

Shankar N. Acharya & Associates

WITH CONTRIBUTIONS BY R.J. CHELLIAH

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# Aspects of the Black Economy in India

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NATIONAL INSTITUTE OF PUBLIC FINANCE AND POLICY

Well known and discussed as the "Black Money Report", the study on Aspects of the Black Economy in India undertaken by the Institute at the instance of the Central Board of Direct Taxes, was published by the Ministry of Finance, Government of India, last year. Reflecting the wide interest it evoked in the country and abroad, copies of the first edition were exhausted within a short time. The Institute is happy to bring out this reprint edition in response to demand for copies still coming in from various quarters. It is hoped that this will also provide access to the report to a wider readership.

# **Aspects of the Black Economy in India**

**REPORT SUBMITTED TO THE MINISTRY OF FINANCE  
GOVERNMENT OF INDIA**

**Shankar N. Acharya & Associates  
With Contributions by R.J. Chelliah**

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## FOREWORD TO REPRINT EDITION

The study on Aspects of the Black Economy in India undertaken by the Institute at the instance of the Central Board of Direct Taxes, was published by the Ministry of Finance, Government of India, last year. Reflecting the wide interest it evoked in the country and abroad, copies of the first edition were exhausted within a short time. The Institute is happy to bring out this reprint edition in response to demand for copies still coming in from various quarters. It is hoped that this will also provide access to the report to a wider readership.

Since this is a reprint, no revision or change has been carried out in any part of the study. However, it needs to be mentioned that in the Acknowledgement by Dr Shankar Acharya, the leader of the team entrusted with the study, a reference is made to a more detailed write-up of the work on sugar to be done by a member of the study team. According to the original plan of the report, this write-up would have formed Appendix 3 of the report. We regret, for reasons beyond our control, this write-up is not forthcoming.

It should also be mentioned that Dr Chelliah, the then Director of the Institute, made substantial contribution in the form of expansion and modification of the chapter on Policies which forms Chapter 14 of the report.

We are grateful to the Central Board of Direct Taxes for permitting us to bring out this reprint edition of the report.

*September 1986*

**A BAGCHI**  
*Director*

## PREFACE

The National Institute of Public Finance and Policy is an autonomous non-profit organisation whose major functions are to carry out research, undertake consultancy work and impart training in the area of public finance and policy.

This study was sponsored by the Central Board of Direct Taxes, Department of Revenue, Ministry of Finance, Government of India. The study was begun early in 1983 and was completed by the end of February, 1985. The report is the product of team work. The study team, whose members are listed on page iv, worked under the leadership of Dr. Shankar Acharya, Senior Fellow. The team must be complimented on the excellent and painstaking work that it has carried out in such a difficult and treacherous terrain.

In the main body of the report no attempt is made to arrive at a global estimate of black income generation in the country. This is because the study team felt that within the limitations of time and resources at its disposal, the required data could not be collected and rigorous methodologies could not be applied to them in respect of each of the major sectors in which black income was considered to be generated. However, since the report would be incomplete if it did not contain the results of even a rough estimate of black income generated in India, additional work was carried out whose results are presented in Chapter 13. This work has been carried out largely by Shri A V L Narayana and myself. In doing this we have received assistance from Dr. M Govinda Rao.

As stated earlier, the report was completed by the end of February, 1985; but could not be submitted immediately because of the delay in reproduction. Meanwhile, the Union Budget was presented on March 16, 1985. We note that

some of measures we have recommended in Chapter 14 have been announced in the Budget. Needless to say, our recommendations were formulated independently.

The Governing Body of the Institute does not take responsibility for any of the views expressed in this report. This responsibility belongs to the Director and staff of the Institute, and more particularly to the authors of the report.

*March 1985*

**R.J. CHELLIAH**  
Honorary Director

## ACKNOWLEDGEMENTS

This study is the product of a little over two years' work by a group at the National Institute of Public Finance and Policy. In any such team effort it is difficult to isolate the contribution of individual members. However, some attempt in this direction is nevertheless desirable.

The bulk of the statistical analysis underlying the estimates of tax-evaded income presented in Chapter 5 has been done by Shri A.V.L. Narayan. He has also drafted Appendix 1, which presents details relating to the underlying data and calculations. Though Shri Narayan only joined the study team in October 1983, his contribution has been invaluable; it has included supervision of the final stages of production of the report.

The case studies of tax evasion in sugar and urban real estate, reported in Chapters 6 and 7 respectively, have been carried out by Dr. Arun Kumar, with the assistance of Shri Diwan Chand and Shri Dilip Mund. Chapter 6 is based on an initial draft by Dr. Kumar, who is currently engaged in preparing a more detailed write-up of his work on sugar, which will be submitted later as Appendix 3 to this report. Chapter 7 is based on background material prepared by Dr. Kumar.

Chapter 10, which explores the effectiveness of deterrence provisions relating to income tax evasion, is based on extensive background material prepared by Shri S.P. Chaudhury, who rendered invaluable assistance to the study during his association with it from July 1983 to July 1984.

In addition to his work on sugar and urban real estate, Shri Dilip Mund also provided research assistance for several other chapters of the report. Shri Ajay Kumar and Smt. Vijaya Khari also helped with research assistance.



For all empirically-oriented chapters, prompt and efficient computer services were provided by the NIPFP's Computer Unit, led by Shri K.K. Atri and including Shri A.K. Halen and Smt. Geeta Bhatnagar.

Very competent typing services were provided by personal assistants, Kum. Sushila Panjwani and Shri N. Natarajan, a number of NIPFP's typists, including, most notably, Shri K.R. Subramanian, Shri Anil Sharma and Kum. Chandra. Whereas Kum. Panjwani and Shri Natarajan had borne the brunt of typing preliminary drafts, the burden of typing the stencilled version has been shouldered by Shri Subramanian.

Shri C. Cecil has contributed welcome assistance in editing this report.

The NIPFP Library, managed by Shri H.K. Paruthi, has rendered valuable services at all stages of the study.

Thanks are due to Shri N. Natarajan, Shri Jagmohan Singh Rawat, Shri Hira Ballabh Pandey and Shri Puran Chand for producing the cyclostyled copies of the present draft.

A number of professional colleagues at the NIPFP have contributed valuable suggestions and comments. In particular, Professor Chelliah has provided constant encouragement and carefully reviewed the penultimate draft. During the first half of the study, when "the light at the end of the tunnel" was often dim, Dr. Amaresh Bagchi provided invaluable encouragement and advice to buoy the spirits of the study team. Shri K. Srinivasan could also always be counted upon for advice and practical assistance whenever difficulties were encountered.

Outside the NIPFP, thanks are due to the Central Board of Direct Taxes (CBDT) and various offices of the Income Tax Department, without whose assistance Chapters 7, 10 and 11 could not have been written in their present form. Special mention needs to be made of the assistance received from Shri P.S. Bhaskaran who was the CBDT Member (Investigation) during the formative stage of this study. Thanks are due to the Central Statistical Organisation's National Income Division for useful discussions on sources and methods of national income accounting. Thanks are also due to the National Council of Applied Economic Research for making

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*xi*

available computer tabulations of their 1975-76 survey of Household Income.

Finally, a very large number of people in many different walks of life have contributed to this study with their insights, responses and comments. However, given the rather unusual nature of the subject, they have generally insisted on anonymity and would be less than delighted to find their names in these acknowledgements.

*January 1985*

**SHANKAR ACHARYA**

## TABLE OF CONTENTS

	Page
<i>Foreword</i>	v
<i>Preface</i>	vii
<i>Acknowledgements</i>	ix
<b>1. Introduction</b>	<b>1</b>
<b>2. Black Money: Some Preliminaries</b>	<b>5</b>
1. Concepts and Definitions	5
2. Black Income Generation: Some Examples	11
3. The Extent of Black Income in India: A Qualitative View	16
<b>3. Black Income in India: A Critical Review of Recent Estimates</b>	<b>21</b>
1. Introduction	21
2. Alternative Methods for Estimating Black Income: A Taxonomy	22
3. Fiscal Approach: Chopra's Estimates	25
4. Monetary Approach: Estimates by Gupta and Gupta	34
5. Physical Input Approach: Estimates by Gupta and Mehta	39
6. National Accounts Approach: Estimates by Ghosh, <i>et. al.</i>	43

	Page
7. Estimates of Unaccounted Income: A Numerical Overview	45
8. Some Lessons	47
<b>4. Estimating Unaccounted Income: A Monetary Approach</b>	<b>51</b>
1. Introduction	51
2. The Tanzi Method	52
3. Some Problems with the Tanzi Method	53
4. Adapting the Tanzi Approach to India	56
5. Interpretation and Assessment of the Result	70
<b>5. The Scale of Black Income: A Fiscal Approach</b>	<b>74</b>
1. Introduction	74
2. National Accounts Statistics: From Net Domestic Product to Gross Personal Income	76
3. The Distribution of Gross Personal Income	77
4. Matching the NCAER and NAS Totals of Gross Personal Income	88
5. The Derivation of Taxable Income	95
6. Estimates of Tax-Evaded Income: First Approximations	122
7. Estimates of Tax-Evaded Income for 1980-81	126
8. What if National Income is Underestimated?	132
9. Overview and Assessment	136

<b>6. Black Income Generation in the Sugar Industry: A Case Study</b>	<b>145</b>
1. Introduction	145
2. The Sugar Industry in India: A Capsule History	148
3. The Anatomy of Black Income Generation in Sugar	154
4. Estimating Suppression of Sugar Output: A Physical Input-Output Approach	157
5. Underpayment for Sugar-cane	182
6. Black Income Generation in Sugar: A Summary of Estimates	183
<b>7. Black Income Generation in Urban Real Estate</b>	<b>190</b>
1. Introduction	190
2. Black Income Generation: Forms and Causes	191
3. Sources of Data	194
4. Black Income Generation in Urban Real Estate: Delhi	195
5. Black Income Generation in Urban Real Estate: Bombay and Madras	199
6. Some Other Results	205
<b>8. Black Incomes From Public Expenditure</b>	<b>210</b>
1. Introduction	210
2. Some Examples and an Unifying Concept	211
3. The Scale of Black Incomes from Public Expenditure: Some Piecemeal Evidence	213
4. The Scale of Black Incomes from Public Expenditure: Some Speculations	218

<b>9. Underlying Causes of the Black Economy: A Qualitative Review of the Principal Factors</b>	<b>222</b>
1. Introduction	222
2. The Level and Structure of Taxation	223
3. Controls on Economic Activities	232
4. General Laws and Regulations	237
5. The Scale of Government Spending	238
6. Political Funding	239
7. Standards of Public Morality	241
8. Inflation	242
<b>10. Deterrence of Tax-Evasion: Theory and Practice</b>	<b>245</b>
1. Introduction	245
2. Factors Influencing the Rate of Detection	246
3. Punishment through Penalties	269
4. Punishment through Prosecution	276
5. A Summing Up	293
<b>11. The Black Economy: Some Aspects</b>	<b>296</b>
I. Introduction	296
2. Important Sectors for Black Income Generation	297
3. Methods of Black Income Generation	299
4. Forms in Which Black Wealth is Held	301
5. Methods of Converting Black Income and Wealth into "White"	303
ANNEXURE: Questionnaire on Black Money	306

<b>12. Some Economic Consequences of the Black Economy</b>	<b>311</b>
1. Misinformation about the Economy	311
2. Impact on the Fiscal System	314
3. Implications for Resource Allocation	316
4. Consequences for Income Distribution	322
5. Implications for Monetary Policy	323
6. Some Wider Issues	324
<b>13. A Global Estimate of Black Income Generation</b>	<b>327</b>
1. Introduction	327
2. A Global Estimate of Black Income Generation	329
<b>14. Policies for Scaling Down Black Income Generation</b>	<b>346</b>
1. A Brief Review of Past Policies	346
2. Measures Recommended for Reducing Black Income Generation	350
<i>Bibliography in the Text</i>	366
<i>Appendix I. Background Material for a Fiscal Approach to Estimating Black Income in India</i>	378
1. The Basic NCAER Survey Data	380
2. Conversion Procedure for Deriving Frequency Distribution of Earners	382
3. Population Adjustments and Changes in the NCAER Estimates for 1975-76	384
4. Fitting a Two-Parameter Lognormal Function	387

**TABLE OF CONTENTS**

*xvii*

5. Results of Lognormal Fits and Modifications	391
6. Estimation Procedure for Component Level Income Distribution Classified by Income Ranges for Earners	397
7. Estimation of Scaled-up Component Level Income Distribution	399
8. Estimation of Tax Deductions	406
9. Estimation of Income Below Exemption Limit	414
10. Computation of Blow-up Factors	417
<i>Appendix II. Tax Evasion: Some Implications for National Income Estimates</i>	512
<i>References in Appendices</i>	525



## LIST OF TABLES IN THE TEXT

	<i>Page</i>
3.3.1 Chopra's Estimates of Unaccounted Income	27
3.3.2 Number of Assessments and Assesseees Reported in Alternative Sources and Derived Indicators of Underreporting in <i>AIITS</i>	31
3.4.1 Size of Black Economy	37
3.7.1 Alternative Estimates of Black Income (As per cent of GNP or GDP)	45
4.4.1 Data Used in the Regressions	58
4.4.2 Regression Results with R12 as the Interest Rate Variable	64
4.4.3 Regression Results with RAVE as the Interest Rate Variable	66
4.4.4 Estimates of Tax-Induced Currency Demand (TICD)	69
4.5.1 Estimates of Unaccounted Income by Tanzi's Method	71
5.2.1 From Net Domestic Product to Gross Personal Income (Rs crore in current prices)	77
5.3.1 Summary Version of the Household Distribution of Income (NCAER) by Source Components of Income for Urban India, 1975-76	79

5.3.2	Summary Version of the Frequency Distribution of Reporting Households (NCAER) by Source Components of Income for Urban India, 1975-76	81
5.3.3	Frequency Distribution of Reporting Households (Urban and Rural) by Earner-Density of Households, 1975-76	84
5.3.4	Distribution of Earners (Urban and Rural) from Households of Varying Earner-Density, 1975-76	85
5.3.5	Conversion of Household Frequency Distribution to Earner-Wise Frequency Distribution: Illustration for 'Two-Earner' Urban Households, 1975-76	86
5.4.1	Population Adjusted Estimates of Gross Household Income (NCAER) and Earners for Urban and Rural India, 1975-76	91
5.4.2	Gross Personal Income Distributed under Three Different Scenarios for Urban and Rural India, 1975-76	92
5.4.3	Estimated Distribution of Gross Personal Income by Income Ranges for Earners—Urban India 1975-76	94
5.4.4	Estimated Distribution of Gross Personal Income by Income Ranges for Earners—Rural India, 1975-76	95
5.4.5	Estimated Distribution of Gross Personal Income by Income Ranges for Earners—All India, 1975-76	96
5.4.6	Size Distribution of Income Based on Derived Earner-Wise Data and the NCAER Raw Household Data for Urban and Rural India, 1975-76	96

**ASPECTS OF THE  
BLACK ECONOMY IN INDIA**

5.5.1	Composition of Gross Household Income by Source Components for Urban and Rural India, 1975-76	99
5.5.2	Unscaled Gross Personal Income Distribution by Income Ranges for Earners, Urban India, 1975-76	102
5.5.3	Unscaled Gross Personal Income Distribution by Income Ranges for Earners, Rural India, 1975-76	104
5.5.4	Step-Wise Derivation of the Distribution of "Net Income" from Gross Income for Urban India, 1975-76, Case 1 ("Missing Income" Allocated in Ratio of U:R=1:2)	106
5.5.5	Step-Wise Derivation of the Distribution of "Net Income" from Gross Income for Urban India, 1975-76, Case 2 ("Missing Income" Allocated in Ratio of U:R=1:1.5)	108
5.5.6	Step-Wise Derivation of the Distribution of "Net Income" from Gross Income for Urban India, 1975-76, Case 3 ("Missing Income" Allocated in Ratio of U:R=1:1)	110
5.5.7	Step-Wise Derivation of the Distribution of "Net Income" from Gross Income for Rural India, 1975-76, Case 1	112
5.5.8	Step-Wise Derivation of the Distribution of "Net Income" from Gross Income for Rural India, 1975-76, Case 2	114
5.5.9	Step-Wise Derivation of the Distribution of "Net Income" from Gross Income for Rural India' 1975-76, Case 3	116
5.5.10	Summary Estimates of Taxable Income under Different Scenarios, 1975-76 (Assessment Year, 1976-77)	124

5.6.1	Adjustments of Income Assessed to Tax by Status of Assesseees, 1975-76 (Assessment Year, 1976-77)	127
5.6.2	Estimates of Tax-Evaded Income in India (First Approximation) under Three Scenarios for Non-Corporate Sector, 1975-76 (Assessment Year, 1976-77)	128
5.7.1	Summary Estimates of Taxable Income under Different Scenarios, 1980-81 (Assessment Year, 1981-82)	130
5.7.2	Estimates of Taxable Income, Income Assessed and Tax-Evaded Income, 1980-81 (Assessment Year, 1981-82)	133
5.8.1	Tax-Evaded Income Associated with Adjustments to GDP to Allow for Underestimation: Some Speculations	136
5.9.1	Estimates of Tax-Evaded Income: An Illustrative Overview	138
5.9.2	NAS-Based Estimates of Tax-Evaded Income: Some Sources of Bias	142
6.1.1	Relative Standing of Sugar-Industry in the Economy as a Whole	146
6.2.1	Indian Sugar Statistics: Area, Production & Yield of Sugarcane, Factories in Operation, Duration, Crushing Capacity, Cane Crushed, Percentage of Cane Crushed by Factories, Sugar & Molasses Production from 1930-31	150
6.4.1	Corrected Electricity Consumption Per Unit of Output	163
6.4.2	Age Profile of Sugar Mills Crushing Capacity	166

6.4.3	Number of Days of Factory Running Corrected for Hours Lost—Converted to Fiscal Year	168
6.4.4	Conversion of Evasion of Output from Fiscal Year to Sugar Year	175
6.4.5	Evasion: Implication for Underreporting of Sugar-cane Crushed and Percentage Recovery (Partitioning)	180
6.5.1	Underpayment in Cane Purchase during Sugar Year	184
6.6.1	Evasion of Excise, Income and Underpayment for Underweighed Cane	186
7.4.1	Estimates of Black Income Generated in Registered Sales of Immovable Property in Delhi	196
7.4.2	Estimates of Black Income Generated in 'Power of Attorney Sales' of Property in Delhi	200
7.5.1	Estimates of Black Income Generated in Registered Sale of Immovable Property in Bombay	201
7.5.2	Estimates of Black Income Generated in Registered Sale of Immovable Property in Madras	206
7.6.1	Undervaluation of Immovable Properties Detected by Valuation Cells in Cases Referred by Acquisition Departments in Delhi, Madras and Bombay	207
7.6.2	Total Number of Forms No. 37G received by the Office of IAC (Acquisition), in the Union Territory of Delhi	208

8.4.1	Leakages from Public Expenditures: Some Speculative Numbers (Current Prices, Rs crore)	220
9.2.1	Burden of Income Tax at Selected Income Levels (1971-72 and 1981-82)	229
9.2.2	Combined Impact of Income and Wealth Taxes Assuming an Yield Rate of 10 Per Cent Per Annum	230
10.2.1	Assessment and Penalty	252
10.2.2	Progress of Detection of New Assesseees from External Survey during the Period 1972-73 to 1977-78	256
10.2.3	Year-Wise Statistical Information Relating to Survey Operations in Financial Years 1979-80 to 1983-84	258
10.2.4	Search and Seizure	260
10.2.5	Results of Sample Study of Search Cases Involving Seizure of Assets of More than Rupees Five Lakh in Each Case Carried Out During the Calendar Years 1976 to 1978	264
10.3.1	Particulars Relating to Penalty Exceeding Rs 10,000 Levied Under Section 271(1)(c) in the Financial Years 1976-77, 1977-78 and 1978-79	271
10.3.2	Statement Showing Results of Appeals Decided by the Benches of the Tribunal during the Period from 1978-79 to 1982-83 where the Penalty Levied or Sustained by the Lower Authorities Exceeded Rs 5,000	273

10.4.1	Total Number of Prosecutions Launched, Convictions Obtained, Cases Acquitted by the Courts & Compounded during the Years 1971-72 Onwards Relating to Non-Technical (Concealment) Offences	277
10.4.2	Data on the Details of Punishment on Conviction for the Year 1980-81 to 1982-83	279
10.4.3	Prosecutions Launched for Concealment: Month-Wise Break-Up	284
10.4.4	Cases in which Penalty was Imposed by the Commission in 1981-82, 1982-83 and 1983-84 (Upto 31-10-1983) for Concealment of Income	288
10.4.4A	"Search Cases" in which Objection had been Received from the Commissioner to the Admission of Settlement Application	289
10.4.4B	Settlement Cases Position in 1981-82, 1982-83 and 1983-84 (Upto 31-10-1983)	290
10.4.5	Statement Giving Details of Receipt and Disposal of Applications by the Settlement Commission (IT + WT)	291
11.2.1	Sectors/Activities Generating Black Income: Percentage Breakdown of Questionnaire Responses	298
11.3.1	Methods of Black Income Generation: Percentage Breakdown of Questionnaire Responses	300
11.4.1	Forms in which Black Wealth is Held: Percentage Breakdown of Questionnaire Responses	302
11.5.1	Methods of Converting Black Income and Wealth into 'White' : Percentage Breakdown of Questionnaire Responses	305



13.2.1	Registered Value of Immovable Property Transfers in Major States in India	333
13.2.2	Forecasting of Registered Values of Immovable Property Transfers in some States for 1975-76 and 1980-81	334
13.2.3	Fixed Capital Formation and Black Income Generation	336
13.2.4	Private Corporate Investment on New Assets and Black Income Generation	338
13.2.5	Black Incomes Generated by Underinvoicing Traditional Exports	339
13.2.6	A Global Estimate of Black Income Generated in India for 1975-76 and 1980-81	342
13.2.7	Estimate of Black Income in India during 1983-84	344

## LIST OF TABLES IN APPENDIX I

	<i>Page</i>
A.1.1 Household Distribution of Income (NCAER) by Households of Varying Earner-Density and by Source Components of Income: Urban India for 1975-76	419
A.1.2 Frequency Distribution by Households (NCAER) of Varying Earner-Density and by Source Components of Income: Urban India for 1975-76	426
A.1.3 Household Distribution of Income (NCAER) by Households of Varying Earner-Density and by Source Components of Income: Rural India for 1975-76	432
A.1.4 Frequency Distribution by Households (NCAER) of Varying Earner-Density and by Source Components of Income: Rural India for 1975-76	438
A.1.5 Frequency Distribution by Income Ranges for Earners Derived for 'Three-Earner' Urban Households, 1975-76	445
A.1.6 Frequency Distribution by Income Ranges for Earners Derived for 'Four-Earner' Urban Households, 1975-76	446
A.1.7 Frequency Distribution by Income Ranges for Earners Derived for 'More than Four-Earner' Urban Households, 1975-76	447

A.1. 8	Frequency Distribution by Income Ranges for Earners Derived for 'Two-Earner' Rural Households, 1975-76	448
A.1. 9	Frequency Distribution by Income Ranges for Earners Derived for 'Three-Earner' Rural Households, 1975-76	449
A.1.10	Frequency Distribution by Income Ranges for Earners Derived for 'Four-Earner' Rural Households, 1975-76	450
A.1.11	Frequency Distribution by Income Ranges for Earners Derived for 'More than Four-Earner' Rural Households, 1975-76	451
A.1.12	Results of 'Goodness of Fit' and Parametric Estimates of Lognormal Distributions Fitted to Earners-Data: Urban and Rural India for 1975-76	452
A.1.13	Results of Modified Parametric Values for Scaled-Up Gross Personal Income Distributions: Urban and Rural India 1975-76	454
A.1.14	Results of Derived Parametric Values for Gross Personal Income Distribution for 1980-81	456
A.1.15	Gross Personal Income Distributions under Different Scenarios, Urban and Rural India for 1980-81	458
A.1.16	Income Distribution (NCAER) of 'One Earner' Urban Households by Source Components of Income for 1975-76	460
A.1.17	Income Distribution (NCAER) of 'Two-Earner' Urban Households by Source Components of Income for 1975-76	462
A.1.18	Income Distribution by Income Ranges for Earners Derived for 'Two-Earner' Urban	

Households by Source Components of Income for 1975-76	464
A.1.19 Income Distribution for Selected Components of Income by Income Ranges for Earners: Urban India for 1975-76	466
A.1.20 Income Distribution for Selected Components of Income by Income Ranges for Earners: Rural India for 1975-76	468
A.1.21 Composition of Gross Income under Different Scenarios by Selected Source Components of Income: Urban and Rural India for 1975-76 and 1980-81	470
A.1.22 Weighting Schemes for Selected Components of Income: Urban and Rural India for 1975-76	472
A.1.23 Estimated Distributions of 'Agricultural Income': Urban and Rural India for 1975-76 and 1980-81	474
A.1.24 Estimated Distributions of 'Business Income': Urban and Rural India for 1975-76 and 1980-81	476
A.1.25 Weighted Frequency Distribution of Salary Earners: Urban India for 1975-76 and 1980-81	478
A.1.26 Results of Lognormal Fits and Estimated Parametric Values for Salary Income Distributions: Urban India 1975-76 and 1980-81	480
A.1.27 Modified Parametric Values used in Estimating Salary Income Distribution for Urban India 1975-76 and 1980-81	481
A.1.28 Estimated Salary Income Distributions: Urban and Rural India for 1975-76 and 1980-81	482

A.1.29	Illustration of Procedures to compute Standard Deductions for the Scenario U:R=1:2 : Urban and Rural India for 1975-76	484
A.1.30	Bagchi's Estimated Rates and Average HRA Rates by Salary Income Ranges	486
A.1.31	Estimated Results of HRA Deductions: Urban and Rural India for 1975-76 and 1980-81	487
A.1.32	Estimates of Salary Income and Employers' Contribution to Provident Fund for Urban, Rural and All-India for 1975-76 and 1980-81	489
A.1.33	Estimated Results of Employers' Contributions to Provident Fund, by Income Ranges: Urban and Rural India for 1975-76 and 1980-81	490
A.1.34	Estimated Results of Average Rates for Chapter VIA Deductions for 1975-76 (Assessment Year, 1976-77)	492
A.1.35	Estimated Results of Average Rates for Chapter VIA Deductions for 1980-81 (Assessment Year, 1981-82)	493
A.1.36	Step-Wise Derivation of the Distribution of "Net Income" from Gross Income for Urban India 1980-81, Case 1 ("Missing Income" Allocated in Ratio of U:R=1:2)	494
A.1.37	Step-Wise Derivation of the Distribution of "Net Income" From Gross Income for Urban India 1980-81, Case 2 ("Missing Income" Allocated in Ratio of U:R=1:1.5)	496
A.1.38	Step-Wise Derivation of the Distribution of "Net Income" from Gross Income for Urban India 1980-81, Case 3 ("Missing Income" Allocated in Ratio of U:R=1:1)	498

A.1.39	Step-Wise Derivation of the Distributions of "Net Income" from Gross Income for Rural India 1980-81, Case 1 ("Missing Income" Allocated in Ratio of U:R=1:2)	500
A.1.40	Step-Wise Derivation of the Distribution of "Net Income" from Gross Income for Rural India 1980-81, Case 2 ("Missing Income" Allocated in Ratio of U:R=1:1.5)	502
A.1.41	Step-Wise Derivation of the Distribution of "Net Income" from Gross Income for Rural India 1980-81, Case 3 ("Missing Income" Allocated in Ratio of U:R=1:1)	504
A.1.42	Estimated Results of Applying the Exemption Limit in Terms of Gross Income under Different Scenarios: Urban and Rural India for 1975-76	506
A.1.43	Estimated Results of Applying the Exemption Limit in Terms of Gross Income Under Different Scenarios: Urban and Rural India for 1980-81	508
A.1.44	Estimated Values of "Blow-Up" Factors by Status of Assessee for the Assessment Year 1976-77	510
A.1.45	Estimated Values of "Blow-Up" Factors by Status of Assessee for the Assessments Completed in the Year 1981-82	511

#### TABLE IN APPENDIX II

A.2.1	Gross Domestic Product at Factor Cost of Current Prices by Industry of Origin for 1970-71 and 1980-81: Percentage Distribution	513
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## LIST OF FIGURES

	<i>Page</i>
V.1 Frequency Distribution for Urban India by Income Ranges for Earners: 1975-76 (Based on NCAER data)	89
VI.1 Electricity Consumption and Output	161
VI.2 Evasion Relationship with Other Variables	177
VI.3 Evasion of Output and Implication for Recovery Percentage and Cane Underreporting	179

# 1

## Introduction

THE "tentative terms of reference" for the present study were:

- i. to identify the important sectors of the economy in which black money is generated;
- ii. to examine the causes and conditions that give rise to and/or facilitate the generation of black money;
- iii. to study the methods employed to generate black money and the channels through which concealed income is invested and spent in other ways;
- iv. the methods employed to convert black money into white money;
- v. to attempt a broad estimate of the volume of black money generated;
- vi. to undertake any regional or sectoral surveys that may be required in connection with the above.

While these tentative terms of reference were clearly wide ranging, it was made clear to us that the Ministry of Finance attached particular importance to item (v), namely, the attempt to quantify the extent of the problem.

In view of this, and given the limited resources at our disposal, we have devoted the bulk of our time and effort to issues of quantification, with the inevitable consequence that



the other items of the terms of reference have received correspondingly less attention. We have concentrated our efforts on the quantification exercises despite being fully aware of the uncertain nature of the venture. We recognized from the beginning that our results would be based on numerous assumptions and approximations, each of which could be challenged. There would be nothing to prevent critics from dismissing our estimates on these grounds. However, that is an occupational hazard of most empirical work, which is vastly magnified in the case of black money, where reliable data are, by definition, elusive. Given the unusual nature of the enterprise, we will rest content if, in the reader's judgement, we have accomplished two goals: first, that we have improved on the work of previous researchers in this field; and second, our methodology, assumptions and data are clearly spelt out so that those who follow us can improve on our results with the benefit of better data, more acceptable assumptions and, perhaps, more refined methodologies.

We should make one other general, introductory remark. Much of the qualitative discussion and views contained in this report is based on a large number of informal interviews we conducted with businessmen, civil servants, politicians, chartered accountants, lawyers, journalists, economists and revenue officials. In its nature, and especially given the topic at hand, it is difficult to assess the reliability of such interview information. On the other hand, there is no basis for ignoring these, admittedly informal data. All we can say is that we used such information with the best judgement at our command.

We turn to outline the scope of this report.

In Chapter 2 we attempt to clarify alternative connotations of black money; outline and contrast different concepts of black income, and illustrate these conceptual distinctions through a consideration of some specific transactions. Chapter 3 reviews alternative methods of estimating the scale of black income that have been advanced in the literature and undertakes a critical survey of some recent applications of several of these methods to India. In Chapter 4 we essay a monetary approach to estimating the dimensions

of black income in India. Though the venture yields some interesting results, our doubts about the methodology are strong enough to conclude the chapter on an agnostic note. In Chapter 5 we undertake a fiscal approach to estimating black income in India. At the macro level this chapter contains the heart of our quantitative work. Despite all their problems we believe that the estimates presented in this chapter are, for the concept of black income under consideration, better grounded than any other available estimate. Supporting methodological details and data are given in Appendix 1 at the end of the report. Appendix 2, which is also associated with this chapter, considers the issue of bias in the official estimates of national income and product.

The next three chapters continue to dwell on quantification, but the focus shifts from the economy-wide level to specific sectors and classes of transaction. The goal of these chapters is threefold: to generate some estimates of black income at the sectoral level, to develop some methodologies which may be of more general interest and to shed light on some of the methods of black income generation. Chapter 6 considers sugar as an example of a commodity producing sector. Chapter 7 deals with black incomes in the form of undeclared capital gains in urban real estate. The detailed description of the sugar case study is given in Appendix 3. Chapter 8 gives a brief account of black income generation through public expenditures.

In the next chapter, 9, we turn to the underlying causes of black income generation. The chapter does not attempt to break fresh ground; rather it reviews and synthesizes existing literature in this area. Chapter 10 takes up *one* of the factors underlying tax evasion—namely, the effectiveness of deterrence—and attempts to provide some fresh information and analysis on this relatively neglected causal factor.

Chapter 11 contains a qualitative account of some aspects of the working of the black economy, including the principal methods of black income generation, the main sectors and activities where it is generated, the important channels for spending black income and some of the more common methods of converting “black” into “white”.

The next two chapters consider issues that, strictly speaking, fall outside the terms of reference of the study. But we felt that for the sake of completeness some coverage of these issues was necessary. Chapter 12 explores some of the possible economic consequences of sizeable black economy while Chapter 13 addresses itself to a global estimate of black income generation. Chapter 14 outlines the array of possible policies to deal with the problem of black income generation.

## Black Money : Some Preliminaries

### 1. Concepts and Definitions

THE black economy (alias the parallel economy, the unaccounted economy, the underground economy, the unreported economy, etc.) in India has been a matter of grave concern for a number of years. Thirteen years ago the Wanchoo Committee Report (Government of India, Ministry of Finance, 1971, p.6) depicted the phenomenon as a "cancerous growth in the country's economy which, if not checked in time, will surely lead to its ruination". Since then numerous articles (and some books) have been written pointing to the various deleterious consequences of the black economy, diagnosing its causes and suggesting a wide range of remedies. A number of efforts have also been made to estimate the quantitative dimensions of the problem. Over the past six or seven years a considerable body of literature has developed which examines similar problems in a number of foreign countries<sup>1</sup>. Despite all this intellectual effort, the meaning of phrases such as "black money" or "the black economy" is less than crystal clear. One of our purposes in this chapter is to discuss and clarify some of the alternative connotations of these terms. The goal is not to arrive at the "correct" definition (an entirely hopeless enterprise) but to be clear about the alternatives and *our* use of these alternatives in this report.

First of all, it is important to distinguish between the *flow of black income* over a period of time (such as a year) and the *stock of black wealth* at any given point in time. Such a distinction between income and wealth is equally important for the analysis of the regular (or "white") economy. Unfortunately, the term "black money" is frequently, and confusingly, used to refer to both black income and wealth (for example, in the Wanchoo Report), when, in fact, its meaning, strictly speaking, should be limited to that portion of black wealth which is held in the form of currency and liquid bank deposits, in short, money. Less frequently, "black money" also refers to *black turnover* (e.g., Sandesara, 1983a), that is, when the turnover is not reported to tax authorities for purposes of tax evasion, or because the transaction in question is illegal (for example, black market sales of price-controlled commodities).

In this report we focus mainly on *black income*, especially when it comes to exploring quantitative dimensions'. There are several reasons for this. First, as we shall see, coming to grips with black income is a difficult enough task. Second, wealth accounting is notoriously difficult; it is no accident that the Central Statistical Organisation (CSO) does not publish any annual estimates of national wealth analogous to their regular estimates of national income and output. Third, the concept of black wealth is prey to even more ambiguities than is the case with black income, especially given the possibilities of "laundering" black income and wealth into white.<sup>2</sup>

The concept of black income is not unambiguous. We can distinguish at least three different connotations in the literature:

- i. income which is illegal;
- ii. income which evades tax;
- iii. income which escapes inclusion in national income estimates.

We shall try to narrow down these three different connotations into two workable definitions.

At the simplest and most commonsensical level black incomes refer to those incomes which have some element of

*illegality* associated with them. These may arise from illegal economic activities such as gambling, smuggling and prostitution, or from unauthorized "sale" of permits, licences, postings or favours, or from black marketing of products and services which are legally required to be sold at controlled prices and/or through specified channels. Alternatively, the activities and income sources may be perfectly legal, but to the extent the incomes made are understated to tax authorities, the law is broken and black incomes are made.

The notion of illegal incomes can be made congruent (almost) with the notion of tax-evaded income once we recognize that, *in principle*, income from illegal activities and sources is taxable, though it would be wholly unrealistic to expect such receipts to be voluntarily *declared* for taxation. The Income Tax Act, 1961, allows for no specific exclusions of illegal incomes. And the Income-Tax Department has always taken the view that illegal incomes are taxable under one or other of the six heads (salaries, business, house property, etc.) depending on the source of the income. Thus, if a trader makes black market profits, they are deemed taxable under the head "business"; that black marketing is illegal is held immaterial to the taxability of incomes.

The lack of congruence between these two notions of black incomes arises when the total of illegal source incomes accruing to an individual, together with his legal source incomes, falls below the prevailing exemption limit. In such a case the issue of tax evasion does not arise. But the individual will nevertheless have received incomes which are black in the sense of being from illegal sources. Leaving this difficulty aside we can subsume the first two connotations of black income into a single *Definition A*:

*The aggregate of incomes which are taxable  
but are not reported to the tax authorities*

For brevity we shall sometimes use the phrase *tax-evaded incomes* for this definition.

More specifically, this definition of black income will include *non-reporting or under-reporting of incomes and receipts from the following categories*<sup>3</sup>.

1. Income from current, legal economic activities;
2. Income from legal transfer payments<sup>4</sup>, e.g., pensions;
3. Income from realized capital gains on legally transferred assets;
4. Income from current illegal economic activities, e.g., smuggling, gambling, black marketing and prostitution;
5. Income from realized capital gains on illegally transferred assets, e.g., from such sales of land and property as are prohibited by law;
6. Income from illegal transfer payments, e.g., various forms of bribes, kickbacks and cuts.

The first three items refer to evasion of incomes from *legal* activities and sources. We could consider the first trio to constitute a "narrow" legal version of Definition A, while the "broader" definition would extend to encompass the latter three illegal elements.

The first thing to note about *Definition A* is that it can be applied either at the level of an individual taxable entity or for an aggregate of tax entities. The total of black income generated in the country in a given year is simply the total of black incomes made by all tax entities in the nation. Second, not all cases of black incomes need fit neatly into this six-fold classification, though our contention is that the overwhelming majority would. Third, it is important to stress that of the six categories of income only items (1) and (4) reflect returns to productive factor engaged in current economic activity; and item (4) is conventionally excluded from the ambit of official totals of national income. However, as far as an individual recipient is concerned all six categories enhance his economic power, that is, his ability to command goods and services in the economy. Fourth, while it is important to distinguish between different kinds of black income, it is at least as important to recognize that the level of any single category of black income is not wholly independent of the level of the others. Thus, for example, an increase in the scale of smuggling in a small economy reliant on foreign trade could substantially alter the total of incomes from current, legal economic activities, as well as the proportion of such income which evades tax.

The above "disaggregation" of Definition A assists comparison with an alternative connotation of black or unaccounted income which is frequently encountered in the literature on this subject and which we define as follows:

*Definition B. The extent to which estimates of national income and output are biased downwards because of deliberate, false reporting of incomes, output and transactions for reasons of tax evasion, flouting of other economic controls and related motives.*

For brevity, we shall sometimes refer to this definition of black income by the phrase *unaccounted income*.

It should be clear that the two definitions are conceptually quite different. By well-established convention the scope of national income is limited to the aggregate of factor earnings from current, lawful economic activities, that is, to item (1) of the six items enumerated under the definition of tax-evaded income<sup>5</sup>. Changes in the levels of the other five items are relevant for Definition B only to the extent that they have repercussions on the levels of true and recorded national income.

Aside from these obvious, and important, conceptual differences, the practice of national income accounting can, and does, drive a wedge between the two concepts of black income advanced above. Even in sectors of lawful current economic activity, tax evasion does not necessarily lead to underestimates if the information supplied to the revenue authorities does not form a basis for estimating national income in that sector. Of course, the two concepts are not wholly unrelated. They are *directly* linked to the extent that underreporting of incomes, output and transaction values to tax and regulatory authorities *does* get reflected in the data sources from which national income estimates are compiled. A couple of examples can illustrate these points for India.

Consider the case of a private doctor who underreports his earnings for 1980-81 (assessment year 1981-82) to the income tax authorities. Such evasion will have no influence on the national account estimates of incomes from professional services for 1980-81. This is because the latter are computed on the basis of survey estimates of value-added



per worker for some earlier "benchmark" year which are moved forward in time with the help of price indices and then multiplied by estimates of total work force for the relevant professional service to obtain current price estimates of value-added in that sector [see Government of India, CSO, (1980)]. None of the key elements of this national accounting calculation are affected by the doctor's current underreporting of income. Of course, underreporting by respondents *at the time of the benchmark survey* would get reflected in the national account estimates for that and subsequent years.

By contrast, the estimates of value-added in the registered manufacturing sector are based on the results of the Annual Surveys of Industry (ASI). The information compiled in these surveys is typically consistent with the financial accounts submitted by the relevant enterprises to the tax authorities. Thus, in this case, underreporting of taxable profits will usually be associated with a downward bias in the estimates of value-added for this sector.<sup>6</sup>

Which of the two alternative definitions of black income proposed above is more fundamental or relevant? As is the case with most definitions, it all depends on the purpose at hand. Normally, tax authorities are likely to be more interested in Definition A, while economists and national income statisticians will tend to focus on Definition B. As this study is sponsored by the Central Board of Direct Taxes (CBDT) we have chosen to give primacy to Definition A.

While we have chosen to define black income as "the aggregate of incomes which are taxable but are not reported to the tax authorities", it is important to avoid the fallacy of inferring that evasion of income tax is the sole, or even the main, *motive* for underreporting of incomes. Especially in India, where more than 80 per cent of the tax revenues of the Centre, States and Union Territories is raised through indirect taxes, evasion of income tax may often be a by-product of falsification of accounts (or wholesale nonreporting) which is motivated by the desire to evade sales, excise or customs duties. Furthermore, income tax evasion can also

be a by-product of actions taken to flout economic controls. Thus, for example, an enterprise may inflate the cost of imported inputs (and thus reduce taxable profits) through over-invoicing of imports triggered by a desire to circumvent foreign exchange controls and accumulate balances abroad. Frequently enterprises are motivated to generate black income in order to meet certain costs which cannot be shown on the books. Such costs may range from petty bribes to low-level government functionaries to substantial "political contributions". Finally, in the case of all the illegal elements of black income (that is, the latter three elements of Definition A), income tax evasion is quite incidental to the breaches of the laws and regulations which are central to making such incomes.

## 2. Black Income Generation: Some Examples

The conceptual remarks of the previous section can be illustrated through a series of examples. In each case we shall describe a hypothetical set of transactions and attempt to answer the following questions:

- i. Do the transactions lead to the generation of black income in the sense of Definition A?
- ii. Do the transactions add value in the economy, and given the present system of national income accounting, does this increase in value-added get recorded in the estimates of national income?
- iii. Do the transactions lead to the generation of black income in the sense of Definition B?
- iv. What are the consequences for different categories of taxes?

### EXAMPLE 1

A trader suppresses a part of his turnover and profits in reporting to sales and income tax authorities. Out of his undeclared profits he pays "haftas" to the local policeman, the tax inspector, health inspector and a few other functionaries. He also purchases the services of a doctor who does not declare these earnings in his income tax return.

The consequences of this set of actions are as follows:

i. Both the trader and the doctor make black income, in the sense of Definition A, and so probably do some recipients of the "haftas" (in some cases their aggregate incomes from all sources may be so low that the income from "unexplained" sources, or bribes, may not render them liable to tax).

ii. The earnings of the trader and the doctor add value to the economy, but given the methods of national income accounting for these sectors, the estimate of national income for these sectors is *not* affected by the individual accounts of these two agents. The "haftas" received are in the nature of transfer payments, which do not add value.

iii. Conversely, the false declaration of their accounts for tax purposes by the trader and the doctor does not influence the estimate of national income, and hence no black income is "generated" in the sense of Definition B.

iv. Sales tax and income tax are evaded.

### EXAMPLE 2

A manufacturing company, registered under the Factories Act, suppresses output declared for excise taxation and keeps the sales of this output off the books. The profits from the sale of the suppressed output are distributed to the controlling owners of the company. At the same time the controlling owners charge some of their personal consumption (in the form of travel, entertainment, use of cars, guest houses, servants, etc.) to the company's account.

The implications are as follows:

(a) Black income in the sense of *Definition A* is generated in several ways. First, the company's profits are understated, both by the misdeclaration of output and by the inflation of expenditures.<sup>7</sup> Second, the controlling owners also enjoy black income from the illegal profit distribution on undeclared output as well as the personal expenses on company account.

(b) The company's operations add value, but only a part of the true profits is actually recorded in the company's financial statement and it is this part which gets picked up

in the estimates of national income for the manufacturing sector. The distribution of profits on sale of suppressed output to the controlling earners is in the nature of illegal transfer payments and such profits do not constitute additional value-added.

(c) The underestimation of national income in the manufacturing sector resulting from the tax evasion and business malpractices in this case constitutes black income in the senses of *Definition B*.

(d) The transactions lead to the evasion of company income tax, personal income tax, excise duties and, perhaps, sales tax.

### EXAMPLE 3

A home owner sells his house for Rs 10 lakh, receiving Rs 5 lakh in cheque, corresponding to the price shown on the transfer deed, and the remaining Rs 5 lakh in cash. Assuming, that he originally purchased or constructed the house at the cost of Rs 2 lakh (all "white") his sale yields a true capital gain of Rs 8 lakh and a declared capital gain of Rs 3 lakh. The implications are as follows:

- i. The seller generates black income, in the sense of *Definition A*, to the tune of Rs 5 lakh, on his undeclared capital gains.
- ii. The transaction does not add value in the economy.
- iii. There is, therefore, no question of black income in the sense of *Definition B*.
- iv. Aside from evading the tax on capital gains, the transactors evade stamp duty and registration fees, and the seller reduces his subsequent wealth tax liability—as compared to a situation where he received the full sale "in white".

### EXAMPLE 4

A municipal corporation gets a public works project completed through private contractors. But the expenditures shown in the corporation's accounts for the project are far

in excess of the actual value (in terms of materials and value-added) of the completed project. The difference is siphoned off through a variety of bribes, cuts and kickbacks to the contractors, a few senior officials of the corporation and suppliers of materials. The implications include:

(i) Black income, in the sense of *Definition A*, is made by many of the recipients of the various bribes and kickbacks, as well as in the form of undisclosed profits in the hands of the contractors and suppliers of materials.

(ii) Value is added in construction activity, though given the methods of estimating value-added in this sector, the actual operations on the project probably do not influence the estimate made for the nation. However, total public sector investment will be overestimated (since it relies on budget documents), and private sector investment will be underestimated by an equivalent amount, with the overall total of fixed investment—estimated by the commodity flow method—remaining unchanged [Government of India, CSO, (1980)].

(iii) Conversely, the siphoning of incomes, cheating on the quality and value of materials, etc., probably do not lead to an underestimation of value added in construction; that is, the transactions do not lead to the generation of black income in the sense of *Definition B*.

(iv) Income tax is clearly evaded by the contractors and the recipients of the bribes, kickbacks and cuts.

#### EXAMPLE 5

A landlord arranges to receive two-thirds of the rental for the premises "in black" and only a third through cheques. He only declares the latter amount both for purposes of income tax and for valuation of house property tax. As a consequence:

- i. He makes black income in the sense of *Definition A*.
- ii. Value is added under the sector "ownership of dwellings" and use is made of his returns to the municipal

authorities in arriving at the estimates. As a consequence, only a part of the actual value-added is captured in the national income estimates.

iii. Correspondingly, black income in the sense of *Definition B* is generated.

iv. The transaction results in the evasion of income tax, municipal property tax and, perhaps, wealth tax.

In the case of illegal incomes the issues regarding direct accounting relationships to national income estimates do not arise. However, for the sake of balance it may be useful to list a few of the myriad ways in which illegal incomes are generated in India:

- grant of licenses and permits in return for bribes or political “contributions”;
- “speed money” to accelerate administrative procedures;
- “sale” of jobs, postings or transfers in various public services;
- regular bribes to petty functionaries from different government departments (e.g., factory inspector, boiler inspector, health inspector, police, tax inspectors for different taxes);
- “pugrees” to circumvent rent control legislation;
- black marketing of price-controlled commodities;
- bribes to alter land use zoning or to “regularise” unauthorised structures;
- bribes to obtain and maintain scarce public goods and services such as electricity, telecommunications, irrigation water and rail wagon allotments;
- various kinds of frauds in banks and other financial institutions;
- “leakages” from various public expenditure programmes;
- bribes to obtain public contracts;
- “contributions” to political authorities at various levels, ostensibly to finance elections and post-elections manipulations.

These simple illustrations help to emphasize a few points. First, any falsification of accounts usually leads to the evasion of more than one tax. Hence, logically, any explanations of tax evasion in terms of a single tax are likely to be

flawed. Second, the links between particular transactions and the national accounts estimate of income in that sector are often weak. This, in turn, implies that the links between tax evasion and underestimation of national income are likely to be quite unsystematic, except in a few sectors. Third, the same level of productive income (or national income) can be associated with quite different levels of corruption, and hence, quite different levels of illegal incomes in the form of illegal transfer payments from one economic agent to another. In a purely *accounting sense*, such transfer payments do not alter the real *size* of the economy, but they can clearly have a very powerful influence on the final distribution of income. Furthermore, if one goes beyond "pure accounting" it is clear that bribes, kickbacks etc. can have significant consequences for the allocation of productive resources in the economy and their effective productivity, and hence, on the real size of national output. Finally, it should be obvious that the estimates of black income according to the broader version of Definition A (that is, including all illegal source incomes) are likely to be extremely difficult, if not impossible. Even the "narrower" version, limited to legal source incomes, will, as we shall see, pose very considerable problems.

### 3. The Extent of Black Income in India:

#### A Qualitative View

Before we come to quantitative estimates, it is useful to offer an initial judgement on the extent of the phenomenon. Based on the available literature and a large number of interviews with people in varied walks of life we cannot escape the conclusion that the making and spending of black incomes has become quite pervasive in society.

The available official reports on taxation certainly support this view. The much-cited Wanchoo Committee Report painted the black economy as a pervasive and growing phenomenon as far back as 1971. The Venkatappiah Committee Report (Government of India, 1974) on the self-removal procedure in Union excises felt "free to confess that

we were not prepared for, and are, therefore, painfully surprised at the range, diversity, and, in certain segments of production, almost the universality of the evasion which is practised by those who produce the goods" (p. 55). More recently, commodity-wise studies of excise evasion by this Institute have found evidence of large-scale evasion in copper (NIPFP, 1982) and cotton fabrics (NIPFP, 1984a) and, to a lesser degree, in plastics (NIPFP, 1983 b).

Studies of State sales tax systems also tend to find rampant evasion. For, example, as far back as 1963, Lokanathan (1963) estimated that for 10 agricultural commodities in Andhra Pradesh in 1960-61 and 1961-62, some 68 per cent of the turnover escaped tax. Using a similar methodology a much more recent evaluation of the Bihar sales tax system by the NIPFP (1981) found that in most years revenue collection from motor parts was less than half of the estimated tax potential. In Kerala, the Report of the Committee on Commodity Taxation (Government of Kerala, 1976) estimated that tax realisation from coconut and copra were often only a third or so of the estimated tax potential. Similarly, the Uttar Pradesh Taxation Enquiry Committee (Government of Uttar Pradesh, 1974) had estimated that in 1965-66 and 1969-70 sales tax receipts were only 42 and 60 per cent respectively of the estimated tax potential.

Tax evasion on legal economic activities has been only one, though probably the most important, source of black income. Pervasive and detailed regulation of economic activity through industrial licensing, import licensing, controls on prices and distribution channels of goods and services (including housing), credit controls and various other means has been another major source of black incomes reaped in different forms of illegal scarcity premia and bribes. Such economic regulations have been a permanent feature of post-1950 Indian economic history, though their nature, scope and intensity have varied from time to time. The Dagli Committee Report (Government of India, Ministry of Finance, 1979) provides the best single compendium of the awesome edifice of controls governing the Indian economy and their history.



Quantitative estimates of black incomes spawned by the system of controls are few and piecemeal. For example, a NCAER (1978) study of price control in selected commodities estimated that Rs 840 crore of black incomes (in the form of scarcity premia) were reaped in just six commodities (urea, cement, tyres, paper, vanaspati and steel) during the period 1965-66 to 1974-75. But the paucity of empirical studies should not detract from the judgement of virtually all knowledgeable observers who credit the extension and institutionalization of economic controls with a major responsibility in the generation of black incomes. Full twenty years ago the Santhanam Committee Report (Government of India, Ministry of Home Affairs, 1964) identified the "large armoury of regulations, controls, licenses and permits", as providing new and expanded opportunities for corruption.

There is every indication that those opportunities have been fulfilled. Generally, controls have given a fillip to black incomes in two distinct ways: first, by creating (illegal) scarcity premia between the controlled price of the good, service or asset and its market clearing price; and second, by vastly augmenting the discretionary authority of functionaries at all levels of government. As the Wanchoo Report (p.9) notes, "Since considerable discretionary power lay in the hands of those who administered controls, this provided them with the scope for corruption—'speed money' for issuing licenses and permits, and 'hush money' for turning a blind eye to the violation of controls." In fact, the use of discretionary authority to extract or levy illegal tolls has spread far beyond the area of economic controls. Particularly at the lower levels of the State apparatus it has become quite common for illegal payments to be demanded in return for the *regular* public services, such as the registration of a document, repair of a telephone, the issue of a tax assessment order, the admission of a student in an educational institution, or decisions on postings and transfers in the public services.

The Santhanam Committee Report had also pointed out that "the rapid expansion of Governmental activities afforded to the unscrupulous elements in public service and public

life unprecedented opportunities for acquiring wealth by dubious methods" (p. 9). The Committee "were told by a large number of witnesses that in all contracts of construction, purchases, sales, and other regular business on behalf of the Government a regular percentage is paid by the parties to the transaction, and this is shared in agreed proportions among the various officials concerned" (p. 10). There is little reason to believe that these practices have changed for the better in the past two decades. In fact, our interviewees were virtually unanimous in maintaining that this form of corruption had greatly worsened over time. What *has* changed is that the absolute and relative scale of government spending has increased dramatically. So the scope for making black incomes through kickbacks, cuts and commissions on government projects, programmes and purchases is today far greater. Furthermore, there are strong indications that political involvement in such transactions has grown enormously. In earlier years the need for political finance was largely met through discretionary control over licenses and permits, with "contributions" being made by private industrialists and traders either as direct *quid pro quos* or in exchange for explicit or implicit assurances of generally easy access to licenses and permits. Today, we were told, a great deal of political finance is raised from purchases, sales and contracts awarded by different levels of government and public sector agencies, with orders placed abroad being particularly lucrative propositions.

To sum up this brief preview, our qualitative judgement is that the making of black incomes has become a very integral even "routine" dimension of Indian society, encompassing pervasive tax evasion on legal source economic activities and widespread corruption and abuse of all forms of public discretionary authority.

### Notes

1. See, for example, the collection of papers edited by Tanzi (1982b).
2. It is sometimes suggested that if we know the amount of black income accruing to an individual it should be easy to estimate his

black wealth by cumulating his "black savings" over time. This is easier said than done. Consider an individual who earns Rs 100,000 in a year, half in white and half in black (the black part may represent legal source income which is not disclosed to the tax authorities or it may represent illegal source income, say, from smuggling. Suppose he consumes goods and services worth Rs 80,000 during the year. Now he has a very considerable degree of freedom in how he chooses to hold his savings of Rs 20,000. The total amount of the savings is unambiguous. But the amount of *black savings* cannot be determined unambiguously. It depends entirely on how the individual chooses to allocate his savings. At one extreme he could hold all of it in declared financial assets, with the implication that there was no saving from his black income. At another extreme it could all be in undeclared forms, if, for some reason, the individual does not wish to add to his stock of white (or declared) wealth. All intermediary situations are, of course, possible.

3. We should note, in passing, that while income tax evasion is typically associated with underreporting and non-reporting of incomes, sometimes evasion is accomplished through *misclassification* of incomes; for example, by showing non-agricultural incomes as agricultural incomes.
4. As the nomenclature suggests, such payments simply transfer purchasing power from one economic agent (or set of agents) to another; there is no increase in the economy's national income.
5. Whether item (4), incomes from current *illegal* economic activities, *should* be excluded from national income is a real, and separate, issue. There may even be some question as to whether the current practice is based on *principle* (of excluding activities which produce social "bads" not social "goods") or on *expediency* (because reliable data cannot be had).
6. This need not always be the case. If the understatement of profits is accomplished solely through fictitious inflation of the wage-bill, then total value-added would not be reduced from what it would have been in the absence of this particular act of evasion.
7. The inflation of expenditures may not only be at the expense of declared profits, but may also lead to higher (than otherwise) output prices.

## Black Income in India: A Critical Review of Recent Estimates<sup>1</sup>

### Introduction

DURING the last three years a number of writers have attempted to estimate the size of the black economy and gauge its trend over time. Some of these estimates have been in the nature of "informal guesses". Others have attempted to articulate and deploy analytical methods, which have the advantage of facilitating discussion and assessment of the *techniques* used, and not just the *results* obtained. A third category of writers present estimates which purport to be based on the application of analytical techniques, but do not delineate their methods in sufficient detail to permit adequate assessment.

The principal objective of this chapter is to present a critical survey of the second category of estimates of the black economy in India. Some reference will also be made, in passing, to exercises from the third category. A second objective of this chapter is to outline a taxonomy for the various estimation approaches that have been essayed in India and abroad. This is done in Section 2. Sections 3 to 6 evaluate four studies recently conducted for India, each exemplifying a different approach to the problem. Section 7 draws together the estimates produced by the various approaches for ready comparison and comment. The final section concludes with

some lessons drawn from the preceding analysis. Incidentally, all the estimates reviewed in this chapter confine their scope to the estimation of black *income* in the economy. This is hardly surprising, given the even more daunting conceptual and practical difficulties in assessing black *wealth*, a point which was emphasised in the preceding chapter.

## 2. Alternative Methods for Estimating Black Income:

### A Taxonomy

Given the proliferation of methods and estimates that have occurred in recent years, a modest taxonomic exercise may not be wholly redundant. The following broad approaches may be distinguished:<sup>2</sup>

- a. Fiscal approaches
- b. Monetary approaches
- c. Physical input approaches
- d. Labour market approaches
- e. National Accounts approaches

A brief explanatory comment on each of them is in order.

a. *Fiscal approaches*. Most variants of this approach attempt to arrive at independent estimates of incomes subject to tax, compare these with the incomes actually assessed for taxation (typically much lower amounts) and call the discrepancy a measure of tax-evaded income. Usually, the "independent estimate" of the tax base starts from income information contained in the National Accounts. Kaldor (1956) was an early exponent of this approach in India. His methodology was used by the Wanchoo Committee Report to obtain more updated estimates of tax-evaded income in India. A variant of the same method has recently been used by Chopra (1982) to estimate a time series of unaccounted income in India from 1960-61 to 1976-77; his work is reviewed in Section 3. Studies based on the same underlying idea have also been conducted in the United States [by Kenadian (1982) and Park (1981, 1983)] and the United Kingdom [O' Higgins, (1982)]. The fiscal approaches, unlike the others that follow, generally make use of the first of the two basic definitions of black income sketched in Chapter 2.

b. *Monetary approaches.* In essence, monetary approaches rest on the assumed stability in the relationship of various money stock aggregates to each other and to the total of income or transactions in the economy, and attribute departures from the "norm" values to the growth of unaccounted income in the economy.

Three variants of the monetary approach have become quite common. The first, pioneered by Gutmann (1977), for the US in 1976, picks a base year when the size of the unaccounted economy is assumed to be negligible, takes the currency to demand deposits ratio for that year to be a fixed norm, and attributes all subsequent increase in this ratio to the disproportionately growing demand for cash to finance transactions in a growing unaccounted economy. Since the currency to deposits ratio has been falling steadily in India since 1950, application of the Gutmann method yields nonsense results such as a "negative black economy" in many of the years since 1952-53. A recent and succinct critique of Gutmann's method as applied to India is provided by Sandesara (1983b).

Another monetary variant first deployed by Feige (1979) in the US for 1976, also starts with a base year when the underground economy is assumed to be non-existent, estimates the ratio of total monetised transactions (by cheque and by currency) to total nominal GNP for that year, and attributes any subsequent increase in this ratio to the growth of the unaccounted economy. Gupta and Gupta (1982) have applied this method to India to estimate a time series for the black economy from 1967-68 to 1978-79. Section 4 summarises and assesses their work.

The third class of monetary approaches, originally suggested by Cagan (1958) and developed by Tanzi (1980, 1983), involves specifying and estimating a currency demand equation with a tax variable included among the independent, explanatory variables. The estimated relationship between change in taxes and in currency demand is then used to estimate the scale of black income on the assumption that the growth of tax-evaded income is associated with growing requirements for cash. This approach has been widely used in

North American and European countries [see, for example, Tanzi (1982b, 1983) and the references cited therein and in Gupta and Gupta (1984)]. Chapter 4 presents a more complete account of this technique and attempts to apply it to India.

c. *Physical input approaches.* Physical input approaches share a close family resemblance to monetary approaches in that both seek to identify some stable "norm" linking the use of physical inputs (or monetary stocks) to national output. Here one starts with an intermediate input, such as electric power, which is widely used throughout the economy, and for which the aggregate output and consumption data are deemed reliable. The next step is to estimate a relationship between national (or sectoral) output and input use, making due allowances for changes in technology and output mix. To the extent that the consumption of the input (power, for example) cannot be explained in terms of growth in officially measured GNP and other relevant variables, such as changes in technology and output mix, to that extent the "residual" consumption is attributed to the unaccounted economy and serves as a measure of its size. Section 5 reviews the attempt by Gupta and Mehta (1982) to apply this approach to India.

d. *Labour market approaches.* It has been suggested that the size of the unaccounted economy can be gauged from official labour force participation rates, if these are inexplicably low compared to periods or countries where the black economy is of limited significance. This approach has been used mainly by researchers in Italy [for example, by Contini (1981)], where the official labour force participation rate has declined drastically since the late 1950s, while unofficial surveys have estimated participation rates much higher than the official ones in recent years, suggesting that growing numbers of Italians are finding gainful employment in activities not reported to the authorities. Given an estimate of the "underground" labour force and one of average value-added per worker, it is easy to compute an estimate of the size of the unaccounted economy. The relevance of this approach

to India is limited, because of the numerous difficulties with employment data.

e. *National Accounts approaches.* Several alternative approaches fall into this category. The first relies on the fact that a country's GNP is frequently estimated independently, from both the income and expenditure sides. Typically, the estimate from the income side is somewhat lower than that from the expenditure side. In the UK, it has been hypothesised (Macafee, 1980) that the discrepancy constitutes a measure of unaccounted incomes, which escape national output accounting from the income side but are "caught" by the expenditure side estimates. This approach hinges crucially on the independence of the national income estimates from income and expenditure sides. Where such independence is not complete, as in India, the approach cannot be effectively applied.<sup>8</sup> Furthermore, this approach cannot deal with those black economy activities which escape national accounting from both the income and expenditure sides.

An alternative national accounting approach to estimating the unaccounted economy is to scrutinize the national account estimate of value-added for each sector and gauge the probable extent to which underreporting of outputs, prices and values might be imparting a downward bias to these estimates. Some work along these lines has been done by Ghosh *et. al.* (1981), which is reviewed in Section 6.

### 3. Fiscal Approach: Chopra's Estimates

a. *The method.* Chopra's study closely follows the Kaldor/Wanchoo methodology. The key assumptions and steps in this method are as follows:

- (i) Incomes by sector of origin from the national income accounts form the starting point;
- (ii) It is assumed that there is no question of tax evasion (and therefore of tax-evaded income) for incomes originating in agriculture, and, that in all other sectors, salary incomes are fully reported for income taxation;
- (iii) For all non-agricultural sectors the ratio of non-salary income to total income is estimated;



- (iv) For each sector the proportion and amount of non-salary income above the income tax exemption limit is estimated;
- (v) Summation across the sectors yields an estimate of total non-salary income assessable to tax;
- (vi) Actual non-salary income assessed for income taxation is estimated and subtracted from the above total to obtain the estimate of tax-evaded income for the relevant year.

Chopra deployed this method to obtain a time series of unaccounted income from 1960-61 to 1976-77. In implementing the crucial steps (iii) and (iv) Chopra used the same proportions that had been used by the Wanchoo Report in its estimate of unaccounted income for 1961-62.

In carrying out step (iv) the Wanchoo Report had obtained information on income assessed to tax for 1961-62 (assessment year 1962-63), but had resorted to a simplifying assumption for 1965-66, namely that, the ratio of evaded (or unaccounted) income to non-salary assessable income had remained constant and equal to that observed for 1961-62. This simplifying assumption was invoked to cope with the awkward fact that incomes earned in any given year are actually assessed over the next several years.<sup>4</sup> Chopra presents one set of estimates using the same simplifying assumption as the one used in the Wanchoo Report for 1966-66. He also estimates an alternative series for unaccounted income based on "a relatively less demanding assumption" for step (vi), namely, that "the ratio of the sum of assessed non-salary income in different years for the given year to the actually assessed non-salary income of the given year remain (s) constant".

The estimates obtained by Chopra are presented in Table 3.3.1, both as absolute magnitudes and percentages of Net and Gross National Product. It is interesting to observe that after 1972-73 there is a marked divergence between the two series computed by Chopra for the final year, 1976-77, the estimate based on Chopra's "own" methodology is nearly 80 per cent higher than that obtained by a direct application of the Wanchoo Report assumptions.

**TABLE 3.3.1**  
**Chopra's Estimates of Unaccounted Income**

Financial year	Unaccounted income: "Wachoo method" (Rs crore)	Unaccounted income: "Own method" (Rs crore)	Column (2) as percentage of NNP at current factor cost	Column (3) as percentage of NNP at current factor cost	Column (2) as percentage of GNP at current factor cost	Column (3) as percentage of GNP at current factor cost
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1960-61	747	916	5.6	6.9	5.3	6.5
1961-62	801	716	5.7	5.1	5.4	4.8
1962-63	897	837	6.1	5.6	5.7	5.3
1963-64	1008	1452	5.9	8.6	5.6	8.1
1964-65	1132	1564	5.7	7.8	5.4	7.4
1965-66	1231	1539	6.0	7.5	5.6	7.0
1966-67	964	1685	4.0	7.1	3.8	6.7
1967-68	1563	1816	5.6	6.5	3.9	4.6
1968-69	1651	1318	5.8	4.6	5.5	4.4
1969-70	2104	2714	6.7	8.6	6.3	8.1
1970-71	1908	2062	5.6	6.0	5.2	5.7
1971-72	2208	1392	6.0	3.8	5.7	3.6
1972-73	1897	1795	4.7	4.5	4.4	4.2
1973-74	2869	4757	5.7	9.4	5.4	8.9
1974-75	4110	8611	6.9	14.5	6.5	13.7
1975-76	4117	7292	6.6	11.7	6.2	11.0
1976-77	4551	8098	6.8	12.1	6.4	11.4

Source: 1. Chopra (1982).

2. Government of India, *Economic Survey*, 1982-83.

b. *A critique.* Chopra himself points, out some of the limitations of the exercise, though he does not always draw out their full implications. First, and perhaps most important, the sectoral national income data are assumed to provide sound estimates of total income originating in each sector. Yet, there are good reasons to believe that in key sectors, such as trade, manufacturing, ownership of dwellings and other services, the estimates of income reported in the official national income estimates may be biased downwards by substantial margins for reasons of tax evasion and related motives

[See, for example Ghose *et. al.* (1981) and Appendix 2 to this Study].<sup>5</sup> Not coincidentally these are also sectors in which the proportion of non-salary incomes are relatively high. Taken together, these points suggest that the estimates of total assessable non-salary income may be substantially below the true levels, which in turn indicates significant under-estimations of tax-evaded income.<sup>6</sup>

Second, the assumption that salary incomes are fully reported for tax may embody some optimism. Aside from various hidden perquisites, there is considerable anecdotal evidence suggesting that payment, by employers, of additional unaccounted emoluments to private sector salary earners may be widespread. Many wage and salary earners also augment their incomes through "moonlighting" on the side.<sup>7</sup> While the earnings from such moonlighting are unlikely to be reported to tax authorities (or to be included in national accounts estimates), this does not, strictly speaking, constitute evasion on *salary* incomes; rather it is a case of evasion with respect to non-salary incomes. A similar remark applies to bribes accepted by wage and salary earners.<sup>8</sup>

Third, Chopra's application of the Wanchoo methodology assumes that the ratio of evaded income to assessable non-salary income remains constant. As Chopra notes, this is a strong assumption, which he proceeds to relax in his alternative "own" estimate. However, Chopra feels that even his weaker assumption (quoted earlier) is subject to criticism, since he notes, it implies "an unchanged efficiency of tax administration". Actually, it is not at all clear that this implication follows from the assumption underlying his "own", modified estimate. What his assumption appears to accomplish is to give him a device to go from published information on non-salary incomes assessed *in* a given year (but pertaining to several years) to an estimate of assessed non-salary income *attributable* to the given year. But the basis for his assumption is not supported by argument or evidence.

Fourth, the methodology assumes that the ratio of non-salary income to total income of a sector remains constant. Chopra finds some support for this assumption in the observation that the ratios are the same for the two years for

which data are presented in the Wanchoo Report. This may be rather cold comfort, since the observed constancy is more likely to be the result of extrapolation of the ratios observed in one year to the other than a product of independent estimates. Certainly, over the seventeen-year period covered by Chopra's work, there is little reason to believe, *a priori*, that these ratios would stay constant.

Fifth, it is also assumed that the ratio of non-salary income above the exemption limit to total income originating in a sector remains constant. There are several problems with assumption. To begin with, the empirical basis for the base year (1961-62) values of these ratios is absent from both the Wanchoo Report and Chopra's article. It is noteworthy that Kaldor (1956) characterised the corresponding, and similar, assumptions in *his* estimates, as being "based on very slender foundations". Furthermore, even if one could give credence to the base year estimates, there is no reason to believe that these proportions would remain invariant to changes, over time, in the structure and organisation of production within each sector, to inflation, or to changes in tax laws which have altered the effective exemption limits. Chopra contends that "on balance there may not be a significant change", but he does not marshal arguments in support of this claim.

There are other problems with this methodology which do not appear to have been fully appreciated by Chopra. First, the national income estimates do not, by deliberate convention, include estimates of income earned in illegal occupations, such as smuggling. But, for estimation of tax-evaded income, such income ought to be included, since the tax laws require the declaration of all earnings, including those from illegal activities. The same point is pertinent with respect to capital gains, which are excluded from national income estimates, but need to be included in taxable income. So, quite apart from the possible *under-estimation* of sectoral incomes discussed earlier, the *exclusion* of illegal incomes and capital gains imparts a further downward bias to the estimates of assessable income, and hence, tax-evaded income, presented in this exercise.

Second, a significant weakness of the Kaldor/Wanchoo/Chopra approach is its failure to distinguish between corporate and non-corporate income earners, when exemption limits, deductions, evasion possibilities (and incentives to evade) are likely to vary substantially across these categories.

Third, in computing non-salary incomes actually assessed to tax, Chopra relies on the data published in the *All India Income Tax Statistics (AIITS)*, various issues. But, owing to delays in reporting and other reasons, the information contained in AIITS is far from complete. Some indication of the extent of under-reporting may be had from Table 3.3.2 which presents relevant information by year of assessment. Column (2) records the number of assessments carried out in the relevant assessment year and for which information is collected in the AIITS. Column (3) shows the total number of assessments conducted in that year according to the annual *Reports of the Comptroller and Auditor-General*. The same reports have been used to compile column (4) which gives the total number of assessees on the rolls of the revenue department at the end of each assessment year. If the assessments in column (2) related solely to the years indicated, then the ratio of column (2) to column (4) [shown in percentage terms in column (7)] would be an adequate indicator of the degree of underreporting.<sup>9</sup> Unfortunately, a substantial proportion of the assessments in column (2) relate to previous assessment years. In recent years a new series of AIITS publications has been issued which gets around this problem and provides for each assessment year the total number of assessments pertaining to that year, which (a) have been conducted in all years, and (b) are reported through the AIITS information system. However, these numbers, shown in column (5), are only available for five years. But, at least for these years, the ratio of column (5) to column (4), shown in column (8), can be argued to be a better indicator of underreporting than the percentages in column (7).

In any case, the main point to be drawn from Table 3.3.2 is that the assessments analysed and tabulated in AIITS publications do not cover all assessees, and there are strong grounds for believing that the extent of underreporting is

TABLE 3.3.2

**Number of Assessments and Assesseees Reported in Alternative Sources and Derived Indicators of Underreporting in AIITS**

Assessment year	Number of assessments AIITS (thousands)	Number of assessments C. and A.G. (thousands)	Number of assesseees C. and A.G. (thousands)	Total assessments tabulated in AIITS for given assessment year (thousands)	Indicators of underreporting (percentages)		
					Column (2) as per cent of column (3)	Column (2) as per cent of column (4)	Column (5) as per cent of column (4)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1967-68	1702	2557	2708	—	66.6	62.9	—
1968-69	1983	3421	2673	—	58.0	74.2	—
1969-70	2025	3558	2910	—	56.9	69.6	—
1971-72	2203	3844	3209	—	57.3	68.7	—
1972-73	2245	3598	3388	—	62.4	66.3	—
1974-75	2445	3841	3637	2518	63.7	67.2	69.2
1975-76	2514	4008	3796	2374	62.7	66.2	62.5
1976-77	2556	3949	3759	2194	64.7	68.0	58.4
1977-78	2651	4044	3955	2304	65.6	67.0	58.3

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1978-79	2042	3310	3970	1829	61.7	51.4	4.61
1979-80	1915	3490	4176	—	54.9	45.9	—
1980-81	1543	4035	4594	—	38.2	33.6	—
1981-82	1501	4548	4161	—	30.0	32.2	—

- Sources:* 1. Ministry of Finance, Directorate of Inspection, *All India Income Tax Statistics (AIITS)*, Various annual issues.
2. Ministry of Finance, Directorate of Inspection, *All India Income Tax Statistics, Assessment Year*, Various annual issues.
3. Government of India, *Report of the Comptroller and Auditor-General (C. & A.G.)* Various annual issues.

substantial. Therefore, Chopra's estimates of assessed non-salary income, which are based on the AIITS, are likely to be serious underestimates. This source of error imparts a strong *upward* bias to Chopra's estimates of unaccounted (tax-evaded) income. Moreover, the degree of bias may fluctuate from year to year with the extent of underreporting in the AIITS data.

To sum up, there are serious problems with the estimates of tax-evaded income obtained by Chopra. Some of the principal sources of error have been touched on here. It is not possible to hazard whether the different sources of bias cancel out or have a discernible net impact upwards or downwards. Nor is it justifiable to take the position that the estimates correctly indicate the broad orders of magnitude of tax-evaded income and its rough trend over time. Finally, given the dubious nature of the estimated time series of unaccounted income, Chopra's econometric efforts to "explain" his series in terms of other causal variables have to be treated, to say the least, with considerable skepticism. At best, Chopra's study provides a point of departure for further explorations along the fiscal approach.

Before concluding this section, mention should be made of some estimates of tax evasion published by Kabra (1982). Unfortunately, Kabra does not compute a series for unaccounted income. He only estimates a series for personal income *tax evasion*. He begins with national income estimates of total personal income earned each year, estimates the proportion of this accruing in the non-primary sectors of the economy, and nets out estimates of tax-exempt income to obtain his series of taxable income. For this last step he uses household data on income distribution, notably the results of a survey by the National Council of Applied Economic Research for 1964-65. He applies observed average effective income tax rates to his derived series of taxable income in order to estimate the tax revenue that should have been collected in each year. Subtracting actual income tax collections yields the estimates of tax evasion. It is difficult to evaluate the quality of these estimates, since Kabra does not provide sufficient detail on how the intermediate steps were



carried out. In particular, one needs to know more about how the income distribution data were used, along with other information, to obtain estimates of the amount of non-primary sector personal income exempt from taxation. On the face of it there is reason for serious doubt since Kabra's estimates of the ratio of taxable to total personal income in non-primary sectors turn out to be implausibly high, nearly 90 per cent in most years.<sup>10</sup> One would have thought that the various personal income tax exemptions would have operated to yield much lower estimates of taxable personal income. This expectation is amply confirmed by our detailed analysis in Chapter 5. Over-estimation of taxable personal income would help to account for Kabra's unusually high estimates of tax evasion.

#### 4. Monetary Approach: Estimates by Gupta and Gupta

a. *The method and the results.* Feige's method relies on the standard Fisherian identity,  $MV = PT$ , where  $M$  is the stock of money,  $V$  is its transactions velocity and  $PT$  is the total value of monetised transactions in the economy. Further, the method assumes that there is a constant proportional relationship between the total value of monetised transactions in the economy,  $PT$ , and total nominal income of the economy,  $Y$ .  $PT$  includes the value of monetised transactions in the black or unreported economy, just as  $Y$  includes the value of income originating in the unreported economy. Application of the method involves the following steps:

- (i) Compute the total value of monetised transactions  $PT (=MV)$  for a base year when the unreported economy is assumed to be non-existent;
- (ii) Observe the ratio of  $PT$  to officially measured GNP in the year (since, by hypothesis, there is no unreported economy, GNP will be equal to  $Y$ );
- (iii) Compute the value of total monetised transactions in subsequent years, and by applying the ratio computed from (ii) estimate the total nominal income,  $Y$ , for the corresponding years;
- (iv) For each year the difference between the computed value of  $Y$  and officially measured nominal GNP

yields estimates of the unreported economy. Looked at another way, whenever the ratio of PT to measured GNP exceeds the base year value, the presence of a black economy is signalled.

The computational burden of this method rests with calculating the total value of monetized transactions in each year. Following Feige, Gupta and Gupta (henceforth GG) subdivided the task into two parts: estimating the value of transactions supported by cheques and that by currency. They estimated the value of chequing transactions by multiplying the average stock of demand deposits by their turnover rate. Data on demand deposits were readily available and information on their turnover rates was available for certain years.

Estimating the value of currency transactions required some bold assumptions. In principle, the value of currency transactions can be obtained by aggregating, for all currency denominations, the product of the value of the currency with the public and its turnover rate (per year) per unit. The value of currency with the public, by different denominations, was readily available. It was in computing their respective turnover rates per unit that assumptions had to be made. Like Feige, GG estimated the turnover rates per unit of currency by recourse to the following identity:

$$\text{Turnover rate per year} = \frac{\text{Life time transaction of currency note}}{\text{Average life of currency note}}$$

For life-time transactions, that is, the total number of times a currency note can change hands before it has to be retired, GG followed Feige in taking Robert Laurent's (1970) estimate of 125 for the United States. For average length of life, they could only obtain indigenous information for the Re 1 note, and they assumed the same length of life for the Rs 2 note. For denominations Rs 5 through Rs 100, they used estimates pertaining to Canadian dollars of denominations ranging from \$ 1 to 100. For Rs 1,000 and Rs 5,000 notes, they used Feige's estimate of 22 years for the US \$ 100 bill.

Based on these assumptions GG obtained the time series for currency transactions, demand deposit transactions and the black economy (Table 3.4.1). In obtaining the last series they used the average transactions to income ratio for the years 1949-50 to 1951-52 as their base period norm on the assumption that the black economy was of negligible dimensions during these years.

b. *A critique.* A crucial assumption in the Feige/GG method relates to the constancy of the ratio of total monetized transactions to total nominal income, that is, the ratio of PT to Y. If this ratio changes over time, for reasons *other than* the growth of a black economy, then the estimates for the black economy are undermined.

In fact, there are some good reasons to expect the ratio of transactions to income to change with economic development. First, with increasing monetisation of the economy the ratio can be expected to increase, since monetisation will tend to increase the numerator without necessarily affecting the denominator. Second, with development, the density of inter-industry transactions normally increases, or, in other words, the input-output matrix for the economy gradually fills up. Thus the growth of inter-industry transactions, and hence of total transactions (the numerator) can be expected to be more rapid than the growth of nominal value added (the denominator). So, once again, the ratio of transactions to income can be expected to increase. Third, as GG themselves note, economic development will normally be associated with disproportionately higher growth in purely financial transactions, reflecting growing diversification and sophistication in financial and capital markets.<sup>11</sup> This too would tend to increase the ratio of transactions to income over time. Fourth, in an economy with a growing proportion of transfer payments (especially illegal ones), the ratio of transactions for nominal value-added can be expected to increase over time. On the other side of the coin a growing proportion of economic transactions may be conducted within vertically integrated production units. This would tend to reduce the transactions/income ratio, though its effect is likely to be much less than the four factors, noted above,

TABLE 3.4.1  
Size of Black Economy

Year	Currency transactions (Rs crore)	Demand deposits transactions (Rs crore)	Total transactions (Rs crore) cols. (2) + (3)	Ratio of the total transactions to official GNP	Size of the black economy (Rs crore)	Black economy as per cent of official GNP	Currency transactions as per cent of total transactions column (2)/(4) × 100
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1967-68	127974.5	82272.4	210246.9	6.56	3034.4	9.50	60.9
1968-69	133399.3	91582.0	224981.3	6.81	4504.2	13.64	59.3
1969-70	145252.8	106770.0	252022.8	6.89	5458.8	14.92	57.6
1970-71	158738.7	135479.9	294218.6	7.32	8900.3	22.15	54.0
1971-72	171925.9	161520.9	333446.8	7.70	12354.8	28.56	51.6
1972-73	182731.7	194626.6	377358.3	7.90	15195.5	31.82	48.4
1973-74	214030.9	234142.5	448173.5	7.61	15894.9	27.00	47.8
1974-75	230685.7	274531.2	505217.0	7.24	14518.1	20.81	45.7
1975-76	237077.4	309402.7	546480.1	7.52	18458.0	25.39	43.4
1976-77	268784.9	372391.4	641176.3	8.33	30014.8	39.01	41.9
1977-78	284537.1	442028.0	726565.1	8.37	34335.2	39.53	39.2
1978-79	315284.3	541782.2	856966.4	8.92	46866.9	48.78	36.8

*Note:* Average value of the ratio of total transactions to official GNP for 1949-50 to 1951-52 ratio is 5.995. Division of yearly figures in column (4) by 5.995 and then subtraction of measured GNP gives column (6).

*Source:* Gupta and Gupta (1982) for columns (2) through (7); column (8) has been computed as shown.

working in the opposite direction. On balance, *a priori* reasoning would suggest that the transactions/income ratio will increase as development proceeds. But if this is the case, then the observed increases in the ratio of transactions to nominal, measured GNP cannot be wholly attributed to the development of an unreported economy. It may, at least partly, reflect the effect of the influences cited above.

A second set of doubts regarding the GG estimates relate to their use of proxy values (from the United States and Canada) for their estimates of lifetime transactions of currency notes and the average life of different denomination notes. One can sympathise with their need to make some assumptions, without suspending doubts about the specific ones they have used.

Quite apart from the issue of the actual values assumed (for lifetime transactions and average length of life), their method freezes the currency turnover rates for the entire period. Thus, on their assumptions, intertemporal variations in the value of currency transactions are attributable solely to variations in currency stocks (of different denominations) held by the public.

Fourth, the method makes no allowance for possible differences in velocity of transactions in the accounted and unaccounted economies. The same turnover rates for demand deposits and currency are implicitly assumed to be applicable irrespective of the nature of the transactions.

None of the last three considerations allows one to deduce the possible direction of bias in the estimates of the unaccounted economy; they simply underline the fragility of their basis.

A fifth reason for doubting the GG estimates derives from the time profile of the ratio of currency transactions to total transactions, which is implied by their estimates. Table 3.4.1, column (8) shows the evolution of this ratio from 1967-68 to 1978-79. There is a marked and steady decline from 61 per cent in 1967-68 to 37 per cent in 1978-79. This decline occurs during a period, when, according to GG, the unaccounted economy grew rapidly in relation to officially measured GNP from under 10 per cent (of officially measured GNP) in

1967-68 to nearly 50 per cent in 1978-79. In absolute nominal terms the scale of the black economy is estimated to have increased by more than 1,500 per cent over this period. These opposing trends do not co-exist comfortably. It is one thing to admit that black economy transactions may not be wholly financed through cash. It is quite another to reconcile a rapid growth in the black economy with a declining share of cash transactions in total transactions. This is so because both reasoning and casual empiricism strongly suggest that black economy transactions are likely to be mainly financed through cash <sup>12</sup>.

Finally, what of the results obtained by GG? A careful scrutiny of the national accounts suggests that about half of officially measured GNP in 1978-79 was in sectors such as "agriculture", "public administration and defence", "electricity, gas and water supply", "banking and insurance" and "railways", sectors in which the incidence of the unaccounted economy is generally believed to be negligible. It follows that virtually all of the Rs 46,867 crore of unaccounted income estimated for 1978-79 by GG was in the remaining sectors for which the total of officially measured NDP (Net Domestic Product) was less than Rs 42,000 crore. This, in turn, implies that those responsible for constructing India's official national accounts were managing to account for only about a half of total value-added in those sectors where the black economy is believed to flourish. While this implication is not impossible, it is certainly implausible.

To sum up, there are serious methodological reasons to doubt the validity of the Feige approach as applied to India by GG. These methodological concerns are compounded by the *prima facie* implausibility of the results obtained through this approach. Furthermore, as in the case of Chopra's estimates, doubts about the methods and results pertaining to any single year are reinforced when it comes to considering the plausibility of the estimated time series, not to mention the regressions advanced to "explain" the series.

##### 5. Physical Input Approach: Estimates by Gupta and Mehta

a. *The method and the estimates.* Gupta and Mehta (henceforth GM) generate estimates of the unreported

economy based on trends in the consumption of electric power in the economy. As noted earlier the basic approach is to identify a stable relationship between the use of electric power and national output (with due allowance for changes in output-mix and technology) and then see if the growth of officially measured GDP can account for the growth of electricity consumption; to the extent it cannot, unreported economic activity is inferred. The main steps and assumptions of their method are summarised below:

- (i) They start with the assumption that there is a fixed linear relationship between total value-added (reported plus unreported) in the economy and the consumption of electric power, which can be represented by the following equation:

$$a = \frac{\text{Input of electric power}}{\text{Total value-added in economy}} = \frac{IN_t}{TY_t}$$

- (ii) In any year,  $t$ , a variable  $b_t$  is defined such that,

$$b_t = \frac{\text{Total GDP}}{\text{Reported GDP}} = \frac{TY_t}{RY_t}$$

- (iii) This allows one to write:

$$IN_t = a \cdot b_t RY_t = \beta_t RY_t,$$

Where,  $\beta_t = ab_t$ .

In order to allow for changes in technology and output-mix, GM define the proxy variables  $IT_t$  and  $IP_t$  to represent these phenomena. The resulting form of the equation to be estimated is :

$$IN_t = \alpha + \beta_t RY_t + \gamma_1 IT_t + \gamma_2 IP_t.$$

- (iv) Recognising that the value of  $\beta_t$  can change over time (because of underlying changes in  $b_t$ ), GM experiment with alternative functional forms of  $\beta_t$ , such as:

$$\beta_t = \beta_0 + \beta_1 t + \beta_2 t^2 \dots\dots\dots$$

- (v) The equation which is finally chosen to derive the scale of the unreported economy incorporates estimates for  $\beta_0$  and  $\beta_2$ , and is as follows:

$$IN_t = -7782.27 + (0.7909 + 0.001203t^2) RY_t$$

(1.75)                      (3.40)

$$+ 2637.72 t + 11856 IP_t$$

(6.33)                      (0.86)

where,  $\bar{R}^2 = 0.996$ ;  $F = 1238.08$ ;  $t$ -values of coefficients are in parentheses; and

$IN_t$  = Gross electricity generation in million Kwh;

$RY_t$  = GDP at factor cost in 1970-71 Rs crore;

$t$  = Time trend (it is also the proxy for technology change)

$IP_t$  = Ratio of gross value-added in the secondary sector to gross value-added in the primary sector of the economy.

On the basis of this equation GM obtain the following estimates for the unreported economy (they present their results as per cent shares of total GDP; here they have also been converted into per cent shares of reported GDP):

	As per cent of total GDP	As per cent of reported GDP
1964-65	2.7	2.8
1974-75	12.1	13.8
1978-79	16.4	19.8

b. *A critique.* The first point that needs to be made about GM's methodology is that their write-up does not seem to be complete. Their estimated equation yields values for  $\beta_t$  for any given year. But  $\beta_t$  is a product of two parameters,  $a$  and  $b_t$ ; and it is only the latter which yields a numerical measure for the unreported economy. To go from  $\beta_t$  to  $b_t$  requires either independent knowledge of the value of  $a$ , or, alternatively, the value of  $a$  can be derived by assuming that the unreported economy is non-existent in some base year (in which case  $b$  becomes unity by hypothesis and  $\beta_0 = b_0 \cdot a$  gives an estimate of  $a$ ). Presumably GM adopted the latter approach, but it is not spelt out in their paper.

Aside from this apparent omission, GM's methodology is questionable on a number of grounds. Most of these relate to GM's assumption of a fixed coefficient relationship between power consumption and national output (abstracting from changes due to technical change and output-mix). While this assumption may be plausible for a technical process or even an industrial plant, it is much less so at the economy-wide level.



First, value-added (whether accounted or not) in service sectors, such as trade, can expand (or contract) greatly with relatively little change in the demand for electricity. The same is true for much of agriculture. Note that the issue here is not of the output-mix of total value-added; rather it is a denial of any fixed coefficient, or linear relationship between power consumption and value-added in certain major sectors of the economy. Once this is admitted, not much significance can be read into the observed changes in the ratio of total electricity consumption to measured GNP.

A second reason for doubting the significance of changes in this ratio is that electricity is not just as an intermediate input in production. Much of residential demand, and perhaps some of commercial demand, falls into the category of final consumption. Such consumption can vary with changes in income, the relative price of electricity, the spread of electricity-using consumer goods and so on. The simple point is that changes in final (that is, as a consumer good) consumption of electricity can powerfully influence the aggregate ratio of total electricity consumption to measured GDP, and thus undermine the interpretation of that ratio as an input-output production relation. Sometimes the growth of final consumption of electricity may be the result of deliberate government policy. The period 1960-61 to 1978-79 witnessed massive increase in rural electrification; while much of this increase could be classified as intermediate consumption of electricity associated with higher production, much could also be categorised as final consumption, which improved the quality of rural life.

A third weakness of GM's method is that it assumes total electricity production to equal total electricity consumption except for transmission losses which are assumed to be a constant proportion. In fact, with the growing emphasis on rural electrification the proportion of transmission losses may have been increasing over time.

Fourth, while GM allow, in principle, for changes in electricity demand due to technology change and shifts in the composition of output, their actual modelling of these factors is unconvincing. Technical change is modelled through a

simple time trend, which could just as well be interpreted as a proxy for any number of factors ranging from the growth of rural electrification to secular increases in final electricity consumption, stemming from growth of per capita incomes and generalised "electrification" of society. As for the output-mix variable,  $IP_t$ , its role in explaining changes in electricity consumption turns out to be statistically insignificant. This may be more a comment on the variable used than on the underlying theory. It leaves the tertiary sector wholly out of the account. Moreover at its high level of aggregation the variable is incapable of reflecting the effect of output shifts *within* the broad sectors, primary and secondary.

Finally, for those who fall credulous prey to high values of  $\bar{R}^2$  and F statistics, it is worth emphasising that GM's estimated equation permits alternative interpretations to the one that they have used. GM interpret the estimated coefficients as indicators of the unreported economy. They could just as easily be interpreted as indicators of electricity-intensification in the economy as it modernises over time and adopts more power-intensive techniques of production in all sectors. Or the coefficients may be interpreted to represent growing final consumption of electricity commensurate with increasing per capita income, rapid rural electrification and the spread of electricity-using consumer goods. The point is that statistical "goodness of fit" cannot substitute for weaknesses in the underlying assumptions and theory.

To sum up, GM have made a novel and intriguing attempt to apply a physical input approach to estimating the size of the unreported economy. Unlike the estimates of Gupta-Gupta, the results obtained by GM are not, in themselves, implausible. But, as the preceding pages have tried to show, GM's efforts to identify "residual" power consumption and thence to gauge the size of the unreported economy are vulnerable to too many questions and doubts to merit confidence.

## 6. National Accounts Approach: Estimates by Ghosh et. al.

a. *The estimates.* As the title says, the main purpose of the paper by Ghosh, Bagchi, Rastogi and Chaturvedi

(1981) is to analyse and explain "Trends in Capital Formation, Growth of Domestic Product and Capital-Output Ratios (1950-51 to 1978-79)". In particular, Ghosh *et. al.* dwell on the "intriguing phenomenon of the high observed rates of capital formation not being reflected in higher output growth...." As *one* of the possible explanations to the puzzle Ghosh *et. al.* consider the possibility that the official data for GDP may reflect significant underestimation. It should, thus, be clear that Ghosh *et. al.* do not make estimation of the central object of their study, but rather are led to this issue in their search for solutions to the investment-output puzzle.

In providing guestimates of unreported GDP, they do not deploy any complicated "methodology", in the normal sense of the word. They simply examine the national accounts, by sector, and suggest some orders of magnitude by which output and value-added may be underrecorded in certain key sectors. Thus, they hazard that the gross value of output from manufacturing is understated by 10 per cent, principally to further the goal of tax evasion. For similar reasons they suggest that gross value-added in trade and other services is underestimated by 15 per cent. For rental from housing they note that the national accounts rely on municipal valuations, which may be grossly understated because of, primarily, the prevailing rent control laws. Ghosh *et. al.* assume that rental from housing is underestimated by 20 per cent.<sup>13</sup> Combining these assumptions they estimated unreported GDP to have been about 7-9 per cent of current market price GDP in the years 1970-71 to 1977-78.

b. *An assessment.* The estimates by Ghosh *et. al.* are the most informal of all the ones reviewed thus far. Indeed, part of the reason for including them in this survey is that they serve as a contrast to the more "technical" methods. Nor are they quite in the category of single number guesses that crop up frequently in newspapers and magazines. These estimates are more in the nature of "three number guesses" (!)—corresponding to the three rates of under-valuation, in different sectors, which they assume.

The fact remains that these three percentages are guesses, unsupported by any independent quantitative information. True, they may reflect informed judgement, since all the authors are well-versed in the strengths and weaknesses of India's national accounts. But they are guesses nonetheless. Aside from suggesting possible (and plausible) orders of magnitude their principal virtue may lie in provoking other researchers to tackle the issue of underestimation at a *sectoral* level and confirm (or controvert) the guesses they have advanced.

## 7. Estimates of Unaccounted Income:

### A Numerical Overview

In Table 3.7.1 the estimates reviewed in this paper are brought together for easy reference and comparison. The latter activity should be prefaced with the repetition of an important warning, namely, the concept of unaccounted income is not the same in all the studies. Specifically, Chopra's estimates are based on the notion of tax-evaded income, while the others reviewed in this paper refer to income which is not reported or measured in official estimates of national income and output. It is not entirely clear which concept of unaccounted income underlies Rangnekar's estimates: in his note of dissent to the Wanchoo Report, he appears to adhere to the concept of tax-evaded income, but his recent paper (Rangnekar, 1982) updating these earlier estimates is somewhat ambiguous on this score.

TABLE 3.7.1  
Alternative Estimates of Black Income  
(As per cent of GNP or GDP)

Year	<i>Chopra's estimates</i>		Gupta and Gupta's estimates	Gupta and Mehta's estimates	Ghosh <i>et. al's</i> estimates	Rangne- kar's estimates
	"Wanchoo method"	"Own method"				
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1960-61	5.0	6.1	—	—	—	—
1961-62	5.0	4.5	—	—	—	—
1962-63	5.3	4.9	—	—	—	—

1	2	3	4	5	6	7
1963-64	5.2	7.4	—	—	—	—
1964-65	4.9	6.8	—	2.8	—	—
1965-66	5.1	6.4	—	—	—	9.8
1966-67	3.5	6.1	—	—	—	—
1967-68	4.9	5.7	9.5	—	—	—
1968-69	5.0	4.0	13.6	—	—	8.6
1969-70	5.8	7.4	14.9	—	—	8.4
1970-71	4.8	5.2	22.3	—	7.6	—
1971-72	5.1	3.2	28.7	—	7.8	—
1972-73	4.0	3.8	31.9	—	7.8	—
1973-74	4.9	8.1	27.1	—	7.4	9.9
1974-75	5.9	12.4	20.9	13.8	8.1	9.3
1975-76	5.6	9.9	25.0	—	8.4	10.0
1976-77	5.7	10.2	37.6	—	8.7	11.3
1977-78	—	—	38.4	—	8.7	12.1
1978-79	—	—	48.1	19.8	—	13.5
1979-80	—	—	—	—	—	14.4

*Note:* Columns (2), (3), (4), (6) and (7) are computed as percentage of GNP at current market prices. Column (5) is computed as a percentage of GDP at factor cost and 1970-71 prices.

*Source:* Chopra (1982), Gupta and Gupta (1982), Gupta and Mehta (1982), Ghosh *et. al.* (1981), Rangnekar (1982) and Government of India, CSO, (1982).

It should be said that no attempt has been made to evaluate Rangnekar's estimates in this paper as it proved impossible to obtain a clear understanding of his "expenditure" methodology from the description provided in both the sources mentioned above. Nevertheless, since his estimates are frequently cited, they have been included for purely numerical comparisons.

A few points emerge from inspection of Table 3.7.1. First, except for the estimates by Ghosh *et. al.*, all the others point towards an unaccounted economy which is growing both in absolute value and in relation to officially estimated GNP<sup>14</sup>. How much should be inferred from this common characteristic is not clear. True, the rising trend accords well with conventional anxieties about a growing black economy. But, given the dubious nature of the underlying methodologies, it would be unwise to infer anything more than a weak presumption of a growing trend. And even that judgement may

be more firmly based on casual empiricism than on the estimates reviewed here.

Second, and this highlights the fragility of the various exercises, the estimates of unaccounted income for any given year vary widely across the different studies. Thus, for the year 1976-77, they range from a low of 9 per cent of GNP according to Ghosh *et. al.* to a high of 38 per cent estimated by Gupta and Gupta <sup>15</sup>. About the only thing these numbers have in common is that they are all positive. And even this virtue would have become a casualty if the results of Sandesara's (critical) application of the Gutmann method had been included (for 1976-77 it gave an estimate of black income of minus 455 per cent of GNP)

## 8. Some Lessons

What is one to make of all this? The first and most obvious lesson to draw is that the enterprise of estimating the size of the unaccounted economy is still in its infancy. It has a long way to go before the methods and results can persuade the agnostics, let alone the skeptics. This need not be construed as a counsel of despair. In any new field of empirical enquiry it is quite natural for the early efforts to be highly vulnerable to criticism. But it is only by beginning, and then responding to legitimate criticisms, that progress can be achieved. Of course, there is no *guarantee* that this particular field of empirical effort will yield increasingly acceptable results. What one *can* guarantee is that without some effort there can be no improvements in the quality of methods and estimates.

Second, in judging the quality of studies in this area it would be unreasonable to expect standards of accuracy that may be prevalent in other applied economic work. The very nature of the phenomena under study defy direct measurement. In principle, attempts could be made to mount direct surveys of unaccounted income and its disposition. But the credibility of such survey responses is likely to be extremely low. Hence, there is likely to be a continuing need to rely on indirect methods and circumstantial evidence.

Is this sort of prospect of uncertain empirical foundations a fatal weakness characterising all efforts at estimating the dimensions of the unaccounted economy? To answer this question one needs to be clear about the principal objectives which motivate such enterprises. First, it is important to establish—even if not beyond reasonable doubt—whether the black economy is a quantitatively significant phenomenon in India. If it is not, then concern about its causes, its nature and its consequences for the economy and economic policy-making, loses much of its steam. Second, it is desirable to form some reasonable judgement about the trends in the black economy: is it static, declining or growing? Both of these are perfectly valid reasons for pursuing efforts at quantification, even if, for the foreseeable future, such estimation exercises are bound to be open to considerable questioning and criticism.

Finally, an excessive preoccupation with the estimation of the size and trends of the unaccounted economy has its dangers. It can detract from serious exploration of its causal origins, its functioning characteristics, as well as the economic and social consequences of the phenomenon. True, such enquiries will be bedevilled by some of the doubts that plague the estimation efforts. But such doubts should not preclude the deduction of qualitative conclusions backed by piecemeal empirical evidence. For example, often it may be possible to form a sound judgement about whether a particular measure will reduce or increase black economic activity. In particular markets one may even be able to substantiate such judgements with empirical evidence. Such evidence is likely to be more accessible and better grounded for a small segment of the economy than for the economy as a whole. Indeed such sector or market-wise studies might yield insights about how to improve the macro estimation efforts. Put simply, the attempts to estimate the dimensions of the black economy should complement, and not substitute for, analyses of its causes, nature and consequences.

## Notes

1. This chapter is based on Acharya (1983b).
2. For a somewhat similar taxonomy, see Gupta and Gupta (1984).
3. The national accounts estimates of private final consumption expenditure rely on estimates of gross output by sector of origin and the latter are intimately linked to the estimates of value-added by sector of origin (Government of India, CSO, 1980).
4. For 1961-62 financial year (1962-63 assessment year) the Wanchoo Committee had obtained the full time profile of assessments from the revenue authorities.
5. Looked at another way, the sources of data for compilation of national income estimates are, for some sectors, dependent on the same financial accounts that are submitted to the revenue authorities. Thus, the national income data do not provide *independent* estimates for income originating in these sectors.
6. This judgement has to be qualified. While the incentives to evade taxes and earn illegal incomes may be powerful in these sectors, the extent to which the associated suppression of incomes and output is reflected in national income data depends crucially on national income estimation methods—a point made earlier.
7. A school teacher may undertake private tuition; a PWD carpenter may take up remunerative projects on his own account, etc.
8. In national accounting terms bribes may be classified as transfers, and therefore excluded from the estimates. But from the viewpoint of the tax authorities non-reporting of bribe incomes constitutes tax evasion. On the other hand, payment of bribes reduces the payer's income without altering his tax liability. Where bribes have to be paid often and regularly it may be reasonable to assume that the payer makes such payments out of tax-evaded income.
9. It should be noted that the difference in total assessments recorded in the AIITS, as compared to the Reports of the Comptroller and Auditor-General, may not be wholly attributed to underreporting. The totals in the AIITS also exclude assessments which did not result in either demand or refund. To the extent these exclusions are significant, the interpretation of the percentages in columns (6), (7) and (8) as indicators of underreporting is weakened. The quantitative significance of this qualification may not be negligible; the proportion of assessments which do not result in demand or refunds is believed to be in the order of 10 per cent of all assessments. The implications are explored more systematically in Chapter 5.
10. Thus for the four most recent years, Kabra's estimates (reported in Chapter 7, Table 4) are as follows (in Rs crore):



	Non-primary sector personal income	Taxable non-primary sector personal income
1975-76	34381.7	30898.99
1976-77	38044.7	33759.35
1977-78	42790.5	38417.31
1978-79	48122.9	43661.82

11. Gupta and Gupta suggest some evidence to the contrary in India, but it is not compelling.
12. Tanzi (1982a) levels a similar criticism against Feige's estimates of the underground economy for the United States.
13. Strictly speaking, this source of underestimation of national income is not directly related to tax evasion and related behaviour.
14. And the principal reason underlying the relatively static estimates by Ghosh *et. al.* is that their assumptions about the percentage of under reporting in various sectors are held constant over time; the changes in the aggregate percentage are attributable wholly to changes in the composition of GDP.
15. Actually, Chopra's estimate by the "Wanchoo method" is even lower, 6 per cent of GNP, but his preferred, "own series" yields a higher estimate of 10 per cent of GNP. Furthermore, the concept of unaccounted income underlying Chopra's (and Rangnekar's?) estimates is not comparable to that used by the other authors.

# Estimating Unaccounted Income: A Monetary Approach

## 1. Introduction

AS noted in Chapter 3, monetary approaches to the estimation of unaccounted income can be broadly classified into three groups:

- i. the fixed currency-deposit ratio approach, originally developed by Cagan (1958) and "rediscovered" by Gutmann (1977);
- ii. the transactions approach developed by Feige (1979), 1980); and
- iii. the currency demand equation technique originally suggested by Cagan and elaborated by Tanzi (1980, 1983).

Applications of the first two approaches to India were assessed in Chapter 3 and found seriously wanting. In this chapter an attempt is made to adapt Tanzi's approach to the Indian context.

Section 2 summarises Tanzi's basic method. Section 3 discusses some of the problems with this approach. Section 4 applies the method to India and the final section concludes with an interpretation and assessment of the results.

## 2. The Tanzi Method<sup>1</sup>

The basic elements of the Tanzi method are as follows:

- i. The existence and growth of the unaccounted economy is attributed principally to high and growing rates of taxation;
- ii. The overwhelming bulk of transactions in the unaccounted economy is assumed to be carried out with currency;
- iii. Thus the size and growth of the unaccounted economy directly influences the public's demand for cash. And, since taxation is the principal cause of the unaccounted economy, a properly specified currency demand equation should include the burden of taxation as a key explanatory variable;
- iv. Once such an equation has been specified and estimated for the sample period, it allows isolation of that part of the public's currency holding which is attributable to the growth of the unaccounted economy in response to taxation;
- v. When the scale of such "illegal currency" has been identified, it can be used, along with assumptions about the income velocity of such currency, to gauge the size of the unaccounted economy.

Tanzi fits equations of the following form to US data:

$$\ln(C/M_2) = a_0 + a_1 \ln T + a_2 \ln(WS/NI) + a_3 \ln R + a_4 \ln Y \dots\dots (1)$$

where  $(C/M_2)$  is the ratio of currency to broad money (including time deposits),  $T$  is the tax variable,  $(WS/NI)$  is the share of wages and salaries in national income,  $R$  is the rate of interest on time deposits and  $Y$  is real per capita GNP. The rationale for  $T$  has been given and for  $R$  is obvious. Tanzi uses several alternatives for the tax variable, all relating to personal income taxation.  $Y$  is used as a proxy for a number of trends which are assumed to accompany economic development and which also influence the public's demand for cash holdings. These factors include growing travel per capita, increasing urbanisation, the spread of commercial branch banking and other financial innovations.

Tanzi includes the variable  $(WS/NI)$  because, he argues, that in the US, while interest, dividends and rents are almost always received by cheque, a portion of wage income is typically received in cash; hence the ratio  $(WS/NI)$  could be expected to influence the demand for currency.

Tanzi fits his equation to annual time series data for the period 1930-80. Having obtained statistically satisfactory estimates of his equation Tanzi proceeds to estimate unaccounted income for a given year,  $t$ , as follows. Taking his "best" equation he obtains the predicted value for currency demand,  $C'_t$ , given the observed value for all the other variables in year  $t$ . He obtains another prediction of currency demand,  $C''_t$ , by setting the value of the tax variable to zero (or, alternatively, to the lowest observed value in the sample period), while retaining the observed values for all the other variables. The difference,  $C'_t - C''_t$  gives an estimate of "illegal currency", or, more properly, the holding of currency that can be attributed to the increase in taxation. Tanzi then subtracts the estimated value of "illegal currency" from the value of "narrow money",  $M_1$ , in year  $t$  to obtain an estimate of "legal money" in year  $t$ . Dividing nominal GNP in year  $t$  by the estimate of "legal money" yields an income velocity for legal money. By assuming that the income velocity of "illegal currency" is the same, Tanzi is able to generate an estimate of unaccounted income for year  $t$ . In fact, Tanzi (1983) presents estimates of the size of the unaccounted economy for each of the years 1930-80.

### 3. Some Problems with the Tanzi Method

The first question that arises is, what is the concept of unaccounted income that underlines Tanzi's estimates? In the final paragraph of his 1983 paper—and almost as an afterthought—Tanzi (1983, p. 303) writes:

"Perhaps a word on what has been measured is necessary. The estimates attempt to measure the incomes that were generated through the excessive use of currency and presumably were not reported to the tax authorities. Whether these incomes were or were not measured by the national

accounts cannot be determined. Presumably, part of these incomes not only evaded the tax net but also may have escaped the attention of the national accounts authorities—but, how large this part was cannot be assessed with the information at hand.”

This agnosticism conflicts with the procedure for estimating the income velocity of “legal money”, in which the estimated stock of legal money ( $M_1$  minus “illegal currency”) is related to measured GNP. The implicit assumption is that none of the “illegal currency” ( $C' - C''$ ) is used to finance transactions relating to recorded GNP, and conversely, all of it is used to finance transactions relating to unaccounted income. But then, the unaccounted income should be wholly additive to measured GNP; there can be no vagueness about whether some of the unaccounted income is already captured in recorded GNP. The choice is clear-cut: either the estimate of unaccounted income is wholly additive to GNP or the procedure for estimating the income velocity of “legal” and “illegal” money (and hence unaccounted income) is logically flawed.

In Tanzi’s framework it is difficult to sustain the first possibility. His estimated equation does not allow one to deduce that the “illegal currency” is used solely to finance transactions associated with incomes which are unrecorded in GNP estimates. All that the equation tells us is that when the tax burden (however defined) increases, the demand for currency increases, presumably because of the growth of income and transactions *hidden from the tax authorities*. Tanzi is correct in professing agnosticism about whether such incomes also escape *national income authorities*.<sup>2</sup> But if this is so, there is no getting away from the logical flaw in estimating the income velocity of “legal money”. To estimate this parameter what we need is not the data on recorded GNP, but rather a series on “legal income”, encompassing income which is properly reported to the tax authorities as well as income which need not, legally, have been reported. Such a series is not easy to construct — and it is not offered by Tanzi.

At best, Tanzi’s estimate of the income velocity of “legal money” should be seen as an approximation; the closer is the

value of "legal income" to recorded GNP the better is the approximation. The problem lies in not having any ready handle to assess the quality of this approximation.

A second major difficulty with Tanzi's approach is his explicit assumption that the income velocity of "illegal currency" is equal to the income velocity of "legal money". The support he offers for this crucial assumption is disarmingly weak: the assumption, he argues, "is the result of agnosticism. The author is unable to take a position between those who would argue that the velocity of money in the underground economy must be lower than in the legal economy, and those who would argue the contrary" (Tanzi, 1980, note 27).

Third, there is some question regarding the stability of the income velocity of "illegal currency". For example, if an increase in *indirect* taxes leads to additional demand for currency to conduct transactions, in cash in order to escape payment of indirect taxes, it is quite possible that this can occur without a substantial change in the *income* that evades tax. This suggests that the relationship between tax-evaded income and "illegal currency" need not be stable, which is another way of saying that the income velocity of "illegal currency" may be unstable.

Fourth, Feige (1980), among others, has challenged the assumption that transactions associated with tax evasion are undertaken solely with cash. Feige argues that many of these transactions occur through the banking system.

Finally, Tanzi's approach is ill-suited to assessing the significance of non-tax causes which might lead to the under-reporting of incomes and transactions to tax authorities. For example, incomes earned through illegal activities may generate a demand for cash (and such incomes would normally evade taxation), but we would not expect to observe any relation between the demand for cash and tax rates for this form of undeclared incomes. The same would be true for undeclared incomes stemming from government regulatory measures; these could include a variety of scarcity premia and bribes, both of which might be expected to be transacted in cash, irrespective of the burden of taxation. And, finally,

there are forms of tax evasion which might not generate any incremental demand for cash: take for instance the well-known—and reportedly widespread—practice of charging personal consumption as business expense, a practice which may reduce the tax base for both personal income taxation and business income taxation.

Despite these substantial shortcomings we attempt to apply a variant of the Tanzi approach to the Indian context.

#### 4. Adapting the Tanzi Approach to India

In formulating our currency demand equation for India we adopt three main points of departure from Tanzi's preferred equation. First, instead of using  $(C/M_2)$  as the explicand we focus directly on the public's demand for real cash balances, that is  $(C/P)$ , where  $P$  is the price level. Second, we take note of the fact that over 80 per cent of tax revenue in India accrues from indirect taxes. Evasion of commodity taxes can be expected to generate powerful demands for cash to facilitate such evasion.<sup>3</sup> It would, therefore, be inappropriate to confine the scope of the tax burden variable to direct taxes on income. Hence our preferred tax variable is  $(T/Y)$ , where  $T$  encompasses all tax revenues accruing to the governments at the Centre, States and Union Territories and  $Y$  is recorded GNP in current market prices.<sup>4</sup> Third, unlike Tanzi, we explore the consequences for currency demand of expectations of price level changes.

The currency demand equation we estimate takes the following form:

$$\frac{C}{P} = a_0 + a_1 + \text{RGNP} + a_2 \text{NOCB} + a_3 \text{TTR} + a_4 (\text{R} - \text{ERI}) + a_5 \text{ERI} \dots \dots \dots (2)$$

+                    -                    +                    -

where the expected signs are noted below each coefficient and the variables are defined as follows:<sup>5</sup>

$C$  = Average annual currency holdings with the public, in Rs crore;

$P$  = Index Number of Wholesale prices with 1970-71 = 100;

$\text{RGNP}$  = Real GNP in 1970-71 market prices;

- NOCB = Number of commercial bank branches on December 31 of each year;
- TTR = Ratio of total tax revenue (of the Centre, States and Union Territories) to current market price GNP;
- R = Nominal rate of interest on bank deposits. Two alternative rates were used.  
 R12 = Average 12-month commercial bank deposit rate;  
 RAVE = Average interest rate on commercial bank time deposits.
- ERI = Expected rate of inflation in per cent per annum (this is explained in greater detail below).

The *a priori* expectations regarding the signs of the coefficients merit explanation.

The demand for real cash balances with the public can be expected to increase as the country's real income increases; hence we anticipate positive value for the coefficient  $a_1$ . There has been a remarkable increase in the number of commercial bank branches during the last thirty years from a little over 4,000 at the end of 1951 to over 34,000 at the end of 1980. Much of this eightfold growth reflects a determined effort by the government and the monetary authorities to extend banking services to rural areas. This expansion in branch banking can be expected to reduce the public's demand for cash balances as it induces shifts in the public's asset portfolio, away from currency and in favour of bank deposits, either because such deposits are deemed safer or because they earn interest. Thus the coefficient  $a_2$  is expected to be negative. The coefficient  $a_3$ , for the tax ratio is hypothesised to be positive. As the burden of taxation in the economy increases, economic agents are increasingly tempted to evade taxation, an activity which is facilitated by conducting the relevant transactions in cash wherever possible. Thus, other things equal, the public will wish to hold higher real cash balances, the greater the burden of taxation.

The coefficient  $a_4$  relates to the real rate of interest which is defined as the nominal rate of interest on bank deposits,



**TABLE 4.4.1**  
**Data Used in the Regressions**

Year	C (Rs. crore)	P (1970-71=100)	RGNP (Rs. crore)	NOCB	TTR (Per cent)	R12 (Per cent)
(1)	(2)	(3)	(4)	(5)	(6)	(6)
1951-52	1287	50.4	18882	4119	7.4	1.73
1952-53	1206	44.1	19513	4040	7.0	2.13
1953-54	1235	46.2	20765	4021	6.5	2.77
1954-55	1285	43.0	21460	4032	7.5	2.39
1955-56	1432	40.8	22304	4085	7.5	2.39
1956-57	1561	46.5	23495	4193	7.5	2.94
1957-58	1609	47.9	23272	4375	8.7	3.29
1958-59	1674	49.8	25172	4605	8.1	3.33
1959-60	1814	51.7	25711	4847	8.7	3.23
1960-61	1956	55.1	27054	4939	9.0	3.31
1961-62	2062	55.2	28145	5012	9.7	3.97
1962-63	2235	57.3	28958	5173	11.0	3.99
1963-64	2438	60.9	30716	5419	11.9	4.00
1964-65	2634	67.5	33054	5828	11.3	4.79
1965-66	2841	72.7	31691	6131	12.2	5.50
1966-67	3028	82.8	31660	6595	11.9	6.00
1967-68	3199	92.4	34277	6984	10.8	6.00
1968-69	3436	91.3	35491	7649	11.4	5.50
1969-70	3765	94.8	37755	9051	11.5	5.50
1970-71	4160	100.0	39979	11184	11.9	6.00
1971-72	4576	105.6	40883	12985	12.9	6.00
1972-73	4969	116.2	40590	14739	14.0	6.00
1973-74	5850	139.7	42134	16503	12.6	6.00
1974-75	6326	174.9	42315	18180	13.3	7.65
1975-76	6557	173.0	45483	20455	15.7	8.00
1976-77	7321	176.6	47040	23555	15.5	8.00
1977-78	8276	185.8	58958	26997	14.5	6.33
1978-79	9474	185.3	54331	29505	16.0	6.00
1979-80	10933	217.6	51753	31558	16.5	6.53
1980-81	12374	257.3	55366	34588	15.3	7.04

RAVE (per cent)	ERI 1 (per cent)	FRI 2 (per cent)	ERI 3 (per cent)	ERI (per cent)	ERI 5 (per cent)	ERI 6 (per cent)	ERI 7 (per cent)
(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
2.70	7.16	9.59	9.39	8.62	7.84	7.15	6.59
3.18	7.05	8.89	8.41	7.62	6.98	6.53	6.25
3.26	5.10	4.61	2.14	-0.43	-2.76	-4.89	-6.87
3.38	5.07	4.64	2.92	1.65	1.00	0.90	1.27
3.53	3.87	2.33	-0.03	-1.78	-2.97	-3.80	-4.47
3.80	2.97	0.84	-1.56	-3.12	-4.04	-4.59	-4.93
4.52	4.07	3.46	3.10	3.72	4.96	6.55	8.30
4.25	3.96	3.37	3.07	3.43	3.99	4.42	4.60
3.69	3.96	3.49	3.34	3.65	3.98	4.15	4.16
3.33	3.95	3.56	3.49	3.72	3.90	3.95	3.92
3.69	4.21	4.16	4.41	4.86	5.24	5.53	5.78
4.02	3.81	3.37	3.14	2.99	2.71	2.32	1.86
4.38	3.81	3.45	3.34	3.31	3.25	3.21	3.22
4.91	4.05	4.02	4.22	4.50	4.77	5.05	5.36
6.20	4.73	5.38	6.21	7.04	7.80	8.52	9.20
7.20	5.03	3.85	6.66	7.30	7.75	8.03	8.15
7.39	5.92	7.45	8.83	9.94	10.82	11.55	12.17
7.22	6.48	8.28	9.66	10.60	11.21	11.57	11.76
6.84	5.72	6.39	6.40	5.88	5.01	3.91	2.70
6.86	5.53	5.88	5.63	5.06	4.42	3.86	3.49
7.29	5.52	5.80	5.59	5.23	4.95	4.84	4.89
7.53	5.53	5.76	5.59	5.38	5.28	5.30	5.39
7.76	5.98	6.62	6.93	7.24	7.66	8.14	8.64
9.30	7.41	9.34	10.91	12.43	13.94	15.39	16.75
10.51	9.19	12.51	15.20	17.54	19.57	21.28	22.66
10.93	8.16	9.79	10.31	10.09	9.24	7.86	6.04
10.95	7.55	8.25	7.84	6.89	5.65	4.39	3.27
10.69	7.32	7.64	7.05	6.22	5.43	4.88	4.63
10.74	6.58	6.71	4.94	3.73	2.72	1.95	1.39
10.54	7.64	8.31	8.59	9.09	9.92	11.05	12.40

ERI 8 (per cent)	ERI 9 (per cent)	Year to year change in wholesale price			
		Year	Price Index		Year
(15)	(16)	(17)	(per cent) (18)	(19)	(per cent) (20)
6.21	6.07	1930-31	-16.14	1960-61	6.58
6.13	6.11	1931-32	-26.29	1961-62	0.18
-8.77	-10.64	1932-33	-5.10	1962-63	3.80
2.05	3.22	1933-34	-6.71	1963-64	6.28
-5.13	-5.91	1934-35	-2.16	1964-65	10.84
-5.12	-5.20	1935-36	9.56	1965-66	7.70
10.15	12.05	1936-37	0.67	1966-67	13.85
4.44	3.91	1937-38	3.33	1967-68	11.59
4.06	3.96	1938-39	-5.16	1968-69	-1.19
3.87	3.83	1939-40	6.25	1969-70	3.82
6.04	6.31	1940-41	-0.51	1970-71	5.49
1.35	0.79	1941-42	9.91	1971-72	5.61
3.31	3.50	1942-43	22.08	1972-73	10.00
3.69	6.00	1943-44	36.83	1973-74	20.22
9.81	10.36	1944-45	10.64	1974-75	25.20
8.12	7.97	1945-46	1.28	1975-76	-1.09
12.74	13.30	1946-47	9.12	1976-77	2.03
11.82	11.76	1947-48	11.63	1977-78	5.28
1.41	0.11	1948-49	22.13	1978-79	0.00
3.35	3.46	1949-50	2.52	1979-80	17.12
5.06	5.29	1950-51	6.26	1980-81	18.20
5.49	5.57	1951-52	6.11		
9.13	9.59	1952-53	-12.50		
18.00	19.16	1953-54	4.76		
23.76	24.60	1954-55	-6.93		
3.88	1.48	1955-56	-5.12		
2.44	2.02	1956-57	13.97		
4.66	4.66	1957-58	3.01		
0.93	0.49	1958-59	3.97		
13.88	15.46	1959-60	3.82		

*Source for Table 4.4.1*

- Column (1) is from Vasudevan (1980, p 16) for all years except 1980-81 which is from RBI bulletins. All data are computed as averages of stocks on the last Friday of each month.
- Column (2) is from Chandok (1978, p. 171) for all years upto 1977-78 and from the *Economic Survey*, 1982-83. Government of India, for recent years.
- Column (3) is from Government of India, CSO (1983, p. 152).
- Column (4) is from *Statistical Tables Relating to Banks in India* (RBI), various issues.
- Column (5) is based on data on total taxes from *Indian Economic Statistics: Public Finance* (published by the Ministry of Finance), various issues, and current market price GNP data from Government of India, CSO (198, p. 150).
- Column (6) is from Gupta (1979, p 229) for all years upto 1976-77 and from information supplied by the Reserve Bank of India for subsequent years.
- Column (7) is based on information on interest payments and on average stocks of time deposits obtained from the *Statistical Tables Relating to Banks in India* (RBI), various issues.
- Columns (8) through (16) give values of ERI for alternative values of 'p', ranging from 0.1 to 0.9 respectively. These series are based on the application of equation (3) in the text to the information in columns (18) and (20), and starting with an initial value for  $pc_{t-1}$  1931-32, which is based on the assumption that  $pc_{t-1}$  = the average of the three years 1927-28, 1928-29 and 1929-30 (which was -2.29 per cent).
- Columns (18) and (20) are from Srinivasa Madhur, who compiled the series from official data and unpublished work by H.L. Chandok.

R, minus the expected rate of inflation, ERI. Our estimation of the latter warrants some explanation. We espouse an adaptive expectations approach which is reflected in the following equation:

$$P^e_t = q P_{t-1} + (1-q) p^e_{t-1} \dots\dots\dots (3)$$

$P^e_t$ , the expected rate of inflation in year  $t$ ; depends on the actual rate of inflation in the previous year and the expected rate of inflation in that year. The relative weights of these two components is given by the size of the parameter  $q$ . There are two problems to implementing the approach: first, how do we estimate the value of  $q$ ; and second, for a given value of  $q$ , how do we estimate the values of  $P^e_{t-2}$ ,  $P^e_{t-3}$  ..... etc., which clearly influence  $P^e_{t-1}$ ? We tackle the first problem by estimating our basic currency demand equation for alternative values of  $q$ , ranging from 0.1 to 0.9, and choosing that value of  $q$  which minimises the standard error of the estimated regression. Basically, this is a standard grid search approach. The second problem is solved, for each given value of  $q$ , by choosing a base period (in the late 1920s) when inflation was negligible and computing the relevant  $P^e_t$  series from then forward, on the basis of equation (3) and knowledge of actual rates of inflation in each year.<sup>6</sup>

The value of  $a_4$  is expected to be negative: as the real interest rate increases economic agents can be expected to substitute interest-bearing deposits for currency in their asset portfolio. The coefficient  $a_5$ , for the expected rate of inflation, ERI, is also expected to be negative: when the expected rate of inflation rises, asset holders are likely to switch out of cash and into real goods.

Our specification of the currency demand equation, (2), is quite similar, in spirit, to that of Singh *et. al.* (1982) in their recent study conducted under the auspices of the Reserve Bank of India (RBI). The variables real income, real rate of interest and the expected rate of inflation are common to both efforts, though the precise specifications vary. Singh *et. al.* also tried a "direct tax to income ratio" variable, but did not find it statistically significant, even though the coefficient had the predicted

positive sign. As we have argued above, limiting the scope of the tax burden variable to direct taxes is inappropriate for India.<sup>7</sup> A second difference is that we have, for reasons given earlier, included the NOCB variable, which is absent in the RBI study. Third, our use of annual time series (instead of quarterly data used in the RBI monograph) has lessened, if not obviated, the need to specify lags in the adjustment of actual real currency balances to desired values.

Tables 4.4.2 and 4.4.3 summarise the regression results obtained for the sample period 1951-52 to 1980-81. As noted earlier, two alternative variables are used for the rate of interest. Table 4.4.2 presents the results for the nine regressions with R 12 as the rate of interest variable and with q taking values from 0.1 to 0.9. Table 4.4.3 shows the corresponding results for RAVE. The "best" equation from each set is presented below.<sup>8</sup>

$$\begin{aligned} \frac{C}{P} = & 14.487 + 0.00067 \text{RGNP} - 0.00022 \text{NOCB} + 1.44265 \text{TTR} \\ & (5.896)^{***} \quad (-2.756)^{***} \quad (5.208)^{***} \\ & - 2.54900 \text{ER I2} - 1.70251 (\text{R 12} - \text{ER I2}) \dots(4) \\ & (-7.798)^{***} \quad (-4.672)^{***} \end{aligned}$$

$$\bar{R}^2 = 0.969; \text{SEE} = 1.103; \text{D.W.} = 2.390; \text{F} = 180.1$$

$$\begin{aligned} \frac{C}{P} = & 17.652 + 0.00055 \text{RGNP} + 0.00003 \text{NOCB} + 1.15619 \text{TTR} \\ & (4.359)^{***} \quad (0.423) \quad (3.717)^{***} \\ & - 1.95152 \text{ER I2} - 1.06436 (\text{RAVE} - \text{ERI2}) \dots(5) \\ & (-6.249)^{***} \quad (-2.964)^{***} \end{aligned}$$

$$\bar{R}^2 = 0.956; \text{SEE} = 1.304; \text{D.W.} = 2.11; \text{F} = 127.4$$

A few comments on these equations are in order. First, equation (4), shown above, has strikingly "good" overall statistical properties, as indicated by the standard measures such as the  $\bar{R}^2$ , the Durbin Watson statistic and the F statistic. What is more important, the signs of the coefficients are exactly as predicted for all five independent variables; the coefficient values are statistically significant, four at the 1% level and one at the 5% level. Equation (5) displays somewhat poorer statistical characteristics. In particular the sign for the NOCB variable is the opposite of that predicted,

**TABLE**  
**Regression Results with R 12**

Equation No	Value of q	Constant	RGNP	NOCB	TTR
(1)	(2)	(3)	(4)	(5)	(6)
IV. 4.2.1	0.1	19.31637	.00057 (5.93154)***	-0.00010 (-1.17941)	1.29143 (4.56576)***
IV. 4.2.2	0.2	14.48554	.00057 (5.89596)***	-0.00022 (-2.75639)**	1.44265 (5.20779)***
IV.4.2.3	0.3	11.41909	.00069 (5.41892)***	-0.00032 (-3.58304)***	1.56901 (5.05711)***
IV. 4.2.4	0.4	9.94253	.00071 (4.71005)***	-0.00037 (-3.75782)***	1.62803 (4.45858)***
IV. 4.2.5	0.5	9.26441	.00074 (4.27575)***	-0.00040 (-3.60780)***	1.54513 (3.96525)***
IV. 4.2.6	0.6	8.88547	.00077 (4.10780)***	-0.0042 (-3.49402)***	1.65085 (3.54628)***
IV. 4.2.7	0.7	8.62183	.00081 (4.09316)***	-0.00044 (-3.44521)***	1.65249 (3.45967)***
IV.4.2.8	0.8	8.42689	.00084 (4.14549)***	-0.00045 (-3.44041)***	1.55301 (3.45397)***
IV. 4.2.9	0.9	8.29037	.00085 (4.21923)***	-0.00046 (3.45305)***	1.55256 (3.29431)***

## 4.4.2.

as the Interest Rate Variable<sup>1</sup>

ERI	(R12-ERI)	R- <sup>2</sup>	SEE	F	D.W.
(7)	(8)	(9)	(10)	(11)	(12)
-3.40395 (-10.66065)***	-1.75215 (-4.89978)***	0.96925	1.09229	183.79218	2.48231
-2.54900 (-7.79790)***	-1.70251 (-4.67185)***	0.96863	1.10316	180.09561	2.38973
-2.20021 (-5.74077)***	-1.57141 (-3.69512)***	0.96034	1.24048	141.42551	2.05005
-2.06560 (-4.41163)***	-1.58415 (-3.06681)**	0.94522	1.45785	101.07080	1.59808
-2.10921 (-3.85714)***	-1.75357 (-2.93445)**	0.92889	1.66093	76.76407	1.26177
-2.25882 (-3.76167)***	-2.00438 (-3.08887)***	0.91538	1.81189	63.73930	1.05965
-2.43702 (-3.87940)***	-2.25718 (-3.36351)***	0.90531	1.91153	56.78023	0.95385
-2.59479 (-4.07242)***	-2.46632 (-3.56331)***	0.89972	1.97238	53.03942	0.90633
-2.71481 (-4.27143)***	-2.51999 (-3.94025)***	0.89612	2.00751	51.03288	0.88847

Note:  $\frac{1.C}{P}$  is the dependent variable in all equations. The table presents the P coefficient values: t-statistics are given in parentheses, \*\*\*\*, \*\*\* and \*\* represent 1 per cent, 5 per cent and 10 per cent levels of significance respectively.



**TABLE**  
**Regression Results with RAVs as the**

Equation No.	Value of q	Constant	KGQ	NOCB	TTR
(1)	(2)	(3)	(4)	(5)	(6)
IV. 4.3.1	0.1	23.00983	.00053 (3.96003)***	.00016 (1.87182)	.96415 (2.93335)**
IV. 4.3.2	0.2	17.65242	.00055 (4.35898)***	.00003 (.42329)	1.15619 (3.71674)***
IV. 4.3.3	0.3	13.96579	.00060 (4.77211)***	-.00008 (-1.02190)	1.34414 4.27885)***
IV. 4.3.4	0.4	12.20749	.00063 (4.60624)***	-.00013 (-.149361)	1.43621 (4.13859)***
IV. 4.35	0.5	11.60555	.00066 (4.31047)***	-.00014 (-1.40398)	1.45442 3.75652)***
IV. 4.3.6	0.6	11.50840	.00063 (4.09539)***	-.00013 (-1.17520)	1.43873 (3.41316)***
IV. 4.3.7	0.7	11.58980	.00070 (3.97035)***	-.00011 (-.95293)	1.41106 (3.15266)***
IV. 4.3.8	0.8	11.72082	.00072 (3.90711)***	-.00009 (-.77102)	1.38077 (2.96165)**
IV. 4.3.9	0.9	11.85517	.00073 (3.88125)***	-.00006 (-.63042)	1.35184 (2.82223)**

## 4.4.3

Interest Rate Variable <sup>1</sup>

ERI	(R12—RI)	R- <sup>2</sup>	SEE	F	D.W.
(7)	(8)	(9)	(10)	(11)	(12)
-2.72532 (-8.29888)***	-.99018 (-2.56659)**	0.95173	1.36844	115.35835	2.03513
-1.95152 (-6.24910)***	-1.06436 (-2.96442)**	0.95616	1.30419	127.43935	2.11087
-1.76921 (-5.51331)***	-1.10726 (-3.08249)**	0.95542	1.31511	125.30093	2.14018
-1.74351 (-4.90119)***	-1.23040 (-3.15029)***	0.94605	1.44666	102.71574	1.86504
-1.79350 (-4.52831)***	-1.39933 (-3.27238)***	0.93319. <sup>b</sup>	1.60997	82.00998	1.55430
-1.87685 (-4.37580)***	-1.57388 (-3.44878)***	0.92092	1.75150	68.54736	1.33205
-1.96705 (-4.34903)***	-1.73184 (-3.64436)***	0.91079	1.66038	60.21264	1.18794
-2.04957 (-4.38015)***	-1.86403 (-3.63242)**	0.90301	1.93979	54.99870	1.09525
-2.11865 (-4.43232)***	-1.96937 (-3.99930)***	0.89734	1.99570	51.69513	1.03436

Note 1.  $\frac{C}{P}$  is the dependent variable in all equations. The table presents the coefficient values; t = statistics are given in parentheses \*\*\*\*, and \* represent 1 per cent, 5 per cent and 10 per cent level of significance, respectively.

though, judging by the corresponding t-statistic, the coefficient is not statistically distinguishable from zero. Nevertheless, in both regressions the coefficient values for the other four variables are of the same order of magnitude, suggesting some underlying stability in the specifications. This point about the stability of the estimated coefficient is reinforced when we turn our attention to the full set of regressions reported in Tables 4.4.2 and 4.4.3. As the value of  $q$  alters within each set, the estimated coefficients do change, but not in a dramatic or haphazard manner. Finally, it is noteworthy that both equations relate to values of  $q=0.2$ . If we accept these results it means that the adjustment of expected to actual inflation is rather slow in India, with earlier years seriously influencing current inflationary expectations. Given the historical variability of the rate of inflation in India, this may not be implausible.

Thus, on balance, equations (4) and (5) can serve as acceptable working hypotheses for depicting the demand for real cash balances in India in the period 1951-52 to 1980-81.

The next stage in implementing Tanzi's method is to use these equations to predict currency demands,  $C'$ , for given years, on the basis of observed values of all other variables and then to juxtapose these results with the predictions obtained,  $C''$ , when the tax burden variable is set to zero. The difference between these two values measures the tax-induced demand for currency (TICD)<sup>9</sup>. Table 4.4.4 summarises the results for our two chosen equations when applied to the years 1955-56, 1960-61, 1965-66, 1974-71, 1975-76 and 1980-81. It also presents the estimates of tax-induced currency demand (TICD) as per cent shares of total currency with the public and  $M_1$ . Some comments are warranted. First, the estimates of TICD are sizeable, both in absolute magnitudes and in relation to total currency holdings of the public ( $C$ ) and  $M_1$ . This suggests that the tax burden variable is an important determinant of currency demand. Second, because of the steady increase in the tax ratio over time, the estimates of TICD also show a clear upward trend. Third, for any given year, the estimates of TICD vary quite

**TABLE 4.4.4**  
**Estimates of Tax-Induced Currency Demand (TICD)**

Financial year	Predicted		TICD (C' - C'')	Currency with public C	TICD as per cent of C	Narrow Money M <sub>1</sub> (Rs crore)	TICD as Per cent of M <sub>1</sub>
	Currency C'	Demand C''					
	(Rs crore)	(Rs crore)	(Rs crore)	(per cent)	(Rs crore)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1960-61							
Equation (4)	1975.95	1260.54	715.41	1954	36.58	2669	26.80
Equation (5)	2004.72	1431.37	573.35	1954	29.31	2689	21.48
1965-66							
Equation (4)	2766.46	1486.92	1279.54	2841	45.04	3853	33.21
Equation (5)	2762.60	1737.13	1025.47	2841	36.10	3853	26.61
1970-71							
Equation (4)	4078.71	2361.97	1716.74	4160	41.27	5941	28.90
Equation (5)	4121.70	2745.84	1375.86	4160	33.07	5941	23.16
1975-76							
Equation (4)	6695.10	2927.16	3767.94	6557	57.46	10166	37.06
Equation (5)	6748.73	3728.15	3020.15	6557	46.07	10166	29.71
1980-81							
Equation (4)	12152.28	6422.21	5730.07	12374.33	46.31	20869	27.46
Equation (5)	12412.15	7860.52	4551.63	12374.33	36.78	20869	21.31

Source : Columns (1) to (3) are based on the estimated equations, column (4) is from Table 4.4.1 and column (6) is from Singh, *et. al.* (1982, p.110).

substantially. In particular, the estimates based on equation (4) are about 25 per cent higher than those based on equation (5).

### 5. Interpretation and Assessment of the Results

In Table 4.5.1 we present estimates of unaccounted income worked out on the basis of Tanzi's procedure. These estimates suffer from all the problems already noted earlier. In particular, the procedure for estimating the income velocity of "legal money" involves, at best, an approximation. What is more important, the method entails the crucial assumption of equality in the income velocities of "legal money" and "illegal currency" (or TICD in our lexicon). As we have seen, the empirical basis for this assumption is notable by its absence. It is interesting to note that Cagan (1958, p.315) believed "that the amount of currency held against a dollar of unreported income is much greater, on the average, than the amount of money held against a dollar of regular income. Unreported income produces an abnormal demand for currency to hoard". But Cagan was unable to produce any empirical justification for his claim. Quite clearly, a great deal depends on the distribution, across types of economic agents, of the initially generated unaccounted income. For example, there is likely to be a higher proportion of currency hoarding from unaccounted income accruing to professionals than when the unaccounted income accrues to traders and manufacturers. Purely for illustrative purposes, we present in Table 4.5.1, estimates of unaccounted income on the assumption that the income velocity of "illegal currency" is *half* of that estimated for "illegal money". We should reiterate that the numbers and ratios shown in columns 7 to 10 of Table 4.5.1 are the product of quite arbitrary assumptions. They are in the nature of "if—then results", for those willing to accept the validity of the strong, and very "iffy", assumptions.

For ourselves, we are content with more limited conclusions. These are as follows. We believe that our estimates of currency demand equations provide substantial grounds

**TABLE 4.5.1**  
**Estimates of Unaccounted Income by Tanzi's Method**

Financial Year	$M_1$	"Legal money" $M_1 \div (C^1 - C^2)$	GNP at Current market prices Y	Income velocity of "legal money" Y	TICD	Unaccounted Income $\frac{V_L(TICD) - 2(V_L TICD)}{2}$		Unaccounted Income as per cent of GNP at market price $\frac{[(7) \div (4)]}{100} \quad \frac{[(8) \div (4)]}{100}$	
	(Rs crore)	(Rs crore)	(Rs crore)	$\frac{L_L M_1 - (C^1 - C^2)}{Y}$	(Rs crore)	(Rs crore)	(Rs crore)	(per cent)	(per cent)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1960-61									
Equation (4)	2669	1953.59	14946	7.65	715.41	5472.89	2740.02	36.5	18.3
Equation (5)	2669	2095.65	14946	7.13	573.35	4087.99	2043.99	27.4	13.7
1965-66									
Equation (4)	3853	2573.46	23948	9.31	1279.54	11912.52	5962.66	49.7	24.9
Equation (5)	3853	2827.53	23948	8.47	1025.47	8685.73	4342.85	36.3	18.1
1970-71									
Equation (4)	5941	4224.26	39979	9.46	1716.74	16240.36	8120.18	40.6	20.3
Equation (5)	5941	4565.14	39979	9.76	1375.16	12052.53	6026.27	30.2	15.1
1975-76									
Equation (4)	10166	6398.06	73829	11.54	3767.94	43482.03	21741.01	58.2	29.5
Equation (5)	10166	7145.42	73829	10.32	3020.58	31202.59	15601.30	42.3	21.2
1980-81									
Equation (4)	20869	15138.93	128524	8.49	5730.07	48648.29	24352.80	37.9	19.0
Equation (5)	20869	16317.37	128524	7.88	4551.63	35866.84	17933.42	27.9	13.0

for believing that much of the public's demand for currency arises from the need to undertake transactions in a manner which facilitates evasion of direct and indirect taxes. Thus these equations bolster the case that tax evasion is a quantitatively "important" phenomenon in India. Since we lack an empirical basis for the crucial missing link—the income velocity of the estimated TICD—we refrain from committing ourselves to any particular set of estimates of unaccounted income based on the application of Tanzi's approach to India. Second, our currency demand equations do suggest that the absolute significance of the phenomenon of unaccounted income has grown over time, as the tax burden has steadily increased. This tentative conclusion follows from the estimated equation, the trend in the tax ratio and the assumption that the income velocity of "illegal currency" (TICD) has not changed significantly over time—a much weaker assumption than attaching a particular value to it.

Finally, we should reiterate our agreement with Tanzi (1983) on the notion of unaccounted income that is associated with this approach. It is income which should have been reported to the tax authorities, but was not. Part of this income could be included in recorded GNP, while the rest escapes national income accounting. Much depends on the sources and methods of national income accounting. The point is that since the "additional" demand for cash is predicated on the motive to avoid taxes, it is income and transactions unreported to tax authorities that constitutes the defining characteristic—not reporting to national account authorities.

### Notes

1. This and the next section are based on Acharya (1984b).
2. It is interesting to note that in his first paper (1980) propagating the currency demand equation approach Tanzi had espoused an opposite view in which he equated tax-evaded income with unrecorded GNP. Though his recent paper has corrected the earlier conceptual error, its influence continues to linger in his procedure for estimating the income velocities of "legal" and "illegal" money.

3. Note that evasion of some commodity taxes is normally associated with evasion of income taxes, even when the primary motive for evasion stems from the indirect taxes.
4. Subsequent to our work on this chapter we received a draft study on the demand for currency and deposits by Lahiri, Purkayastha and Wadhwa (1984), which also finds our kind of tax variable to be significant in their currency demand equations. Incidentally, a case can be made for restricting the notion of income in the denominator to monetised GNP. Since no comparable time series for monetized GNP was readily available, we could not try this alternative definition of the tax variable.
5. The underlying data and sources are given in Table 4.4.1.
6. We are indebted to Srinivasa Madhur for suggesting the approach and supplying the data.
7. The need to include indirect taxes in monetarist approaches to estimating unaccounted income has also been recognised in the United Kingdom [see Mathews (1982)].
8. Strictly speaking, going by the 'standard error of the estimate equation (4) is marginally worse than the one for  $q = 0.1$ . But since the  $R^2$  is 0.969 in both cases and since the significance tests for the regression coefficients perform better for equation (4), we have chosen to deem it as the "best" equation in its set.
9. In his 1980 paper Tanzi had expressed a preference for estimating the tax-induced demand by setting the tax variable for the lowest value observed in the sample period rather than to zero "as it is unrealistic to conceive of an economy without taxes..." But this does not seem to provide a compelling reason to truncate the estimate of tax-induced currency demand in such an arbitrary manner. In his later work Tanzi (1983) appears to accept this logic and discards any use of this lowest observed value in the sample period,



# The Scale of Black Income: a Fiscal Approach

## 1. Introduction

Our attempt, in the previous chapter, to gauge the scale of black income through a currency demand equation approach ended on an agnostic note. In this chapter we mount a fiscal approach to the problem.<sup>1</sup> In doing so, we emulate earlier exponents of this approach—Kaldor (1956), Wanchoo Committee Report (1971) and Chopra (1982)—in two essential respects. First, the concept of black income pertinent to this approach is the fiscal one, namely, income which should have been declared to the tax authorities, but was not. Second, the crux of the method lies in arriving at an independent estimate of total income subject to tax and comparing this to total income actually assessed for taxation (typically a lower amount), with the discrepancy being the measure of black income. Given the availability of data, the basic exercise is limited to 1975-76, though a crude extrapolation is also attempted for a more recent year, 1980-81. Furthermore, the exercise is confined to the evasion of non-corporate incomes, though, as we shall argue later, this limitation may not be as much of a handicap as it may appear at first sight.

The essence of our approach consists of estimating a *distribution of income by earner* and then allowing for the main exclusions, exemptions and deductions which are permitted

under the Income Tax Act in order to arrive at an estimate of incomes which should have been assessed to tax. We believe that operating with an earner-wise income distribution allows us to obtain much better estimates than the Kaldor/Wanchoo/Chopra method which relies on rough guesses about the proportions of non-salary income in each sector which are believed to be above the basic exemption limit for income tax.

The principal steps in our analysis are as follows:

- (i) The official National Accounts Statistics (NAS) are used as a starting point to derive an estimate of gross personal income accruing to households. The procedure is outlined in Section 2.
- (ii) For essentially the same concept, namely, gross personal incomes, the all-India survey of household incomes for 1975-76 by the National Council of Applied Economic Research (NCAER) provides estimates of the distribution of income, separately for urban and rural *households* (NCAER, 1980). These distributions by *household* are *converted* to distributions by *earner* on the basis of certain assumptions. To facilitate further computations the actual distributions are then approximated by log normal distributions. Section 3 summarises the assumptions and procedures.
- (iii) The total gross personal income estimated by the NCAER survey falls substantially below the corresponding estimate in the NAS. We treat the NAS total as the controlling one and "scale-up" the NCAER-based distributions according to several alternative assumptions. The underlying rationale and assumptions are described in Section 4.
- (iv) The lognormal, earner-wise distributions of income, so obtained, constitute our key analytical tools. Working with these distributions we proceed to make allowances for the major exclusions, exemptions and deductions permitted under the Income Tax Act. This is done separately for the urban and rural distributions, with due allowance for different components of income (salary, business, etc). The result of these labours

yields estimates under alternative assumptions, of the total income which should have been declared for for income tax assessment. Section 5 outlines the procedure and the results.

- (v) These estimated totals are then compared in the next section, Section 6, with the information from the AIITS (suitably adjusted for undercoverage) about the total of non-corporate incomes *actually* assessed to tax. The discrepancies yield alternative estimates of black income under the fiscal approach.
- (vi) In Section 7 the results obtained for 1975-76 are extrapolated to 1980-81 on the basis of a number of assumptions and some more recent information.
- (vii) Thus far the analysis is predicated on the assumption that the NAS estimate of gross personal household income is correct. In Section 8 we relax this assumption and explore the consequences of some alternative assumptions regarding the extent to which the NAS estimates may be biased downwards because of tax evasion and related factors.
- (viii) The entire analysis is subject to a large number of qualifications and shortcomings. The principal ones are discussed in Section 9. In each case we offer a judgement about the direction of resulting bias in our estimates of black income.

## **2. National Accounts Statistics: From Net Domestic Product to Gross Personal Income**

The annual CSO publications on National Accounts Statistics readily provide information on such concepts as GNP, GDP and NDP. They also present the steps necessary to go from these aggregates to the corresponding total of gross personal income accruing to households. Table 5.2.1 presents the steps in the transition from NDP at factor cost to gross personal income accruing to households for the years 1975-76 and 1980-81.

These totals of gross personal income are only the starting point for the estimation of taxable income. It is easy to see why. If the total of gross personal income were distributed

equally across all earners, then each earner would have earned about Rs 3,500 in 1975-76, less than half the income tax exemption limit of Rs 8,000.<sup>2</sup> In other words, taxable income would have been zero. Therefore, quite obviously, it is essential to have some knowledge about the *distribution* of gross personal income in order to arrive at any estimate of taxable income. It is to this that we now turn.

TABLE 5.2.1

From Net Domestic Product to Gross Personal Income  
(Rs crore in current prices)

	1975-76	1980-81
1. <i>Net Domestic Product at factor cost</i>	62,324	106,209
2. <i>Less income from entrepreneurship and government accruing to government administrative departments</i>	997	2,245
3. <i>Less saving of non-departmental enterprises</i>	222	184
4. <i>Income from domestic product accruing to the private sector</i>	61,105	103,780
5. <i>add interest on national debt</i>	491	1,500
6. <i>add net factor income from abroad</i>	-255	330
7. <i>add current transfers from government administrative departments</i>	1,350	2,808
8. <i>add current transfers from the rest of the world</i>	528	2,064
9. <i>Private income</i>	63,219	110,482
10. <i>Less savings of private corporate sector</i>	347	2,513
11. <i>Less corporation tax</i>	862	1,311
12. <i>Net Personal Income</i>	62,010	106,658
13. <i>add consumption of fixed capital (households)</i>	2,492	4,871
14. <i>Gross personal income</i>	64,502	111,529

Source : Government of India, CSO (1983).

### The Distribution of Gross Personal Income

The most recent all-India survey of household income is the one carried out by the NCAER for 1975-76. The results of this survey were published in two volumes (NCAER, 1980). In addition, the NCAER made available to us some

hitherto unpublished cross-tabulations of the survey information. Since the survey is our primary data source on the distribution of income, a few remarks on its nature and quality are in order.

The survey employed a multi-stage sampling strategy to obtain a final sample of 5124 households. In order to improve the estimates for the relatively small number of high and middle income households in the country, the sampling strategy was deliberately skewed to achieve over-representation of these households. As a consequence, about two-fifths of the sample was drawn from urban households, though these households accounted for just over one-fifth of the nation's population. This characteristic of the survey as well as the separate tabulations for urban and rural households are particularly desirable features for our purposes, since the bulk of taxable income can be expected to be attributable to urban households. This is so partly because urban households, are, on average, richer than rural households, and, more importantly, because incomes from agriculture are exempted from taxation. The survey's definition of income suffers from no obvious drawbacks. More importantly, for our purposes, the income concept is more or less congruent with the notion of gross personal income in the NAS.<sup>3</sup> For example, capital gains and other windfall receipts appear to be excluded from both concepts of income.

The survey data used in this report are recorded in Tables A.1.1 through A.1.4 of Appendix 1. These tables present the survey results according to a three-way classification, separately for urban and rural households. This three-way classification consists of household income ranges (or classes), source components of income (agriculture, business, salary, etc.) and, what we call the earner-density of households, that is, the number of earners per household. There are two key tables (separately for urban and rural households), one giving the frequency distribution of households and the other presenting the distribution of household incomes, in each according to the same three-way classification. For easy reference, summary versions of the two *urban* tables are shown in Tables 5.3.1 and 5.3.2. Note that

TABLE 5.3.1

Summary Version of the Household Distribution of Income (NCAER)  
by Source Component of Income for Urban India: 1975-76

Rs. million				
Household income ranges (Rs)	Agricultu- ral income	Livestock income	Business income	Salary income
(1)	(2)	(3)	(4)	(5)
0-1200	26.40	0.00	44.17	42.45
1201-2400	116.31	1.09	422.24	253.29
2401-3600	387.25	215.79	2313.33	2390.98
3601-4800	508.95	98.24	2605.19	6292.82
4801-6000	587.62	176.15	3485.10	8302.60
6001-7500	533.79	299.58	3075.55	7901.01
7501-10000	619.35	317.09	5409.39	11510.74
10001-15000	821.77	228.50	595.056	12318.48
15001-20000	480.41	113.97	4031.14	9170.60
20001-25000	377.06	37.66	2554.99	6179.87
25001-30000	117.65	88.26	2927.32	3237.94
30001-60000	295.67	73.27	1597.44	4117.12
40001-50000	311.08	25.22	1563.20	1436.60
Over60000	239.04	15.89	3510.93	633.70
All Income Ranges <sup>2</sup>	5422.36	1690.72	39496.54	73788.10
<i>Earners-Density of Household<sup>1</sup></i>				
One-Earner	3191.22	1003.57	20718.67	47792.94
Two-Earner	1142.35	346.91	10136.39	18895.78
Three-Earner	696.25	74.06	3896.90	5070.81
Four-Earner	197.57	31.49	1604.49	1548.95
More than Four- Earners	194.95	234.69	3140.08	479.63
GRAND TOTAL	5422.36	1690.72	39496.54	73788.10

Notes: 1. Earner-Density of households are given only for 'All Income Ranges'. For the other income ranges, see Table A.1.1 Appendix 1.

2. Totals may not tally due to rounding.

Source: Same as for Table A.1.1, Appendix 1.

(Rs million)

Agricultural wage income	Non-agricultural wage income	Housing income	Dividend and interest income	Transfer income	Gross income
(6)	(7)	(8)	(9)	(10)	(11)
25.70	73.04	20.15	0.00	16.02	247.92
361.44	3243.19	132.51	0.00	31.81	4561.80
88.15	5014.65	403.03	3.44	519.23	11335.86
56.00	3598.78	738.07	2.44	286.21	14186.70
207.99	1640.90	514.49	45.23	628.78	15589.25
0.00	1498.99	452.08	31.50	790.79	14492.79
0.00	673.06	780.44	39.99	907.31	20257.38
19.44	183.56	1570.23	95.51	448.39	21941.92
0.00	16.42	764.82	118.53	585.40	15281.79
0.00	2.27	534.97	52.46	110.95	9850.14
0.00	0.00	487.18	44.14	117.95	7020.40
0.00	6.53	430.72	46.64	81.35	6648.90
0.00	0.00	349.41	43.57	7.35	3736.65
0.00	0.00	284.29	2.70	0.00	4685.54
758.72	15861.39	7762.39	526.14	4531.76	149838.12
272.36	7736.60	4602.60	310.94	3484.25	89113.14
230.92	6242.75	1777.29	174.91	537.54	39484.85
36.64	1496.01	778.08	30.03	258.24	12337.02
207.99	386.03	265.63	8.55	245.58	4496.28
10.80	0.00	338.80	1.71	6.16	4406.83
758.72	15861.39	7762.39	526.14	4531.76	149838.12

TABLE 5.3.2

Summary Version of the Frequency Distribution of Reporting Households (NCAER) by Source Components of Income for Urban India, 1975-76

(Households in Hundred)

Household Income ranges (Rs)	Agricultural income	Livestock income	Business income	Salary income
(1)	(2)	(3)	(4)	(5)
0-1200	1200	0	800	36
1201-2400	1816	2908	2944	1272
2401-3600	4153	4180	9236	8854
3601-4800	5636	5036	7771	15724
4801-6000	2108	3672	7834	16796
6001-7500	2926	1,2670	5866	13952
7501-10000	2154	3363	8345	15873
10001-15000	2321	2667	6549	12295
15001-20000	715	823	3351	5935
20001-25000	414	459	1593	3118
25001-30000	207	571	1372	1404
30001-40000	234	234	576	1386
40001-60000	135	162	432	387
Over 60000	90	144	405	189
All Income Ranges	24109	27889	57074	98221
<i>Earners Density of Households<sup>1</sup></i>				
One-Earner	15432	17252	33554	71745
Two-Earner	5786	7575	16455	19949
Three-Earner	1767	1839	4313	4849
Four-Earner	589	234	1183	963
More than Four-Earner	535	989	1569	715

Note: 1. Same as note 1 of Table 5.3.1.

Source: Same as for Table A.1.2.



Table 5.3.2 Contd.

Agricultural wage income	Non-agricultural wage income	Housing income	Dividend and interest income	Transfer income	Gross income
(6)	(7)	(8)	(9)	(10)	(12)
400	1200	1672	0	836	2836
2800	18544	10396	0	1272	24468
436	20481	19906	2800	3600	38315
800	11744	18760	1600	2072	34495
430	4180	12342	2836	3317	29210
0	2544	10244	2580	4180	21463
0	2216	11520	3705	4585	23800
72	504	11623	2664	1579	18264
0	36	4427	2492	1255	8872
0	9	2493	666	198	4387
0	0	1966	297	207	2587
0	18	1368	306	225	1935
0	0	639	171	18	774
0		423	72	0	468
4908	61476	107779	20189	23344	211874
2036	31034	66594	14850	17710	144114
2000	24140	29736	4021	3269	51567
436	5205	7402	1048	976	11215
400	1097	2752	234	980	3220
36	0	1295	36	409	1758

the incomes from different sources, shown in columns (2) to (10) of Table 5.3.1 add up across the columns to give total household income. But in Table 5.3.2 the number of households under each source component of income are *not* mutually exclusive, and are, therefore, not column-wise additive. However, there is a one-to-one correspondence between the amount of income (Table 5.3.1) and the number of households who earned it (Table 5.3.2), given the income range, the earner density of the household and the source component of income.

For our purposes the NCAER data set suffers from one important drawback: it relates to *households*, not *earners*. Yet, for any exploration of taxable income, we need to have the distribution of income by earners, since it is they who are assesseees, not the households. The original NCAER data are coded in a way which does not permit extraction of an earner-wise distribution. We have, therefore, to make certain assumptions to convert the NCAER's household distributions to earner-wise distributions.

Note that the single-earner households present no problem in such a conversion since the income of the household is also the income of the earner. If we treat the income classes as those for earners rather than households, we immediately have the frequency distribution of earners for such households. The ease of this transition is significant given that single-earner households accounted for 68 per cent of all urban households (the primary focus of our analysis) and for 43 per cent of all rural households in 1975-76 (Table 5.3.3). However, the picture is not quite so sanguine when we consider distribution of *earners* by households of varying earner-density (Table 5.3.4). Only 47 per cent of all urban earners belonged to single-earner households; the corresponding percentage for rural households was only 23. Viewed from a different angle we have to devise some procedures, however approximate, for allocating the 53 per cent of urban earners from multi-earner households (and 77 per cent of rural earners from such households) to appropriate income ranges.

TABLE 5.3.3

Frequency Distribution of Reporting Households (Urban and Rural) by Earner-Density of Households, 1975-76

Earner-density of households	(in million)	
	<i>Frequency of Households</i>	
	Urban	Rural
One-earner	14.4114 (68.02)	33.5484 (43.33)
Two-earner	5.1567 (24.33)	28.0044 (36.17)
Three-earner	1.1215 (5.29)	9.5292 (12.31)
Four-earner	0.3220 (1.52)	4.0392 (5.22)
More than four-earner	0.1758 (0.83)	2.2608 (2.92)
No earner	0.0 (0.00)	0.0360 (0.05)
All households	21.1874 (100.00)	77.4180 (100.00)

Note: Figures in parentheses are percentages.

Source: Based on Tables A.1.2 and A.1.4 of Appendix 1.

The procedure we adopted can be illustrated with the case of two-earner urban households. The distributions of gross personal income and of the number of earners in these households are available from the NCAER data and shown in columns (2) and (3) respectively, of Table 5.3.5. For each (household) income range the average per-earner income is computed and recorded in column (4). We now assume that the *average* income per earner is also the *actual* income for all earners in the relevant (household) income range. Thus, the 0.800 million earners corresponding to the household income range Rs 0-1200, are all assumed to earn Rs 452 each. Similarly the 1.5488 million earners in the next household income range are assumed to earn Rs 880 each. On the basis of the data in column (3) and (4) we can now allocate all

earners from two-earner urban households to appropriate income classes (for earners). Thus, the sum of the first two elements of column (3) gives the total number of earner (from two-earner urban households) earning in the range Rs 0-1200. This total, of 1.6289 million, is only recorded as the first entry in column (6). Proceeding in this manner all of column (6), a derived frequency distribution for earners, is completed. By addition with the *known* frequency distribution for single earner households [(in column (5))] we obtain, in column (7), a derived frequency distribution of earners from single and two-earner households, arranged according to income ranges for *earners*. The same procedure is repeated for all other multi-earner households to yield an approximate frequency distribution of *all* urban earners classified according to income

TABLE 5.3.4

Distribution of Earners (Urban and Rural) from Households of Varying Earner-Density, 1975-76.

Earner-density of household	(in million)			
	Urban	Urban cumulative	Rural	Rural cumulative
One-earner	14.4114 (47.48)	14.4114 (47.49)	33.5484 (22.83)	33.5484 (22.83)
Two-earner	10.3134 (33.98)	24.7248 (81.47)	56.0088 (38.11)	89.5572 (60.93)
Three-earner	3.3645 (11.08)	28.0893 (92.55)	28.5876 (19.45)	118.1448 (80.38)
Four-earner	1.2880 (4.24)	29.3773 (96.80)	16.1568 (10.99)	134.3016 (91.38)
More than four-earner	0.9725 (3.20)	30.3498 (100.00)	12.6720 (8.62)	146.9736 (100.00)
All-earners	30.3498 (100.00)		146.9736 (100.00)	

*Note:* Figures in parentheses are shares in total number of earners.

*Source:* Same as in Table 5.3.3.

TABLE 5.3.5  
Conversion of Household Frequency Distribution to Earner-Wise Frequency  
Distribution : Illustration for 'Two-Earner' Urban Households, 1975-76

Income ranges (Rs)	Two-earner households			Derived Frequency distribution of earners		
	Gross income (Rs. mil)	Number of earners (Mil.)	Per- earner income (Rs)	One-earner households	Two-earner households	One+two— earner house holds
(1)	(2)	(3)	(4)=2 ÷ 3	(5)	(6)	(7)=5 + 6
0-1200	36.20	0.0800	452	0.2436	1.6288	1.8724
1201-2400	1362.74	1.5488	880	1.5524	3.4976	5.0500
2401-3600	1872.34	1.3016	1438	3.0207	1.6262	4.6469
3601-4800	4529.85	2.1960	2063	2.2715	1.1332	3.4047
4801-6000	2340.58	0.8890	2633	2.3349	1.2928	3.6277
6001-7500	2468.20	0.7372	3348	1.5597	NIL	1.5597
7501-10000	4897.03	1.1332	4321	1.5751	0.4680	2.0431
10001-15000	7736.27	1.2928	5984	0.9483	0.4454	1.3937
15001-20000	4035.94	0.4680	8624	0.5236	0.1404	0.6640
20001-25000	3632.74	0.3194	11374	0.1764	0.0576	0.2340
25001-30000	1712.68	0.1260	13593	0.1080	NIL	0.1080
30001-40000	2392.61	0.1404	17041	0.0720	NIL	0.0720
40001-60000	1388.59	0.0576	24107	0.0162	0.0234	0.0396
60000 & above	1079.08	0.0234	45114	0.0090	NIL	0.0090
	N	10.3134	—	14.4114	10.3134	24.7248

Source: As explained in the text.

classes which pertain to earners. A similar procedure is used to generate a frequency distribution for rural earner-wise income ranges. The details are given in Appendix 1.

The procedure deployed is admittedly crude. It is based on the crucial assumption that for any given household income range and earner-density the average per earner income is in fact the income earned by all earners in that group. The assumption clearly violates reality and is a possible source of error. But given the limitations of the underlying data and the nature of our enterprise we feel justified in treating the assumption as a necessary approximation.

The frequency distributions so obtained are not readily tractable to analytical manipulations. For that we need to fit analytical distributions to the given frequency distributions. We note that our frequency distributions resemble typical distributions for income, wealth and consumption, in which a large number of earners are concentrated at relatively low levels of income, while relatively fewer earners are scattered at the higher income levels. Figure V.1 shows a plot of the urban frequency distribution. It has been found that this type of frequency distribution can be approximated by a log-normal function. The lognormal is a two parameter distribution, with  $\mu$  as the "location" parameter and  $\sigma$  as the "dispersion" parameter. It recommends itself because of its analytical tractability.

We fitted lognormal functions to our urban and rural frequency distributions and tested for "goodness of fit" with the  $\chi^2$ -statistic. The details are given in Appendix 1. Basically, the fit was "good" (i.e., above 90 per cent confidence level) for the urban frequency distribution. In the rural case, the lognormal was a "good fit" only in the case of the single-earner distribution. For the all-earners case we assumed the lognormal to be a crude approximation, with  $\sigma$ , the dispersion parameter, being taken from the single-earner fitted distribution, and with  $\mu$  being given by the total number of earners and total rural income.

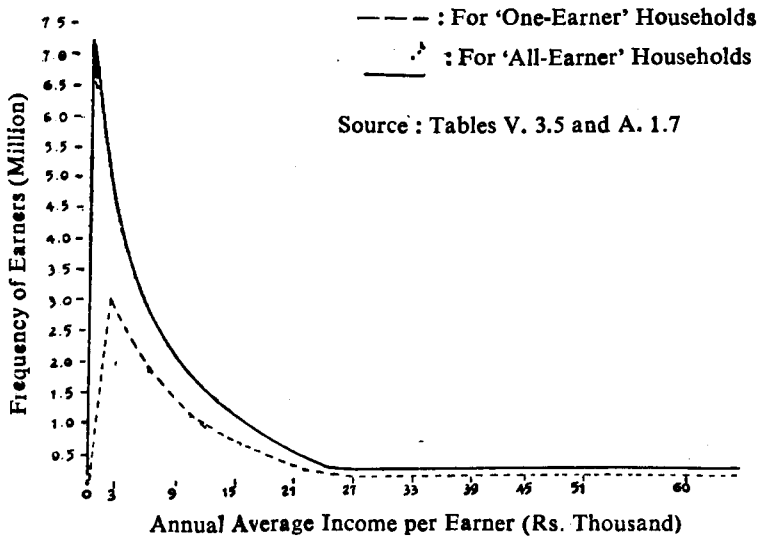
#### 4. Matching the NCAER and NAS totals of Gross Personal Income

Based on the survey results and the sampling fractions used, the NCAER study estimates gross household personal income at Rs 45.1 thousand crore in 1975-76. The corresponding estimate of gross personal income from the NAS for the same year is Rs 64.5 thousand crore<sup>5</sup>. That is, the NCAER total is just 70 per cent of the NAS total. How do we account for this discrepancy and what should we do about it?

First, as we noted earlier, the concept of gross personal income is almost identical in both data sources. So, lack of conceptual congruence is not a promising line of enquiry to explain the substantial divergence in the estimates. Second, some mileage can be had from adjustments in the population data. The NCAER reports a 1975-76 population total of 588.9 million, with 122.9 million in urban areas and 466.0 million in rural areas (the classification of urban and rural areas was based on the 1971 census). But in the light of the final totals for the 1981 census we interpolate an estimate of 616.7 million for all India in 1975-76. Following Bhalla and Vashista (1983) we use this information to compute an adjustment factor ( $616.7/588.9=1.047$ ) to be applied to the NCAER total of gross household income. This yields a revised total of Rs 47.3 thousand crore. But this total is still only 73.3 per cent of the corresponding NAS figure; the two dilemmas of how to explain the discrepancy and what to do about it remain.

We resolve the first dilemma by choosing to treat the NAS estimate of gross personal income as the "controlling" total. We justify this decision on the following grounds. First, as Bhalla and Vashista (1983, p. 11) observe, national accounts data command a "natural" authority. National and international bodies regularly analyse and appraise economic performance on their basis. Planning, investment allocation, regional policy, fiscal and monetary policies all habitually rely on the national accounts statistics. The overwhelming

**FIGURE V.1**  
**Frequency Distribution for Urban India by Income**  
**Ranges for Earners: 1975-76**  
**(Based on NCAER Data)**





bulk of macroeconomic research is predicated on the accuracy of national accounts data. Second, and perhaps more substantively, the machinery for compiling national accounts data reflects a very considerable history of investment and effort in statistical systems, data compilation and analysis, an investment which is many times greater than that devoted to a single (and relatively small) household survey. Third, the phenomenon of household surveys yielding lower totals for macroeconomic aggregates than national accounts is quite common, especially in developing countries. The divergence is usually attributed to systematic incentives for under-reporting survey responses, such as fear of fiscal consequences. Fourth, as argued in a later section and Appendix 2, we have reason to believe that the estimates of national income are themselves biased downwards by tax evasion and related behaviour. So considering them as controlling totals imparts, if anything, a downward bias to our estimates of tax-evaded income.

The decision to accept the NAS estimate of gross personal income as the controlling total still leaves open the question of *how* we adjust the NCAER distributions for urban and rural households to take account of the Rs 17.2 thousand crore difference between the (population-adjusted) NCAER total and the NAS total. We proceed as follows. First, the (population-adjusted) NCAER all-India total of gross household income is split between urban and rural sectors in the same proportion as the unadjusted NCAER estimate (Table 5.4.1). This assumes that the shares of urban and rural sectors in the adjusted population total for 1975-76 are the same as in the unadjusted data and, further, that the ratio of earners to population also remains unchanged for both urban and rural sectors.

Second, we allocate the "missing income" of Rs 17.2 thousand crore between the urban and rural sectors according to three different sets of assumptions. Case 1 represents the simplest assumption, namely, that *all* earners underreport income by the same proportion. This assumption can be decomposed into two constituent assumptions: first, that urban earners underreport income to the same degree as rural

earners; and second, that the degree of underreporting is uniform across all income ranges within the urban and rural sectors. From the viewpoint of gauging taxable income both assumptions are conservative. We would expect the proportion of underreporting to be higher among urban earners, partly because the opportunities for reaping black incomes are skewed in their favour and partly because the exemption of agricultural incomes from taxation reduces the incentive to underreport incomes among rural earners as compared to urban ones. Similarly, given a progressive structure of income taxation the probability of underreporting income (to a household survey) is likely to increase with income, in tandem with the probability to underdeclare income to tax authorities.

TABLE 5.4.1

Population-Adjusted Estimates of Gross Household Income (NCAER) and Earners for Urban and Rural India, 1975-76

Item	(Income in Rs crore. Population and earners in million)		
	Urban India	Rural India	All India
Total income (NCAER unadjusted)	14984	30167	45151
Number of earners (unadjusted)	30.35	146.91	177.26
Population (NCAER)	122.90	466.00	588.90
Population (1981 census)	128.70	487.98	616.68
Adjustment factor (Population as per 1981 census ÷ population as per NCAER)	1.047	1.047	1.047
Total income (adjusted) <sup>1</sup>	15691	31590	47281
Number of earners <sup>2</sup> (Adjusted)	31.78	153.81	185.69

*Note:* 1, 2. For details of these computations, see Appendix 1.

*Source:* As explained in the text.

The equiproportionate scaling up of all incomes in Case 1 implies that the ratio of total urban incomes to total rural incomes remains the same as in the unadjusted NCAER data, that is, in the ratio of 149.8 : 301.7, which is almost exactly 1:2. Thus, in Case 1 the "missing income" of Rs 17.2 thousand crore is allocated in the ratio of 1:2 to urban versus rural earners.

Cases 2 and 3 explore less conservative scenarios by altering this ratio (for allocating the "missing income") in favour of urban earners. In Case 2 the ratio is taken to be 1:1.5 and in Case 3 it is taken as 1:1. In effect these Cases assume that the underreporting of incomes is systematically greater for urban incomes than for rural incomes. Table 5.4.2 presents the consequences of these different assumptions for

TABLE 5.4.2

**Gross Personal Income Distributed under Three Different Scenarios  
for Urban and Rural India, 1975-76**

	(Rs crore)		
Item	Urban India	Rural India	All India
<i>Gross personal income</i> (unscaled, population- adjusted NCAER estimates)	15691.0	31590.0	47281.0
<i>Alternative Allocation of "Missing Income"<sup>1</sup></i>			
(a) U:R = 1:2	5740.3	11480.7	17221.0
(b) U:R = 1:1.5	6888.4	10332.6	17221.0
(c) U:R = 1:1	8610.5	8610.5	17221.0
<i>Scaled-up gross personal income</i>			
(a) U:R = 1:2	21431.3	43070.7	64502.0
(b) U:R = 1:1.5	22579.4	41922.6	64502.0
(c) U:R = 1:1	24301.5	40200.5	64502.0

*Note:* 1. Missing income for all-India was Rs 17221 crore in 1975-76. For the first scenario (U:R = 1:2) the scaled-up urban total, Rs 21431.3 crore has been obtained by adding one-third of Rs 17221 crore that is, Rs 5740.3 crore to the unscaled urban (NCAER) estimate of Rs 15691 crore. A similar procedure was followed for the other two scenarios by using the corresponding urban-to-rural ratios.

*Source:* As explained in the text.

the overall split of gross personal income (scaled up to the NAS total) between urban and rural earners. The three different assumptions for allocating "missing income" imply different degrees of underreporting for urban and rural earners. In Case 1 all earners underreport by 27 per cent. In Case 2 urban earners underreport by 31 per cent, while rural earners underreport by 25 per cent. In Case 3 underreporting by urban earners climbs to 35 per cent, while underreporting by rural earners falls to 21 per cent. Note that none of these assumptions is particularly extreme. A really extreme assumption—one whose implication we do not explore—would be that *all* the "missing income" is attributable to underreporting of urban incomes. This would imply that urban incomes were underreported by more than 50 per cent.

However, in all three Cases we retain the assumption that, *within* urban and rural categories, the proportion of underreporting is invariant across income ranges. This permits us to readily modify the log-normal distributions fitted to the urban and rural distributions in the previous section. The details of the procedure are explained in Appendix 1. In essence, the equiproportionate "increase" in the income of all earners in a given frequency distribution leaves the relative relationship of each earner to all others unchanged, and is equivalent to holding the dispersion parameter,  $\sigma$ , constant. The different "scaling up" assumptions—corresponding to the different assumptions for allocating "missing income"—simply lead to different values for  $\mu$  for each of the urban and rural distributions in the three scenarios. Clearly, for a given urban or rural distribution, the greater the proportionate scaling up, the higher is the amount of income falling in upper income ranges.

This can be seen from Tables 5.4.3 through 5.4.5, which show the details of the estimated distributions of gross personal income by (earner-wise) income ranges for Urban India, Rural India and all-India.

At this stage it is pertinent to ask whether the various assumptions and procedures that we have adopted to go from the raw household-based NCAER information to earner-wise

distributions, scaled up to match the NAS total of gross personal income, may not have done rough violence to reality. In the absence of actual information on the earner-wise distribution of income we cannot give a direct answer to this question. However, it may be suggestive to compare the size distribution of income associated with our derived earner-wise distribution with the size distribution of income implied by the raw NCAER data. Columns (4) and (5) of Table 5.4.6 do this. It is interesting, and reassuring, to observe that the size distributions are remarkably similar. Of course, there is no theorem which says that a size distribution based on household incomes should be similar to the corresponding size distribution based on earners. Nevertheless, we offer Table 5.4.6 as heuristic evidence in support of the assumptions and procedures that we have deployed to derive earner-wise distributions, consistent with the NAS controlling total for gross personal income.

TABLE 5.4.3

Estimated Distribution of Gross Personal Income by Income Ranges  
for Earners—Urban India 1975-76

Income ranges (Rs) for earners	Gross personal income under		
	Case 1	Case 2	Case 3
	U:R = 1:2	U:R = 1:1.5	U:R = 1:1
1-1200	154.75	138.87	113.76
1201-2400	894.94	833.21	768.85
2401-3600	1497.99	1457.61	1379.91
3601-4800	1652.05	1625.35	1676.72
4801-6000	1740.94	1690.26	1770.03
6001-7500	2015.04	1985.44	2043.19
7501-10000	2866.08	2989.53	3060.19
10001-15000	3846.10	4107.75	4393.71
15001-20000	2312.96	2400.96	2870.07
20001-25000	1340.93	1560.49	1796.01
25001-30000	867.97	1033.35	1166.65
30001-40000	953.61	1096.13	1363.64
40001-60000	708.45	831.64	1028.45
Above 60000	581.19	830.42	871.82
All Income ranges	21433.00	22581.00	24303.00

Source: As explained in the text.

TABLE 5.4.4

**Estimated Distribution of Gross Personal Income by Income  
Ranges for Earners—Rural India, 1975-76**

(Rs crore)

Income range for earners (Rs)	Gross personal income under		
	Case 1 U:R = 1:2	Case 2 U:R = 1:1.5	Case 3 U:R = 1:1
1-1200	2939.35	3003.94	3243.30
1201-2400	8447.39	8868.26	8670.95
2401-3600	8380.84	8269.94	8179.13
3601-4800	6091.41	5831.58	5753.42
4801-6000	4296.62	4281.32	3700.30
6001-7500	3613.76	3452.52	3244.69
7501-10000	3443.24	3326.89	2975.63
10001-15000	2780.86	2581.72	2306.14
15001-20000	899.13	838.86	700.29
20001-25000	345.26	307.02	260.89
25001-30000	142.73	131.11	110.01
30001-40000	104.12	89.13	74.86
40001-60000	37.49	33.38	25.96
Above 60000	1547.80	906.33	954.43
All income ranges	43070.00	41922.00	40200.00

*Source:* As explained in the text.

## 5. The Derivation of Taxable Income

The derivation of (approximate) earner-wise distributions which are consistent with the NAS total for gross personal income was a necessary preliminary stage. We now turn to the heart of the matter: the estimation of taxable non-corporate income. We begin by emphasising certain caveats. First, given the complexity of the Indian Income Tax, Act, we cannot hope to account for all the exclusions, exemptions, deductions and allowances which apply to different source components of income. All we can attempt is to gauge the effects of the

**TABLE 5.4.5**  
**Estimated Distribution of Gross Personal Income by Income Ranges for Earners - All India, 1975-76**

Income ranges for earners (Rs)	Gross personal income under			(Rs crore)
	Case 1	Case 2	Case 3	
	U:R = 1:2	U:R = 1:1.5	U:R = 1:1	
1-1200	3094.10	3142.13	3357.06	
1201-2400	9342.33	9701.47	9439.80	
2401-3600	9878.83	9727.55	9559.04	
3601-4800	7743.46	7456.93	7430.14	
4801-6000	6037.56	5971.58	5470.33	
6001-7500	5628.80	5437.96	5287.88	
7501-10000	6309.32	6316.42	6035.82	
10001-15000	6626.96	6689.47	6699.85	
15001-20000	3212.09	3239.82	3570.36	
20001-25000	1686.19	1867.51	2056.90	
25001-30000	1010.70	1164.46	1276.66	
30001-40000	1057.73	1185.26	1438.50	
40001-60000	745.94	865.02	1054.41	
Above 60000	2128.99	1736.75	1826.25	
All income ranges	64503.00	64503.00	64503.00	

Source: As explained in the text.

**TABLE 5.4.6**  
**Size Distribution of Income Based on Derived Earner-Wise Data and the NCAER Raw Household Data for Urban and Rural India, 1975-76**

Fractiles	Proportion of Earners			Proportion of households (NCAER raw data) <sup>1</sup> All India
	Urban India	Rural India	All India	
Bottom 20%	4.55	5.80	5.39	5.77
Bottom 40%	13.66	16.88	15.81	15.69
Top 20%	49.21	25.90	47.00	49.34
Top 10%	31.10	28.39	29.29	33.90

Note: 1. Figures in this column are taken from Bhalla and Vashishta (1983).

Source: As explained in the text.

major ones. Second, the "scaling up" procedure that we adopted in the previous section implicitly assumed uniform degrees of underreporting for all source components of income. Though this is a strong assumption, we shall argue later that it biases our results in a conservative direction, namely, towards underestimating total taxable income, and hence, tax-evaded income. Third, in going from gross personal income to estimates of taxable income, the exercise entails estimation of the quantitative significance of the principal exclusions and deductions. These estimates are based on strong assumptions and scanty data. Such weaknesses are inherent in the nature of the exercise. All we can do is to spell out our assumptions and leave it to the reader to judge the validity of the results obtained.

Our basic approach is to begin with the totals of gross personal income associated with our estimated distributions (earner-income-wise) of urban and rural income and then to proceed to subtract, by stages, tranches of income corresponding to the estimated application of the major exclusions, exemptions and deductions, until one is left with estimates of total assessable income. It is this total of assessable income (urban and rural) which is compared in the next section, to estimates of actual assessed income, with the difference being a measure of noncorporate tax-evaded income.

The exclusions, exemptions and deductions which we try to take into account are as follows:

- (i) the *exclusion of agricultural income*;
- (ii) the *exclusion of house rent allowances (HRA)*, up to certain specified limits, for salary earners;
- (iii) the *exemption (in the hands of salary earners) of employers' contribution to provident funds*;
- (iv) the *standard deduction* pertaining to salary incomes;
- (v) the *deduction of depreciation* from business income;
- (vi) all "*Chapter VI A deductions*", including those pertaining to Sections 80C and 80L of the Income Tax Act, which are designed to enhance incentives for financial savings; and
- (vii) the *exemption limit* for income taxation



We shall consider each of these separately. But before we do so, we note that the list highlights two general points. First, most of the exclusions or deductions pertain not to income in general, but to particular source components of income. This means that we have to have recourse to information on different source components of income. Fortunately, the NCAER survey data provide valuable information, but, as we shall see, their use for our purposes requires additional assumptions. Second, the list of exemptions and deductions is far from complete. Just to take one example it makes no reference to deductions relating to income from housing. Our only defence here is to reiterate that we believe that we have accounted for the *quantitatively important* exclusions, exemptions and deductions, and that is both necessary and sufficient for the kind of "orders of magnitude" exercise that we are engaged in here. In any case, the data necessary to take account of other exemptions and deductions were simply not available.

*a. Source component of income : use of the NCAER Survey data.* The underlying NCAER survey information is classified according to nine different source components of income. For our purposes, it is generally convenient to aggregate this information into four income categories as follows:

<i>Our Categories</i>	<i>NCAER Survey Components</i>
1. Agricultural Income	Agricultural Income, Livestock Income, Agricultural Wages
2. Salary Income	Salary Non-Agricultural Wages
3. Business Income	Business Income
4. Other Income	Income from Housing Transfers Dividend and Interest

The quantitative importance of different source components of income, according to these two different income classifications, is given for urban and rural India in Table 5.5.1.

In the NCAER survey the information on source components of income is available according to *household* income

ranges (or classes). To make use of this information we have first to transform the information to *earner* income classes. This transformation is accomplished by applying the same procedure that was used in Section 3 to transform the distribution of *households* by *household* income ranges into a distribution of *earners* by *earner* income ranges. Where, earlier, earners were reshuffled across income ranges, this time it is the income of these earners—disaggregated by source components—which is regrouped into earner-wise

TABLE 5.5.1

Composition of Gross Household Income by Source Components for Urban and Rural India, 1975-76

Source of component of income	(Per cent)	
	Urban India	Rural India
<b>A. NCAER classification</b>		
Agricultural income	3.61	47.88
Livestock income	1.13	6.55
Business income	26.30	7.94
Salary income	49.12	9.51
Agrioultural wage income	0.51	13.27
Non-agricultural wage income	10.59	8.36
Housing income	5.17	3.61
Dividends and interest	0.35	0.12
Transfer income	3.22	2.75
Gross income	100.00	100.00
<b>B. Our classification</b>		
Agricultural income (including livestock and agricultural wages)	5.25	67.71
Salary income (including non-agricultural wage income)	59.71	17.87
Business Income	26.30	7.94
Other income (including housing income, dividends and interest, and transfer income)	8.74	6.48
Gross income	100.00	100.00

income ranges. An illustration of the procedure is given in Appendix 1. The net results (shown in tables 5.5.2 and 5.5.3) are distributions of income, disaggregated by source components, and according to earner-wise income classes. We should emphasise that these regroupings of income are consistent with the frequency distributions of earners by earner-wise income ranges that were derived earlier.

The information in Tables 5.5.2 and 5.5.3 relates to earner-wise income distributions prior to the scaling up exercises, conducted in section 4, to match with the NAS controlling total of gross personal income. However, given our assumption that the scaling up exercises are neutral with respect to the different income components, it turns out that the share of each income component in the gross income of any given income range remains unaltered by the scaling up. This means that the weights derived from Tables 5.5.2 and 5.5.3 can be used to compute the distribution of gross income (by component and by income class) in the case of the three pairs (urban and rural) of scaled up distributions obtained under our three different scenarios in the previous Section.<sup>6</sup> This is done.

To estimate the effect of the standard deduction on salary income it is also necessary to estimate *frequency distributions* for the salary component. This is accomplished by applying the weights (for the salary component) derived from Tables 5.5.2 and 5.5.3 to the frequency distributions of gross income estimated earlier. This yields frequency distributions for salary income according to the 14 major income ranges shown in our tables. To facilitate more precise estimation of the aggregate of standard deductions, lognormal distributions have been fitted to these frequency distributions for salary income. Appendix 1 provides more detail.

We now proceed to estimate the effects of the principal exclusions, deductions and exemptions.

*b. Exclusion of agricultural incomes.* Under Section 10 of the Income Tax Act, incomes from agriculture are exempt from tax. Strictly speaking, full exemption does not extend to livestock income, the taxation of which is governed by

Section 80 JJ. However, the exemption provisions under this section are so liberal, that we decided to err on the conservative side and assume that all livestock income was tax exempt. Similarly, given the low level of agricultural wages, it is a reasonable approximation to assume that all agricultural wages are exempt from taxation. Thus, we proceeded on the basis that all income connoted by our broad notion of agricultural income was exempt from tax.

Since we have already computed the distribution of agricultural income for both the urban and rural cases, corresponding to our three different scenarios of scaling up, it is a relatively simple matter to subtract the entire amount, in each income class, from the corresponding total of gross income in that class, as a first step in the journey from total gross income to assessable income.

Tables 5.5.4. to 5.5.9 present the result of the step-wise subtractions of the amounts corresponding to the different exemptions and deductions, separately for urban and rural India and for each of our three different scenarios of scaling up. The amount for subtraction attributed to the exemption of agricultural incomes is shown in column (3) of each of these tables.

*c. Exclusion of house rent allowance.* Under Section 10 (13A) of the Income Tax Act, house rent allowance (HRA) paid to salary earners by their employers is exempt from tax subject to certain specified limits. It did not prove possible to directly apply the tax norms to estimate the quantitative effect of this exemption. Instead, we relied on some earlier work by Bagchi (1975).<sup>7</sup> Based on a sample of 1,000 salary earners in Delhi, taken from statements furnished by employers to the Income Tax authorities regarding salaries paid to their employees for 1971-72 (and deductions thereon), Bagchi had computed average rates for HRA and conveyance (taken together) as a proportion of gross income across different income groups.

This use of Bagchi's rates poses some minor difficulties for us. First, the estimated rates include deductions for

TABLE 5.5.2

**Unscaled Gross Personal Income Distribution by Income Ranges for Earners, Urban India, 1975-76**

Income ranges for earners  (Rs)	Agricul tural Income	Livestock income	Business income	Salary Income
(1)	(2)	(3)	(4)	(5)
0-1200	73.27	-11.60	167.58	141.56
1201-2400	586.49	243.70	2870.04	1708.89
2401-3600	451.07	346.04	4379.53	4187.97
3601-4800	372.45	119.99	3747.32	9247.32
4801-6000	1043.86	234.41	5787.96	14004.84
6001-7500	397.42	292.14	2525.46	7963.06
7501-10000	609.56	213.35	4113.53	12704.42
10001-15000	572.78	61.51	5261.96	10027.74
15001-20000	574.56	101.27	3721.69	6707.99
20001-25000	259.50	27.92	3110.32	3077.56
25001-30000	179.20	-1.17	1621.84	1807.43
30001-40000	187.05	57.71	585.33	1439.40
40001-60000	48.44	-0.90	1191.50	518.72
Above 60000	66.71	6.35	412.48	251.20
All income ranges	5422.36	1690.72	39496.54	73788.10

*Source:* As explained in the text.

(Rs million)

Agricultural wage income	Non-Agricultural wage income	Housing income	Dividend and interest income	Transfer income	Gross income
(6)	(7)	(8)	(9)	(10)	(11)
276.62	1555.23	52.20	nil	39.20	22294.06
337.32	6567.41	492.63	1.47	367.56	13175.51
88.14	4873.91	736.82	15.44	662.39	15741.31
56.64	1916.70	897.83	11.73	203.23	16573.21
nil	698.20	1009.79	82.97	841.98	23704.01
nil	230.27	475.55	37.29	739.72	12660.91
nil	5.27	756.76	55.77	701.61	9160.27
nil	13.14	1537.51	100.20	328.39	17903.23
nil	nil	673.49	124.41	509.71	12413.12
nil	nil	473.38	70.33	66.15	7085.16
nil	nil	312.31	9.72	71.82	4001.15
nil	1.26	206.97	7.48	nil	2485.20
nil	nil	96.15	7.66	nil	1861.57
nil	nil	41.00	1.67	nil	779.41
758.72	15861.39	7762.39	526.14	4531.75	149838.12

TABLE 5.5.3

Unscaled Gross Personal Income Distribution by Income Ranges for Earners, Rural India, 1975-76

Income ranges for earners (Rs)	Agricultural income	Livestock income	Business income	Salary income
(1)	(2)	(3)	(4)	(5)
0-1200	14315.70	1439.13	1376.53	540.00
1201-2400	42437.35	6941.14	5791.82	5234.06
2401-3600	26433.66	4220.41	3596.81	5322.58
3601-4800	17511.91	3291.04	3692.91	5553.61
4801-6000	9306.43	1166.24	1780.96	3388.37
6001-7500	10633.67	1776.98	1054.37	4459.42
7501-10000	9128.17	622.93	1703.44	2648.61
10001-15000	9542.04	264.83	1725.14	1192.98
15001-20000	3010.49	-13.49	325.48	300.78
20001-25000	1619.28	69.89	662.40	0.00
25001-30000	266.47	8.69	522.72	58.10
30001-40000	15.08	2.47	0.00	0.00
40001-60000	190.11	-3.29	0.00	0.00
Above 60000	0.00	0.00	1705.68	0.00
All Income Ranges	144410.36	19786.97	23938.26	28698.37

Source: As explained in the text.

(Rs million)

Agricultural wage income	Non-agricultural wage income	Housing income	Dividend and interest income	Transfer income	Gross Income
(6)	(7)	(8)	(9)	(10)	(11)
20250.33	7548.91	1321.48	0.99	632.95	47473.76
15931.96	10364.72	3039.15	47.19	1900.84	91752.13
3053.84	4767.54	1964.20	9.81	1659.20	51105.05
650.30	2074.49	1456.77	8.96	1443.11	35699.04
13844.44	402.19	701.61	3.99	432.14	17337.57
5.18	27.90	896.28	1.79	285.28	19273.80
0.09	1.94	626.15	75.17	537.63	15361.02
0.00	0.00	493.52	26.85	776.12	14150.93
0.00	0.00	130.66	5.17	54.00	3816.16
0.00	0.00	70.26	51.88	23.76	2497.47
0.00	0.00	71.33	127.44	0.00	1054.74
0.00	0.00	4.23	0.00	0.00	108.17
0.00	0.00	2.79	0.00	9.00	198.60
0.00	0.00	109.08	0.00	0.00	1814.76
40030.05	25187.69	10887.51	359.24	7753.96	301607.10



TABLE 5.5.4

Step-wise Derivation of the Distribution of 'Net Income' from Gross Income for Urban India, 1975-76, Case 1 ('Missing Income' Allocated in Ratio of U:R=1:2)

Income ranges for earners	Gross income	Agricultural income	Depreciation	Standard deductions	H.R.A. Deductions
(1)	(2)	(3)	(4)	(5)	(6)
1-1200	154.75	28.49	1.03	26.32	0.00
1201-2400	894.94	82.52	17.79	117.71	0.00
2401-3600	1497.99	87.61	38.03	185.77	0.00
3601-4800	1652.05	56.74	34.09	189.68	0.00
4801-6000	1740.94	96.92	38.31	202.53	50.02
6001-7500	2015.04	114.07	36.67	222.61	67.55
7501-10000	2866.08	128.10	56.15	321.46	97.53
10001-15000	3846.10	140.61	103.15	396.11	109.88
15001-20000	2312.96	122.01	63.28	208.53	67.42
20001-25000	1340.93	56.56	53.71	125.61	58.33
25001-30000	867.97	40.09	32.10	71.06	39.06
30001-40000	953.61	97.74	20.37	64.43	52.43
40001-60000	708.45	17.53	40.92	37.90	18.90
Above 60000	581.19	56.69	28.00	98.70	7.12
All Income Ranges	21433.00	1125.68	563.68	2268.42	568.24

Source: As explained in the text.

(Rs crore)

Employers' contribu- tion to P.F.	Ch.VIA rates	Sum of cols. 3 through 7	Col.2 minus col.9	Amount of ch.VIA deductions	Net income (Col. 10-11)	Cumula- tive of Col. 12.
(7)	(8)	(9)	(10)	(11)	(12)	(13)
3.79	0.3171	59.63	95.11	30.16	64.95	64.95
16.96	0.3171	234.98	659.96	209.27	45.69	515.64
26.77	0.3171	338.19	1159.80	367.77	792.03	1307.67
27.33	0.3171	307.84	1344.21	426.25	917.96	2225.63
29.18	0.1270	416.95	1323.99	168.94	1155.05	3380.68
32.07	0.1276	472.97	1542.07	196.77	1345.30	4725.98
46.31	0.1051	649.55	2216.53	232.96	1983.57	6709.55
62.59	0.1071	812.35	3033.75	324.91	2708.83	9418.39
37.95	0.0988	499.19	1813.77	179.20	1634.57	11052.96
24.96	0.0790	319.17	1021.70	80.72	941.04	11994.00
15.99	0.0914	198.30	669.67	61.21	608.47	12602.46
18.12	0.0712	253.09	700.53	49.88	650.65	13253.11
14.79	0.0742	130.04	578.41	42.92	535.49	13788.60
8.40	0.0585	198.90	382.21	22.36	359.85	14148.45
365.21	N.A.	4891.23	16541.77	2393.32	14148.45	14148.45

TABLE 5.5.5

Step-Wise Derivation of the Distribution of "Net Income" From Gross Income for Urban India, 1975-76. Case 2 ("Missing Income" Allocated in Ratio of U:R 1:1.5)

Income ranges for earners	Gross income	Agricultural income	Depreciation	Standard deductions	H.R. A. deductions
(1)	(2)	(3)	(4)	(5)	(6)
1-1200	138.87	25.53	0.90	22.58	0.00
1201-2400	833.21	76.71	16.16	114.80	0.00
2401-3600	1457.51	85.11	36.14	180.30	0.00
3601-4800	1625.35	55.73	32.75	199.62	0.00
4801-6000	1690.26	93.94	36.32	180.38	45.82
6001-7500	1985.44	112.21	35.29	218.53	66.77
7501-10000	2989.53	133.41	57.20	335.08	102.37
10001-15000	4107.75	149.94	107.50	422.80	118.08
15001-20000	2400.96	126.45	64.16	233.99	76.27
20001-25000	1560.49	65.72	61.05	132.96	62.21
25001-30000	1033.35	47.66	37.33	80.04	44.11
30001-40000	1096.13	112.16	22.87	75.26	61.76
40001-60000	831.64	20.55	46.91	42.63	21.34
Above 60000	830.41	80.88	39.17	123.55	8.64
All income ranges	22581.00	1185.98	593.87	2362.48	607.37

*Note:* Totals may not tally due to rounding.

*Source:* As explained in the text.

(Rs crore)

Employers' contribution to P.F.	Ch.VI A rates	Sum of Cols. 3 through 7	Col.2 minus col. 9	Amount of Ch.VI A deductions	Net income (col. 10-11)	Cumulative of col. 12
(7)	(8)	(9)	(10)	(11)	(12)	(13)
3.17	0.3171	52.18	86.69	27.49	59.20	59.20
16.10	0.3171	223.78	609.42	193.25	416.18	475.38
25.29	0.3171	326.84	1130.76	358.57	772.20	1247.58
28.00	0.3171	316.10	1309.24	415.16	894.08	2141.65
25.39	0.1276	381.70	1308.55	166.97	1141.58	3283.84
30.65	0.1276	463.45	1521.98	194.21	1327.78	4511.02
46.99	0.1051	675.08	2314.48	243.25	2071.23	6582.25
65.02	0.1071	863.44	3244.31	347.47	2896.84	9579.09
41.50	0.0988	542.37	1868.59	183.60	1674.96	11254.06
25.73	0.0790	347.67	1212.82	95.81	1117.01	12371.07
17.45	0.0914	226.59	806.76	73.74	733.02	13104.08
20.63	0.0712	292.68	803.45	57.21	746.24	13850.33
16.27	0.0742	147.70	683.94	50.75	633.19	14483.52
9.85	0.0585	262.09	568.34	33.25	535.10	15018.62
371.94	N.A.	5121.64	17459.36	24440.74	15018.62	15019.62

TABLE 5.5.6

Step-wise Derivation of the Distribution of "Net Income" from Gross Income for Urban India, 1975-76, Case 3 ("Missing Income" Allocated in Ratio of U:R= 1:1

Income ranges for earners (Rs)	Gross income	Agricultural income	Depreciation	Standard deductions	H.R.A. deductions
(1)	(2)	(3)	(4)	(5)	(6)
1-1200	113.76	21.00	0.73	20.12	0.00
1201-2400	768.85	71.07	14.72	105.67	0.00
2401-3600	1379.91	80.90	33.73	165.94	0.00
3601-4800	1676.72	57.72	33.31	190.80	0.00
4801-6000	1770.03	98.77	37.50	199.79	51.67
6001-7500	2043.19	115.94	35.81	235.33	71.81
7501-10000	3060.19	137.11	57.72	353.54	107.87
10001-15000	4393.71	161.03	113.46	449.41	125.28
15001-20000	2870.07	152.07	75.60	261.98	85.30
20001-25000	1796.01	75.93	69.27	152.27	71.16
25001-30000	1166.65	54.03	41.55	93.27	51.44
30001-40000	1363.64	140.10	28.04	89.47	73.47
40001-60000	1028.45	25.52	57.18	52.15	26.10
Above 60000	871.81	85.25	40.54	113.75	11.06
All income ranges	24303.00	1276.42	639.16	2483.49	675.16

Note: Totals may not tally due to rounding.

Source: As explained in the text.

(Rs crore)

Employers' contributions to P.F.	Ch.VIA rates	Sum of cols.3 through 7	Col.2 minus col.9	Amount of Ch.VIA deductions	Net income (col. 10-11)	Cumulative of col.12
(7)	(8)	(9)	(10)	(11)	(12)	(13)
2.69	0.3171	44.54	69.22	21.95	47.27	47.27
14.11	0.3171	205.57	563.28	178.62	384.67	431.94
22.16	0.3171	302.73	1077.18	341.57	735.61	1167.55
25.47	0.3171	307.30	1369.42	434.24	935.18	2102.72
26.67	0.1276	414.40	1355.63	172.98	1182.66	3285.38
31.42	0.1276	490.31	1552.88	198.15	1354.73	4640.11
47.20	0.1051	703.44	2356.75	247.69	2109.06	6749.17
65.76	0.1071	914.94	3478.78	372.58	3106.20	9855.37
44.24	0.0988	619.19	2250.88	222.39	2028.50	11883.87
28.05	0.0790	396.68	1399.33	110.55	1288.78	13172.65
19.41	0.0914	259.69	906.96	82.90	824.06	13996.71
23.39	0.0712	354.47	1009.17	71.85	937.31	14934.03
19.00	0.0742	179.94	848.51	62.96	785.55	15719.57
12.02	0.0585	262.62	609.19	35.64	573.56	16293.13
381.58	N.A.	5455.81	18847.19	2554.06	16293.13	16293.13

TABLE 5.5.7

Step-wise Derivation of the Distribution of "Net Income" From Gross Income for Rural India, 1975-76, Case 1

Income ranges for earners  (Rs)	Gross in- come	Agri- cultural income	Depre- ciation	Stand- ard deductions	H.R.A. deduc- tions
(1)	(2)	(3)	(4)	(5)	(6)
1-1200	2939.35	2363.21	5.96	6.69	0.00
1201-2400	8447.39	6369.40	37.26	96.38	0.00
2401-3600	8380.84	5855.52	41.21	174.57	0.00
3601-4800	6091.41	3877.61	44.03	189.52	0.00
4801-6000	4296.62	2785.54	30.84	167.94	34.12
6001-7500	3613.76	2465.91	13.81	167.22	41.85
7501-10000	3443.24	2315.32	26.68	118.75	29.71
10001-15000	2780.86	2041.43	23.69	43.23	9.78
15001-20000	899.13	747.99	5.36	11.26	2.99
20001-25000	345.26	247.36	6.40	0.00	0.00
25001-30000	142.73	39.45	4.94	1.02	0.46
30001-40000	104.12	17.89	0.00	0.00	0.00
40001-60000	37.49	37.36	0.00	0.00	0.00
Above 60000	1547.81	0.00	101.66	0.00	0.00
All income ranges	43070.00	29163.99	341.84	976.58	118.91

Note: Totals may not tally due to rounding.

Source: As explained in the text.

(Rs crore)

Emp- loyers' contribu- tion to P.F.	Ch.VIA rates	Sum of cols.3 through 7	Col.2 minus col.9	Amount of Ch. VIA deduct- ions	Net income (col.10 -11)	Cumula- tive of col. 12
(7)	(8)	(9)	(10)	(11)	(12)	(13)
0.80	0.3171	2376.66	562.69	178.43	384.26	384.26
11.45	0.3171	6514.49	1932.90	612.92	1319.97	1704.24
20.74	0.3171	6092.04	2228.80	725.78	1563.02	3267.26
22.52	0.3171	4133.68	1957.73	620.79	1336.93	4604.19
19.96	0.1276	3038.40	1258.21	160.55	1097.67	5701.85
19.87	0.1276	2708.67	905.09	115.49	789.60	6491.46
14.11	0.1051	2504.57	938.67	98.65	840.02	7331.47
5.57	0.1071	2123.70	657.16	70.38	586.78	7918.25
1.68	0.0988	769.28	129.85	12.83	117.02	8035.28
0.00	0.0790	253.76	91.50	7.23	84.27	8119.55
0.19	0.0914	46.06	96.67	8.84	87.84	8207.38
0.00	0.0712	17.89	86.23	6.14	80.09	8287.47
0.00	0.0742	37.36	0.13	0.01	0.12	8287.59
0.00	0.0585	101.66	1446.15	84.60	1361.55	9649.15
116.90	N.A.	30718.22	12351.78	2702.64	9649.15	9649.15



TABLE 5.5.8

State-wise Derivation of the Distribution of "Net Income" From Gross Income for Rural India, 1975-76, Case 2

Income ranges for earners (Rs)	Gross income	Agri-cultural income	Depreciation	Standard deductions	H.R.A. deduction
(1)	(2)	(3)	(4)	(5)	(6)
1-1200	3003.94	2375.62	6.88	6.84	0.00
1201-2400	8868.26	6577.40	44.20	101.18	0.00
2401-3600	8269.94	5683.54	45.95	172.26	0.00
3601-4800	5831.58	3651.51	47.63	181.44	0.00
4801-6000	4281.32	2730.24	34.72	167.34	34.15
6001-7500	3452.52	2317.36	14.91	159.76	39.86
7501-10000	3326.89	2200.50	29.13	114.73	28.63
10001-15000	2581.72	1864.25	24.85	40.76	9.05
15001-20000	838.86	686.43	5.65	10.52	2.78
20001-25000	307.02	216.36	6.43	0.00	0.00
25001-30000	131.11	35.63	5.13	0.93	0.42
30001-40000	89.13	15.07	0.00	0.00	0.00
40001-60000	33.38	32.72	0.00	0.00	0.00
Above 60000	906.32	0.00	67.25	0.00	0.00
All income ranges	41922.00	28386.64	332.73	955.16	114.89

Note: Totals may not tally due to rounding.

Source: As explained in the text.

(Rs. crore)

Employers' contribution to P.F.	Ch. VIA rates	Sum of cols.3 through 7	Col.2 minus col. 9	Amount of Ch. VIA deductions	Net income (Col.10 -11)	Cumulative of col.12
(7)	(8)	(9)	(10)	(11)	(12)	(13)
0.73	0.3171	2390.14	613.80	194.64	419.16	419.16
11.59	0.3171	6734.36	2133.90	676.66	1457.24	1876.40
19.73	0.3171	5921.48	2348.46	744.70	1603.76	3480.17
20.78	0.3171	3901.36	1930.22	612.07	1318.15	4798.31
19.17	0.1276	2985.62	1295.70	165.33	1130.37	5928.68
18.30	0.1276	2550.20	902.33	115.14	787.19	6715.87
13.14	0.1071	2386.12	940.77	98.87	841.90	7557.77
4.99	0.1071	1943.29	638.43	68.38	570.05	8127.82
1.51	0.0988	706.88	131.98	13.04	118.94	8246.75
0.00	0.0790	222.79	84.23	6.65	77.58	8324.33
0.17	0.0914	42.29	88.82	8.12	80.70	8405.04
0.00	0.0712	15.07	74.06	5.27	68.79	8473.83
0.00	0.0742	32.72	0.00	0.05	0.61	8474.44
0.00	0.0585	67.25	839.07	49.09	789.98	9264.42
110.16	N.A.	29899.58	12022.42	2758.00	9262.42	9264.42

TABLE 5.5.9

Step-Wise Derivation of the Distribution of "Net Income" From  
Gross Income for Rural India, 1975-76. Case 3

Income ranges for earners (Rs)	Gross income	Agri- cultural income	Depre- ciation	Stan- dard deduc- tions	H.R.A. deduc- tions
(1)	(2)	(3)	(4)	(5)	(6)
1-1200	3243.30	2565.41	7.39	7.38	0.00
1201-2400	8670.95	6432.24	43.00	98.93	0.00
2401-3600	8179.13	5622.18	45.22	170.37	0.00
3601-4800	5753.42	3603.24	46.76	179.01	0.00
4801-6000	3700.30	2360.14	29.86	144.63	29.52
6001-7500	3244.69	2178.27	13.94	150.15	38.15
7501-10000	2975.63	1968.52	25.92	102.62	26.07
10001-15000	2306.14	1665.56	22.08	35.88	8.24
15001-20000	700.29	573.15	4.69	8.77	2.37
20001-25000	260.89	183.89	5.44	0.00	0.00
25001-30000	110.01	29.91	4.28	0.78	0.36
30001-40000	74.86	12.66	0.00	0.00	0.00
40001-60000	25.96	25.45	0.00	0.00	0.00
Above 60000	954.42	0.00	70.47	0.00	0.00
All income ranges	40200.00	27220.63	319.06	898.52	104.71

*Note* Totals may not tally due to rounding.

*Source:* As explained in the text.

(Rs crore)

Employers' contribution to P.F.	Ch. VIA rates	Sum of cols.3 through 7	Col.2 minus col.9	Amount of Ch. VIA deductions	Net income (col.10 11)	Cumulative of col.12
(7)	(8)	(9)	(10)	(11)	(12)	(13)
0.82	0.3171	2581.01	662.20	210.01	452.28	452.28
11.00	0.3171	6585.18	2085.77	661.40	1424.38	1876.66
18.94	0.3171	5856.71	2322.42	736.44	1585.98	3462.64
19.90	0.3171	3848.91	1904.51	603.92	1300.59	4763.23
16.08	0.1276	2580.23	1120.07	142.92	977.15	5740.37
16.69	0.1276	2397.20	847.49	108.14	739.35	6479.72
11.41	0.1051	2134.55	841.08	88.40	752.68	7232.41
4.32	0.1071	1736.08	570.06	61.05	509.00	7741.41
1.23	0.0988	590.21	110.08	10.88	99.20	7840.61
0.00	0.0790	189.32	71.57	5.65	65.91	7906.53
0.13	0.0914	35.46	74.55	6.31	67.74	7974.26
0.00	0.0712	12.66	62.20	4.43	57.77	8032.03
0.00	0.0742	25.45	0.51	0.04	0.47	8032.50
0.00	0.0585	70.47	883.95	51.71	832.24	8864.74
100.53	N.A.	28643.45	11556.55	2691.80	8864.74	8864.74

conveyance allowance, which were probably quite significant in 1971-72, since the standard deduction on salaries had not yet been instituted. To allow for this we assumed (after consultation with Bagchi) that two-thirds of the total deductions towards HRA plus conveyance would be attributable to HRA alone (the resulting rates are given in Table A. 1.30 of Appendix 1) Second, there is some question as to whether the income concepts pertaining to Bagchi's estimates are identical to those used here. However, since we have no way of correcting for any such mismatch we have assumed that the errors stemming from such definitional incongruence are small enough to be ignored for our purposes.

Accordingly, we have proceeded to apply the Bagchi-based rates to our distributions of salary income to estimate the corresponding deductions for urban and rural India in our three scenarios. The results of these exercises are summarised in column (6) of Tables 5.5.5 to 5.5.9.

d. *Employer's contribution to provident fund.* The concept of gross personal income in the NAS and in the NCAER survey includes all regular allowances, including employers' contribution to provident fund (P.F.), which nationally accrues to the concerned salary earners. But such contributions to P.F. are not taxable (see Schedule IV of the Income Tax Act) and hence we have to estimate these amounts and subtract them from gross income.

The total P.F. contributions of employers and employees were estimated (see Appendix 1) at Rs 964 crore in 1975-76. Assuming that the share of employers is 50 per cent, it works out to Rs 482 crore. Each of our three basic scenarios has associated with it a total of salary income (urban plus rural), which can be divided into the total of employers' P.F. contributions to yield corresponding "average rates". These average rates range from 2.6 to 2.9 per cent across the three scenarios (see Appendix 1).

By applying these average rates of P.F. contributions to the salary income distributions in our three scenarios, the deductions corresponding to P.F. contribution are estimated by income class. The results are shown in column (7) of Tables 5.5.4 to 5.5.9.

e. *Standard deductions for salary incomes.* The standard deduction is easily the most important deduction pertaining to salary incomes under Chapter IV of the Income Tax Act. The Finance Act of 1974 gives the formula relevant for 1975-76 (assessment year 1976-77). The rate of deduction was 20 per cent of salary income of an assessee upto Rs 10,000 per annum plus 10 per cent of the excess over Rs 10,000, subject to a maximum limit of Rs 3,500.

This formula is applied to our estimated frequency distributions for salary incomes. In a given distribution, for each income class, the mid-point of the class interval is designated as the representative income for all salary earners in that class. On this basis, the standard deduction is estimated for each income class. In the case of urban India our fitted lognormal distributions for salary income permit application of this procedure for finely divided class intervals. The results are aggregated to the 14-class level of disaggregation for presentation. However, for rural India the exercise has to be carried out at the level of the 14 broad income intervals in which the data are available. Column (5) of Tables 5.5.4 to 5.5.9 present the outcomes of these exercises.

f. *Deduction of depreciation from business income.* The notion of gross income in the NCAER survey and the corresponding NAS total of gross personal income are both gross of depreciation. But under Section 32, Chapter IV, of the Income Tax Act, depreciation of fixed capital used in business or profession is an allowable deduction. Therefore, in continuing our journey towards assessable income, we are obliged to estimate and deduct depreciation pertaining to business income.

The key problem here is to estimate a rate of depreciation which is appropriate for business income. The CSO estimated depreciation for the household sector at Rs 2,497 crore in 1975-76, which was 3.9 per cent of the CSO's estimate of gross personal income. It would be inappropriate to apply this rate to business income since gross personal income includes forms of income (such as wages and salaries and transfers) against which depreciation cannot be legitimately assigned. If we consider only those forms of income against

which depreciation *can* be assigned, then the computed rate comes to 7 per cent. However, this includes depreciation pertaining to agricultural incomes. And agricultural activities, it could be argued, are, on balance, less capital-intensive than most other activities which generate business income. So, the argument runs, the depreciation rate relevant for business income (in our sense) should be higher. This is a debatable proposition, since many forms of business-income-earning activities (such as trade and professions) make relatively little use of fixed capital. In any case, to err on the conservative side, we have assumed a depreciation rate (in relation to income) of 10 per cent for business income. Incidentally, this is identical to the depreciation assumption made by the NCAER (1972) in its survey of income and expenditure for 1967-68 with regard to income from self-employment.

This 10 per cent rate of depreciation is then applied to our distributions of business income in urban and rural cases and across our three basic scenarios, to estimate the quantum of deduction, by income class, in each case. The results are reported in column (4) of Tables 5.5.4 to 5.5.9.

*g. Chapter VIA deductions.* The exemptions and deductions considered thus far apply to particular source components of income, notably, agricultural income, salaries and business income. Chapter VIA deductions are applicable to all income, irrespective of source. The important deductions relevant for non-corporate assesseees include those under Section 80C (employee's contribution to P.F., life insurance premium paid, savings in other specified forms) and 80L (interest on bank deposits and certain specified securities).

The first step in estimating the quantitative significance of these deductions is to estimate the average rate of Chapter VIA deductions (as a percentage of income) by different income classes. This is accomplished by using data published in the annual AIITS publications. While the details of the procedure are given in Appendix 1, we should emphasise that the rates obtained should be treated as approximation for several reasons. First there is doubt about the completeness of coverage of the AIITS data with respect to Chapter VIA

deductions. Second, the published information is organised according to assessments completed during a financial year, not by assessments pertaining to a particular year. Averaging the published information over several years provides only a partial solution to this problem. Third, the notions of income and income ranges in the AIITS data are not identical to those used here. Nevertheless, the estimated rates are probably reasonable approximations for our purposes.

To compute the estimates of Chapter VIA deductions according to our 14 income classes, an estimate of gross income minus the five deductions previously mentioned is first obtained, and shown in column (10) of each of our tables 5.5.4 to 5.5.9. It is to this concept of income that the estimated average rates of Chapter VIA deductions are applied to yield the quanta of such deductions in each of the 14 income ranges for each of our three basic scenarios, separately for urban and rural India. Column (11) of Tables 5.5.4 to 5.5.9 records the amounts of Chapter VIA deductions thus estimated.

h. *The exemption limit.* We come now to the last step in the journey from gross personal income (of earners) to income assessable to tax, namely, the application of the exemption limit. Column (12) of Tables 5.5.4 to 5.5.9 records incomes after Chapter VIA deductions have been deducted. This is termed "net income". In the absence of an exemption limit all the income in this column could be considered as income which should have been assessed to tax, or taxable income for short. In fact, of course, there was an exemption limit of Rs 8,000 operative in the assessment year 1976-77 (relevant for incomes earned in financial year 1975-76), which has to be taken into account.

One might think that the application of the exemption limit is a straightforward matter which merely involves excluding all incomes in column (12) which fall in income ranges below Rs 8,000. Unfortunately, the matter is not so simple. The income ranges in Tables 5.5.4 to 5.5.9 refer to *gross income* of earners, whereas the exemption limit relates to *income after all exclusions, deductions and exemptions have been allowed for*. To take account of this fact, we would,



ideally, wish to rearrange the net incomes in column (12) according to income ranges defined in terms of *net* income.

However, we do not have the information necessary to carry out this transformation. We have, therefore, pursued an alternative route of estimating the gross income corresponding to a "net income" of Rs 8,000. We have done so for each of our three scenarios by taking the ratio of gross income in column (2) to "net income" in column (12) for income ranges proximate to the exemption limit and then multiplying this derived ratio by Rs 8,000. Appendix 1 describes the details. This procedure yields, for each of our scenarios, a cut-off value of gross income such that all incomes above this value in column (13) can be aggregated to yield, for that scenario, an estimate of total noncorporate income which should have been assessed to tax.

Table 5.5.10 summarises the estimates of total taxable income for our three basic scenarios and gives the urban/rural breakdown in each case.

## 6. Estimates of Tax-Evaded Income: First Approximations

To obtain estimates of tax-evaded income we have to subtract the total of income actually assessed to tax from the estimates of taxable income derived in the previous section. To do so we need to know the amount of non-corporate income actually assessed to tax in the assessment year 1976-77. Once again, this crucial element of information is not readily available in the official data; it has to be derived on the basis of certain assumptions.

As we noted in Chapter 3, a new series of AIITS publications does provide information on incomes assessed to tax on an *assessment year basis* for a few years. Fortunately, this new series includes 1976-77, the year of primary interest to us. Unfortunately, the data in this publication suffer from the same grievous deficiency of undercoverage which bedevils the "regular" AIITS volumes presenting information according to assessments conducted in a given financial year. The crux of the problem is to adjust for the undercoverage.

In Chapter 3 we discussed some alternative indicators of the extent of undercoverage and concluded that, where available, the best indicator was the ratio total of number of assessments reported in the AIITS (assessment year basis) to the number of *assesseees* on the rolls of the department at the end of that year as reported in the C.&A.G.'s reports. The inverse of this ratio can then be used to "blow up" the information on incomes assessed presented in the AIITS new series) publication.

Before applying this procedure we make three further modifications. First, as we observed in Chapter 3, the gap between the total number of assessments recorded in the AIITS and the total number of assesseees reported by the C. & A.G. is not entirely attributable to undercoverage. The AIITS totals also exclude assessments which did not result in either demand or refund. Before computing blow-up factors this number of assessments has either to be added to the AIITS number of assessments or subtracted from the C. & A.G.'s total. Almost all of these excluded assessments relate to cases of "N.A. and filed" relating to individuals and firms. Discussions with the Directorate of Research, Statistics and Public Relations (of the Income Tax Department) indicate that such cases were running at about 10 per cent of all assessments (C. & A.G.'s total) in the late 1970s. We have, accordingly, adjusted the C. & A.G.'s numbers for assesseees (individuals and firms) for 1976-77 downwards by 10 per cent.

Second, in conducting the "blowing up" exercise, we have computed and used separate blow-up factors for the income of assesseees of different status: individuals, Hindu Undivided Families (H.U.Fs.), Associations of Persons (A.O.Ps.) and unregistered firms.<sup>8</sup> Third, before we apply the blow-up factors to AIITS information on incomes assessed we have to subtract capital gains income assessed from total incomes assessed for the different categories of assesseees. This adjustment is necessary to improve the comparability between our independent NAS/NCAER-based estimates of taxable income (which, by definition, exclude income from capital gains) and the estimated total of income actually assessed.<sup>9</sup> Table 5.6.1 presents, for the assessment year

**TABLE**

**Summary Estimates of Taxable Income Under Different Scenarios**

Sl. No.	Item	Urban India		
		Case 1	Case 2	Case 3
(1)		(2)	(3)	(4)
1.	Gross income	21433.00	22581.00	24303.00
2. a.	Agricultural income	1125.68	1185.98	1276.42
b.	Depreciation	563.68	593.87	639.16
c.	Standard deduction	2268.42	2362.48	2483.49
d.	HRA deduction	568.24	607.37	675.16
e.	Employers' contribution to provident fund	365.21	371.94	381.58
f.	Amount of Ch. VIA deduction	2393.32	2440.74	2554.06
	Sub-total of a. to f.	7284.55	7562.38	8009.87
3.	Net income (1-2)	14148.45	15018.62	16293.13
4.	Income below exemption limit (Rs 8000)	8776.11	8889.38	9116.92
5.	Taxable (assessable) income (3-4)	5372.34	6129.24	7176.21

*Source:* Based on Tables 5.5.4 through 5.5.9.

## 5.5.10

1975-76 (Assessment Year: 1976-77)

(Rs crore)

Rural India			All India		
Case 1	Case 2	Case 3	Case 1	Case 2	Case 3
(5)	(6)	(7)	(8)	(9)	(10)
43070.00	41922.00	40200.00	64503.00	64503.00	64503.00
29163.99	28386.64	27220.63	30289.67	29572.62	28497.05
341.84	332.73	319.06	905.52	926.60	958.22
976.58	955.16	898.52	3245.00	3317.64	3382.01
118.91	114.89	104.71	687.15	722.26	779.87
116.90	110.16	100.53	482.11	482.10	482.11
2702.64	2758.00	2691.80	5095.96	5198.74	5245.86
33420.86	32657.58	31335.25	40705.41	40219.96	39345.12
9649.14	9264.42	8864.75	23797.59	24283.04	25157.88
8276.19	8461.97	8022.10	17052.30	17351.35	17139.02
1372.95	802.45	842.65	6745.29	6931.69	8018.86

1976-77, the unadjusted data on incomes assessed (by status of assessee), the same data after adjustment for capital gains, the blow-up factors used and the resulting estimates of non-corporate income assessed to tax.

We can, at last, compute our first estimates of tax-evaded income by subtracting the total of estimated non-corporate income *assessed* to tax (from Table 5.6.1) from our earlier estimates of *taxable* noncorporate income derived independently in Section 5. The results are shown in Table 5.6.2, first in absolute terms and then as percentages of (a) GDP for 1975-76 and (b) noncorporate income actually assessed to tax.

## 7. Estimates of Tax-Evaded Income for 1980-81

Our analysis thus far has been confined to 1975-76. The principal reason for this was the availability of data, notably the income distributions from the NCAER survey as well as other supporting elements such as AIITS information on an assessment year basis. In this section we make an attempt to extend our analysis to 1980-81. The paucity of relevant and recent data inevitably obliges us to make more assumptions and approximations. Nevertheless, we consider the exercise worthwhile and the results interesting.

We begin with the all-India figure of gross personal income for 1980-81. This is taken directly from the official NAS (see Table 5.2.1). The first, and most important, problem is to construct rural and urban income distributions corresponding to this total of gross personal incomes. To solve this problem we first compute the rural and urban population on the basis of the 1981 census results. We then estimate the number of rural and urban earners in 1980-81 on the assumption that the ratio of earners to population is the same (for rural and urban India, separately) as it was in 1975-76.<sup>10</sup>

The next step is to find a plausible method for partitioning total gross personal income into urban and rural subtotals. We do this for three alternative cases which correspond to our three basic scenarios for 1975-76. In each case the correspondence is established by the following assumption:

**TABLE 5.6.1**  
**Adjustments of Income Assessed to Tax by Status of Assessee,**  
**1975-76 (Assessment Year, 1976-77)**

(Rs crore)					
Status of assessee (non-corporate sector)	Assessed income (unadjust- ed)	Income assessed from capital gains	Assessed income minus capital gains col (2-3)	Blow-up factors for under- coverage	Income assessed to tax (adjust- ed) col (4x5)
(1)	(2)	(3)	(4)	(5)	(6)
Individuals	2696.13	22.65	2673.48	1.4188	3793.13
Hindu undi- vided family	135.43	4.46	130.97	2.8657	375.32
Association of persons	24.10	2.74	21.36	2.2410	47.87
Unregistered firm	32.32	0.05	32.27	1.9181	61.90
Total (Non- corporate sector)	2887.98	29.90	2858.08	N.A.	4278.22

*Note:* N.A. means not applicable

*Source:* For cols. 2, 3 and 4, see AIITS, Assessment Years 1976-77 to 1978-79. For col. 5 see Table A.1.44 of Appendix 1.

that the urban to rural ratio of per earner gross income remains the same as in 1975-76. For our purposes this is a conservative assumption, since there is some evidence (Mohan, 1984) to suggest that the ratio has been increasing over time, a fact which would imply a higher allocation to urban income—and hence taxable income—than is warranted by our assumption. With this assumption, and the knowledge that the urban income subtotal plus the rural income subtotal must add to the NAS total of gross personal income, we have, essentially, two equations in two unknowns for each of our scenarios. The unknowns here are the subtotals for urban and rural incomes. Solution of the equations readily gives us the desired split of NAS gross personal income into urban and rural incomes for each of our three cases (see Appendix 1 for further details).

TABLE 5.6.2

**Estimates of Tax-Evaded Income in India (First Approximation)  
Under Three Scenarios for Non-Corporate Sector, 1975-76  
(Assessment year, 1976-77)**

Item (1)	Case 1 (2)	Case 2 (3)	Case 3 (4)
1. Taxable (assessable) income	6745.3	6931.7	8018.9
2. Assessed income (adjusted for undercoverage)	4278.2	4278.2	4278.2
3. Tax-evaded income (Row 1 minus Row 2)	2467.1	2653.5	3740.7
4. Tax-evaded income as percentage of GDP at current prices in 1975-76 <sup>1</sup>	3.7	4.0	5.6
5. Tax-evaded income as percentage of income actually assessed to tax	57.7	62.0	87.4

*Note:* 1. GDP at current prices and at factor cost was Rs 66370 crore in 1975-76 (Government of India, CSO, 1983)

*Source:* Based on Tables 5.5.10 and 5.6.1.

Having estimated total urban (and rural) incomes for each scenario and the total number of urban (and rural) earners, which is the same for all scenarios, we now have to devise a method for constructing the corresponding *frequency distributions* of earners. The central assumption we make here is to assume that, for each case, the concentration of incomes remains unchanged between 1975-76 and 1980-81. Once again, this is probably a conservative assumption, since it is widely believed that the distribution of income has worsened over time, a fact, which, if true, would imply more taxable income than is entailed by our constancy assumption. Unchanged concentration of income means that the  $\sigma$  parameters estimated for our 1975-76 lognormal distributions also apply to the corresponding 1980-81 distributions. The location parameter,  $\mu$ , is, of course, different because means of earner income are different in 1980-81. But in each case, we can compute it since it depends only on  $\sigma$  and the value of mean

earner income ( $\alpha$ )  $\sigma$  we know by assumption and  $\alpha$  by computation). Hence, for all our three cases (and for urban and rural India separately in each case), we now have the values for  $\mu$ ,  $\sigma$  and the total number of earners, which is all the information necessary to generate the frequency distributions of earners and the corresponding distributions of income by specified income ranges.

We turn now to the estimation of taxable income. First, we make the additional assumption that the *shares* of different components of income (agricultural income, salary, business income, etc.) in total gross income are the same as they were for the corresponding scenarios in 1975-76. We can then proceed with a stepwise application of the principal exclusions, exemptions and deductions.

First, all agricultural incomes (defined broadly) are excluded. HRA deductions are computed using the same rate structure as was used with respect to salary incomes in 1975-76. The tax law (and hence the formula) for the standard deduction against salary was the same in assessment year 1981-82 as it was in 1976-77. This, together with the assumption that the distribution characteristics of salary income are the same as earlier, allows us to estimate the quantitative significance of standard deductions by income ranges. The deductions corresponding to employers' contribution to provident fund have been estimated on the basis of fresh information relating to 1980-81, though the procedure followed is unchanged. For business income, the same 10 per cent deduction for depreciation is applied. The application of Chapter VIA deductions uses more recent data available from the annual series of AIITS publications. The numerical details of these stepwise deductions and results are given in Appendix Tables A. 1. 36 to A.1. 42. Finally, the exemption limit (Rs 12,000 for assessment year 1981-82) is applied along the lines adopted in 1975-76. Table 5.7.1 summarises the estimates of total taxable income for the three cases in 1980-81 and gives the urban/rural decomposition for each case.

The next step is to estimate noncorporate incomes *actually assessed* for taxation in the assessment year 1981-82. Unfor-



TABLE 5.7.1

Summary Estimates of Taxable Income Under Different Scenarios,  
1980-87 (Assessment Year 1981-82)

Sl. No.	Item	Urban India			
		Case 1	Case 2	Case 3	Case 1
	(1)	(2)	(3)	(4)	(5)
1.	Gross Income	40668.00	42648.00	45837.00	70861.00
2.	a. Agricultural income	2135.92	2239.92	2407.41	47982.11
	b. Depreciation	1069.56	1121.63	1205.55	562.42
	c. Standard deduction	3787.27	3954.88	4056.61	1784.50
	d. H.R.A. deduction	1233.30	1310.02	1410.31	254.00
	e. Employer's contribution to provident fund	421.45	428.21	438.33	116.95
	f. Amount of Ch. VIA deductions	3619.81	3772.01	3885.37	3251.49
	Sub-total	12267.31	12826.67	13403.58	53951.47
3.	Net Income (1-2)	28400.69	29821.33	32433.42	16909.53
4.	Income below exemption limit (Rs 12000)	16629.21	17280.27	17141.09	16764.65
5.	Taxable income (3-4)	11771.48	12540.96	15223.31	144.18

Source: Based on Tables A.1.36 through A.8.41 and A.1.43 of Appendix 1.

(Rs crore)

Rural India		All India		
Case 2	Case 3	Case 1 Cols.2+5	Case 2 Cols.3+6	Case 3 Cols.4+7
(6)	(7)	(8)	(9)	(10)
68881.00	65692.00	111529.00	111529.00	111529.00
46641.39	44482.02	50118.03	48881.31	46889.43
546.70	521.39	1631.98	1668.33	1726.94
1712.50	1630.04	5571.77	5667.38	5686.65
253.59	226.05	1487.30	1563.61	1636.36
110.17	100.05	538.40	538.38	538.38
3152.56	2999.64	6871.30	6924.57	6885.01
52416.91	49959.19	66218.78	65243.58	63362.77
16464.09	15732.81	45310.22	46285.42	48166.23
15223.31	14134.67	33393.67	32503.68	31275.76
1240.78	1598.14	11916.36	13781.74	16890.47

unately, the AIITS have not yet published the assessment years-basis volume for 1981-82<sup>11</sup>. Indeed, the AIITS volume containing data on assessments completed in the financial year 1981-82 has only become available very recently (in August 1984). We have, therefore, been obliged to use the data in the latter volume as an approximation, even though we recognise that only about 60 per cent of the assessments conducted in a given financial year relate to that assessment year while the rest pertain to preceding assessment years (NIPFP, 1983a).

As in 1975-76, the AIITS information on incomes assessed has to be adjusted for undercoverage. This is accomplished using analogous "blow up" factors and after allowing for exclusion of "N.A. and Filed" case. Furthermore, adjustments are made excluding capital gains from the AIITS information. Table 5.7.2 presents the data on income assessed, the "blow up" factors, the estimate of total income assessed and the estimates of tax-evaded income. The last is derived by subtracting the estimate of total noncorporate income assessed from the three alternative estimates of taxable income obtained earlier.

Comparing the results in Table 5.7.2 with those reported for 1975-76 in Table 5.6.2 we note that the estimates of tax-evaded income in 1980-81 are not only higher in absolute terms but also as percentages of GDP and income assessed to tax. Thus, where the ratio of tax-evaded income to GDP was estimated to range from 3.7 per cent to 5.7 per cent in 1975-76, the corresponding range in 1980-81 is between 4.2 and 8.6 per cent. As a ratio to *income assessed*, a more relevant ratio in our view, tax-evaded income was estimated to range from 57 per cent to 87 per cent in 1975-76. The comparable range in 1980-81 is between 68 and 139 per cent.

### 8. What if National Income is Underestimated ?

The estimates of tax-evaded income presented in the last two sections are predicated on the assumption that the estimates of national income are accurate. Crucial to the estimation procedure is the use of the NAS aggregates as controlling totals. But what if these aggregates themselves are

TABLE 5.7.2

Estimates of Taxable Income, Income Assessed and Tax-Evaded Income, 1980-81 (Assessment year 1981-82)

A. Estimates of Income Assessed					(Rs crore)
Status of assessee (non-corporate sector)	Assessed income (unadjusted)	Income from capital gains	Assessed income minus capital gains Col. (2)-(3)	"Blow-up" factors for under-coverage	Income assessed to tax (adjusted) Col. (4)×(5)
(1)	(2)	(3)	(4)	(5)	(6)
Individuals	2210.60	6.35	2204.25	2.8476	6276.82
Hindu Undivided Family	110.00	1.09	108.91	5.3169	579.06
Association of persons	25.50	0.19	25.31	4.3112	109.12
Unregistered firm	36.90	0.02	36.83	3.0476	112.39
Total (Non-corporate sector)	2383.00	7.65	2373.35	—	7077.39

B. Estimates of Tax-Evaded Income				(Rs crore)
(1)	(2)	(3)	(4)	
Item	Case 1	Case 2	Case 3	
Taxable income	11916.36	13781.74	16890.47	
Tax-evaded income (taxable income minus assessed income of Rs 7077.39 crore)	4838.97	6704.35	9813.08	
Tax-evaded income as per cent of GDP at current prices and at factor cost in 1980-81 <sup>1</sup>	4.23	5.87	8.59	
Tax-evaded income as per cent of assessed income	68.37	94.74	138.65	

Note: GDP at current prices and at factor cost was Rs 114271 crore in 1980-81 (Government of India, CSO, 1983).

Source: For cols. 2, 3 and 4, 4 of (A) AIITS Financial Year, 1981-82 and for col. 5, see Table A.1.45 of Appendix 1. For details of Taxable Income, see Table A. 1.43 of Appendix 1.

distorted by evasion behaviour? This is not just possible but probable. To take just one example, when a manufacturing enterprise underreports production and sales or overreports expenses (perhaps by showing personal expenses as deductible business expenses), the associated reduction in taxable profits is likely to lead to the underestimation of value-added for the manufacturing sector, and hence to the underestimation of GDP.

It was, partly, the recognition of this possibility that led us in Chapter 2 to distinguish an alternative definition of black income, namely, "the extent to which estimates of national income and output are biased downwards because of deliberate, false reporting of incomes, output and transactions for reasons of tax evasion, flouting of other economic controls and related motives. "The extent to which NAS aggregates are distorted by evasion and related behaviour depends not only on the nature and prevalence of such behaviour but also on the sources and methods of national income accounting. As we noted in Chapter 2, evasion does not necessarily lead to misestimation of national income. Much depends on the sources and methods of compiling NAS estimates.

The problem at hand is to assess the extent to which NAS aggregates are *in fact* misestimated because of evasion and related behaviour. In Appendix 2 we review the sources and methods of national income accounting used by the CSO and provide some qualitative judgements about the extent to which the value-added estimates for different sectors are vulnerable to the practice of evasion of taxes and other economic regulations. We conclude that there is a strong *prima facie* case for suspecting significant underestimation of total GDP. Based on our qualitative appraisal, we suggest that such underestimation may be most pronounced in the following sectors: "Manufacturing (Registered and Un-registered)" "Transport by any other means and storage", Trade, Hotels and Restaurant" and "Other Services". These views are consistent with the ones advanced by Ghosh *et.al.* (1981) in their paper which we reviewed in Chapter 3.

What about the *extent* of such underestimation? Based on guestimates for several specific sectors, Ghosh *et. al.* "estimated" that GDP was underestimated by about 8 per cent in 1975-76. We do not make bold to offer specific estimates. Instead, we explore some of the implications of assuming that GDP in 1975-76 and 1980-81 exceeded the officially estimated figure by 5, 10 and 15 per cent, respectively. In the light of available information and the views of national accounts experts (including Ghosh *et. al.*) this range of underestimation in the official numbers seems "reasonable". Some have commented that these numbers are on the conservative side.

One way of conducting the sensitivity analysis with respect to alternative "inflations" of the official GDP estimates would be to revise the corresponding NAS total in Sections 5 and 7 accordingly and rework the entire analysis of these sections, including the use of the NCAER-based distributions of income and so forth. However, given that we are assuming that the omission of 5, 10 and 15 per cent, respectively, of GDP from the official estimates is being attributed entirely to the phenomenon of evasion, this does not seem to be a reasonable way to proceed. Instead, it may be more acceptable to make two assumptions: first, that most, if not all of the "omitted GDP" accrues to earners who are already in taxable income brackets, and second, that all legitimate deductions and exclusions have already been claimed so that no further ones are pertinent for the incomes associated with these "omitted" GDP increments. This means that most of the "additional" income can be treated as tax-evaded income.

More specifically, we explore, numerically, the implications of two assumptions. In the first case three-quarters of the "omitted GDP" is assumed to accrue to earners in the form of tax-evaded income, while in the second, half of the increment to GDP is assumed to have the character of tax-evaded income. The results of these assumptions are shown in Table 5.8.1.

These results are revealing. They suggest that even modest degrees of (evasion-related) under-estimation of GDP, could,

TABLE 5.8.1

Tax-Evaded Income Associated with Adjustments to GDP to Allow for Underestimation: Some Speculations

(Rs crore)

Percentage by which official GDP (factor cost) inflated <sup>1</sup>	Assumed proportion of GDP "inflation" taking the form of tax-evaded income			
	1975-76		1980-81	
	Three-quarters	Half	Three-quarters	Half
(1)	(2)	(3)	(4)	(5)
5	2489	1659	4285	2857
10	4978	3318	8570	5713
15	7467	4978	12855	8570

Note: 1. GDP at factor cost and at current prices was Rs 66370 crore in 1975-76 and Rs 114,271 crore in 1980-81 (Government of India, CSO, 1983).

Source: As explained in the text.

on our assumptions, be associated with amounts of "additional" tax-evaded income which are large in relation to our earlier estimates of tax-evaded income—and in relation to income assessed to tax. Thus, if in 1975-76, official GDP has to be adjusted upwards by 10 per cent and three-quarters of this increment is assumed to take the form of tax-evaded income, then an associated "additional" tax-evaded income of almost Rs 5,000 crore has to be added to our earlier estimates, which ranged, across our three scenarios in Table 5.6.2, from Rs 2,467 crore to Rs 3,741 crore. Thus, this particular adjustment for evasion-related underestimation of GDP has the effect of more than doubling our earlier highest estimate of tax-evaded income. Furthermore, the resulting total of tax-evaded income is also more than double the estimated total of noncorporate income assessed to tax.

## 9. Overview and Assessment

It is now time to pull together the results of our labours

(and assumptions) and to assess their strengths and weaknesses.

*a. Overview.* In Table 5.9.1 we provide an illustrative overview, which chooses *one* possible estimate of *some* major components of tax-evaded income for each of the years 1975-76 and 1980-81. The table calls for some explanatory remarks. First, it is important to emphasise that alternative estimates are available for each row element. Thus row (1) gives the estimates for tax-evaded income which correspond to scenario 3 of our work in Sections 4 and 5, where the "missing income" between the NCAER estimate of total gross personal incomes and the official NAS total for the same concept is split in the ratio of 1:1, urban:rural, in the course of the "blow-up" exercise. Though this gives the highest estimate of our three scenarios, we have argued earlier that even this estimate is based on conservative assumptions (see Section 4). Row (2) of the table gives "guestimates" of "additional" tax-evaded income, based on the assumption that the official GDP estimate requires upward adjustment by 10 per cent and that half of this "increment" accrues to earners in the form of tax-evaded income. Compared to the other guestimates in Table 5.8.1, this corresponds to a "middle" set of assumptions. Finally, row (3) gives a "middle" case of guestimates of black income obtained through leakages from public expenditures. Though the basis for these numbers is presented in Chapter 8, it is convenient, for exposition, to include them in the illustrative overview presented here.

Rows (5) and (6) present, for comparative purposes, the official estimates of GDP and our estimates (from Section 6) of total non-corporate income assessed to tax in 1976-77 and 1981-82, which corresponds to incomes earned in financial years 1975-76 and 1980-81. The "estimated" subtotals of tax-evaded income are displayed as percentages of GDP and income assessed, in rows (7) and (8), respectively.

Second, it should be obvious that the empirical bases for the numbers shown in Table 5.9.1 vary enormously. The magnitudes in row (1) can be genuinely called estimates, which reflect the detailed quantitative work described in the



**TABLE 5.9.1**  
**Estimates of Tax-Evaded Income: An Illustrative Overview**

	(Rs crore)	
	1975-76	1980-81
<b>Tax-evaded income from:</b>		
1. Non-corporate income from current, legal economic activity and legal transfers assuming official NAS data to be correct <sup>1</sup>	3,741	9,813
2. Adjustment to (1) for possible under-estimation of official GDP <sup>2</sup>	3,318	5,713
3. Illegal transfers from public expenditure <sup>3</sup>	900	1,683
4. Sub-total	7,959	17,209
5. GDP at factor cost at current price	66,370	114,271
6. Assessed income (adjusted for undercoverage)	4,278	7,077
7. Sub-total as per cent of GDP at factor cost (row 5)	11.99	15.06
8. Sub-total as per cent of assessed income (row 6)	186.04	243.17

*Notes:* 1. The estimates presented here correspond to scenario 3, where the "missing income" is split between urban and rural in the ratio of 1:1 in the course of the "blow-up" to the NAS controlling total.

2. The data shown here correspond to the assumption that official GDP requires upward adjustment by 10 per cent and that half of this "increment" accrues to earners in the form tax-evaded income.

3. These estimates (explained in more detail in Chapter 8) assume that 10 per cent of a relevant subtotal of public expenditures are "siphoned off" in one form or another and three-quarter of this amount accrues to people with taxable income.

*Source:* As explained in the text.

earlier sections of this chapter and in Appendix 1. The numbers in rows (2) and (3) are more in the nature of estimates. The only justification for mixing numbers of such qualitatively diverse origin is to convey a flavour of the magnitudes that may be involved.

Third, if we hark to the distinctions drawn in Chapter 2 between different categories of income which should be included in a complete notion of tax-evaded income, we can see that both rows (1) and (2) refer to two kinds of income, namely, income from current, legal economic activity and from legal transfer payments. Row (3) pertains to one form—arguably the most relevant form—of illegal payments. The table offers no estimates for tax-evaded income from capital gains (legal or illegal) or from illegal current economic activities such as smuggling and black marketing. To that extent, the totals in the table do not encompass all tax-evaded income.

b. *Some limitations and their Consequences.* We turn now to some of the more obvious limitations of our work. We begin with our basic estimates of tax-evaded income relating to officially estimated (NAS) current economic activity and legal transfers.

The most glaring lacuna here is that we have omitted consideration of evasion pertaining to corporate incomes. In one sense this is an obvious shortcoming. However, if we take the view that our study should be limited to assessing evasion of incomes only once, and not include evasion when the same income is transferred to other economic agents, then this criticism loses much of its force. For the fact is that our total of gross personal incomes includes, in principle, incomes which have passed through corporate entities. Ultimately, it is households and individuals who enjoy all incomes.<sup>12</sup> Of course, companies may provide potent conduits for evasion through their multitude of complex transactions, including the opportunities for misclassifying personal consumption as business expense.<sup>13</sup> But the fact remains, that such evaded income finds its way to individuals through all sorts of “under the table” payments and misclassified expenses.<sup>14</sup>

However, where the activity of evasion through the corporate cover leads to underestimation of GDP, then our (that is the CSO's) total of gross personal income is directly affected (underestimated) and in turn, biases our estimates of tax-evaded income downwards. But if our crude upward

adjustment of the official GDP estimate is an accurate one, then (a) the total of gross personal incomes should be correct and (b) it should include all incomes which have come to households via corporate entities (see Table 5.2.1). If, however, we confine ourselves to the estimates corresponding to the unadjusted GDP total, then there is little doubt that our basic estimates of tax-evaded income are biased downwards because amongst other things, they fail to adequately reflect evasion through corporate cover. Looked at another way, the misestimation of NAS totals due to falsification of corporate accounts is a particular case of the more general problem of underestimation of GDP because of tax evasion and related behaviour.

Second, our basic estimates of taxable income which were computed in Sections 4 and 5 rely on the simplifying assumptions that where the NCAER totals of gross personal income are "blown up" to match the NAS total, this scaling up is neutral with regard to different components of income. This, it could be argued, is an unreasonable assumption. In particular, salaries are likely to be underreported much less than other components such as business income. We have two responses to this criticism. First, the practice of "topping up" salaries through under-the-table payments has reportedly become widespread in recent years. So one should be wary of assuming that incentives to underreport salary are nil or negligible. More importantly, even if we grant the validity of this criticism, we should emphasise that our procedure (of uniform scaling up) is then conservative, in the sense that it biases *downwards* our estimates of tax-evaded income. This is because the cumulative deductions and exemptions applied, in Section 5, to salary incomes are much greater than those applied to business income.<sup>15</sup>

Third, the scaling up procedure adopted in Section 4 is also assumed to be neutral across income ranges. In fact, given a progressive income tax schedule, common sense would suggest that those with higher incomes are likely to underreport a higher proportion of their incomes than those with lower incomes. Thus the neutral scaling up assumption results in underestimation of taxable and tax-evaded income.

Fourth (a point we have already made), our estimates of tax-evaded income are biased downwards to the extent that they exclude consideration of certain categories of income, notably undeclared capital gains (legal and illegal), income from illegal current economic activities and illegal current economic activities and illegal transfers.

With respect to illegal transfers we have offered, in Table 5.9.1, some guestimates relating to "siphoning off" from public expenditures. But this excludes illegal transfers in the form of bribes from one individual to another. Such an exclusion may be defensible if we wish to consider incomes only once. For then the exclusion of a bribe in the hands of a recipient may be justified on the grounds that the income was already taxed (in principle) in the hands of the donor. Inter-individual bribes do not swell the total of gross personal incomes. This argument does not apply to illegal transfers (or "leakages") from public expenditures, where the flows *do* augment the total of gross personal income.

All the factors considered thus far point in the direction of *downward* bias in our estimates of tax-evaded income. On the other side there are some factors which work in the opposite direction. First, our estimates do not take adequate account of legal avoidance through entities like trusts and H.U.F.s. To the extent such legal avoidance is not allowed for, estimates of taxable income, and tax-evaded income, are upward biased. Second, as we pointed out in Section 5, we have not been able to allow for all the exclusions, exemptions and deductions that exist in the law. Our analysis in that section was explicitly limited to the important ones. Consequently, our estimates of tax-evaded income are biased upwards on this count.

For easy reference Table 5.9.2 lists the significant limitations in our basic estimates of tax-evaded income. A glance at this table should confirm that the factors imparting *downward* bias to our estimates are likely to far outweigh those working in the opposite direction. So our basic, official NAS-based estimates of tax-evaded income are, very probably, quite conservative. This judgement remains plausible even with respect to the totals in Table 5.9.1 where we

have explicitly made (crude) allowances for two of the sources of downward bias: the underestimation of GDP due to tax evasion and the exclusion of illegal transfers from public expenditures.

TABLE 5.9.2

NAS-based Estimates of Tax-evaded Income: Some Sources of Bias

Nature of limitation	Resulting direction of bias
1. Official NAS total is likely to be downward biased due to evasion behaviour <sup>1</sup>	Downwards
2. Assumption of neutrality with respect to income components in scaling up the NCAER total to the NAS total of income	"
3. Assumption of neutrality with respect to income ranges in scaling up the NCAER total to the NAS total of gross personal income	"
4. Excludes capital gains (on both legally and illegally transferred asset)	"
5. Excludes incomes from illegal current economic activity	"
6. Excludes illegal transfers <sup>2</sup>	"
7. Does not consider all legitimate exclusion, exemptions and deductions	Upwards
8. Does not allow for legal avoidance through trusts, H.U.F.s etc.	"

*Notes:* 1. In the estimates presented in Tables 5.6.2 and 5.7.2, a crude attempt is made to allow for this.

2. Table 5.9.1 (and Chapter 8) present illustrative guestimates of the scale of illegal transfers from public expenditure.

*Source:* As explained in the text.

### Notes

1. Similar approaches have been tried for other countries. See, for example, Herschel (1978) for Argentina and Park (1981, 1983) for the USA.
2. Based on the NCAER survey estimate of 17.7 crore earners in India in 1975-76.

3. The congruency may not be perfect because of some features such as different procedures for imputations of items such as income from owner-occupied house property.
4. We should emphasise that the income ranges in column (1) of Table 5.3.5 pertain to *household* income in the case of columns (2), (3) and (4), and to *earner* income in the case of columns (5), (6) and (7).
5. Note that the reference period for the NCAER survey was July 1975-June 1976, while the NAS data are computed for the fiscal year April 1975 to March 1976. No adjustment is attempted for this temporal discrepancy.
6. For any given income range  $i$  and income component  $j$ , the weight  $W_{ij}$  is simply  $\frac{Y_{ij}}{Y_i}$  where  $Y_{ij}$  is the income in its income class attributable to the  $j$ th component and  $y_i$  is gross income in the  $i$ th class.
7. Bagchi's unpublished dissertation, *Taxation of Income in India: A Study in Base Erosion*, is a masterly work which contains a definitive treatment, to date, of these issues in the public finance literature on India.
8. The details of the computation of the "blow-up" factors are given in Appendix 1. Though *registered firms* are not corporate entities, we exclude their income assessed. We do so because the income of these firms is also taxed in the hands of individuals (as partners) and including their income would amount to double counting for our purpose of computing a total of noncorporate income assessed to tax which is comparable with our estimates of noncorporate taxable income derived in Section 5.
9. The dimensions of this adjustment—based on information from the regular AITTS series of publications—is actually rather small, as can be seen from Table 5.6.1.
10. In this way we retain a comparable definition of earners for 1980-81.
11. Publication of the volumes containing information by assessment year normally involves a six-year lag, while the regular series, giving information on assessments conducted in a financial year, emerge with a 2-3 year lag.
12. The argument here is analogous to the reasoning advanced in tax incidence studies, where the point is made that *all* taxes (including corporation tax), are, in an important sense, borne by individuals.
13. Bagchi (1975, pp. 42-49) provides a telling illustration of how such misclassification can reduce the effective tax burden of an individual with business income.
14. Of course, corporate profits which are actually not distributed (that is, undistributed corporate profits as shown in company accounts) should and are excluded from the estimate of gross personal incomes presented by the CSO.

15. Thus, for example, in Case 3 for urban India in 1975-76, the total of deductions, HRA deduction and employers' contribution to provident fund together amounted to 24 per cent of gross salary income, as computed to an assumed deduction of 10 per cent for depreciation against business income.

# Black Income Generation in the Sugar Industry : A Case Study

## 1. Introduction

The last three chapters dwelt on the scale of black income generation in the economy as a whole. In this chapter we shift our attention to a single commodity, sugar. The reasons for this shift are as follows. First, it will help illustrate the methods of black income generation deployed, some of which may be specific to sugar, while others are more generally prevalent. Second, it can throw light on the causal factors spurring black income generation. Third, the methods of estimation developed for the sugar industry may be of interest in themselves as well as examples of approaches which may be mounted for other commodities and sectors. Fourth, the chapter shows how difficult is the task of estimating black income generation, even at the level of a single, relatively homogeneous, commodity.

The choice of sugar as a case study has been influenced by a number of factors. First, as Table 6.1.1 indicates, sugar figures prominently both in the output of registered manufacturing and in private final consumption expenditure. Second, the commodity has important links with agriculture through its major input, sugar-cane. Third, the sugar industry has, since its infancy, been subject to varying degrees of



TABLE

## Relative Standing of Sugar-Industry in the Economy as a whole

Year	Output of sugar (lakh tons)	Free market wholesale price of sugar (Rs/ton)	Registered manufacturing		
			Value of output of sugar (Col. 2 x Col. 3) (Rs crore)	As a per- centage of value of output in food products	Standing of sugar in regist- ered manufa- cturing
(1)	(2)	(3)	(4)	(5)	(6)
1970-71	37.40	1839.1	687.79	25.72	9
1971-72	31.13	2252.0	701.05	25.68	10
1972-73	38.73	3048.6	1190.98	—	—
1973-74	39.48	3900.9	1540.08	35.09	6
1974-75	47.97	4381.1	2101.57	47.27	6
1975-76	42.62	4555.0	1941.34	38.62	7
1976-77	48.40	4349.4	2104.91	39.17	7
1977-78	64.61	4279.9	2765.31	43.33	7
1978-79	58.41	2992.8	1748.21	25.59	9
1979-80	38.58	—	—	—	—
1980-81	51.48	—	—	—	—

- Source: 1. Column (2) from National Federation of Co-operative Sugar Factories (1982), *Co-operative Sugar Directory and Year Book*, 1981.
2. Column (3) from Ministry of Agriculture and Irrigation, Directorate of Economics and Statistics (1980), *Indian Agriculture in Brief*.
3. Column (5) is calculated from value of output of sugar in Column 4, value of output of food-product from Government of India, CSO (1983) National Accounts Statistics 1970-71 to 1980-81.
4. Columns (6), (7), (9), (10), (11) and (12) are from Government of India, CSO (1983).
5. Column (8) calculated from value of output of sugar-cane and value of output of agriculture found in Government of India, CSO, (1983).
6. Columns (13) and (14) are from *Report on Currency and Finance (RBI)*. Various Issues.

## 6.1.1

Agriculture			Private final consumption expenditure			Wholesale price Index (1970-71 = 100)	
Value of output	As a percentage of total value of output	Standing of sugar-cane in Agriculture	Sugar (Rs crore)	As percentage of total	Standing of sugar in total private final expenditure	Total	Sugar (including khand-sari and gur)
(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1036.79	6.91	4	1325	4.5	9	—	—
1235.57	6.72	3	1822	5.7	7	105.6	141.2
1681.88	8.31	3	2259	4.5	7	116.2	188.0
1851.43	6.76	4	2473	6.4	7	139.7	192.4
2028.23	6.72	3	2429	4.7	8	174.9	199.8
1948.29	6.94	3	2477	4.7	8	173.0	213.5
2127.17	7.34	4	2782	5.1	8	176.6	217.5
1998.83	6.02	4	2366	3.8	10	185.8	185.4
1788.27	5.31	4	2704	4.0	12	185.8	146.8
2540.71	7.27	4	4451	6.0	8	217.6	231.3
4075.17	9.12	3	5811	6.5	8	257.3	376.9

government regulation.<sup>1</sup> This holds out the possibility of investigating links, if any, between controls and black income generation at the level of an individual commodity.<sup>2</sup> Finally, the homogeneous character of sugar makes the very difficult task of estimation of a time series of black income generation a little more tractable.

The outline of this chapter is as follows. Section 2 presents a capsule history of the sugar industry in India. Section 3 gives a qualitative account of some of the mechanisms used to generate black income in the industry. The subsequent section, which is the heart of the chapter, describes the methodology for and results of estimating suppression of sugar output to generate black incomes. Section 5 deals with black income generation through the underweighting of cane. The chapter closes with a summary of estimates and conclusions. A much more detailed account, especially of the material in Sections 4 and 5, is contained in Appendix 3 to this report.

## **2. The Sugar Industry in India: A Capsule History**

Cultivation of sugar-cane and the conversion of its juice to sugar has apparently been going on in India for over a thousand years. According to Bagchi (1975), India annually exported significant quantities of unrefined sugar upto the middle of the 19th century. The development of the beet-sugar industry in some parts of the world, together with the adoption of a policy of free trade in sugar by the British Government contributed to the decline of India's sugar exports. Even though small quantities of refined sugar were always imported, there was a sudden spurt in this activity after 1885, as foreign sugar (from both beet and sugar-cane) benefited from technical advances and export subsidies.<sup>3</sup> Despite rising imports of refined sugar, the cultivation of sugar-cane and its conversion to sugar continued in India. But, up until the First World War, the growth of the sugar industry was slow and the capacity of individual cane-processing units remained small. For a number of historical reasons, whatever growth occurred was concentrated in Bihar.

The advent of the First World War led to a sharp decline in sugar imports and a corresponding increase in domestic

cultivation of sugar-cane and sugar production. This process of war-induced import substitution was, to some extent, constrained by the availability of the necessary machinery.

In 1919, the Indian Sugar Committee was set up to advise on all aspects of the development of the sugar industry in India. But there was little action on their recommendations until 1931. Bagchi (1975) points to several factors which militated against rapid growth of the industry during these years. First, the duty on sugar was raised sharply for revenue reasons. Second, the period witnessed a decline in world sugar prices, which undermined the competitive position of Indian sugar. This was compounded by the rising price of sugar-cane as the war-spawned sugar mills competed against each other for sugar-cane. Finally, unlike most other sugar-producing countries, the absence of worthwhile Government-backed research on development of improved varieties of sugar-cane retarded the growth of the industry.

The situation changed dramatically in 1931 when the Indian Tariff Board recommended protection of the domestic sugar industry for fifteen years, a recommendation which was enacted in the following year. Table 6.2.1 records the almost immediate impact on the output of sugar-cane and sugar. The global depression of the 1930s also helped by reducing the price of imported machinery. The relative profitability of sugar-cane cultivation was further enhanced by the generally depressed state of other agricultural prices. The ensuing boom in sugar-cane production also accelerated the diffusion of improved cane varieties, resulting in further productivity increases.

The next phase of growth of the Indian sugar industry started in the mid-1950s, with the rapid growth of the co-operative sector (with Government help) in Western and Southern India. These areas witnessed the emergence of new sugar-cane varieties with higher sugar content and higher sugar-cane yields per acre. Costs declined as a consequence and those regions (composed notably of Maharashtra, Andhra Pradesh and Karnataka) came to be known as low-cost areas, compared to the older, high-cost sugar producing areas of the North (consisting of Bihar and Uttar Pradesh).

TABLE 6.2.1  
INDIAN SUGAR STATISTICS

Area, Production & Yield of Sugarcane, Factories in Operation, Duration, Crushing Capacity, Cane Crushed, Percentage of Cane Crushed by Factories, Sugar & Molasses Production From 1930-31

Year	Area under sugar cane (000 Acre)	Production of sugar cane ('000 tonnes)	Yield of cane per acre (tonnes)	No. of factories in operation	Average duration (days)	Average capacity (tonnes per day)	Total cane crushed ('000 tonnes)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1930-31	2,825	36,354	13.0	20	—	—	1,339
1931-32	3,077	44,011	14.3	31	—	—	1,814
1932-33	3,425	51,950	15.2	56	138	481	3,404
1933-34	3,422	53,297	15.6	111	103	500	5,240
1934-35	3,602	55,218	15.3	128	104	545	6,655
1935-36	4,154	62,185	15.0	135	126	644	10,045
1936-37	4,621	68,401	14.8	137	138	685	11,876
1937-38	4,043	56,533	14.0	136	112	722	10,075
1938-39	3,281	43,792	13.3	139	83	673	7,117
1939-40	3,125	40,145	12.8	145	129	778	13,342
1940-41	3,996	51,978	13.0	148	113	750	11,492
1941-42	2,956	38,515	13.0	150	85	698	8,155
1942-43	3,073	46,005	15.0	150	101	762	10,586
1943-44	3,617	52,741	14.6	151	117	762	12,333
1944-45	3,547	49,558	14.0	140	98	755	9,493
1945-46	3,210	47,273	14.7	145	93	768	9,510
1946-47	3,528	50,568	14.3	160	98	755	9,497
1947-48	4,056	58,170	14.3	134	110	815	11,014
1948-49	3,752	48,690	13.0	137	101	808	10,258
1949-50	3,624	49,380	13.6	139	92	855	10,024
1950-51	4,217	54,823	13.0	139	101	873	11,348
1951-52	4,792	59,227	12.4	140	132	938	15,889
1952-53	4,272	49,004	11.5	134	113	952	13,216
1953-54	3,485	43,182	12.4	134	86	926	9,778
1954-55	3,994	56,026	14.1	136	132	958	15,759
1955-56	4,564	58,384	12.8	143	145	980	18,642

\*Provisional.

Source: National Federation of Co-operative Sugar Factories (1982),  
*Co-operative Sugar Directory and Year Book, 1981.*

%age of cane crushed by factories to total ('000 tonnes)	Total sugar production ('000 tonnes)	Recovery of sugar %	Molasses production ('000 tonnes)	Molasses % cane	Year	Area under sugar cane ('000 Acre)	Production of sugar cane ('000 tonnes)	Yield of cane per acre (tonnes)
(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
3.68	120	8.96	—	—	1956-57	5,057	65,944	13.0
4.12	161	8.63	—	3.85	1957-58	5,080	65,948	13.2
6.55	295	8.88	132	3.89	1958-59	4,803	68,346	14.5
9.83	461	8.80	193	3.68	1959-60	5,220	74,016	14.2
12.05	578	8.69	232	3.50	1960-61	5,968	110,001	18.4
16.15	934	9.29	336	3.33	1961-62	6,066	103,967	17.1
17.86	1,128	9.50	414	3.48	1962-63	5,540	91,913	16.6
17.32	946	9.39	356	3.53	1963-64	5,557	104,225	18.8
16.25	661	9.29	246	3.46	1964-65	6,432	121,909	18.9
33.23	1,242	9.31	493	3.69	1965-66	7,008	123,990	17.4
22.11	1,113	9.70	431	3.76	1966-67	5,687	92,826	19.3
21.17	790	9.69	298	3.65	1967-68	5,057	95,500	18.9
23.01	1,088	10.28	375	3.54	1968-69	6,257	124,682	19.9
22.38	1,235	10.02	446	3.61	1969-70	6,792	135,024	19.9
19.16	969	10.21	333	3.51	1970-71	6,462	126,368	19.6
20.12	959	10.09	333	3.61	1971-72	5,907	113,579	19.2
18.78	935	9.85	323	3.49	1972-73	6,058	134,866	20.6
18.93	1,092	9.91	417	3.78	1973-74	6,800	140,805	20.7
21.07	1,017	9.91	379	3.69	1974-75	7,151	144,289	20.2
20.30	995	9.93	363	3.62	1975-76	6,825	140,604	20.6
20.70	1,100	9.99	387	3.60	1976-77	7,082	153,007	21.6
26.82	1,474	9.57	598	3.91	1977-78	7,786	171,966	22.7
28.98	1,277	9.98	501	3.85	1978-79	7,630	151,655	20.3
22.64	985	10.08	338	3.46	1979-80	6,449	128,833	19.9
28.13	1,566	9.93	606	3.75	1980-81*	6,543	150,522	23.0
31.93	1,834	9.83	736	3.94				

No. of factories in operation	Average duration (days)	Average capacity (tonnes per day)	Total cane crushed (000 tonnes)	%age of cane crushed by factories total	Total sugar production ('000 tonnes)	Recovery sugar % cane	Molasses production ('000 tonnes)	Molasses % cane
(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
147	150	1016	20,536	31.14	1,998	9.73	768	3.73
158	129	1040	19,438		1,946	10.01	732	3.78
164	118	1082	19,187	27.67	1,889	9.84	720	3.75
168	138	1131	24,041	32.48	2,384	9.92	916	3.81
174	166	1172	31,021	28.20	3,021	9.74	1210	3.99
180	148	1144	27,946	26.88	2,729	9.76	1086	3.91
186	106	1151	20,799	22.63	2,139	10.28	749	3.63
194	22	1185	25,716	24.67	2,573	10.01	964	3.74
198	153	1204	33,454	27.44	3,222	9.66	1344	4.00
200	159	1253	36,512	29.45	3,541	9.70	1530	4.17
200	96	1229	21,637	23.81	2,151	9.94	838	3.81
200	97	1273	22,638	23.70	2,248	9.92	867	3.11
205	152	1320	37,699	30.24	3,559	9.44	1671	4.46
215	174	1333	45,701	33.85	4,262	9.33	2004	4.47
215	139	1394	38,205	30.23	3,740	9.79	1611	4.22
220	107	1437	31,015	27.31	3,113	10.03	1228	3.96
228	133	1460	40,407	32.36	3,873	9.57	1694	4.19
229	135	1491	42,278	30.03	3,948	9.34	1831	4.28
246	140	1534	48,435	33.57	4,797	9.90	2012	4.15
252	116	1563	41,880	29.79	4,262	9.83	1703	4.07
270	125	1578	48,819	31.91	4,840	9.91	2059	4.22
287	165	1551	67,329	38.05	6,461	9.59	2971	4.41
298	140	1562	59,717	37.56	5,841	9.78	2537	5.25
300	86	1651	39,050	30.31	3,858	9.88	1582	4.04
315	104	1719	51,584	34.27	5,148	9.98	2126	4.12

This brief historical sketch highlights the positive role played by government intervention at various stages of the growth of the sugar industry during the last fifty years. However, periods of rapid growth created their own problems, which then required further government intervention to protect the interests of the sugar industry. To understand this, it is necessary to first grasp some of the other complications inherent in the structure of production and sale of sweeteners as a group.

Sugar-cane, in addition to being the key input for sugar production, is also required for the production of *gur* and *khandsari*. These are inferior substitutes for sugar and compete for the sugar-cane that would otherwise go to the sugar mills. The distribution of sugar-cane among its competing uses is governed by the relative prices of sugar and its inferior substitutes. When sugar prices increase, consumers shift in favour of *gur* and *khandsari* leading to an improvement in their capacity to draw a larger share of sugar-cane output. This phenomenon is known as "diversion".

The periods of rapid growth in sugar production, noted earlier, have been associated with surges in acreage under sugar-cane. Periods of rapid growth have typically glutted the markets for sweeteners, depressed prices and included reductions in supply of both sugar and sugar-cane, which, in turn, have engendered subsequent scarcities and higher prices leading to the next cycle of fluctuations.

Until the 1970s the bulk of sugar production was in the high-cost regions. Mills in these areas found it difficult to compete with low-cost areas on the one hand and the inferior sugar substitutes on the other. This led, in the mid-1960s, to the institution of *dual pricing* in sugar in order to avoid the collapse of the sugar industry in the high-cost regions and the associated political backlash. The present policy consists of various forms of controls on output, pricing and distribution of sugar (and sugar-cane). Around these controls have evolved various mechanisms of black income generation.



### 3. The Anatomy of Black Income Generation in Sugar

The major activities related to the production and sale of sugar are:

- a. purchase of raw material, that is, sugar-cane;
- b. extraction of sugar from sugar-cane, that is, manufacture of sugar; and
- c. sale of sugar.

Each of these activities is subject to controls and regulations. There are different mechanisms for the generation of black incomes at each of these stages.

a. *Black incomes via purchase of raw material.* Sugar-cane, the principal input into production of sugar, constitutes roughly 70 per cent of the cost of production of sugar. The cultivation of sugar-cane is largely confined to small farmers and this makes possible the exercise of local monopsony power by the mills. This monopsony power has been somewhat curtailed by the emergence of unions of sugar-cane suppliers. However, it is reported that unions are often controlled by the mills themselves through the rich farmers and traders.

One of the mechanisms of black income generation relating to sugar-cane stems from the fixation of a minimum price that the mills are required to pay to the farmers. The other method which is prevalent is independent of any control or regulation, namely, through under- and over-weighting of sugar-cane.

A factory cannot show on its books a price lower than the State-advised minimum. Thus, under-payment is resorted to through intermediaries/agents of the management of the mills. The difference between the amount actually paid to the farmer and the minimum price is black or unreported income. Quite clearly, a farmer would be unwilling to accept a price that he could obtain from a *gur* or a *khandsari* producer in his area and this acts as a floor to the underpayment. Underpayment may be directly made by the mills on the pretext that the cane has dry matter, etc. This amounts to cheating the farmer but not necessarily to generation of black

income since this mechanism would raise the profitability of the mill and taxes would have to be paid.

Under-weightment of sugar-cane may be resorted to at the point of its entry into the mill. The Excise Department is supposed to check the weighbridges and scales. However, this is only done periodically. The under-weightment would lead to an increase in the profitability of the factory, unless, a corresponding amount of the output is also not declared. Secondly, under-weightment may be accompanied by the issue of bogus receipts of supply of sugar-cane in the names of agents of the management. In either of these cases, black incomes would be generated. The use of bogus receipts in itself would amount to over-weightment since it would tend to artificially increase the amount of sugar-cane purchased.<sup>4</sup>

b. *Black incomes via manufacture of sugar.* The output of sugar is monitored by the Excise Department which levies duty on production and effectively regulates the monthly release of sugar into the markets. If a certain portion of the output escapes the excise net, not only does it not pay duty but the entire proceeds of this sale becomes the management's undeclared profit (and hence black income).

Here, the motivation is not just evasion of excise duty but a skimming-off of profits from the firm's (or the cooperative's) profit-and-loss account. The cost of manufacture of the undeclared output gets loaded on to that of the declared output. Thus, if output suppression is at all possible, the gains from it may result from factors other than the rate of excise duty. In these circumstances, it is the possibility of successful evasion which may be as important as the *rate* of duty for an explanation of underreporting of output.

Output suppression in the sugar industry could result from removal of sugar from the godowns without following proper procedures and without obtaining the requisite permits for moving sugar. Other things remaining the same, this would imply a lower recorded recovery percentage of sugar from sugar-cane. For the operation to be successful, various records at the intermediate stages of production, where the sugar content of juice is measured, would have to be doctored. This may be possible since all chemical analysis is done

centrally in the laboratory. However, it may be easier to just show a lower weight of input material so that the recovery percentage does not have to be fudged at various stages of production. From the point of view of the management, under-weighment also has the advantage that it does not involve them in deceiving the factory; it is the farmer who loses.

At the output stage, various other raw materials are used and by-products generated. Compared to the value of sugarcane purchased and sugar produced, these are of minor significance. However, it is generally believed that black incomes are generated in the case of sale and purchase of each of these items. Among the by-products, molasses are the most important. The sales of molasses are governed by permits and are apparently associated with generation of significant amounts of black income. Labour is the other major input into sugar production. Since the industry is of a seasonal nature, it involves employment of much temporary labour during the season. Reportedly, these labour contracts involve pay-offs as well. It has been suggested that 5-10 per cent of all contracts may be taken as the amount of unreported incomes generated through purchases of inputs and sales of by-products.

*c. Black incomes via sales of sugar.* Sugar is sold through the open market as well as through the public distribution system. The government obtains supplies for the public distribution system by imposing a levy on the mills. This sugar is sold at regulated prices which are generally lower than the free market prices. Thus, diversion of sugar from the public distribution system to the free market allows a (black) profit to be earned. Either the diversion may be outright, through the use of bogus ration cards or through substitution by inferior *khandsari*. No estimate for this has been attempted here since independent data on consumption of sweeteners and for output of inferior substitutes were not available.

Black incomes are also generated through sales of sugar in the open market. These sales are through auctions but it appears that traders sometimes form rings to bid down prices. Usually, prices are fixed at the level prevailing in the nearby

major market (say, Bombay, Delhi, etc.) less transport margin. However, this pattern makes little sense since the sugar may be moving in the direction opposite to the market from which prices may have been compared. For instance, if sugar is to move from Kolhapur to Kerala, there is very little sense in comparing the price with Bombay and allowing for transport margin for moving the goods to Bombay. Apparently, cuts are obtained by the managements for sales to the traders' rings.

In the above discussion, some of the mechanisms of generation of black incomes depend not so much on any controls or regulations as on the possibility of getting away with business malpractices. Amongst the various ways of generating black incomes in sugar industry, suppression of output is likely to be the major one. In what follows, an attempt is made to estimate this for the period 1961-62 to 1980-81 and then to analyse the results in the context of controls and regulations to understand if any links exist between them and the generation of black incomes.

#### 4. Estimating Suppression of Sugar Output: A Physical Input-Output Approach

In principle, output suppression may be estimated either directly or indirectly. Direct estimates would require the use of Excise Department data on the extent of evasion detected. Reliable evidence of this nature is unavailable. Hence one is obliged to use indirect approaches. The most promising indirect approach is to focus on a key input used in sugar production, observe the inter-temporal profile of the input-output ratio, estimate the input-output norm that ought to prevail in the light of objective, technical and economic factors, and attribute departures from this norm to output suppression.

The most obvious candidate for such an input-based approach is sugar-cane, with the sugar recovery percentage as the key ratio. However, as noted earlier, sugar-cane is not only an input for sugar production but also for the inferior substitutes *gur* and *khandsari*. Furthermore, a certain portion

of sugar-cane is used for seed, for feed and chewing; there are no reliable estimates of these. Generally, a norm of 11 per cent is used to estimate sugar-cane used for seed, feed and chewing, while the amounts used for *gur* and *khandsari* production are estimated as a residual: In effect, no independent estimate of how much sugar-cane is used by sugar factories is available. Thus, the application of the observed recovery percentage to the factory-reported input of sugar-cane will not reveal evasion.

Alternatively, if an independent estimate of the recovery percentage could be obtained, then, accepting factory records on sugar-cane input to be correct could yield alternative estimates of sugar output. Unfortunately, no standard recovery percentage can be credibly computed. This is because recovery percentages vary from factory to factory, season to season and month to month.

After a careful consideration of a variety of inputs, it was decided to focus on the use of energy as an input, especially electricity, for sugar production to estimate associated input-output norms, actual sugar output and, hence, the extent of sugar suppression.

a. *The logic of the exercise.* In summary, the application of a physical input-output approach, based on energy use, to estimating the extent of sugar output suppression involves the following steps.

We first hypothesise that, in any given year, recorded electricity use per unit of recorded sugar output depends on a number of factors:

- i. the technology of sugar production;
  - ii. the substitution of electrical for thermal energy in sugar production;
  - iii. the changes in machine energy requirements due to aging of plants;
  - iv. the changes in recovery percentage of sugar from sugar-cane;
  - v. the duration of the sugar-cane crushing season;
  - vi. stoppages of plant and machinery;
  - vii. the suppression of figures for electricity consumption;
- and

vii. the suppression of sugar output.

We then proceed to systematically allow for the first seven factors and thus isolate the changes in recorded electricity consumption per unit of recorded sugar output, which are attributable to varying levels of suppression of sugar output. This, in turn, allows us to estimate the quantum of output suppression in each of the years of our sample period, 1961-62 to 1980-81.

In this section we present a summary account of our methodology and results. A much more detailed treatment is available in Appendix 3 to this report. We begin with a brief discussion of energy use in sugar production.

b. *Energy use in sugar production.* Energy is required for production and sugar is no exception. Energy is used for a variety of purposes and in a variety of forms. Thus, a small amount of man-supplied mechanical energy is used for controlling and directing operations. Energy is also used for transporting sugar-cane. However, our focus here is on the direct energy requirements of the machines for converting sugar-cane into sugar (this excludes losses incurred in transferring energy from one part of the factory to another).

Machine energy requirements can be met either through thermal or electrical energy. In the older sugar mills steam was produced by burning bagasse (thermal energy) and then used for driving crushers (creating motion, that is, mechanical energy) to obtain juice from sugar-cane. In the more modern mills the steam is first used to run turbines (mechanical energy), which then drive generators to produce electricity (electrical energy) and this is used to drive motors to drive the crushers (mechanical energy).

In both cases thermal energy, obtained by burning bagasse, is converted into mechanical energy to drive crushers. The intermediate conversion into electrical energy in the modern mills is dictated by efficiency gains to be reaped from using the steam to run a large turbine to generate electricity in bulk instead of using it to run a number of smaller turbines to drive the rollers of the crushers.

In all this, assuming that the crushing technology remains more or less unchanged, the total energy requirement of

machines per unit of sugar output remains unchanged. What does happen is that the energy requirement of the machines is met, in the more modern mills, by a smaller proportion of energy input from outside the factory. In other words, energy carried by steam is more fully utilised and the purchases of energy from outside (in the form of coal, fuel oil and electricity) are correspondingly reduced.

Incidentally, electricity generated by the factories is sometimes also supplied to local townships for lighting. The data on this are separately available and can be subtracted from the total generation of electricity to obtain the figures for electricity consumption in the factory for the production of sugar.

We turn now to a discussion, seriatim, of the principal factors influencing the consumption of electricity per unit of sugar output, which were listed on an earlier page. Electricity consumption and output of sugar are presented in Figure VI.1.

*c. Technological change in the sugar industry.* Our working assumption is that, measured in terms of machine energy requirements per unit of sugar output, technical change in the sugar industry in India in the period 1961-62 to 1980-81 was negligible. The basis for this assumption is as follows.

Table 6.2.1 indicates that the number of factories operating changed little between 1935-36 and 1956-57. However, in this period, installed capacity per factory increased considerably, from 644 tons per day (tpd) in 1935-36 to 1016 tpd in 1956-57<sup>5</sup>. This increase resulted mainly from increases in plant sizes through addition of machinery. As Bagchi (1975) points out, most of the plant and machinery put in place during this period was imported.

During the 1950s, when manufacture of indigenous machinery was taken up, the Government asked the manufacturers to standardise plant size at 1,000 tpd. This was subsequently raised to 1,250 tpd. As a consequence, if we examine the plant sizes of new factories commissioned during 1955-56 to 1980-81, we find that up until 1964-65 plant sizes varied between 813 tpd and 1270 tpd<sup>6</sup>. After 1964-65 an overwhelming majority of plants were scaled at 1250 tpd. Furthermore,

**Figure 6.1**  
**Electricity Consumption and Output**

Scale :

X axis: 10 divisions = 1 Year

Y axis :

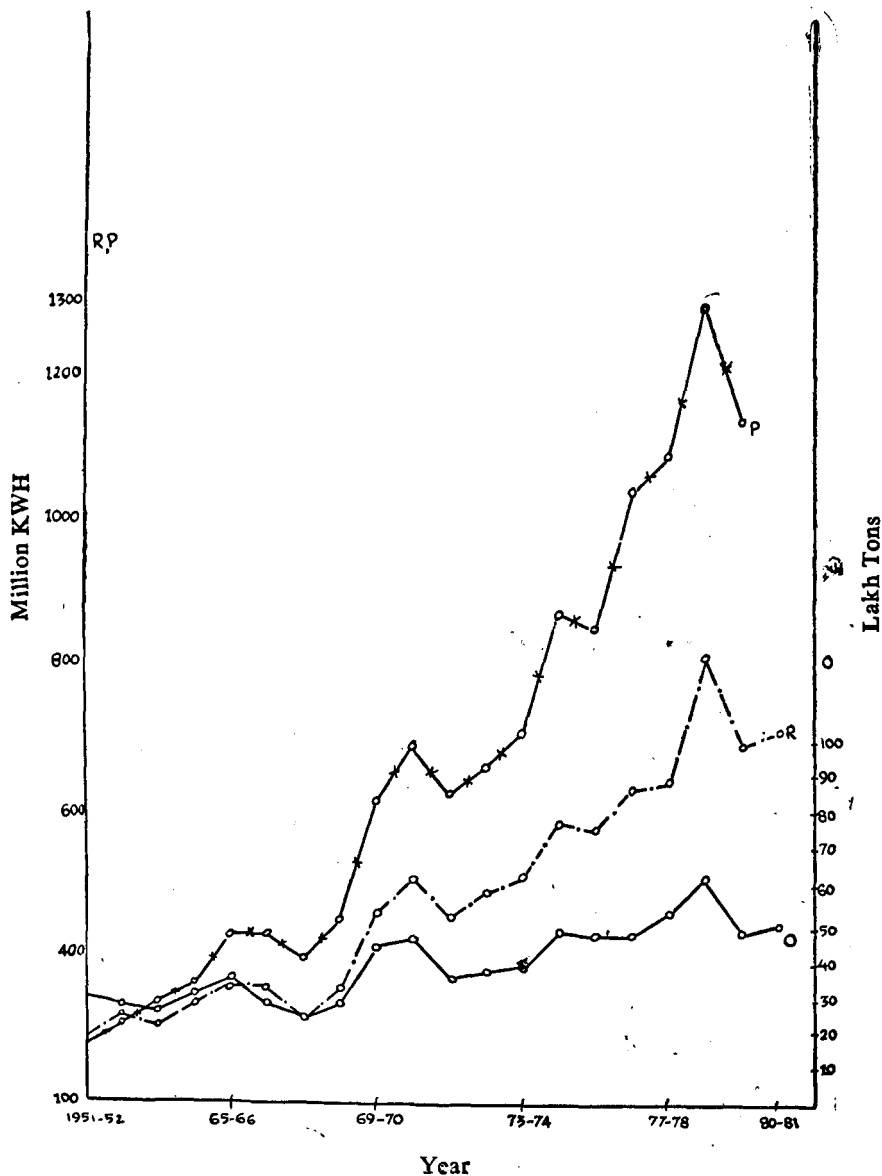
(a) 1 division = 5 million Kwh

(b) 1 division = 1 lakh tons

P—Total electricity consumption by Industry (adjusted for non-reporting). Given as x

R—Total electricity consumption adjusted for substituted Given as — —

O—Output of Sugar. Given as o-e





many smaller size, older plants were modernised by adding machinery and upgraded to 1,250 tpd capacity. In addition, many factories of larger size were set up by erection of plants in multiples of 1,250 tpd capacity. Thus, for the period under consideration, plant size was largely standardised.

It could be argued that even if plant size remained largely unchanged, machinery of different makes and varying efficiencies might have been involved. Thus we have to look at the relative efficiency of plants of different brands. An analysis of the data suggests that machines of different makes gave roughly the same efficiency of extraction<sup>7</sup>.

Hence we can deem technology to have remained approximately invariant during the period in question, not only because plant sizes were largely standardised, but also because the efficiency of plants of different makes were more or less the same. With this meaning of a stable technology in the sugar industry, we can now discuss the other factors that influence electricity consumption per unit of sugar output<sup>8</sup>.

d. *Substitution of electricity for thermal energy.* We argued above that technology has remained stable as indicated by machine energy requirements per unit of sugar output. But the period 1961-62 to 1980-81 witnessed substantial *substitution* of electricity for thermal energy in sugar production. This occurred because the newer plants found it profitable to convert the thermal energy associated with steam from bagasse burning into electricity before driving the sugar-cane crushers. Thus, the series for (recorded) electricity consumption per unit of (recorded) output of sugar shows an increasing trend and so does the series for installed generation capacity per unit of installed sugar-cane crushing capacity (see Table 6.4.1).

If, as we have argued, the machine requirement of energy per unit of sugar output has remained constant, and electricity consumption per unit of sugar output has increased as a result of substitution, then (other things being equal), subtraction of the increased consumption of electricity (*on account of substitution*) from the total consumption of electricity should yield a constant figure for the remaining consumption of electricity per unit of sugar output. The

TABLE 6.4.1.  
Corrected Electricity Consumption per Unit of Output

Year	Total number of factories reporting	Total installed capacity (KW)	Number of factories working in the year	Proportionate installed generating capacity (KW)	Installed super-cane crushing capacity (tons/day)
(1)	(2)	(3)	(4)	(5)	(6)
1960-61	—	—	—	—	203926
1961-62	99	70134	160	163687	205920
1962-63	98	80080	186	169070	214086
1963-64	95	99311	194	202803	229690
1964-65	100	102229	198	202413	238392
1965-66	109	119104	200	238208	250600
1966-67	141	166723	200	236557	245800
1967-68	134	172145	200	256733	254600
1968-69	136	183345	205	276322	270600
1969-70	140	195298	213	299922	286595
1970-71	140	201511	215	320213	299710
1971-72	136	215531	220	344078	316140
1972-73	145	224202	228	352538	332680
1973-74	143	236027	229	377973	341457
1974-75	149	270213	246	446123	377364
1975-76	163	300636	252	465087	393876
1976-77	178	364640	270	553106	426060
1977-78	209	435254	287	597693	445237
1978-79	274	425863	298	593998	465476
1979-80	216	470518	200	653497	495300
1980-81	227	496314	318	688718	541485

- Source: 1. Columns (4), from Table 6..2.1.  
 2. Column (5), calculated using columns (2), (3) and (4); col. (5) =  $\frac{\text{col. 4}}{\text{col. 2}} \times \text{Col. (3)}$   
 3. Column (6), calculated from Table 6. 2.1.  
 4. Column (11), from Central Excise and Customs, Directorate of Statistics, and Intelligence, *Statistical Year Book Central Excise*, Vol. 1, Various issues from 1970-71 to 1980-81.  
 5. Column (2), (3) & (9), from Public Electricity Supply, All India, State General Review for Relevant Years.

lg (col. 5. /col. 6.)	Index of lg 1961-62 = 100)	Total electricity consump- tion in industry (P <sub>1</sub> ) (million (KWH)	P <sub>1</sub> /1 <sub>r</sub> -P col.2 ÷ col. 3) million (KWH)	Output in the fiscal year (O) (lakh tons)	P/o col 10 ÷ col. 11.
(7)	(8)	(9)	(10)	(11)	(12)
—	—	—	—	—	—
0.7059	1.000	287.960	287.96	28.36	10.157
0.7897	0.992	312.285	314.74	25.67	12.261
0.8822	1.108	339.267	306.19	25.05	12.223
0.8491	1.064	360.174	337.55	29.00	11.640
0.9506	1.194	430.632	360.63	33.99	10.611
0.9624	1.209	428.350	354.25	27.43	12.918
1.0092	1.268	395.035	311.64	22.40	13.908
1.0211	1.283	459.700	350.30	27.19	13.170
1.0465	1.318	612.440	465.73	40.31	11.501
1.0684	1.342	679.890	806.62	45.23	11.201
1.0884	1.367	623.423	456.08	34.41	13.283
1.0591	1.331	660.832	496.49	36.68	13.536
1.1078	13.91	706.760	508.07	37.36	13.603
1.1822	1.486	866.163	583.27	47.26	12.337
1.1808	1.454	849.851	572.67	46.32	12.337
1.2982	1.631	1042.602	639.26	46.67	13.697
1.3427	1.687	1091.247	646.98	51.80	12.487
1.2761	1.603	1299.458	810.64	62.31	13.010
1.3194	1.658	1144.417	690.23	47.06	14.606
1.2719	1.598	1131.738	708.22	49.73	14.241

subtraction of the substitution-related electricity consumption is done in the calculations shown in Table 6.4.1, on the assumption that this amount is proportional to the increased installed electricity generation per unit of installed sugar-cane crushing capacity. In other words, if the figures are deflated by the index ( $I_g$ ) of the ratio of installed generating capacity in the industry to the installed sugar-cane crushing capacity in the industry, then the resulting, "modified" series for electricity consumption per unit of output ought to be constant, provided other things remained unchanged.

Other things, of course, changed during this period. And we turn now to gauging and "netting out" the influence of other factors on electricity consumption per unit of output.

e. *The influence of aging of sugar plants.* The average age of sugar machinery is a factor that can affect the efficiency of plants. As machinery ages, and in spite of maintenance, efficiency usually declines as a result of wear and tear, cumulative small changes in tolerances and increased breakdowns. In sugar this would be reflected in increased consumption of machine energy per unit of output. Table 6.4.2 gives the data on the number of factories in operation and their average installed crushing capacity per day in each of the years. Thus we know how much new crushing capacity was brought into operation each year. We noted earlier that there was an upsurge in the number of sugar factories in the period 1930-31 to 1934-35. From this we deduce that in 1950-51 the average age of sugar plants was about 17 years. In each succeeding year the new crushing capacity added is taken to be one year old, while the average age of the already existing crushing capacity is advanced by a year. A weighted average of the age of the crushing capacity is presented in Table 6.4.2 both in absolute terms as well as in index-form ( $I_A$ ).

f. *Recovery of sugar from sugar-cane.* The sugar content of sugar-cane varies for a number of reasons including different varieties of cane and weather conditions. If there is more sugar content in the juice extracted from cane, then with the same expenditure of energy more sugar would be recovered—other things equal. In other words, energy consumption per unit of sugar output would be lower. The data

TABLE 6.4.2

## Age Profile of Sugar Mills Crushing Capacity

Fiscal year	Number of factories in operation	Average capacity (tons per day)	Total crushing capacity (per day) col. 2 × col. 3)	Age profile (years)	Age index I <sub>A</sub> (1960-61 = 1.0)
(1)	(2)	(3)	(4)	(5)	(6)
1950-51	139	873	121347	17.00	—
1951-52	140	938	131320	16.70	—
1952-53	134	952	127568	17.67	—
1953-54	134	926	124084	18.63	—
1954-55	136	958	130288	18.69	—
1955-56	143	980	140140	18.19	—
1956-57	147	1016	149352	17.91	—
1957-58	158	1040	164320	17.11	—
1958-59	164	1082	177448	15.74	—
1959-60	168	1131	190008	15.63	—
1960-61	174	1172	20 928	15.53	1.000
1961-62	180	1144	205920	16.37	1.054
1962-63	186	1151	214086	16.71	1.076
1963-64	194	1185	229890	16.54	1.065
1964-65	198	1204	238392	16.87	1.086
1965-66	200	1253	250600	17.02	1.096
1966-67	200	1229	245800	18.19	1.171
1967-68	200	1273	254600	18.46	1.189
1868-69	205	1320	270600	18.35	1.182
1969-70	215	1333	286595	18.25	1.175
1970-71	215	1394	299710	18.33	1.180
1971-72	220	1437	316140	18.23	1.174
1972-73	228	1460	332880	18.13	1.167
1973-74	229	1491	341439	18.67	1.202
1974-75	246	1634	377364	17.89	1.152
1975-76	252	1563	393876	18.14	1.168
1976-77	270	1578	426060	17.77	1.144
1977-78	287	1551	445137	18.01	1.160
1978-79	298	1562	465476	18.22	1.173
1979-80	300	1651	495300	18.12	1.167
1980-81	315	1719	541485	17.57	1.131

Source: 1. Columns (2) and (3), refer to Table 6.2.

2. Column (5), calculated as per the text.

on recovery percentages is given in Table 6.2.1 From this we derived an index of recovery percentage ( $I_r$ ).

g. *Duration of the sugar-cane crushing season.* The duration of the crushing season of sugar industry also influences energy consumption. These data also appear in Table 6.2.1. However, the data refer to the standardised day of 22 hours and not to the actual number of days for which the factories operated. For this, data were collected on the All India average hours lost as a percentage of total hours available (see Table 6.4.3). The data from Table 6.2.1 on the average number of days of factory operations were corrected by the figures for percentage hours lost to obtain the average number of days of actual factory running during the year. Given that the sugar industry has a seasonal character, plant and machinery is designed for a certain optimum number of days of operations. If the plant is run for either a shorter or a longer duration than the optimum, then the energy consumption per unit of output is likely to increase. In the former case, this would be the result of (a) overheads being spread over a smaller amount of output, and (b) factory operation over the coldest parts of the crushing season. In the latter case, the reason would be overloading of plants and the consequent higher wear and tear of machinery which would cumulatively add up during the later part of the season to cause larger numbers of plant breakdowns. Such breakdown are distinct from any stoppages due either to shortage of raw material or breakdown on account of the age of machinery.

If an index of the actual number of days of factory operations ( $I_N$ ) is constructed, then energy consumption per unit of output would be minimum at the  $I_N$  corresponding to the optimum. This has been taken to be the average number of days of factory running (162.5 days) in the period 1960-61 to 1980-81 and normalised at unity. Then energy consumption per unit of output may be taken to be an increasing function of  $(1 + I_N - 1)$ . This is given in Table 6.4.3.

h. *Stoppages of machinery and plant.* The hours lost as a percentage of hours available (in index form,  $I_h$ ) would be

TABLE 6.4.3

Number of days of Factory Running Corrected for Hours Lost—  
Converted to Fiscal Year

Year	Sugar year number of days of effective running	Per cent lost in sugar year	Corrected for hours lost (actual days)	Days of running upto March 31	Extra after March 31 (Col. 4 opera- col 5)	Fiscal year days of operations (N)	Index of In (col. 5)	1 ÷ / 1 <sub>t</sub> - 1 /
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1960-61	166	—	—	135	—	—	—	—
1961-62	148	17.20*	178	135	43	—	—	—
1962-63	106	16.70	127	127	0	170	1.049	1.049
1963-64	122	16.67	146	135	11	135	0.833	1.167
1964-65	153	17.39	185	135	50	146	0.901	1.099
1965-66	159	15.89	189	135	54	185	1.242	1.142
1966-67	96	20.00	120	120	0	174	1.074	1.074
1967-68	97	24.10	128	128	0	128	0.790	1.210
1968-69	152	19.00	188	135	53	135	0.833	1.167
1969-70	174	17.18	210	135	75	188	1.160	1.160
1970-71	139	18.20	170	135	35	210	1.296	1.296
1971-72	107	18.90	132	132	0	167	1.031	1.031
1972-73	133	17.80	162	135	27	135	0.833	1.167
1973-74	135	17.80	164	135	29	162	1.000	1.000
1974-75	140	17.20	169	135	34	164	1.012	1.012
1975-76	116	17.00	148	135	5	169	1.043	1.043
1976-77	125	17.60	152	135	17	140	0.864	1.136
1977-78	165	19.30	204	135	69	152	0.944	1.056
1978-79	140	21.00	177	135	42	204	1.259	1.259
1979-80	86	36.75	136	135	1	177	1.093	1.093
1980-81	104	28.71	146	135	11	136	0.840	1.160

Notes: \* Approximate

Source: 1. Column (2), from Table 6. 2.1

2. Column (3), Indian Sugar Mills Association, *India Sugar Year Book*. Various Issues.

3. Column (4), calculated using Columns (2) and (3).

4. Column (5), as in the text.

5. Column (7), calculated by using column (6) and column (5) [col. 7 = (6) for year t + col. (5) for year (t + 1)].

6. Column (10), refers to Table 6.2.1.

7. Columns (11) and (12) are calculated using columns (5), (6), and column (10).

8. Column (13), calculated using columns (5), (6), (11) and (12).

9. Column (15), calculated using columns (3), (5) and (6).

10. Column (17), refer Table 6. 2.1

Recovery per cent in sugar year	Recovery per cent upto March 31 (X)	Recovery per cent after March 31 (.9X)	Fiscal year recovery per cent	Index of recovery per cent $[(I_r)_{sin} = I_r]$	Per cent hours lost in fiscal year	Index of hours lost in fiscal year in 16.3 % $I_n = 1.000$	1A In fiscal year
(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
9.74	—	—	—	—	—	—	—
9.76	10.00	9.00	—	—	—	—	—
10.28	10.28	0.00	9.96	1.061	16.78	1.029	1.029
10.01	10.09	9.08	10.09	1.075	16.67	1.023	1.023
9.66	9.93	8.94	9.87	1.051	17.34	1.064	1.063
9.70	9.99	8.99	9.71	1.033	16.30	1.000	1.000
9.94	9.94	0.00	9.65	1.026	18.72	1.148	1.148
9.92	9.92	0.00	9.92	1.056	24.10	1.479	1.479
9.57	9.85	8.86	9.85	1.049	19.00	1.166	1.166
9.56	9.91	8.92	9.61	1.023	17.64	1.082	1.052
9.84	10.05	9.04	9.65	1.028	17.81	1.093	1.093
10.03	10.03	0.00	9.82	1.046	18.75	1.150	1.150
9.57	9.73	8.76	9.73	1.036	17.80	1.092	1.092
9.34	9.51	8.56	9.39	1.000	17.80	1.092	1.092
9.94	10.10	4.13	9.86	1.050	17.31	1.062	1.062
9.83	9.87	1.88	9.72	1.035	17.04	1.045	1.045
9.91	10.02	9.02	9.98	1.063	17.58	1.079	1.079
9.59	9.93	8.93	9.63	1.047	19.11	1.172	1.172
9.78	10.02	9.02	9.65	1.028	20.43	1.253	1.253
9.88	9.89	8.90	9.68	1.031	33.01	2.025	2.025
9.98	10.08	9.05	10.05	1.070	28.77	1.765	1.765



another factor affecting input of energy per unit of output. The reason is that most new plants have teething troubles and have to stop for reasons other than wear and tear. Further, plant may also be stopped due to shortages of raw materials. Each stoppage implies loss of heat because boilers and generators have to be maintained at a minimum level of functioning and other machinery has to be allowed to cool or to stop for repairs, etc. Stoppages may lead to loss of material in process or may require extra expenditure of energy to maintain the temperatures in different parts of the plant. Lastly, energy is also required to heat the plants back to optimum temperatures before starting the process after a stoppage. In all these cases, the energy consumption per unit of output would go up.

i. *Doctoring of data on electricity consumption.* Earlier in this chapter we listed eight factors which influence the reported electricity consumption per unit of recorded sugar output. The six factors discussed thus far have been of a technical nature, while the remaining two depend on manipulations, if any, resorted to by the industry.

Electricity consumption in sugar production is the sum of own generation by the industry and purchases from the State Electricity Board. In either case, if purchases/uses are suppressed, then it would have to be done systematically by adjusting the relevant counters and meters. In neither case is such doctoring likely to be seasonally adjusted. So, it would simply that in both cases estimates of sugar output suppression based on recorded electricity consumption would be biased downward.

However, the doctoring of electricity consumption data is unlikely to be widespread for two reasons. First, the value of electricity purchased from the State Electricity Boards is a tiny fraction of the total value of inputs into sugar production. Data from the 1973-74 *Annual Survey of Industries* suggest that such purchases amounted to less than 0.1 per cent of the average value of output per factory. Thus the monetary gain to owners and managers from doctoring the meters in connivance with utility officials appears to be too

small to be worth the risk. Second, most of the industry's electricity needs are met from self generation. Since this is a by-product, no valuation or payment is required. Thus, suppression of these figures leads to no direct monetary gain.

It might be argued that from 1978-79 an electricity generation duty was imposed by the Centre (on behalf of State Governments) and this could have induced tampering with the electricity data. But, in most cases, this duty amounted to a few thousand rupees per factory and was not a credible reason for doctoring electricity consumption.

Finally, we could entertain a collusive theory of deliberately doctoring electricity consumption figures to show an unchanged input-output relationship. However, in the absence of well-established and recognised electricity input norms for the industry, the trouble of suppressing electricity consumption, in a manner which is systematically related to sugar output suppression, seems to be hardly worth the effort.

So, we assume that the our electricity consumption data are not doctored by the industry.

j. *Suppression of sugar output.* Finally, if there is evasion of output, then the consumption of energy per unit of *reported* output would be higher. There is no direct evidence on this. Indeed, the purpose of this entire exercise is to estimate such evasion. We hypothesise that each of the technical factors (discussed above) affecting the machine energy consumption per unit of sugar output is largely independent of each other. Further, the extent of sugar output suppression is unlikely to depend on these technical factors. Instead, it is likely to be governed by prices, profitability, ease of evasion and so forth. Thus, evasion is unlikely to depend on the variables  $I_A$ ,  $I_r$ ,  $I_h$ , and  $I_N$ . So, if the relationship of these factors with electricity consumption (corrected for substitution of thermal energy) per unit of output,  $P/O$ , is estimated, then, by hypothesis, fluctuations in  $P/O$  may be attributed to output suppression.

k. *The model : a summary*<sup>9</sup>. As discussed in previous sub-sections, the machine requirement of energy (E) for sugar production (O) can be split up into two components, thermal (T) and electrical (P). Recall that  $I_A$  is the index of

average age of plants,  $I_r$  is the average recovery percentage,  $I_N$  is the index number of days of factory operation and  $I_h$  is the index of hours lost as a percentage of hours available. On the basis of our earlier discussion we can then write

$$E = F(O, I_N, I_r, I_N, I_h) \dots\dots\dots (6.1)$$

and

$$E = T + P. \dots\dots\dots (6.2)$$

For simplicity, we choose a multiplicative form of the function  $F$ , so that

$$E = C.O \alpha^1. I_A \alpha^2. I_r \alpha^3. (1 + /I_N - 1/) \alpha^4. I_h \alpha^5 \dots\dots\dots (6.3)$$

where  $C$  is a constant term.

Now, our assumption that sugar production technology is constant implies that  $\alpha_1 = 1$ .

And holding other variables constant, we obtain

$$\frac{\partial E}{\partial O} = \frac{\partial (T + P)}{\partial O} = \text{constant} \dots\dots\dots (6.4)$$

Furthermore, it is shown in Appendix 3 that under these assumptions,

$$\frac{P}{O} = \left(\frac{\bar{P}}{O}\right) \cdot I_g, \dots\dots\dots (6.5)$$

where  $\left(\frac{\bar{P}}{O}\right)$  is electricity consumption per unit of sugar output in the base year (taken as 1961-62) and  $I_g$  is the index of  $g$ , with  $I_g = 1$  in the base year and with  $g$  defined as;

$$g = \frac{\text{installed electricity generation capacity in the industry}}{\text{installed sugar-cane crushing capacity in the industry}} \dots (6.6)$$

Using (6.2), (6.4) and (6.5) we can show that,

$$E \propto \frac{P}{I_g} \dots\dots\dots (6.7)$$

Now, allowing the other factors in (6.3) to vary, and combining (6.3) and (6.7), we get:

$$\frac{P}{(O.I_g)} = C' . I_A^{\alpha^2} . I_r^{\alpha^3} . (1 + /I_N - 1/)^{\alpha^4} . I_h^{\alpha^5} \dots\dots\dots (6.8)$$

where  $C'$  is a new constant term.

Now let us define,

$$P_c = P / (I_g \cdot I_A^{\alpha_2} \cdot I_r^{\alpha_3} \cdot (1 + I_N - 1)^{\alpha_4} \cdot I_h^{\alpha_5}) \dots\dots (6.9)$$

and

$$O = O_e + O_d \dots\dots\dots (6.10)$$

where  $O_e + O_d$  is evaded (or suppressed) output and  $O_d$  is declared output.

Then, we can show (as we do in Appendix 3) that

$$\frac{P_c}{O_d} = (1 + \frac{O_e}{O_d}) \left( \frac{P_c}{O_d} \right)_o \dots\dots\dots (6.11)$$

where  $\left( \frac{P_c}{O_d} \right)_o$  gives the value of the ratio when  $O_e$  is zero, that is, when there is no evasion.

Now  $O_d$  is known and  $P_c$  can be estimated. If a graph of  $\frac{P_c}{O_d}$  is plotted against time, then equation (6.11) can be used to calculate evasion. The ratio  $\left( \frac{P_c}{O_d} \right)_o$  can be used as a first approximation. This would bias downwards the results obtained for output evasion in other years.

1. *Estimation of evaded output*<sup>1</sup>. We noted above that, with certain assumptions, the ratio  $\frac{P_c}{O_d}$  can be examined to deduce the extent of output suppression in each year in our sample period. Estimation of the annual values of  $P_c$  requires knowledge of the  $\alpha_i$  parameters. To estimate the  $\alpha_i$  an ordinary least squares regression was run on the logarithmic form of equation (6.7), with the approximation involved in using  $O_d$  in place of  $O$ , the latter being unobservable. It yielded the following results:

$$\log \left( \frac{P}{I_g \cdot O_d} \right) = 2.42 + \frac{0.67 \log I_A}{(1.43)^*} - \frac{0.37 \log I_r}{(-0.32)} - \frac{0.28 \log (1 + I_N - 1)}{(-2.23)^{**}} + \frac{0.25 \log I_h}{(3.72)^{***}} \dots\dots (6.11)$$

where  $t$  - statistics are indicated in parentheses below the coefficients<sup>10</sup> and

$$\bar{R}^2 = 0.68; F = 10.43; DW = 1.77.$$

The regression coefficients (the  $\alpha_1$ s) have the expected signs and are also significant, except for that of  $I_r$ . The estimates of  $\alpha_1$  from equation (6.11) were substituted in equation (6.8), together with the observed values of the other variables to yield an estimated time series for  $P_c$ . Knowing the annual values of  $O_d$  and  $P_c$ , and hence the ratio  $\frac{P_c}{O_d}$  for each year, the percentage of sugar output suppression was calculated for each year along the lines indicated in the preceding subsection. The results are shown in Table 6.4.4 and Figure 6.2.

The estimates of output evasion obtained by the above method relate to evasion during the financial year. Each financial year spans two "sugar years" and the factors which may cause or influence evasion—such as, prices, the market situation, government policy and so forth—usually vary with sugar years. So, the estimates of evasion by financial year were converted to estimates of evasion by sugar years by allocating the number of days of operation of factories over the different financial years and by assuming uniform rates of output suppression over the year. The results are shown in Table 6.4.4. This conversion was also necessary to test whether evasion of output was resorted to by underreporting of sugar-cane crushed or by suppression of the recovery percentage.

*m. Interpretation of the results.* As noted earlier, evasion of sugar output may be associated either with reporting the correct amount of sugar-cane purchased for crushing and suppressing the recovery percentage, or by underreporting the amount of sugar-cane purchased and leaving unchanged the figure for recovery percentage, or a combination of the two. We indicated earlier that under Excise Department rules, various registers have to be maintained at different stages of production for checking the recovery percentages. Thus, distortion of the data may involve active collusion with a number of people. For underreporting of sugar-cane, only the point of its weightment is crucial.

To investigate this issue, the implications of output evasion for underreporting of sugar-cane was compared with capacity utilisation data for industry.<sup>11</sup> Table 6.4.5 and Figure 6.3 show that in almost all cases the evasion-implied

TABLE 6.4.4

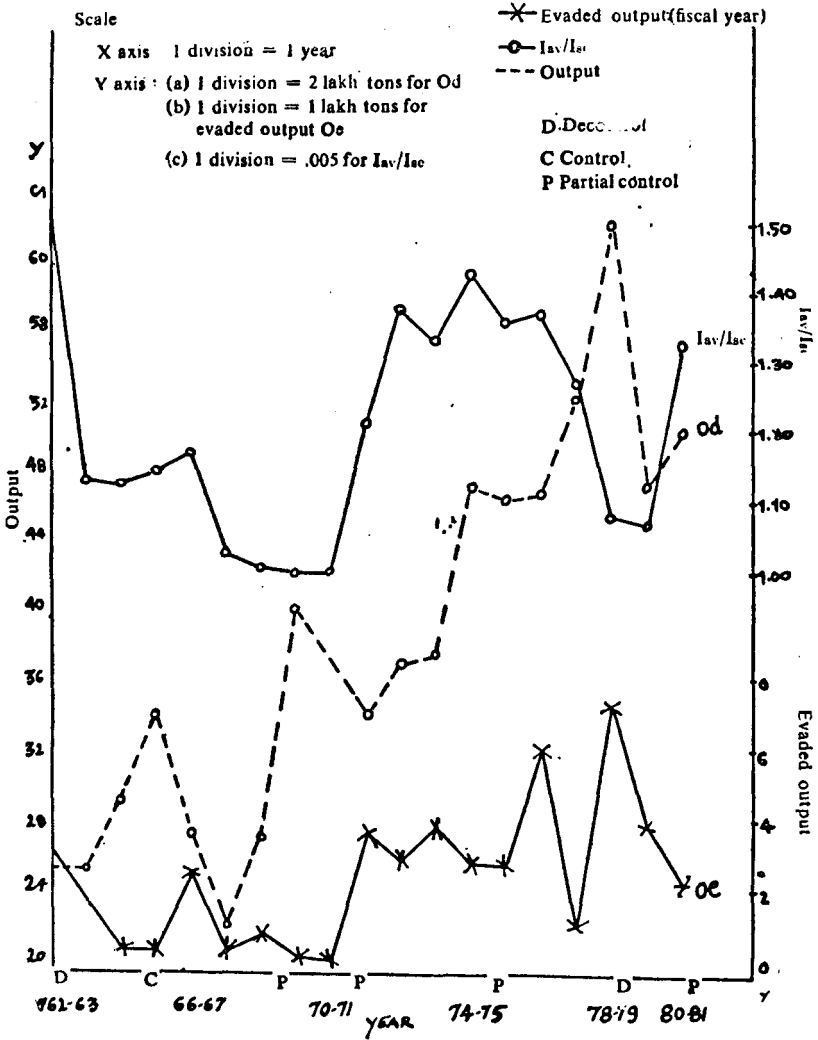
Conversion of Evasion of Output from Fiscal Year to Sugar Year

Year	Fiscal year output (lakh tones)	Sugar year, output (lakh tons)	Evasion in fiscal year (lakh tons)	Number of days of running in fiscal year
(1)	(2)	(3)	(4)	(5)
1961-62	28.35	27.29	—	—
1962-63	25.67	21.39	3.23	170
1963-64	25.05	25.73	1.63	135
1964-65	29.00	32.22	0.17	146
1965-66	33.99	35.41	0.24	185
1966-67	27.43	21.51	2.36	174
1967-68	22.40	22.48	0.16	128
1968-69	27.19	35.59	0.76	135
1969-70	40.31	42.62	0.12	188
1970-71	45.23	37.40	0.00	210
1971-72	34.41	31.13	3.65	167
1972-73	36.68	38.73	2.90	135
1973-74	37.35	39.48	3.85	162
1974-75	47.28	47.97	2.79	164
1975-76	46.42	42.62	2.65	169
1976-77	45.67	48.40	6.07	140
1977-78	51.90	64.61	1.04	152
1978-79	62.31	58.41	7.35	204
1979-80	47.00	38.58	3.90	177
1980-81	49.73	51.48	2.19	136

*Source* : Column (2), refer to Table 6.4.1.  
 Column (3), refer to Table 6.2.1.  
 Column (4), calculated from the regression analysis mentioned in the text.  
 Column (5), refer to Table 6.4.2.  
 Columns (7), (8) and (9), refer to Table 6.4.3.  
 Column (10), calculated using columns (6), (8) and (9).

Evasion per day (col. 4 ÷ col. 5 lakh tons)	Days of running sugar year	Days upto March 31	Days after March 31	Evasion in the sugar year (lakh tons)	Percentage evasion in the sugar year (col. 10 as percent of col. 3)
(6)	(7)	(8)	(9)	(10)	(11)
—	178	135	43	—	—
0.019	127	127	0	2.413	11.28
0.012	146	135	11	1.631	6.34
0.001	185	135	50	0.185	0.57
0.001	189	135	54	0.891	2.52
0.014	120	120	0	1.680	7.81
0.001	128	128	0	0.128	0.57
0.006	188	135	53	0.863	2.42
0.001	210	135	75	0.135	0.32
0.000	170	135	35	0.770	2.06
0.022	132	132	0	2.904	9.33
0.021	162	135	27	3.483	8.99
0.024	164	135	29	3.733	9.46
0.017	169	135	34	2.839	5.92
0.016	140	135	5	2.375	5.57
0.043	152	135	17	5.924	12.24
0.007	204	135	69	3.429	5.31
0.036	177	135	42	5.784	9.90
0.022	136	135	1	2.986	7.74
0.016	146	138	11	—	—

Figure VI.2  
Evasion : Relationship with Other Variables





underreporting of cane purchased was less than or equal to the unutilised capacity in that year. Thus, only in a few years of unusually high output evasion is it necessary to invoke suppression of the sugar recovery percentage. Then too, the suppression of this ratio is never more than five per cent in the period considered.

We turn now to a heuristic exploration of some of the factors that might explain the time-profile of sugar output evasion estimated by our method.<sup>13</sup> Figure 6.2 plots against time (financial years) the following variables: evaded sugar output ( $O_E$ ), declared sugar output ( $O_d$ ) and the ratio of indices of average sugar prices ( $I_{av}/I_{ac}$ ). Further, segmentation of the horizontal axis indicates, broadly, different phases of government control over marketing and prices of sugar.

Inspection of Figure 6.2 yields some tentative judgements. First, there does not appear to be any clear-cut relationship between the extent of control and the degree of output evasion. Second, with the conspicuous exception of 1978-79, evasion seems to be lower in periods of rapidly rising sugar output. Third, until 1977-78, the time-path of evasion appears to display a trend similar to that of ( $I_{av}/I_{ac}$ ). The latter roughly indicates mark-up on prime costs and can be viewed as a rough index of profitability. A possible interpretation of this result can be that when profitability increases, the industry is induced to skim off profits through output suppression. But this relationship breaks down completely after 1977-78. Fourth, the evasion results in Table 6.4.4 indicate that the average percentage of output suppression seems to be significantly higher in the 1970s, averaging nearly 8 per cent of the declared output, than in the 1960s, when it averaged at about 4 per cent. But this observation must be qualified by the presence of a higher amplitude of fluctuations in the degree of evasion in the 1970s as compared to the earlier decade.

Finally, we should emphasise that given the complex and indirect methodology we adopted to estimate sugar output suppression and the attendant range of uncertainty regarding the results, we thought it best to eschew more "rigorous" multivariate approaches to explaining the time-profile of evasion.

Figure 6.3

**Evasion of Output and Implication for Recovery Percentage and Cane Underreporting**

Scale:

X axis : 1 division = 0.1 year  
 Y axis : 1 division = 0.25 percent

○-○ Declared percentage recovery as percentage of actual.  
 \*-\* Percent evasion in the sugar year  
 ○-○ Percentage cane underreporting

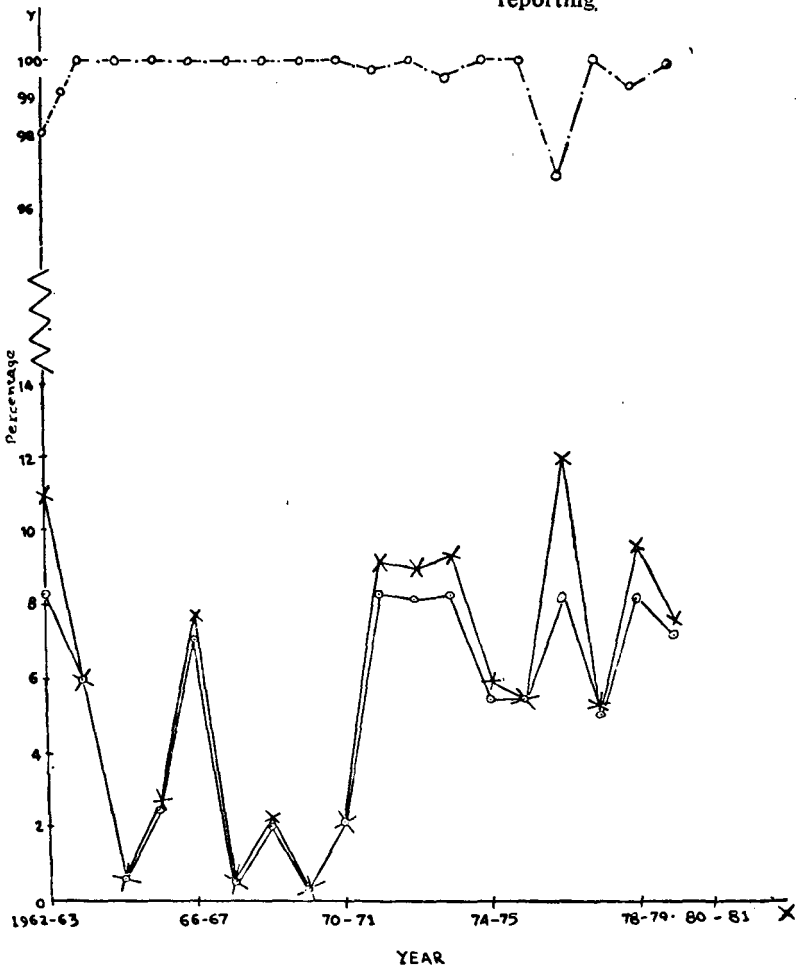


TABLE 6.4.5

**Evasion: Implication For Underreporting of Sugar-cane Crushed and Percentage Recovery (Partitioning)**

Year	Available crushing capacity (lakh tons)	Actual sugar-cane crushing (lakh tons)	Additional capacity available (col.2— col.3) (lakh tons)	Additional sugar-cane implied by evasion (lakh tons)	Additional sugar production explained by under-reporting of cane crushed (lakh tons)
(1)	(2)	(3)	(4)	(5)	(6)
1961-62	304.76	279.46	25.30	—	—
1962-63	226.93	207.99	18.94	23.46	1.95
1963-64	260.47	257.16	23.31	16.30	1.63
1964-65	364.74	334.54	30.20	1.91	0.18
1965-66	398.45	365.12	33.33	9.20	0.89
1966-67	235.97	216.37	19.60	16.90	1.68
1967-68	240.96	226.38	20.58	1.29	0.13
1968-69	411.31	376.99	34.32	9.12	0.86
1969-70	498.68	457.01	41.67	1.46	0.14
1970-71	416.60	382.05	34.55	7.87	0.77
1971-72	338.27	310.15	28.12	28.94	2.82
1972-73	412.73	404.07	38.66	36.33	3.48
1973-74	460.94	422.78	38.16	39.99	3.54
1974-75	526.31	484.35	43.96	28.67	2.85
1975-76	456.50	418.80	38.10	23.33	2.29
1976-77	532.50	488.19	43.39	59.75	4.30
1977-78	734.48	673.29	61.19	35.75	3.43
1978-79	651.57	597.17	54.50	59.12	5.33
1979-80	425.96	390.50	35.46	30.22	2.99
1980-81	563.14	515.84	—	—	—

Note : \*  $\frac{42.62}{418.80} = 10.18$

In the source (Table 6.2.1) the figure is given at 9.83%. However, the output of sugar is given as 42.62 lakh tons and sugarcane crushed as 418.8 lakh tons. The recovery percentage has correspondingly been changed to 10.18. It may be noted that the figures have been cross-checked with those in other tables as well.

Source: 1. Col. (2), calculated using Table 6.4.2 for crushing capacity per day and Table 2.1 for average number of days of operation of factories.

Reported percentage of sugar recovery	Actual sugar-cane crushed implied by reported + undereported cane [col.3+ or = (col.4, col.5)] (lakh tons)	Actual sugar output (lakh tons)	Actual percentage recovery (col.9 as % of col.8)	percentage sugar cane under-reported (col.4) $\frac{\text{col.5}}{\text{col.2}} \times 100$	Declared percentage recovery as percentage of actual (col.7 as % of col.10)
(7)	(8)	(9)	(10)	(11)	(12)
9.76	—	—	—	—	—
10.29	226.93	23.803	10.41	8.38	98.00
10.01	273.46	27.361	10.04	5.96	100.00
9.63	336.45	32.405	9.63	0.57	100.00
9.70	374.32	36.301	9.70	2.46	100.00
9.94	233.27	23.190	9.94	7.25	100.00
9.92	227.67	22.608	9.93	0.57	100.00
9.44	386.11	36.453	9.44	2.36	100.00
9.33	458.47	42.755	9.33	0.32	100.00
9.79	389.92	38.170	9.79	2.02	100.00
10.03	338.27	38.034	10.06	0.31	99.70
9.57	440.40	42.213	9.56	0.25	100.00
9.34	460.91	43.213	9.30	8.20	99.57
9.94	513.02	50.809	9.90	5.59	100.00
10.10*	442.13	44.993	10.18	5.20	100.00
9.91	531.58	54.324	10.22	0.16	96.97
9.59	709.04	68.039	9.60	5.04	100.00
9.70	651.67	64.194	9.83	8.36	99.29
9.80	420.72	41.568	9.00	7.18	100.00
9.98	—	—	—	—	—

2. Col. (3), refer to Table 6.2.1.
3. Col. (5), derived from evasion in the sugar year from Table 6.7 and reported percentage recovery from Table 6. 2.1
4. Col. (6), min. [Col.3, Col4]  $\times$  Col.(7).
5. Col. (7), refer to Table 6.2.1
6. Col. (9), col.(9) + col.(2) of Table 6.4.4.
7. Col. (12), from Table 6.2.1.

### 5. Underpayment for Sugar-cane

The Government fixes the minimum prices that sugar factories are required to pay to farmers for their sugar-cane.<sup>13</sup> Farmers frequently complain that they are paid less. This is more likely to be the case in those years when there is a bumper crop of cane and prices of sugar and its substitutes slump, with the *gur* and *khandsari* manufacturers paying cane prices below the minimum fixed for the sugar factories. In years when the manufacturers of sugar substitutes purchase their cane at prices above the State-advised minima (for the sugar factories), underpayment by sugar factories is unlikely, since they would then not be able to secure the necessary supplies.

We further assume that underpayment can only be resorted to at the margin. Large farmers, who regularly supply sugar-cane to their local mills, are likely to possess sufficient economic clout to ensure receipt of the stipulated minimum prices. It is the smaller farmers, particularly those who switch in and out of cane cultivation, and who have the weakest bargaining position with respect to the sugar mills, that are most likely to be victims of underpayment.

It is, therefore, necessary to identify the quantum of sugar-cane supplied by this category of farmers and to estimate the associated underpayment. The calculations and results are shown in Table 6.5.1. Since the minimum price of sugar-cane and the price of *gur* (taken as a proxy for substitutes of sugar) vary across regions, the country was treated as comprising three major zones, namely, Northern, Western and Southern. The zone-wise averages of the stipulated price minima, the recorded cane prices and the average wholesale price of *gur* at the *mandis* were obtained. Assuming that for *gur* the conversion and transportation charges can be taken into account by a 20 per cent margin on the wholesale prices and using a 10 per cent recovery percentage of *gur* from sugar-cane, the prices likely to be offered by *gur* manufacturers to sugar-cane growers were estimated.<sup>14</sup>

The difference between this price and the recorded sugar-cane price paid by the factories was taken as an indicator of underpayment. We further assumed that if the former

was less than the latter then half the difference constituted underpayment. To estimate the amount of sugar-cane subject to such underpayment, we computed the region-wise totals of sugar-cane crushed and compared these with the averages for the preceding three years.<sup>15</sup> The excess of cane crushed over the preceding three-year average was treated as an estimate of the amount on which underpayment occurred.

The total amount of underpayment on sugar-cane purchases by sugar factories was then computed, zone-wise, by multiplying the relevant estimate of underpayment per unit by the corresponding estimate of the amount of sugar-cane as calculated above. Needless to say, the estimates presented here are rough and reflect the crude assumption deployed. On the whole, the estimates are likely to be biased downwards.<sup>16</sup>

## **6. Black Income Generation in Sugar:**

### **A Summary of Estimates**

The entire underpayment for sugar-cane constitutes black income in the hands of the mill managers/agents.

Quantitatively more significant are the proceeds (black) from the sale of sugar output suppressed from the formal accounts. Since this sugar is sold in the free market an estimate of the associated black incomes is obtained by multiplying, in each year, the estimate of output evaded by the average free market price of sugar (adjusted downwards by 10 per cent to allow for transportation and marketing charges). The results are shown in Table 6.6.1.

The amount of excise duty evaded by the sugar industry is estimated by assuming that the effective average rate of duty on the evaded output would have been the same as that recorded for declared clearances of sugar.<sup>17</sup> Table 6.6.1 shows the results.

The underweighting of cane implied by sugar output evasion entails a loss to the cane growers. In Table 6.6.1 the annual amount of this loss is estimated by multiplying the estimated net under-weighting by the average minimum price of sugar-cane in that year. The latter is taken as the price the industry would have to pay as per the formula for the State-advised minimum price.

**TABLE 6.5.1**  
**Underpayment in Cane Purchase during Sugar Year**

Year	Zone	Minimum sugar- cane price (Rs/ qntl.)	Actual average cane price paid (Rs/ qntl.)	Gur price* (Rs./ qntl)	Col. (5)— 20 per cent
(1)	(2)	(3)	(4)	(5)	(6)
1973-74	Northern	9.21	12.64	139.63	111.70
	Western	9.87	11.76	181.25	145.00
	Southern	8.80	11.32	143.75	115.00
1974-75	Northern	9.25	14.10	150.88	120.70
	Western	10.75	12.75	185.00	148.00
	Southern	9.66	12.83	147.25	117.80
1975-76	Northern	9.65	13.01	129.25	103.20
	Western	10.82	14.55	133.76	107.00
	Southern	10.08	12.70	147.50	118.00
1976-77	Northern	9.56	13.02	144.13	115.30
	Western	11.01	12.93	189.25	151.40
	Southern	10.10	11.80	147.50	118.00
1977-78	Northern	9.84	13.17	122.63	98.10
	Western	10.70	12.16	135.25	108.20
	Southern	9.48	12.60	97.52	78.02
1978-79	Northern	11.46	11.21	104.00	83.00
	Western	12.70	10.61	111.00	88.80
	Southern	11.30	10.97	97.00	77.60
1979-80	Northern	14.12	14.54	256.88	205.50
	Western	16.26	14.08	266.25	213.00
	Southern	14.15	14.11	212.00	169.60
1980-81	Northern	15.20	23.25	274.38	219.50
	Western	16.08	19.30	342.50	274.00
	Southern	14.37	29.54	258.50	206.80

\* Calculated as average of wholesale prices at important mandis in the region; the average wholesale prices were calculated by averaging over the prices prevailing during the 4 important months of gur production.

Source: 1. Columns 3,4 and 7, from Indian Sugar Mills Association, *India Sugar Year Book*, Various issues.

2. Column 5, from National Federation of Co-operative Sugar Factories (1982)

Col. 4 - col. 6/10) (Rs/ qntl.)	1/2 (Col. (7)) (Rs./ qntl.)	Sugar- cane crushed (lakh tons)	3-year past moving average	Excess cane crushed (Col. 9— col. 10) (lakh tons)	Under- payment (Col. 8 X col. 11) (Rs lakh)
(7)	(8)	(9)	(10)	(11)	(12)
1.47	0.74	189.72	161.93	27.79	205.65
-2.74	—	107.18	107.54	0.00	—
-0.18	—	114.16	100.56	—	—
2.03	1.02	197.53	143.44	64.09	55.72
-2.05	—	151.44	124.72	—	—
1.05	0.53	118.92	111.00	7.92	41.98
2.69	1.35	162.92	137.88	26.04	338.04
3.85	1.93	153.36	137.32	16.04	309.57
0.90	0.45	88.28	107.12	-14.84	0.00
1.49	0.75	193.28	139.08	54.20	406.50
-2.21	—	166.62	157.14	—	—
0.00	0.00	113.36	106.84	—	—
3.36	1.68	266.68	207.60	59.08	992.54
1.34	0.67	224.06	181.34	42.72	286.22
4.80	2.40	161.64	121.08	40.56	973.44
2.89	1.45	212.08	224.00	-11.92	0.00
1.73	0.87	221.68	204.12	17.56	152.77
3.21	1.61	143.32	139.44	3.88	62.47
-6.01	—	135.04	204.60	—	—
-7.22	—	152.46	199.40	—	—
-2.85	—	93.24	132.72	—	—
1.30	0.65	168.40	171.84	-3.44	0.00
-8.10	—	222.20	198.78	—	—
-0.14	—	116.72	117.76	—	—



TABLE 6.6.1

## Evation of Excise, Income and Underpayment for Underweighed Cane

Year	Evation in fiscal year (lakh tons)	Free market price of sugar (Rs/ton)	(Col.3)— 10 per cent (Rs/tons)	Income evaded (Col.2x col.4) (Rs. lakh)	Price of sugar-cane in sugar year (Rs/tons)
(1)	(2)	(3)	(4)	(5)	(6)
1961-62	—	—	—	—	—
1962-63	3.23	—	—	—	—
1963-64	1.63	—	—	—	—
1964-65	1.17	—	—	—	—
1965-66	0.24	—	—	—	—
1966-67	2.36	—	—	—	—
1967-68	0.16	—	—	—	—
1968-69	0.76	1775.87	1898.28	1214.69	73.00
1969-70	0.12	1749.27	1574.34	188.92	73.70
1970-71	0.00	1740.85	1566.77	0.00	76.30
1971-72	3.65	2076.08	1868.47	6819.92	77.90
1972-73	2.90	3213.10	2891.70	8385.93	90.10
1973-74	3.85	3740.50	3366.45	12960.83	87.90
1974-75	2.79	4487.50	4038.75	11268.11	99.00
1975-76	2.65	4422.80	3980.52	10548.38	98.30
1976-77	6.07	4551.40	4096.26	24864.30	99.10
1977-78	1.04	3829.30	3446.37	3584.22	95.90
1978-79	7.35	2378.40	2140.56	15633.12	100.10
1979-80	3.90	3117.70	2805.93	10943.13	145.30
1980-81	2.19	6190.10	5571.09	12200.69	—

Source: 1. Col. (2), refer Table 6.4.4.

2. Col. (3), from Ministry of Agriculture and Irrigation, Directorate of Economics and Statistics (1980), *Indian Agriculture in Brief*.

3. Col. (6) from National Federation of Co-operative Sugar Factories Ltd. (1982), *Co-operative Sugar Directory and Year Book, 1981*.

4. Col. (7), refer to Table 6.4.2 (Min. col.4, col.5).

5. Col. (9) and col. (10) from Central Excise and Customs, Directorate of Statistics and Intelligence, *Statistical Year Book, Central Excise, Vol. 1*, various issues from 1970-71 to 1980-81.

Under-reporting of cane crushed (lakh tons)	Under-payment for cane under weighment sugar year (Col.6× col.7) (Rs lakh)	Total excise duty collected from V P S (Rs lakh)	Clearance of sugar (lakh qtls.)	Average excise duty (Rs/ qtls.) (Col.9÷ col.10)	Duty evaded (Col.2 x Col. 11) (Rs lakh)
(7)	(8)	(9)	(10)	(11)	(12)
—	—	5842	222.76	26.23	—
18.94	—	7498	269.72	27.80	897.9
16.72	—	6617	234.85	28.18	459.3
2.01	—	6518	230.56	28.27	330.8
2.56	—	7500	261.20	28.71	68.9
18.61	—	11012	298.08	36.94	871.8
1.58	—	7396	212.54	34.80	55.7
10.56	780.39	6655	226.63	29.37	223.2
1.37	100.97	10215	305.65	33.42	40.1
0.00	0	13801	369.12	37.39	0.0
28.12	2190.55	16320	404.71	40.33	1472.0
31.92	2876.00	17540	350.76	50.01	1450.3
38.16	3354.27	19547	360.71	54.19	2086.3
28.58	2829.42	19050	328.75	57.95	1616.8
23.87	2346.43	22495	365.70	61.51	1630.0
43.39	4299.95	22745	396.40	61.57	3737.3
1.35	129.47	20174	402.57	50.11	521.1
54.50	5455.45	18580	529.36	35.10	2579.9
32.41	4709.18	—	—	—	—
—	—	—	—	—	—

Perhaps the most interesting and intriguing result of our analysis is the absence of any clear-cut relationship between the estimated time-profile of sugar output evasion and the varying extent of controls over sugar prices and marketing.

### Notes

1. See the *Report of the Committee on Controls and Subsidies*, (Government of India, Ministry of Finance, 1979) for a detailed list of controls and regulations which have been applicable to the sugar industry.
2. While a causal relationship between controls and black income generation is widely believed to exist, good empirical studies of the issue are notable by their absence. Such studies are generally not possible if the estimates of evasion and black income generation are limited to one or two years, as in the case of the recent research on excise evasion in copper (NIPFP, 1982), Plastics (NIPFP, 1983b) and cotton fabrics (NIPFP, 1984a).
3. Bagchi (1975) points out that the technical advances were mainly a product of government support in these countries.
4. See *Investigation of Accounts, Volume II* for instances of use of these mechanisms, detected by the Income-tax Department (CBDT, 1981).
5. See National Federation of Cooperative Sugar Factories (1982), pp. 155-181.
6. *Ibid.*
7. See National Sugar Institute (1960) and the National Federation of Cooperative Sugar Factories (1982), pp. 186-265.
8. The above discussion of efficiency in the sugar industry in India has been confined to the period 1960-80. An account of the changes in efficiency during the 1930s, when the first major expansion of the industry occurred, may be found in Bagchi (1975).
9. A more complete treatment is given in Appendix 3.
10. \*\*, \*\*\* and \*\*\*\* indicated that the coefficient is significantly different from zero at the 10 per cent, 5 per cent and 1 per cent levels of significance respectively.
11. Capacity here is calculated by multiplying the number of factories operating by the number of days (consolidated to 22 hours of working) of running and the average crushing capacity in tons per day.
12. We should emphasise that given our methodology the estimated time-profile (or pattern) of evasion is more robust than the point estimates for individual years.

13. The Government of India passed the Sugar-cane Act in 1934 to provide for a minimum price of cane, to be fixed by the provincial governments. Further, for the enforcement of the Sugar-cane Rules, cane inspectors were appointed. However, Bagchi (1975) reports that evidence before the Indian Tariff Board pointed to continuing monopsonistic exploitation of cultivators by sugar factories. Often the minimum price was treated as the maximum price.
14. Recovery of 10 per cent of *gur* from sugar-cane does not mean 10 per cent of sugar content. The latter may not amount to more than 5-6 per cent, the rest being composed of various forms of organic matter.
15. A three-year period was chosen as this roughly covers one cycle of sugar-cane cultivation.
16. The phenomenon of underpayment may be much more widespread because of effective control exercised over the cane farmers by traders and sugar mill managers. Kickbacks may be paid to directors (and their agents) who can oblige farmers, in return, through early harvesting, registration and payments.
17. Both the excise duty rates (which are *ad valorem*) and the tariff values are changed from time to time. What is necessary is a weighted average of the duty to be paid over the year. The average rate based on clearances is one such weighted average.

# Black Income Generation in Urban Real Estate

## 1. Introduction

THE purpose of this chapter is to give some indication of the forms and dimensions of black income generation in urban real estate in India. The empirical analysis encompasses the three metropolitan centres of Delhi, Bombay and Madras. However, the extent and quality of the underlying information is far superior for Delhi as compared to the other two cities.

Before we proceed to the substantive analysis we must be clear about definitions. The concept of black income used in this chapter is the one deployed by the Income Tax Department. That is, in any transaction related to real estate the entire unaccounted amount detected in a particular year is treated as income for that year for the concerned assessee. Thus, if a property is sold and part of the proceeds are unrecorded on the sale deed, then all of this unrecorded portion is treated as black income for the seller. Note that this may not correspond to a more economic concept of black income which would have to take account of some of the costs "paid in black". For example, the seller may have originally purchased the property by paying part of the price in black and this would have to be netted out

in arriving at an economic concept of his black earnings from the current sale.

## 2. Black Income Generation: Forms and Causes

Even a cursory survey of the field of urban real estate suggests that the principal form of black income is undeclared capital gains, where this is defined to equal the black (or undeclared) portion of the proceeds received from the sale of a property.

Typically, both buyer and seller of real estate have incentives to declare a lower price on the sale deed than the one at which the transaction actually occurs. For the seller, these inducements include:

- a. the evasion of capital gains taxation;
- b. the continued evasion of wealth tax in so far as the black portion of the sale proceeds can be held in undeclared forms of wealth;
- c. ready access to black funds for use in activities—including fresh purchases of real estate—where such resources are necessary.

For the buyer, the incentives encompass:

- a. the evasion of wealth tax;
- b. the evasion of stamp duties and registration charges on the transaction;
- c. the evasion of income tax (corresponding to income from house property);
- d. the evasion of house property tax;
- e. investment of black resources in a form in which its detection is far more problematic and in which it earns a higher return than is the case with some alternatives such as undisclosed cash or 'benami' financial assets.

While the effective taxation of urban property through a variety of taxes is a prime reason motivating black transactions, it is by no means the only factor. In many urban localities the operation of rent control spurs the generation of black incomes, either in the form of black (that is, under

the table) rents or "pugree" payments, which capitalise the difference between the anticipated profile of market clearing rents and the stream of controlled, nominal payments<sup>2</sup>.

Another source of black income generation is the variety of permits that are required from government agencies for construction or transfer of urban properties. Any new building requires sanction of a building plan, water connections, electricity connections, a completion certificate and so forth. For expeditious clearance each of these typically requires payment of bribes. Even the simple registration of sale deeds has often to be consummated through bribes. In the case of Delhi a large portion of urban land is controlled by the Delhi Development Authority (DDA) and the Land and Development Office (L&DO) of the Union Ministry of Works and Housing. Transfer of such lands or the associated construction requires prior sanction by the concerned authority. Further, 50 per cent of capital gains (the "unearned increment") is required to be shared with these governmental agencies. All this affords substantial opportunities for unscrupulous elements in the staff of these agencies to extort bribes from the concerned parties.

The law proscribes sale of many urban properties for a stipulated period. Such restrictions apply, for example, to DDA flats and leasehold land made available to many group housing societies in Delhi. *De facto* circumvention of these restrictions is often associated with substantial black income generation. The burgeoning phenomenon of "power of attorney sales" in Delhi is a case in point. Such transactions avoid the need to obtain permission for transfer and evade (or at least postpone) sharing of the capital gains and payment of various stamp duties and transfer charges<sup>3</sup>.

Another form of black income generation in urban real estate is associated with manipulation of changes in land use patterns. Unauthorised occupation of land is frequently "regularised" on payment of necessary bribes to appropriate quarters. The same is true of many unauthorised constructions. Frequently, bribes are paid not so much to regularise unauthorised encroachments and constructions, as to induce the concerned authorities to turn a blind eye to offending

transgressions. In some areas local politicians or "dadas" manage the necessary "protection" of the encroachers from the local authorities for a price and, in the process, consolidate their respective political bases.

New construction of urban structure also provides avenues for black income generation. "Siphoning off" from public sector construction projects is one method, which is discussed at length in the next chapter. In the case of new construction by private parties, undervaluation of buildings affords substantial scope for relatively safe holding of black wealth, possibly reaped in other lines of activity.

Fundamental to most forms of successful black income generation in urban real estate is the enormous difficulty of arriving at an objective, legally acceptable valuation of a piece of urban property<sup>4</sup>. Each property has a unique location, with its own physical infrastructure and potential for economic production and consumption. This is further modified by legal provisions (and their interpretations) relating to use, transferability and income flow. Quite apart from the difficulty of accessing the potential profile of income from a given piece of property, there are knotty questions regarding the discount rate which should be employed to capitalise the anticipated stream of income and/or consumption. All of this enormously complicates efforts at objective, legally acceptable valuations of property.

To counter the widespread understatement of property values in sale deeds the Government added Chapter XXA to the Income-tax Act in 1972, authorising, in certain circumstances, public acquisition of a privately held immovable property if there was adequate reason to believe that such property was undervalued by more than 15 per cent in a sale. The reasons for the limited efficacy of these provisions have been widely commented upon and are briefly discussed in Chapter 10. But, there is some evidence to suggest that these provisions (together with the extension, through the 1981 Income-tax Amendment Act, of the threat of acquisition to cases of transfer of flats and tenements) have had *some* effect in moderating the extent of property undervaluation in transfers. Moreover, as we shall see, one consequence of this



legislation is that it has provided us with an important source of information for gauging the extent of black income generation in urban real estate.

### 3. Sources of Data

The principal source of data for this chapter was the Income Tax Department, in particular the Competent Authorities concerned with acquisition of properties under Chapter XXA in the cities of Delhi, Bombay, and Madras and the Valuation Cells charged with the responsibility of valuing properties referred to them from these cities.

In brief, legal transfer of an immovable property requires registration under the Indian Registration Act of 1908. With the advent of Chapter XXA of the Income-tax Act, the Registrar's office is obliged to intimate details of each transaction involving an immovable property with registered value in excess of Rs 10,000 to the Competent Authority—typically an Inspecting Assistant Commissioner (IAC), Acquisition—in a standard form 37G filled and verified by the transferee<sup>5</sup>. Whenever the concerned IAC (Acquisition) suspects undervaluation in excess of 15 per cent, a file is opened on the property and a preliminary notice is sent to the concerned buyer for appearance before the IAC to provide additional information—hence these are called “notified cases”<sup>6</sup>. This notice provides information additional to that contained in the corresponding form 37G, including the *judgement value* of the IAC.

This initial judgement value has no particular legal significance. But it can be taken as one indicator of the property's market value, since it reflects the IAC's initial judgement in this respect, before he has had a chance to be influenced by the transferee or his agents or by subsequent legal proceedings. Moreover, discussions with the IACs (Acquisition) in Delhi suggested that “notified cases” were selected more or less at random from the inflow of 37G forms, and thus a sample of notified cases may be representative of all 37G cases. However, it is important to recognise that the IAC's judgement values would be coloured (typically biased downwards) by previous legal proceedings on property valuations,

including judicial precedents on issues of valuation. Nevertheless, the difference between the judgement value and the registered (or declared) value provides one estimate of the black element involved in a specific property transaction.

A subset of the notified cases is referred by the IACs to the relevant Valuation Cell, though the extent to which this occurs varies markedly across cities. The bulk of our data on property values and all the data on judgement values came from the offices of the IACs (Acquisition) and the valuation Cells in the three metropolitan cities.

The basic sample on declared property values was augmented by data from other sources, such as the offices of the Registrars, the L&DO in Delhi and the Survey Wards of the Income Tax Department.

In addition, information on market values and the black components of these values was obtained by interviewing real estate brokers, builders, accountants and other sources.

#### **4. Black Income Generation in Urban Real Estate: Delhi**

Table 7.4.1 presents estimates of black income generated through sale of real estate in registered transactions for the five years 1978-79 to 1982-83. For the sample of property sales in each year, column (4) records the average declared value per property. Columns (5) and (6) present two different estimates of the average ratio (as a percentage) of black payments to white (or recorded) payments. The first of these columns relies on data obtained from brokers, while the second is based on the difference between "judgement values" and registered values in the records of the Income Tax Department. Invariably, the broker information indicates a higher percentage of black payments than that shown by the tax department's data. The reasons for downward bias in the latter have already been noted. For that reason, we would have preferred to rely on the data from brokers. But, for each of the years, the size of the sample of information from this source was too small to warrant full confidence. Accordingly, we have presented estimates based on both sets of information. On balance, despite the small size of samples, we attach more significance to the broker information.

TABLE 7.4.1

## Estimates of Black Income Generated in Registered Sales of Immovable Property in Delhi

Year	Number in sample	Total declared value (Rs 000)	Black as per cent of white value <sup>1</sup>		Black Value per property		Total number of Form 37b	Estimated Black Income		
			Declared value per property (Rs 000)	Broker sample (5)	IT Dept. sample <sup>2</sup> (6)	Broker sample = (4)A(5) 100 (Rs 000)		I-T Dept. sample = (4)A(6) 100 (Rs 000)	Broker valuation = (9)A(7) (Rs 000)	I-T Dept. valuation = (9)A(8) (Rs 000)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1978-79	305	48046	157.5	80(21)	50(131)	126.0	78.8	3013	379368	237424
1979-80	344	61910	180.0	208(18)	60(217)	374.4	103.0	3302	1236269	356615
1980-81	408	78400	192.2	154(23)	66(285)	296.0	126.8	5467	1618232	693216
1981-82	403	70036	173.8	146(17)	73(333)	253.7	12.69	6171	1565583	783100
1982-83	286	71909	251.4	188(23)	91(277)	472.6	228.8	5202	2458465	1190217

Note: <sup>1</sup> Numbers in parentheses refer to sample size.

<sup>2</sup> Refers to the excess of the judgment value over the declared value.

Source: As described in the text.

Columns (7) and (8) present estimates of black value per property. These estimates are multiplied through by the total number of 37G forms pertaining to each year [column (9)] to give alternative estimates of black incomes generated in such registered sales in columns (10) and (11), respectively. Thus, according to the valuation based on the broker sample, black income generated in registered property sales in Delhi in 1982-83 was in excess of Rs 240 crore. If we go by the valuation implicit in the Income Tax Department's "judgement values" the estimated black income is barely half that amount.

We now turn to some obvious limitations pertaining to those estimates. First, our reliance on 37G forms excludes, by definition, all sales of immovable properties with registered values less than Rs 10,000. On the basis of an analysis of records at the offices of the Sub-Registrar we estimate that in 1982-83 the number of registered sales of property with declared value less than Rs 10,000 was about 8,200. This means that the total value of such properties must have been less than Rs 8.2 crore. Accordingly, the black income associated with these sales should have been less than Rs 16 crore (even if we use our higher, broker-based estimate of the ratio of black to white).

Second, there is a question regarding the representativeness of our basic sample with respect to properties of registered value greater than Rs 10,000. Since more than half the sample is drawn from the offices of the Income Tax Department, there is a danger that the sample estimate of the average declared value of a property may be biased upwards (relative to the mean of the underlying population of transactions) because of the known tendency of the IACs to neglect low-valued properties, especially those below Rs 25,000 declared value. Analysis of an independent sample for 1982-83 (the only year for which data were made available) of properties with registered value higher than Rs 10,000 from the Office of the Collector of Stamps for Delhi confirms this possibility, since the average declared value was closer to one lakh than the 2.51 lakh estimate in our sample in Table 7.4.1 for 1982-83.

However, the problem posed by this bias may be mitigated by another finding revealed by our detailed analysis of "judgement values" and declared values, namely, that properties with lower absolute value tend to be under-valued significantly and systematically more (in percentage terms) than higher-valued properties. Of course, while these two facts work in opposite directions, there is no guarantee that they cancel out.

Third, our sample completely misses out black incomes involved in "pugree" payments associated with transfers of tenancies.

Fourth, the analysis in Table 7.4.1 excludes black incomes associated with "power of attorney sales". We tried to make some rough estimates of such black incomes using data from the 150th Report of the Public Accounts Committee of the Seventh Lok Sabha published in 1983. This report gives annual information on the total number of general powers of attorney (GPA) registered in Delhi and the total number of GPAs involving DDA-controlled property. Two different estimates of the number of "power of attorney sales" were obtained by assuming, first, that half of all GPAs related to such "sales" and second, that all DDA-property-related GPAs pertain to "sales" of immovable property. On the basis of these assumptions and the additional assumption that the information on black values per property pertaining to registered sales (Table 7.4.1) could be applied, as an approximation, to GPA "sales" of property, we computed some rough estimates which are presented in Table 7.4.2. Taking the year 1980-81 as an example, the estimates of black income generated in GPA sales of immovable property range from Rs 44 crore to Rs 146 crore. These are very substantial sums and can be compared to estimates of black income from registered property sales in that year ranging from Rs 69 crore to Rs 162 crore (Table 7.4.1).

Fifth, the estimates presented in Table 7.4.1 exclude black incomes associated with the transfer of flats and tenements, since these are not, by definition, included in the data 37G forms.

Finally, in addition to the estimates presented in Tables 7.4.1 and 7.4.2, we made some very rough estimates of the amount of black income associated with undervaluation of new private construction. These estimates were based on information pertaining to carpet area constructed each year in Delhi, estimates of costs of such construction obtained by using information from the Central Public Works Department, and the assumption (based on interviews with brokers and valuers) that the average prevailing rate of undervaluation was around 25 per cent. On this basis, the amount of black income associated with undervaluation of new private construction was roughly estimated to range from 8 crore in 1978-79 to Rs 13 crore in 1981-82. Clearly, though these are sizeable amounts, they are of secondary significance when compared to our earlier estimates of black income generated from registered property sales and GPA "sales".

## 5. Black Income Generation in Urban Real Estate: Bombay and Madras

a. *Bombay.* The information received from the Bombay offices of the Income Tax Department and other sources was incomplete, a fact which severely handicapped our analysis. An especially important lacuna relates to the absence of sale values for flats falling within the ambit of form 37EE after the promulgation of the 1981 Income-Tax Amendment Act, which extended the scope of Chapter XXA to include sales of flats and tenements. Another important gap in the data pertains to estimates of market values and the black components of such values—the sample information from market sources was grossly inadequate, much more so than in the case of Delhi.

Nevertheless, we make bold to present some very rough estimates in Table 7.5.1 on the basis of scanty data and a set of assumptions. Columns (1) through (9) of the table are obtained in the same way as for Table 7.4.1 for Delhi, with one important exception. In the absence of an adequate broker sample for Bombay we fell back to using the black/white rates obtained from the Delhi data. In our judgement,

TABLE 7.4.2

Estimate of Black Income Generated in "Power of Attorney Sales" of Property in Delhi

Year	Estimates of number of GPA sales of immovable property		Black value per property		(Rs thousand)			
					Estimates of black income from GPA Sales of immovable property			
	A	B	Broker Sample	Income-tax Department Sample	Broker valuation		I.T. Dept. valuation	
					A	B	A	B
(1)	(2)	(3)	(4)	(5)	=(2)X(4)	=(3)X(4)	=(2)X(5)	(3)X(5)
1978-79	4931	3417	126.0	78.8	621306	430542	388563	269260
1979-80	5905	4922	374.4	108.0	2210832	1842797	637740	531576
1980-81	4940	3500	296.0	126.8	1462240	1036000	626392	443800
1981-82	3626	655	253.7	126.9	919916	166174	460139	83120

Source: Column (2) equals 50 per cent of all GPAs registered in Delhi as reported in the PAC Report cited in the text. Column (3) equals the total number of GPAs pertaining to DDA-controlled properties, from the same source. Columns (4) and (6) are from Table 7.4.1. Other columns obtained by computation.

TABLE 7.5.1

**Estimates of Income Generated in Registered Sale of Immovable  
Property in Bombay**

Year	Number in sample (37G)	Total value declar- ed (Rs thousand)	Declared value per/pro- perty	Black as per cent of white value Broker (Delhi sam- ple	I-T Dept. sam- ple <sup>1</sup>	Black value Broker sample =(4)×(5) 100 (Rs )
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1978-79	40	19695	492	80	35	393.6
1979-80	133	108268	814	208	55	1693.1
1980-81	103	57788	561	154	48	863.9
1981-82	95	41919	441	146	114	643.9
1982-83	74	25195	340	188	65	639.2

*Note:* 1 Refers to the excess of the judgement value over the declared value as per cent of the declared value.

*Source:* As described in the text.



per property I-T. Deptt. sample =4×(6) 100 (Rs 000)	Total number of Form 37G	Total number of Form 37EE	Estimated Black Income			
			From 37G transactions		From 37EE transactions	
			Broker valua- tion =(9)×(7) (Rs 000)	I-T. Deptt. valua- tion =(9)×(8) (Rs 000)	Broker valu- ation	I-T Deptt. valu- ation (Rs 00)
(8)	(9)	(10)	(11)	(12)	(13)	(14)
172.2	—	—	—	—	—	—
447.7	682	—	1154694	305331	—	—
269.3	489	—	422447	131687	—	—
502.7	418	—	269150	210128	—	—
221.0	569	9830	363705	125749	216667	74111

the use of the Delhi rates for Bombay should be seen as a part of an attempt to obtain "lower-bound" estimates. This is because our scattered, market information on Bombay uniformly indicated substantially higher black/white rates than those prevailing in the corresponding year in our Delhi sample.

Columns (11) and (12) present the alternative estimates of black income generated in sales of registered property as recorded in 37G forms. A quick comparison of the values in these columns with the corresponding items in Table 7.4.1 reveals that the amounts in Bombay are much lower than those estimated for Delhi. The principal reason for this difference is simple: transactions recorded in 37G forms constitute a far smaller proportion of registered property sales in Bombay than in Delhi. Given the character of urban development in Bombay, the sales of flats are numerically far more important than sales of buildings. The monthly totals of 37EE forms were obtained from the Income Tax Department beginning with July 1982. On the basis of these data it was estimated that the number of registered sales of flats under the purview of 37EE forms was about 9,830 for the full year 1982-83. This compares with the total of transactions recorded in 37G forms of only 569 for the same year.

However, as indicated earlier, we did not receive information relating to the declared (and "judgement") values of transactions in 37EE cases, information which was necessary to estimate the black income generated in these transactions. Despite this crucial lacuna, we attempted a "lower-bound" estimate of black income associated with 37EE transactions in 1982-83 as follows.

Information from the District Deputy Registrar, Cooperative Societies, Bombay, indicates that the average number of members per group housing society in the period 1978-1983 was 29. We used this as an estimate of the average number of flats per building. We went on to assume that the 569 forms for 1982-83 *all* relate to sales of buildings consisting of flats. This permits us to estimate the average declared value of a flat by dividing the figure in column (4) of Table 7.5.1 by 29. Obviously, this estimate is biased downwards to the extent

that some of the 37G form cases pertain to sales of single unit structures, instead of buildings consisting of flats. Using this lower-bound estimate, the black/white ratios in (5) and (6), and the estimate of the total number of 37EE transactions in 1982-83, we obtain estimates of black income generated in 37EE cases. These are shown in columns (13) and (14) of Table 7.5.1. A comparison with columns (11) and (12) indicates that even using our "lower bound" estimate for the average declared value of flats sold, the estimated amount of black income generated in 37EE cases was quite substantial in Bombay in 1982-83.

b. *Madras*. As in the case of Bombay, our information regarding real estate transactions in Madras was incomplete in many respects. In particular, we had insufficient information on the relationship between market values and declared values for property sales. This may be a particularly serious handicap because of the prevalence of "guideline" values in the registration of property sales in Madras.

It was our understanding that the Registrar's office in Madras calculates guideline values for property in all areas. These values are apparently based on a survey carried out in 1970-71, with subsequent upward adjustments at the rate of 5 per cent per year. Apparently, registration of property at values less than guideline values is not permitted. Though the guideline values are secret (they were not provided for the purposes of this study), touts in league with the staff of the Registrar's office are believed to do a brisk trade in this information. Because property values in Madras have appreciated much faster than the upward adjustments to the guideline values, it is very much in the interest of a property transactor to gain access to the relevant guideline value and register the sale at that low price, even though the "black-inclusive", actual market price would typically be much higher. Some piecemeal information gathered by us indicated massive differences between registered and market values for property sales in Madras.

In the absence of adequate information, and following the precedent of Bombay, we used the Delhi estimates of black/white ratios as "lower-bound" proxy estimates for Madras.

The results are shown in Table 7.5.2.<sup>7</sup> These estimates should be treated with extreme caution. The "broker valuations" refer to information from Delhi and are, therefore, strictly speaking, not applicable to Madras. On the other hand, the "Income-Tax Department valuation" indicates a surprisingly small spread between declared values and "judgement values", a fact which sits awkwardly with what we learned about the operation of guideline values in Madras. Clearly, the matter requires deeper investigation. Furthermore, as in the case of Bombay, we were unable to exercise supervision regarding how the sample information was collected by the Income Tax Department. So there may be serious questions regarding how representative the sample is with respect to the underlying population of all Form 37G cases in a given year.

These strong caveats notwithstanding, Table 7.5.2 suggests that large amounts black income are generated through the registered sales of properties in Madras. For example, for 1982-83 our crude estimates of the total black income generated in such sales range from Rs 172 crore to Rs 677 crore.

## 6. Some Other Results

Further analysis of the underlying information, especially of the better data relating to Delhi, reveals some interesting features.

First, we have already noted the systematic tendency for lower-valued properties to be under-valued (in per cent terms) significantly more than higher valued properties. This observation can be marshalled in support of the view that the deterrence implicit in the Acquisition provisions of the Income-tax Act may be more potent than changes in the effective rate of capital gains taxation in containing the extent of undervaluation (that is the prevalence of black payments) in property sales. If the effective rate of capital gains taxation were the dominant factor, one might expect equal or higher rates of undervaluation on properties with higher absolute values as compared to low-valued properties. But given that higher-valued properties attract greater scrutiny from tax authorities it is not surprising to find that they display a lower rate of undervaluation than low-valued properties.

TABLE 7.5.2

## Estimates of Black Income Generated in Sale of Immovable Property in Madras

Year	Number in sample	Total declar- value	Declared value per property (Rs thousand)	Black as per cent of white value		Black value per Property		Total number of Form 37G	Estimated black income	
				Broker I-T Deptt. (Delhi) sample <sup>1</sup> sample	Broker I-T Deptt. sample	Broker I-T Deptt. sample	Broker I-T Deptt. sample		Broker valuation =(9)×(7)	I-T Deptt. valuation =(9)×(8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1979-80	106	50452	476.0	208	11(97)	990.0	52.4	6476	6411240	339342
1980-81	101	22646	224.2	154	23(94)	345.3	51.6	5800	1726500	258000
1981-82	77	26313	341.7	146	32(72)	498.9	109.3	8797	4388823	196512
	77	20468	265.8	188	48(67)	499.7	127.6	13550	6770935	1728980

Note: 1. Refers to the excess of the judgement value over the declared value as a per cent of the declared value.

Numbers in parentheses refer to sample size.

Src: As described in text.

However, we should caution against inferring much from the pattern of correlation noted above. Such a pattern is also consistent with the hypothesis that the extent (in percentage terms) of undervaluation is influenced more by taxes levied on the declared value of property (such as stamp duties) than on the effective rates of capital gains taxation.

The evidence on the efficacy of the capital gains taxation concessions, introduced in the 1977 Finance Act and pertaining to 1978-79, in reducing undervaluation is mixed. On the one hand, the data from the Income Tax Department (Table 7.6.1) reveal a marked and temporary dip for that year in the average rate of undervaluation (as per cent of declared value)

TABLE 7.6.1

Undervaluation of Immovable Properties Detected by valuation Cells in Cases Referred by Acquisition Departments in Delhi, Madras and Bombay

Year	Delhi		Madras		Bombay	
	Cases received	Undervaluation as percentage of declared value	Cases received	Undervaluation as percentage of declared value	Cases received	Undervaluation as percentage of declared value
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1972-73	—	—	11	9.06	4	55.22
1973-74	116	41.05	49	16.72	250	59.77
1974-75	221	32.07	85	31.41	370	38.54
1975-76	622	26.04	106	17.60	294	33.11
1976-77	372	24.55	120	18.44	190	37.53
1977-78	206	40.08	123	18.57	79	35.05
1978-79	295	11.47	141	12.94	128	43.93
1978-80	305	31.19	202	15.95	155	52.94
1980-81	255	26.30	166	19.13	146	77.40
1981-82	272	31.41	70	15.81	116	74.07
1982-83	263	22.45	107	16.38	268	29.54
TOTAL	2927	26.45	1180	17.20	2000	47.01

Source: Central Board of Direct Taxes.

of immovable properties in Delhi detected by the Valuation Cell in cases referred to by the IACs (Acquisition). On the other hand, no such dip is observable for the comparable data from Bombay and Madras. Furthermore, the time-profile of the number of 37G forms received annually by the IAC (Acquisition) in Delhi does not show the temporary peak in 1978-79 that one might expect if property transactors rushed to avail themselves of the capital gains tax concessions. Instead, the data in Table 7.6.2 suggest that registered property sales fell sharply during the Emergency (perhaps reflecting the effect of heightened deterrence of tax evasion) and then recovered gradually to levels far in excess of that achieved in 1978-79.

TABLE 7.6.2

Total Number of Forms No. 37G Received by the Office of IAC (Acquisition), in the Union Territory of Delhi

Year	Number of No. 37G received
1973-74	3064
1974-75	2068
1975-76	1209
1976-77	796
1977-78	1308
1978-79	3013
1979-80	3302
1980-81	5467
1981-82	6171
1982-83	5202
1983-84	3058

*Source:* Office of the Inspecting Assistant Commissioner (Acquisition) of Income Tax Department, New Delhi.

Of course, it may be unrealistic to expect that modifications in only one form of taxation capital gains taxation-would, by itself, have a pronounced impact on the volume and character of sales of urban property. As we indicated in the beginning of this chapter, undervaluation (in sale deeds) of property sales helps both seller and buyer evade several taxes. Effective reduction of one tax may be insufficient to significantly alter the behaviour of transactors.

## Notes

1. The initial scope of this part of the study was more ambitious. However, the exercise was dogged by a number of problems, including prolonged delays (and sometimes failure) in obtaining data requested from official sources. As a consequence, this chapter is best seen as a brief, preliminary account of a larger report which may be separately prepared at a later stage, time and other resources permitting.
2. Incidentally, rent control is not a prerequisite for the existence of black (undeclared) elements in rental transactions. Even where rents are free of control, landlords frequently require a substantial portion of the payment to be paid "in black" in order to facilitate evasion of various taxes pertaining to property.
3. The 150th Report of the Public Accounts Committee of the Seventh Lok Sabha provides an illuminating account of such "power of attorney" transactions.
4. For a lucid discussion of economic and legal issues in property valuation and of alternative methods of valuation in the context of property taxation, see NIPFP (1981b).
5. The 1981 Income-tax Amendment Act extended the scope of Chapter XXA to flats and tenements; in their case the standard form is 37EE.
6. This departmental notification has no statutory basis and is not to be confused with any subsequent issue of a preliminary notice of acquisition under Section 269D of the Income-tax Act. Furthermore, even the departmental notification is unlikely for cases involving declared values less than Rs 25,000 since such properties are not subject to acquisition (in 1984 this cut-off was legally amended to Rs 50,000).
7. Given what we knew about the operation of guideline values, the differences between the declared values and "judgement values" in the sample from the Income Tax Department were surprisingly small, ranging from 10 to 50 per cent. In the absence of opportunities to seek explanations for these low figures, we present them with considerable misgivings.
8. The higher is the absolute declared capital gain, the higher is the effective rate of tax it invites, since the rate of taxation depends on the assessed income of the seller.



# Black Incomes from Public Expenditure

## 1. Introduction

THE examples and estimates of black income generation discussed in the preceding chapters have largely dealt with the private sector of the economy. The operations of the public sector also afford large (and perhaps growing) opportunities for reaping black incomes. The nature of such opportunities is extremely varied and diverse. Very broadly, we can distinguish between black income generating opportunities created by:

- (i) public controls over private sector activity,
- (ii) direct public sector participation in economic activity.

The first category encompasses the entire gamut of public economic controls on private economic activity. At the national level it includes all aspects of industrial licensing, controls over foreign trade and payments, controls on price and distribution of a wide range of commodities and services, controls over the operation of the private capital markets (e.g., through controls on interest rates, regulation of capital issues, etc.) and a wide variety of requirements relating to registration and conduct of various economic activities. State and local governments also exercise discretionary

control over economic activity through numerous departments and inspectorates which issue and renew permits of one kind or another. The sub-national levels of government play an especially important role in regulating the use of land, especially urban land, and all aspects of construction activity.

We shall return to the role of economic controls in generating black income in Chapter 9. Here we simply observe that controls typically spawn scarcity premia for the licenses, permits and quotas, through which they are exercised, and both the pursuit and realisation of these premia (whether on import licenses, building permits or cement allocations) often involve black income generation.

In this chapter we are more concerned with the second way in which the public sector spawns black incomes, namely, in the context of direct public sector participation in economic activity. In particular, we deal with the generation of black incomes through public expenditure. The reason for dwelling on this type of black income generation is that there is increasing evidence, mostly of an anecdotal nature, pointing to its growing importance in recent years.

## 2. Some Examples and an Unifying Concept

To concretise the subject it is useful to consider some examples of black income generation through public expenditures;

- (i) In the construction of an irrigation dam a significant percentage of the expenditure takes the form of illicit payments to contractors and officials. The mechanisms include substandard work and materials, inflated bills, false muster rolls for labour and kickbacks to the sanctioning officials. The net result is that the actual materials used and work done is less in quantity and quality than that billed for, with the difference accruing—in the form of black incomes—to contractors and officials of the irrigation department. The same techniques are used to defraud the government in the case of public funds allocated

for operation and maintenance (O&M) of such public projects.

- (ii) In the purchase of major civil or defence equipment from abroad the vending company makes payments—usually into accounts held overseas—to key participants (or their agents) in the decision to award the contract. These participants can include both officials and ministers. The amount of such payments is, naturally, built into the price of the equipment in question. Hence a part of the full price paid by the government or public sector agency corresponds to black incomes paid to those who colluded in the award of the contract.
- (iii) Substantial proportions of government expenditure on various anti-poverty programmes, such as Integrated Rural Development Programme (IRDP), never reach the designated beneficiaries. Collusion between functionaries of the district administration and local banks effectively siphons off these amounts in the form of explicit or implicit “cuts”. What is true for special anti-poverty programmes is often also true for regular government expenditure on social welfare: for example, medical supplies for rural clinics often do not reach their destination or are illegally sold off by the compounder and shown as “dispensed”.

Such examples can be readily multiplied. Nor is the phenomenon new in India. Twenty years ago the Santhanam Committee (Government of India, Ministry of Home Affairs, 1964, p.10) observed: “We were told by a large number of witnesses that in all contracts of construction, purchases, sales, and other regular business on behalf of the Government, a regular percentage is paid by the parties to the transaction, and this is shared in agreed proportions among the various officials concerned. We were told that in the constructions of the Public Works Department, seven to eleven per cent was usually paid in this manner and this was shared by persons of the rank of Executive Engineer and below down to the Mistry, and occasionally even the Superintending Engineer might have a share.” The Committee’s report

did not add the obvious, that such payments by contractors to officials in the form of cuts or kickbacks were, presumably, built into the cost structure of the works executed.

The common features of these examples merit emphasis. First, the illicit payments received clearly constitute black income in the hands of the recipients.<sup>1</sup> More importantly, these payments can be characterised as *illegal transfers from the public account* to individuals. They differ in one important respect from bribes between individuals. In the latter case a bribe by A to B reduces A's disposable income by the same amount that B's increases. Hence the bribe does not, conceptually, alter the total of gross personal income in the economy,<sup>2</sup> But in the case of the illegal transfers that we are considering here, that is those from public expenditure, the *total* of gross personal incomes increases by the extent of the illegal transfer.

Thus, in the context of the exercise conducted in Chapter 5 the full amount of such illegal transfers should be conceptually added to the total gross personal incomes computed from national accounts data by considering only *legal* transfers. Of course, the extent to which this income is taxable (and hence tax-evaded) depends on its distribution across income classes.

### 3. The Scale of Black Incomes from Public Expenditure: Some Piecemeal Evidence

It is widely believed that the scale of "leakage" from public expenditures is substantial and growing (in proportionate terms) over time. Our own informal interview information is consistent with this view. But, given the nature of the subject, it is extremely difficult to marshal quantitative support for these impressions.

The most persuasive empirical work on the subject that we have come across is a remarkable article by Robert Wade (1982), which delineates the character, extent and consequences of institutionalised corruption in the O&M divisions of canal irrigation in a "South Indian state". Before we summarise his principal findings it may be salutary to quote

some of his remarks on the basis of his evidence (p. 291): "Obviously one cannot work towards an understanding of the phenomena discussed here by the familiar methods of random sample, the formal interview and structured questionnaire. One has to use, rather, more informal, more "anthropological" means. The material on which this paper is based was collected in the course of six periods of field-work in the same small area of south India between 1976 and 1981, each of between one and four months' duration." Wade's primary objective was to understand the functioning of canal irrigation systems. In the process he came to recognise the great importance of the corruption "system", which permeated most aspects of canal operation and maintenance. This realisation led him to conduct informal interviews with dozens of irrigation engineers, other government officials and farmers, which formed the basis for his findings. As he emphasises, his findings are "based on prolonged residence and repeated enquiry, on *both* sides of the farmer-official transactions." Wade's main conclusions of particular interest to us are summarised below.

First, irrigation officers in the O&M divisions could and did raise enormous amounts of "illicit revenue" through abuse of their offices. The two principal sources of illicit revenue were the "works budget" from the "selling" of water to the farmers. The former, representing as it does leakage from government expenditure, is of direct relevance to our concerns in this chapter.

Each canal Division (headed by an Executive Engineer (EE) with Assistant Engineers (AE) in charge of Subdivisions, and Supervisors in charge of Sections) gets a regular grant for annual maintenance which is used to finance the necessary maintenance work by private contractors. Apparently, "by long established tradition"  $8\frac{1}{2}$  per cent of each contract is kicked back to the officers and clerks of the O&M Division:  $2\frac{1}{2}$  per cent going to the EE (the tender-accepting authority in most cases), 1 per cent to clerical staff, and the remaining 5 per cent being split between the AE and the Supervisor.

This  $8\frac{1}{2}$  per cent is, however, the minimum kickback, on the assumption that "work is actually done to specification".

In fact, of course, this is almost never the case; there is plenty of opportunity to achieve 'savings on the ground' through cheating on materials. Wade concludes that "such 'savings on the ground' are normally sufficient to bring the total rake-off to the officers (including the  $8\frac{1}{2}$  per cent to at least 25 per cent of the value of what is meant to be put on the ground, and sometimes to as much as 50 per cent." Even taking his lower bound figure of 25 per cent, the extent of leakage from expenditures on maintenance work is clearly very substantial.

Wade estimates that in the late 1970s EEs were making an additional, illicit (black) income of *at least* Rs 260,000 per year, compared to average official salary (including allowances) of Rs 28,500 a year. As for the AE, Wade estimates that on average he probably made about Rs 80,000 in illicit income (with perhaps Rs 30,000 being his share of the works budget and Rs 50,000 being raised or extorted from the farmers for allocation of water) compared to an official average salary of about Rs 23,000 per year.

These large additional illicit revenues which can be extracted in these O&M jobs clearly make them attractive propositions within the State Irrigation Department, especially in comparison with posts in inspection and design. Aspirants for transfer to these posts are usually prepared to pay handsomely to the transferring authority or his agent(s). Wade estimates that EEs paid anywhere from Rs 50,000 to Rs 400,000 for transfer to O&M posts (the transferring authority being the Minister) with the price being correlated with possibilities for making illicit revenues, which differs across divisions. For AE posts the going price ranged from Rs 25,000 to Rs 50,000, with the remuneration being shared by senior Departmental officers, and one or two local MLAs.

Wade's account is replete with a great deal of detailed description of the complex links between the irrigation officers, the private contractors and the politicians. He also goes on to demonstrate the detrimental consequences of corruption for the canal irrigation system. For our purposes,

his most interesting conclusion remains the *estimated minimum rake-off of 25 per cent* from the annual works budget for canal maintenance.

Leakages of this order raise the obvious question: what about audit and other forms of scrutiny of government expenditures; why do these not work as effective checks on the generation of black incomes from public expenditures? There are several answers to this query. First, the audit conducted by the State Accountant General's Office is a *financial* audit, not a physical one. As Wade notes (p. 310) it is "sufficiently effective to make correct charging for bad structures, rather than over-charging for good structures, the most promising strategy, since neither this office nor any other independent body makes checks on physical quantities." Second, while there is an elaborate machinery for supervising, investigating and disciplining corrupt officers, it can be too easily neutralised. In principle, adverse comments in confidential reports (CRs) can trigger investigations by the Irrigation Department's Vigilance Cell, or the State's Anti-Corruption Bureau (ACB). In practice these deterrents are far from effective. To begin with, the safeguards against action against officers are strong (the original intent was to protect their independence). Where a case is allowed to be initiated under the Vigilance-ACB machinery, it can be easily derailed by intervention from the Departmental Secretary or the Minister. As Wade puts it (p. 310), "If the Minister sold the EE his tenure and subsequently put the screws on him for more money, he may be a bit ambivalent about allowing an ACB investigation to proceed". Indeed, the anti-corruption machinery is more likely to be mobilised "as a part of the struggle for power and spoils", whether between a senior officer and his Minister, or rival Ministers, or when the State government changes and the new party in power deploys the machinery of government to discredit its predecessor.

Is this case of corruption in canal irrigation in "a South Indian state" an aberrant, isolated example, or is it symptomatic of a more pervasive malaise? Wade cites the work by Pant (1979) to suggest that such practices are common in

other irrigation systems. In his study of the Kosi Canal system in Bihar, Pant reported that only 40 to 50 per cent of the recorded public expenditure was actually spent on works, with the remainder lining the pockets of the irrigation staff and bloating contractor's profits. Wade also draws attention to the Santhanam Committee's reports of pervasive corruption in government purchases and contracts.

Preliminary work by Talwar (1984) relating to public sector construction projects (mostly in Delhi) also confirms the existence of large discrepancies between the quanta of public expenditure and the value of the corresponding works actually built. Talwar distinguishes between "institutionalised" and "collusive" corruption. The former represents customary "cuts" to various levels of functionaries, while the latter reflects more audacious conspiracies to inflate project cost estimates in which only a handful of people are directly involved and which usually requires the explicit blessing of, if not initiation by, powerful politicians. Like Wade, Talwar is obliged to rely mainly on interview material gathered over many years of residence and public service in Delhi. Based on these interviews Talwar estimates that as much as 25 to 30 per cent of the recorded cost of public works in Delhi and neighbouring States may be siphoned off as black income in the hands of government functionaries, politicians and contractors. For one public sector agency his information suggests that the percentage of "leakage" may be about 40 per cent for houses and buildings, while it may climb as high as 80 per cent for "land development and acquisition" and "minor works, maintenance and beautification works".

Our own informal interviews confirm the view that leakages from public expenditures are a pervasive, not an isolated, phenomenon. Experienced civil servants indicated that leakages from anti-poverty programmes (such as IRDP) in the range of 10 to 30 per cent were quite common, while in some cases they may be even higher. A great deal depended on the quality and motivation of the district administration. According to a recent study by Jain *et. al.* (1984), the extent of corruption leakage in anti-poverty programmes



may be much higher, in the range of 50 to 80 per cent of programme funds.

Our interviews also indicate that kickbacks on government contracts and purchases are common. Nor are they limited to administrative departments such as the public works departments, but extend to include public enterprises. The impression we formed was that for most substantial public sector contracts, whether placed at home or abroad, significant cuts and kickbacks to key decision-makers has become the rule rather than the exception. This impression is also consistent with any number of press accounts.<sup>3</sup> Furthermore, most of our informants agreed that the relative scale of this form of corruption—leakages from public expenditure—has grown substantially over the past two decades. In the latter part of this period it is believed to have become an important source of unaccounted funds for political finance of elections and inter-election political manipulations.

#### 4. The Scale of Black Incomes from Public Expenditure: Some Speculations

The piecemeal evidence presented in the previous section provokes the question: how much does all this leakage from public expenditures add up to in any given year? It should be readily apparent that, at present, there is little prospect of any adequately grounded answer to this intriguing question. First, virtually all the piecemeal evidence summarised earlier is ultimately based on "off the record" interview information where the corroboration comes from other such interviews, not documentary evidence. Given the nature of the beast, this is hardly surprising—but it would be unwise to dismiss such interview data too lightly. Nevertheless, doubts can be legitimately raised. Second, as Wade's study indicates, establishing the dimensions of institutionalised corruption in public expenditure in a given sector and geographical area with a reasonable degree of credibility requires close familiarity and prolonged effort. Until such time that comparable studies have been completed for other sectors

and areas of public expenditure, the basis for estimating any aggregate amount of leakage will remain very weak. After all, there can be no presumption that the rate of leakage found in one kind of public expenditure in one area is applicable across the board of all public expenditure. For some kinds of expenditure, such as Central and State government wage and salary payments to its permanent employees, the amount of leakage may be nil or negligible. Third, many instances of leakage may represent unique events (for example the kickbacks associated with a particular, massive weapons system contract), where question of customary or institutionalised rates of leakage simply does not arise.

For all these reasons, we are unable to offer any reasonable basis for estimating the aggregate amount of leakage (or illegal transfer) from public expenditures in any given year. Nevertheless, it may be instructive to obtain some idea about the dimensions which might be involved. We do this by simply taking a relevant subtotal of capital and current expenditure by the public sector and applying alternative percentages of 5, 10 and 20 per cent to this subtotal to see, for illustrative purposes, the scale of leakage which may be involved. Table 8.4.1 presents the results for 1975-76, 1980-81 and 1981-82.

For each year, Table 8.4.1 presents two columns. The first simply reflects the application of the specified percentages to the specified subtotal of expenditures, while the second column reports numbers which are 75 per cent of the first column. The second column is based on the assumption that three-quarters of the illegal transfers from these public expenditures accrue to beneficiaries who are in taxable brackets of income. Thus the latter set of columns contain speculative guesstimates of amounts by which illegal transfers from public expenditures could augment the totals of tax-evaded income estimated in Chapter 5.

Table 8.4.1 suggests, that even if we make crude, but perhaps reasonable, assumptions regarding the average proportion of leakage from public expenditures, the amounts involved are quite substantial. Thus, if in 1975-76 the average leakage proportion was 10 per cent, it meant that black

**TABLE 8.4.1**  
**Leakages from Public Expenditures: Some Speculative Numbers**  
 (Current prices, Rs crore)

	1975-76		1980-81		1981-82	
	(1)	(2)	(3)	(4)	(5)	(6)
1. Public sector gross domestic capital formation	7,677		13,922		17,444	
2. Net purchase of commodities and services by administrative departments	2,670		4,877		5,964	
3. Purchase of commodities and services by departmental enterprises	1,650		3,036		3,725	
4. <i>Relevant subtotal of public expenditure</i>	11,997		21,835		27,133	
5. Assuming 5% rate of leakage	600	450	1,092	819	1,357	1,018
6. Assuming 10% rate of leakage	1,200	900	2,184	1,638	2,713	2,036
7. Assuming 20% rate of leakage	2,399	1,800	4,367	3,276	5,427	4,071

*Note:* For the last three rows, columns (2), (4) and (6) are computed as 75 per cent of columns (1), (3) and (5), respectively.

*Source:* Tables 24, 27 and 28 of Government of India, CSO (1984).

incomes (tax evaded) from public expenditures might have been in the order of Rs 900 crore, a sum which may be compared to the estimates of tax-evaded (legal) income in Chapter 5 ranging from Rs 2,467 crore to Rs 3,741 crore. The corresponding tax-evaded leakage in 1980-81 may have been Rs 1,638 crore, which compares with our earlier estimates of tax-evaded (legal) income ranging from Rs 4,813 crore.

We should reiterate that these numbers are purely speculative. They are presented only to drive home the point that even if the average proportion of leakage from public expenditures is quite modest, the amounts involved can be substantial.

### Notes

1. While most of such income usually accrues to those who are in tax paying brackets, some goes to those below the effective income tax exemption limit. In such cases the incomes are 'black' in the sense of being illicit, but they are not black if a strict definition of tax-evaded income is used.
2. Strictly speaking, *taxable* income may increase since A's income (from all sources) is augmented by the bribe. while A cannot, legitimately, treat the bribe as a deductible expense.
3. As one example, see the article on the Delhi Development Authority in *India Today*, April 30, 1984. Another well-publicised example, of the "Kuo deal", is described in Shourie (1983).

# Underlying Causes of the Black Economy: A Qualitative Review of the Principal Factors

## 1. Introduction

MUCH has been written on the causes of black income generation.<sup>1</sup> For the most part we shall draw on the existing literature and our extensive interviews. In one relatively neglected area—the effectiveness of deterrence (of tax evasion) — we have marshalled a considerable body of fresh information to which we devote a separate chapter.

We find it convenient to group the causes of black income generation under the following heads:

- i. the level and structure of taxation;
- ii. the effectiveness of tax administration;
- iii. controls on economic activity;
- iv. general laws and regulations;
- v. political finance;
- vi. government spending: its scale and accountability;
- vii. standards of public morality;
- viii. inflation.

Before turning to an item-wise discussion of these causes, we begin with a few general observations. First, we should

emphasise that the causes itemised above operate *together*, not as isolated elements. When an economic agent or enterprise undertakes its decisions on product, finance, sale, investment, accounting, etc., which lead to black income generation, it does so in a context where all (or at least some) of those factors are operating *simultaneously*, not in isolation, or seriatim. It is important to emphasise this since, for ease of exposition, our discussion of the causal factors is organised sequentially. Second, and quite obviously, the range of causal factors influences different sets of economic agents to different degrees. Third, given the complexity of the context in which black income is generated, it is quite beyond the scope of this study to *quantitatively* isolate the relative influence of different causal factors, an exercise which would also require much firmer estimates of the extent of black income and over an extended time period, than it has been possible to make. Finally (and this harks back to the first point), the causal factors can and do act to reinforce each other. For example, the need for financing election politics through illegal contribution from (or levies on) trade and industry bolsters a system of economic controls and interventions within which black incomes can be readily generated.

## 2. The Level and Structure of Taxation

a. *Some lessons from theory.* We begin with a brief review of the theoretical literature on tax evasion and its determinants. In a series of papers published in the early 1970s, Allingham and Sandmo (1972), Singh (1973) and Srinivasan (1973)<sup>1</sup> developed a model based on the analysis of choice under uncertainty. In essence the model perceives an individual taxpayer as maximising his *expected income*, which is depicted as a sum, weighted by probabilities, of two possible states of affairs, one in which he conceals a part of legally taxable income and successfully evades tax and another in which such evasion is detected through the administrative efforts of the tax system and a monetary penalty imposed.

While different authors have advanced alternative variants of the model, its spirit can be captured by the following equation:

$E(Y) = k [Y - T(Y) - P(m)mY] + (1-k) [Y - T(1-m)Y]$   
 where,

$Y$  = the individual's true income,

$T(Y)$  = the tax function,

$m$  = the proportion by which true income is understated,

$P(m)$  = the penalty function,

$k$  = the probability that evasion is detected.

Thus, the first expression on the right hand side depicts the situation when evasion has been detected and the second expression represents successful evasion.

On the assumption that individuals maximise expected income,  $E(Y)$ , this model has been used to generate a number of qualitative conclusions, including:

i. The "optimal" extent of evasion depends simultaneously on the rate structure of taxation, the probability of detection through administrative efforts and the rate structure of monetary penalties;

ii. Other things equal, and assuming a progressive tax structure, the optimal proportion of income understatement (that is, the degree of evasion) increases with the individual's income;

iii. Other things equal, the optimal degree of evasion decreases as the probability of detection increases;

iv. If the probability of detection increases with income, then, for a constant marginal rate of tax, the optimal degree of evasion declines as income increases;

v. Penalty rates and tax administration efforts (the latter modelled by  $k$ ) both act to deter evasion and to some degree one can act as a substitute for the other; that is, the same optimal degree of evasion can be secured through higher penalty rates and lower detection efforts — and vice versa.<sup>3</sup>

vi Other things equal, when the overall structure of taxation is raised, the optimum degree of evasion for individuals at any given income level will increase, that is, total evasion will increase.

As with any theoretical model, these qualitative conclusions depend, to some extent, on "reasonable" tax functions, penalty

functions and so forth. Broadly speaking, the qualitative conclusions are also in harmony with common sense; indeed, the underlying model(s) may be characterised as formalisations of common sense. That said, we must recognise that these models suffer from some severe limitations.

First, the models do not provide policymakers with any empirical guidance regarding the responses of tax evasion to alternative instruments such as tax rates, detection efforts and penalty rates. Second, by confining the analysis to the paradigm of an individual subject to a single tax (on income), the models do rough justice to the real world where an individual or enterprise may be subject to several taxes as well as a number of other influences that we have indicated above, all of which will jointly determine the extent to which income is underreported to tax authorities. For one thing, each of these other taxes may have a quite separate battery of detection and penalty procedures. For another, the approach abstracts from the larger social environment, which may have a lot to do with evasion and compliance. Surveys conducted in Sweden (Vogel, 1974) and the United States (Spicer and Lundstedt, 1976) emphasise the significance of social norms on tax compliance and people's perceptions about the equity (or inequity) of the prevailing tax system.

Third, by representing tax administration efforts through a single variable,  $k$ , the models oversimplify — to the point of misrepresentation — the real world, where the probability of detection is likely to vary enormously across types of economic activity and where detection can, in effect, be nullified through bribery. Corruption apart, the "fact" of detection (of evasion) becomes somewhat nebulous when we take account of the numerous appellate stages in which the *prima facie* finding of income concealment can, and is, challenged. Similarly, the idea that penalty rates are well-specified and automatic must appear extremely naive to anyone familiar with the Indian scene, where numerous appellate and judicial procedures intervene to dilute the relevance of a given structure of penalties. And, in the case of illegal source incomes, the deterrence/incentive effects of tax rates and tax evasion penalties are likely to



be secondary to those implicit in the laws broken in making the illegal source incomes.

b. *Empirical evidence.* Other things equal, a higher effective rate of tax clearly increases the incentive to evade. And, as virtually every official committee of enquiry on tax issues in India has observed, evasion of taxes is rampant with respect to every major tax, a view which is supported by our estimates for tax-evaded income presented in Chapter 5.<sup>4</sup> But studies which quantify the nature of the links between the *level and structure of taxation* and the *extent of evasion* are virtually nonexistent in India. Given the enormous difficulty of arriving at any reliable estimates of evasion and the uncertainty which attaches to these estimates, this is hardly surprising.

In discussing the role of the level and structure of taxation in encouraging tax evasion, it is important to distinguish between:

- i. the aggregate level of taxation in the economy;
- ii. the composition of the tax structure;
- iii. the rate structure and other relevant characteristics of the important taxes that make up the tax system.

With respect to the aggregate level or rate of taxation, defined as the ratio of total tax revenues to GNP, we have already advanced some indirect evidence in Chapter 4, which suggests that the increase in the economy's tax ratio from 7 per cent in the early 1950s to 15 per cent in 1980-81 has been associated with an increase in incomes, outputs and transactions not reported to the tax authorities.

*A priori*, we would expect the *composition* of taxes to have a bearing on the extent of evasion. It is generally believed that indirect taxes on commodities are more difficult to evade than direct taxes on income and wealth. That is why countries at earlier stages of development (that is, with low per capita GNP) normally rely much more heavily on indirect taxes than more developed nations, where the more abundant availability of administrative skills and information systems facilitates much greater reliance on direct taxes. Thus, there is some presumption that as a country develops over time the composition of its tax revenue would gradually shift in favour of direct taxes. Over the past three decades the trend in India has been

in the opposite direction. In 1950-51 direct taxes accounted for 37 per cent of total tax revenues of the Centre, States and Union Territories. By 1982-83, this share had declined to 17 per cent. Such an atypical trend suggests that the problems of evasion of direct taxes have been unusually severe in India and have militated against the "normal" growth in the share of these taxes in total tax revenues<sup>5</sup>.

Among major taxes, the evasion aspects of Union excise duties were seriously studied by the Venkatappiah Committee (Government of India, 1974). Though the Committee refrained from offering quantitative estimates, it concluded (p.65) that "evasion is considerable and in some sectors pervasive". The Committee attributed the widespread evasion to a number of factors:

- i. "Slack, non-existent or dishonest supervision",
- ii. "unnecessarily complicated tariff items", particularly "the differential rates for different categories and sub-categories of the same tariff item or of allied products in different items",
- iii. "unrealistically designed exemptions", which offer enormous scope for abuse,
- iv. "high tax rates".

Of these, the last three clearly relate to the level and structure of excise duties. Similar conclusions have been arrived at in the detailed, commodity-wise studies of excise evasion in copper (NIPFP, 1982), plastics (NIPFP, 1983b) and cotton fabrics (NIPFP, 1984) carried out by the National Institute of Public Finance and Policy. Chapter 6 of this report presents a somewhat different view in the case of sugar.

However, most of the debate regarding the relationship between the level and structure of tax rates and evasion relates to taxes on income, and especially, non-corporate income. And the focus is on tax rates, to the exclusion of other characteristics of the tax, such as provisions for exemptions and deductions. The claim that high rates of personal income tax are a prime cause of evasion is almost invariably based on *a priori* arguments, which link evasion to the high marginal rates of taxation, especially when such rates are viewed in combination

with the structure of wealth tax rates. For example, the Wanchoo Committee Report pointed out when "the marginal rate of taxation is as high as 97.75 per cent, the net profit on concealment can be as much as 4,300 per cent of the after-tax income . . . We will not be surprised that placed in such a situation, it would be difficult for a person to resist the temptation to evade taxes."

Rates of personal income taxation have been reduced since the early 1970s, once in 1974-75 and again in 1976-77, and, most recently, in the 1984-85 budget. These reductions refer to nominal rates. As Bagchi (1982) has shown, when inflation is allowed for, the effect has been to reduce the average burden of taxation (over the period 1971-72 to 1981-82) for the lowest and highest levels and increase it for those in the "middle", that is, those earning gross income between Rs 29,950 and Rs 2,34,000 per annum in 1981-82 prices (see Table 9.2.1). Given the rather ample span of the "middle" we would be excused from concluding that the reductions in nominal rates have been more than nullified by inflation for most categories of income tax payers. So, if the rate structure of the personal income tax was regarded as a significant cause of evasion in 1971-72, logically, it would be inconsistent to resile from this view in 1981-82. And since the rate of inflation between 1981-82 and 1984-85 has been greater than the percentage-wise, across-the-board rate reliefs offered in the budget for 1984-85, the same argument applies to the position in 1984-85.

Furthermore, the EARC's Report No. 22 has highlighted the high tax burden imposed on individuals through a *combination* of taxes on income and wealth. Table 9.2.2, which is based on a table in the EARC report, displays the combined effect of income and wealth taxes at different levels of wealth and assuming a pre-tax rate of return of 10 per cent per annum. A glance at column (10) of the table indicates that though the highest marginal rate of income tax (inclusive of surcharge) was 67.5 per cent in assessment year 1984-85, when this was combined with the wealth tax, the combined marginal rate of tax on income from wealth reached 97.5

TABLE 9.2.1

Burden of Income Tax at Selected Income Levels (1971-72 and 1981-82)

(Rupees)									
Gross income	Deductions	Taxable income	Tax	Tax as per cent of gross income	Gross income*	Deductions	Taxable income	Tax	Tax as per cent of gross income
1971-72					1981-82				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
5000	900	4100	Nil	—	11700	3020	3680	Nil	—
7500	1090	6410	155	2.07	17500	4900	12600	Nil	—
10000	1400	8600	396	3.96	23400	6780	16600	535	2.29
12500	1870	10630	668	5.34	29250	8825	20425	1791	6.12
15000	2300	12700	1055	7.03	35000	9510	25490	3484	9.95
20000	3700	16300	1896	9.48	46800	12500	34300	7062	15.09
30000	7600	22400	3703	12.34	70200	16500	53700	16005	22.80
50000	11300	38700	11903	23.81	117000	23500	93500	39188	33.49
100000	16400	83600	45655	45.66	234000	25500	208500	114730	49.03
250000	16400	233600	176616	70.65	385000	25500	559500	346390	59.21
500000	16400	483600	410366	82.07	1170000	25500	1144500	732490	62.61

Note: Equivalent in real terms to the gross income shown in column (1).

Source: Bagchi (1982) p. 735.

TABLE 9.2.2

Combined Impact of Income and Wealth Taxes Assuming an Yield Rate of 10 Per cent per Annum

Wealth	Income from wealth	Income tax*	Wealth tax*	Total tax	Tax as per cent of income	Post-tax income	Increments in income	Tax on increments in income	Tax on increments in wealth	Total incremental tax	"Total Marginal" rate of tax col.(11) as per cent col.(8)
(Rs)	(Rs)	(Rs)	(Rs)	(Rs)		(Rs)	(Rs)	(Rs)	(Rs)	(Rs)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
2 lakhs	20000	1406	1000	2406	12.0	17594	—	—	—	—	—
5 lakhs	90000	14063	3750	17813	33.6	32187	30000	12657	2750	15407	51.35
10 lakhs	100000	44578	13750	58328	58.3	41672	50000	30515	10000	40515	81.03
12 lakhs	120000	58076	19750	77828	64.9	42172	20000	13500	6000	19500	97.5
15 lakhs	158000	27328	78750	107078	71.4	42922	30000	20250	9000	29250	97.5
18 lakhs	180000	98578	43750	142328	79.1	37672	30000	20250	15000	35250	117.5
20 lakhs	200000	112070	53750	165828	82.9	34172	20000	13500	10000	23500	117.5
30 lakhs	300000	179578	103750	283328	94.4	16672	100000	67500	50000	117500	117.5
40 lakhs	400000	247078	453750	400828	100.2	-828	100000	67500	50000	117500	117.5
50 lakhs	500000	314578	203750	518328	103.7	-18328	100000	67500	50000	117500	117.5
100 lakhs	1000000	652078	453750	1105828	110.6	-105828	500000	337500	250000	587500	117.5

Note : At rates applicable for assessment year 1984-85.

Source: Based on EARC Report No. 22 (p. 154, Table 11).

per cent for net wealth of 12 lakhs and exceeded 100 per cent for net wealth of 18 lakhs and above.

The key empirical question is how significant is the rate structure of personal income taxation in inducing evasion. The one good study in this area is by Bagchi and Rao (1282). They set out to estimate the elasticity of the non-corporate income tax in India. In the process they noted that the budgets for 1974-75 and 1976-77, in which personal income tax rates were reduced, made no estimates for revenue loss from these reductions, on the assumption that such losses would be exactly offset by revenue gains from improved compliance. They proceeded to challenge this assumption by making independent estimates of assessable incomes over the years 1974-75 to 1977-78, based on regressions of assessable income on GDP for the period 1962-63 to 1973-74, when changes in the tax were minor and could be adjusted for. Based on their regression equation *forecasts* for assessable incomes in 1974-75 to 1977-1978, Bagchi and Rao concluded that assessable incomes and tax yields would have been significantly greater in these years but for the rate reductions. In other words, the tax compliance effects of rate reductions were much lower than had been presumed in the Budgets. From this Bagchi and Rao moved to a broader conclusion: "The results . . . raise doubt about the validity of the widely held presumption that a reduction in tax rates leads to a higher yield of income tax because of better compliance", (p. 1452).

Though the Bagchi and Rao paper is the best available, their analysis and conclusion can be subject to several criticisms. First, there is the usual problem with AITS annual data on assessed incomes, namely that each year's data relate to several assessment years; any conclusions based on this data have to be treated with some circumspection. Second, their key regressions link assessable incomes to only one variable, GDP at factor cost, if we leave aside a dummy variable for certain tax structure changes in the sample period. Yet theory would suggest that the total of reported and assessed incomes should also be influenced by a number of other factors, such as the rate of inflation (which influences

the effective burden of taxation), trends in other taxes, the climate for enforcement, detection and penalties, and so on. True, the statistical attributes of the Bagchi-Rao equations are good, but unless they are seriously tested against more complete formulations, it may be unwise to accept them uncritically for the purposes at hand.

Third, it is one thing to use the analysis to challenge (and revise) the budget assumptions regarding revenue loss attributable to discretionary rate reductions; it is quite another to arrive at broad conclusions about the links between tax rates and compliance (or evasion). The latter is a complex subject, where the influence of tax rate reductions may reasonably be expected to take some time to work, especially after a long history of tax hikes. Those concealing income cannot be expected to turn honest overnight, if for no other reason than this could lead to dangerous anomalies in their histories of tax returns! Yet, over time, a lower structure of rates could have a significant positive effect on compliance, both by existing tax dodgers and, perhaps more importantly, by new potential assesseees, especially once the populace is convinced that the rate reductions are not temporary gimmicks.

To sum up, while the Bagchi-Rao paper provides a strong precaution against making unrealistically rosy estimates of improved revenues from better compliance in the short run, its wider doubts about a policy of combating evasion through reduced rates are not so securely founded. So where does this leave us? Essentially with our judgements and prejudices. And to put those on the table, we side with those who believe that high effective rates of taxation are a major contributory factor to tax evasion and black income generation in India. Improved tax compliance *can* result from significant and sustained reductions in the effective tax burdens of those who are liable to tax.

### 3. Controls on Economic Activities

The range and complexity of controls over economic activity in India is awesome. This is the principal impression that strikes the reader of the Dagli Committee's unique and

valiant attempt (Government of India, Ministry of Finance, 1979) to compile and analyse the consequences of controls on the Indian economy. And this impression is strengthened when the reader absorbs the full import of the Committee's admission that it "has been able to make only a beginning in the matter of the study of the extant controls in the Indian economy, as it has been able to examine only a sample of the existing controls..." (p.(ii) ). The Committee's testament to the complexity of the control system is also worthy of quotation : "The control system today has become so complex that even the executive authorities responsible for implementing the controls are unaware at senior levels of the exact control system which they have to implement".

The main contours of the control system as described in the Dagli Committee Report have remained in place, though individual components have been modified from time to time. There is little point in repeating, or even summarising, the description of the control system provided by the Dagli Committee Report. However, we should take note of the principal components. These are:

- i. Controls on industrial activity;
- ii. Controls on imports through licensing and canalisation procedures;
- iii. Foreign exchange controls;
- iv. Controls over prices and distribution of a wide range of commodities;
- v. Controls on rents and on use of urban land.

In each of these areas knowledge of the control system requires knowledge of the relevant economic law such as the Industries (Development and Regulation) Act or the Essential Commodities Act, the statutory Control Orders, the numerous notifications issued under each statutory Control Order, and the array of administrative and informal controls and procedures which often buttress (and sometimes substitute for) statutory controls.

There are several dimensions to the manner in which controls contribute to the generation of black incomes. First, and most obviously, in areas such as import licensing, foreign



exchange control, rent control and commodity price controls, the institution and operation of controls spawns scarcity premia over and above the official or controlled prices, and these are usually reaped by operators in the black market for the relevant item. As the Wanchoo Committee Report noted (p.9), since "the transactions in violation of statutory restrictions had to be entered secretly, these had necessarily to be kept back from the tax authorities. In consequence, evasion of tax on incomes thus made illegally follow inevitably".

The dimensions of such scarcity premia have fluctuated over time with the nature of the controls and the underlying conditions of supply and demand in the relevant markets. Comprehensive estimates are hard to come by. Mohammad and Whalley (1983) provide an estimate for 1980-81. According to them the total scarcity premia or "rents" associated with four major sets of controls (import licenses, capital market controls, commodity price controls and labour market controls) was in the order of 32,500 crore to 45,000 crore, or between 30 and 45 per cent of GNP. The basis for their estimates is somewhat rough and ready. For example, Mohammad and Whalley assume that the differential between controlled and black market prices for all non-agricultural price controlled items (including steel, cement, fertiliser, automobiles, chemicals, pharmaceuticals, sugar, paper, petroleum products and tractors) was 100 per cent. They apply this premium to the estimated value of production of those commodities to obtain an estimate of Rs 17,000 crore of scarcity premia attributable to price controls on the specified non-agricultural commodities. Similarly, they conclude that the real rate of return on investment was at least two to three times higher than the real rate of return accruing to savers, with the difference being attributed to controls on credit and interest rates. By multiplying this "premium" by the annual flow of household financial savings, they estimate that the scarcity premia in this area were in the order of Rs 8,500 crore to Rs 17,000 crore.

Quite clearly, these estimates are based on rather weak foundations. Perhaps more important, it is difficult to know

what proportion of the scarcity premia are actually realised in the form of illegal black incomes and what proportion is implicitly (but legally) enjoyed by recipients of the controlled allocations. Nevertheless, informed sources attribute great significance to controls as a cause of black incomes. For example, Pendse (1983) considers them so important as to come to the judgement that the aggregate of illegal source black incomes (principally the illicit premia spawned by controls) is larger than that of legal source, tax-evaded incomes in India.

Second, the present system of controls typically require anyone setting up a new activity to get *de facto* approval from a number of different agencies and departments; one might pass judgement on the foreign exchange implications, another on the project's consonance with Plan priorities, and still another on the foreign collaboration proposed. And obtaining the industrial license may only be the beginning. Further approvals may be required from the relevant State government (on land use, on environmental implications, etc.), term lending institutions, suppliers of infrastructure such as power and transport, and so on. At each stage of approval there is potential for graft, and that too at different levels. As an experienced Union Cabinet Minister puts it, "we have allowed a huge bureaucratic network to develop as a constraint on them (trade and industry). This apparatus exists only to say 'yes' or 'no' to a project whose file has to pass from the lowest section officer to the highest ministerial office. . . This merry-go-round goes on not only for months but for years. The only way to expedite matters and to obtain a 'no objection' certificate is to resort to the lubricant of unaccounted money which is used at every decision-making point, from the lowest to the highest level. This is how corruption becomes the rule rather than the exception." (Sathe, 1984, p. 154).

Third, once an economic activity has been established, it continues to interface with many elements of the control system. Import licenses may have to be negotiated, access to credit, controlled inputs and infrastructure (such as power, telecommunications and transport), secured. The enterprise

may become subject to monitoring by a whole new set of government departments such as labour, health, environment and so on. Once again, in each case, the regulators have to be propitiated, typically through some form of graft.<sup>6</sup>

Fourth, the operation of a complex and discretionary system of controls invites corruption and lobbying of another form. Economic agents do not rest content to confining their bribery to speeding up the processing of their various applications or to securing advantageous interpretations when the regulations are ambiguous. They can also use their money power to change the scope and content of the controls. For example, there have been cases where the zoning of urban land has been altered to suit individual developers in return for appropriate considerations. In effect, changes in public policy are purchased, thus further vitiating the original rationale of the controls. Conversely, the *design* of the control system, and not just its administration can be used as a powerful instrument for conferring windfall gains (or promising to do so) and inflicting unforeseen costs (or threatening to do so) in a highly selective manner, which facilitates its use for raising money for political or private purposes.

In all of these cases the bribes themselves constitute black incomes in the hands of the recipients. What is perhaps even more significant is that the need to pay regular bribes to different elements of the control apparatus provides productive enterprises with a good reason to *generate* black income in their operations. "Greasing the wheels of business" is a significant rationale for enterprises to keep some of their income "off the books". And this need is high because the spread, complexity and discretionary content of the control system is great.<sup>7</sup>

A couple of general points merit emphasis. First, the system of economic controls and permits is not limited to the Central government; it extends to State and local levels. We were frequently told that though recent years had witnessed some relaxation in Central government controls (e.g., with respect to imports, price controls on cement and steel), the operation of the "license-permit raj" at the State and local levels had become more burdensome and corrupt, for

example, with regard to the distribution of liquor license and use of urban land. Second, as we already hinted above, the culture of corruption which is spawned (or at least, nurtured) by a system of complex discretionary controls on economic activity does not remain confined strictly economic controls.

### General Laws and Regulations

The giving and taking of bribes goes well beyond strictly economic controls. For example, it is common practice for traders to give general purpose "haftahs" to local policemen and various municipal inspectors as well as special considerations to overlook unauthorised pavement retailing or other specific transgressions. Unauthorised constructions are frequently "regularised" through appropriate pay-offs. Corruption is, reportedly, rampant in the lower echelons of the general administration and the judiciary. Simple registrations of documents frequently require petty bribes. Placements of students in schools and colleges can often be secured only at a price. In some States the power to transfer officials is abused to extort bribes from the victims. In others, appointments to public jobs are "sold". These examples can be multiplied readily. It is their general characteristics which may be more interesting.

Laws and regulations grant a certain amount of monopoly power and capacity for harassment to those responsible for interpreting and administering them. The discretion is intended to serve the public interest. All too often in India it is used to enhance private (and illegal) profit. In effect, in the hands of the unscrupulous, regulatory authority becomes transformed into levers of "private taxation" through which tolls are levied on the public. As in the case of economic controls, the actual bribes received constitute black incomes in the hands of the recipients, though from a national income accounting perspective they are in the nature of transfer payments. However, to the extent such bribes are predictable, they encourage the donors to *generate* black incomes, typically by concealing legal source incomes and turnover from tax authorities.

Another noteworthy, general point is that when public offices are systematically abused to enrich the incumbents, the posts themselves frequently come to command a monetary price. In Chapter 8 we cited the work by Wade indicating that posts of engineers in canal irrigation systems fetch high prices. In our interviews, we were told that it was quite common for police postings to "fetch a going price", depending on their location and "revenue-earning" potential. Indeed, we were informed that recruitment to public services, in general, and especially at the lower levels, was becoming increasingly "monetised". Even jobs of public school teachers were often "on sale", though they were associated with little regulatory authority (such posts do however have earning potential in excess of salaries, to the extent that permanent teaching jobs provide both a certification and a clientele for remunerative—and tax-evading—private tuition). Of course, such "sales" of jobs are more likely to fetch high prices when they carry significant regulatory authority over lucrative economic activities.<sup>8</sup>

### **5. The Scale of Government Spending**

We have noted how a regime of detailed and discretionary controls provides opportunities to those who design and administer the system to selectively confer benefits and inflict costs on different groups of economic agents. Similarly, government spending can be a potent source of economic patronage. As far back as 1964, the Santhanam Committee Report had warned about the "unprecedented opportunities for acquiring wealth by dubious methods" that was afforded by rapid increases in government expenditure. Even then the Committee received complaints about a virtually universal practice of cuts and kickbacks in "all contracts of construction, purchases and sales".

In the past three decades, government spending has increased nearly fifty times in absolute nominal terms; even as a ratio of GNP, government spending has increased from 9 per cent in 1950-51 to 27 per cent in 1982-83. There is no reason to believe that the accountability of expenditure has improved over time. In fact, our information suggests that

matters have worsened considerably, especially with the reported growth of political fund raising through government contracts. Furthermore, this period also saw a very rapid increase in the operations and turnover of public sector enterprises, some of which also offer substantial opportunities for making illicit commissions. Thus, it is difficult to resist the conclusion that rapid increase in public spending has been a significant factor behind the growth of black incomes.

The most common method of making black incomes from government spending is to "siphon off" a chunk of the reported expenditure and diminish the actual materials supplied and work done (in quantity or quality) by a corresponding amount. In effect, the "siphoning off" can be viewed as an illegal transfer from the public treasury to the recipients of the cuts, kickbacks and commissions. This set of issues and practices was discussed in Chapter 8.

## 6. Political Funding

Back in 1971 the Wanchoo Committee Report (p.9) had identified political finance as a significant factor in black income generation. Many of those we interviewed singled out (illegal) political fund-raising as a prime cause of black income generation. Under the present law no candidate to a Lok Sabha election is permitted to spend more than Rs 35,000 towards his election, and, since 1969, companies are disallowed from contributing towards the election expenditure of parties and candidates. It is common knowledge that these legal limitations are not taken seriously. Chief Election Commissioner R.K. Trivedi is reported (Advani, 1983) to have commented on the role of money power in elections in the following terms:

"This malady, I am afraid, during the last decade, has assumed alarming proportions. The huge expenditures incurred by candidates and political parties have no relationship to the ceiling prescribed under the law. The candidates and their political parties look to big money-bags for their funds to contest elections, thereby adopting a formula which establishes

the chances of winning in direct proportion to the money spent. That in course of time this triggers chain reaction leading to corruption at various decision-making levels, does not seem to bother them." Similar views are expressed by Union Cabinet Minister Sathe in his recent book (Sathe, 1984, p. 156).

Some attempts have been made to gauge the dimensions of the expenditure involved. Based on some rough norms, Pendse (1983) estimates that Rs 170 crore of "black money" was spent in the 1980 Lok Sabha elections. Allowing for leakages en route, he suggests that something like Rs 400 crore of black income would have had to be generated to assure that Rs 170 crore became available for actual election expenditure. And this is for Lok Sabha elections alone. When we take account of elections to State Assemblies and to various local bodies, as well as the inter-election requirements for political campaigning and manipulation, it is quite clear that the demand for political funds could easily average several hundred crores per year.<sup>9</sup>

Such funds are in the nature of transfers, but the greater the demand for such transfers the greater is the inducement for *generation* of black incomes. Political contributions are raised from a wide range of sources of which industry and trade are believed to be the principal ones. Black incomes made through tax evasion of legal source incomes along with black incomes from all manner of illegal sources provide the "base" for the political "contributions". Political domination over the apparatus for licenses and permits and over public expenditures ensures means by which this base can be enhanced at will and individual enterprises induced to contribute. As numerous commentators have pointed out [e.g., Trivedi (1983), Kabra (1982) and Jha (1980)], such a close nexus between political funding and black incomes is extremely dangerous as it places public policy on the auctioneer's block. And, if the black incomes in question have been made through outright illegal activities, such as smuggling, then the prospect for effective and impartial administration of laws and regulations is that much weaker [see, for example, Jha (1981) and the cover feature in *Business India* of July 30-August 12, 1984].

What is especially pertinent to the generation of black incomes is that the growth of linkages between the black economy and political authority at all levels of government can severely weaken voluntary compliance with tax laws and other economic regulations. We have noted earlier that there is some evidence from other countries linking tax compliance with social norms and people's perceptions about equity. If people come to believe that their political masters are direct or indirect beneficiaries of black incomes, their motivation towards voluntary compliance is likely to suffer. Furthermore, political dependence on black incomes weakens the effectiveness of the government's administrative machinery for deterring evasion of tax laws and other economic regulations. When special leniency has to be frequently shown towards politically well-connected transgressors, the chances of achieving fair administration and effective deterrence are slim.

### 7. Standards of Public Morality

The Wanchoo Committee Report (p. 10) pointed "to the general deterioration in moral standards of our people" as a significant factor fuelling the growth of tax evasion. That such a decline has occurred seems beyond doubt. Everyone we interviewed agreed that standards in public life had declined over the last three decades, perhaps more rapidly in the years since the Wanchoo Report. B.K. Nehru (1982) observes, "Corruption is rampant in every sector of our society . . . A large number of politicians and ministers are corrupt, corruption is universal in the lower ranks of the public services, it has affected the middle ranks as well and is now infecting the apex of our administrative structure, the All-India Services. . . ." Nor does Nehru believe that this was always the case but rather that we have "degenerated, in one single generation, from being an honest society into a dishonest one . . ."

Among the reasons cited by Nehru and others for this precipitous drop in public morality are: the relative decline of old elites and their established values and the rise of new, moneyed elites with little to offer except their example of material success; the example set by the political rulers in using public



office to advance party and private interest and their apparent ability to flout the rule of law with substantial impunity;<sup>10</sup> the sharp decline in real incomes of government servants coupled with growing opportunities for deploying their discretionary authority for personal profit; the cumulative character of corruption; and the growing weakness of established institutions and sources of authority.

Whatever the reason, the effects on tax compliance cannot be anything but adverse. The moral inhibitions against tax evasion and participation in other black transactions have clearly weakened. The process has been hastened by two other factors: the growing role of specialised middlemen who inter-mediate between the citizen and the revenue (or other) authority; and the virtual universality of black transactions in certain markets (such as urban real estate) which obliges otherwise honest citizens to flout tax statutes if they are to participate in these markets at all. The Wanchoo Report had pointed out (p. 10) that "some tax advisers do not hesitate to lend their support in shielding, and even assisting tax dodgers" By all account, this practice has become far more prevalent. The assessee/client does not himself directly bribe the revenue official to get his assessment reduced, or a false return accepted. He shifts the burden of the act (and the associated guilt) to the intermediary tax consultant. Since reports indicate that revenue officials frequently harass even honest taxpayers, it is hardly surprising that the use of intermediary consultants and accountants has become virtually universal. A similar role is played by clearing agents with respect to customs authorities. In either case the intermediary may provide genuine professional services; but he also eases the process by which irregular tax returns are tendered and accepted and revenue lost to the State.

## 8. Inflation

There are several ways in which inflation enhances the incentives and opportunities for making black incomes: First, with a progressive income (and wealth) tax structure, defined with respect to *nominal* values, inflation results in "bracket creep" which increases the effective burden of taxation at any

given level of *real* income (and wealth), and hence the incentive to evade. Second, general inflation is usually accompanied by pronounced scarcities and windfall gains in certain sectors which are unlikely to be fully declared to the revenue authorities. Third, in a system where some prices are fixed by legal or executive fiat, adjustments in these prices are likely to lag behind the changes in market-clearing prices. The likely consequence is increases in the illegal scarcity premia, at least temporarily. Fourth, inflation reduces the real incomes of those whose nominal incomes do not keep pace with rate of change in prices. This includes government servants, many of whom have access to various forms of discretionary authority which can be bartered for money. Thus inflation, especially when it is prolonged and severe, increases the incentive to succumb to such temptations.

### Notes

1. For a sampling of the general literature on the causes of black income generation in India, see the Wanchoo Committee Report (Government of India, Ministry of Finance, 1971). Sundaram and Pandit (1976), Chugh (1978), Kabra 1982), Pendse (1983), Sandesara (1983a) and Monga and Sanctis (1984).
2. These and subsequent papers have been surveyed by Sisson (1981).
3. For qualifications to this view see Sisson (1981).
4. The Wanchoo Committee Report is the most cited document on direct taxes. For Union excise duties the Venkatappiah Committee Report (Government of India, Ministry of Finance, 1974) found that evasion was widespread, although they were unwilling to venture quantitative estimates. Similar conclusions have been arrived at for State level taxes. See the references cited in Chapter 2.
5. Other reasons may also have been at work, such as differing requirements for sharing taxes collected by the Central Government with the States.
6. Informal estimates by Raj Krishna indicate that a going concern may have to keep functionaries from 25 to 30 public agencies happy.
7. Complexity of provisions and discretionary procedures also breed corruption in the case of other instruments of government policy, such as subsidies. Minhas (1977), p. 229) comments on India's export subsidy system as it operated in the mid-1970s in the

terms, "The infinite layers of contacts which exporters have to maintain with the bureaucracy, lead to colossal corruption."

8. In part, the illicit premia for such jobs also reflect excess supply of qualified candidates at the going rate of salary or wages.
9. In Raj Krishna's words "Indian politics has been becoming increasingly capital-intensive".
10. Nehru (1982) estimates that in one State at least thirty per cent of the legislators were involved in criminal cases of one type or another.

## Deterrence of Tax Evasion : Theory and Practice

### 1. Introduction

We noted in the previous chapter that the effectiveness of deterrence is an important factor in explaining the extent of tax evasion, and, hence, black income generation, at least from legal source incomes. If the potential *benefits* from tax evasion (to the tax evader) are embedded in the tax structure, the potential *costs* of tax evasion are determined by the effectiveness of deterrence measures. In this chapter we attempt to assess the extent to which the Income-tax Act, its administration and the various appellate procedures have succeeded in generating effective deterrence to tax evasion.

As we observed in the preceding chapter, public finance theorists find it convenient to disaggregate deterrence into two constituent elements:

- i. the probability of detection in cases of tax evasion, and
- ii. the degree of punishment meted out in detected cases.

A strong tax administration, it is argued, with a high probability of detecting evasion will not by itself be an effective deterrent, if the penalties levied are nominal. Conversely, high penalties, whether in the form of monetary fines or imprisonment, may be of limited consequence if ineffective

administration of tax statutes leads to very low probabilities for detection of evasion.

This two-part breakdown of deterrence is conceptually appealing. But it is difficult to sustain in practice, at least in India, because the *establishment* of detection (of concealed income) is usually inextricably linked to the outcome of penalty proceedings or prosecutions. For the purposes of this chapter we may, somewhat arbitrarily, consider *prima facie* detection to have occurred when penalty orders are issued for concealment of income. We will assess the effectiveness of deterrence under three broad heads: factors which influence the rate of detection of evasion, the efficacy of punishment through (monetary) penalties and the effectiveness of punishment through prosecutions.

## 2. Factors Influencing the Rate of Detection

Broadly speaking, the probability of detecting tax evasion can be increased either by expanding the statutory obligations of the tax payers or by enhancing the effective powers—and the quality of administration—of the tax enforcement authorities. The object of both is the same, namely, the proper determination of taxable income and the collection of the full taxes due. Of course, some measures entail both aspects: they impose fresh obligations on assesseees at the same time that they augment the powers of the enforcement authorities.

a. *Statutory obligations of the taxpayers.* The current legal position is quite clear: everyone with taxable income is legally obliged to file a return. Failure to do so invites payment of interest for the period of default, penalty under Section 271 (1) (a) of the Income-tax Act and, in certain circumstances, prosecution under Section 275CC.

Where pertinent, the return of income has to be accompanied by a statement of account as per books, if maintained, or a statement estimated on the basis of materials available with the assessee. In its report the Wanchoo Committee noted that many professionals and other non-corporate assesseees carrying on business, with substantial turnover, did not maintain books of accounts (or claimed they did not), thereby making it very difficult to estimate true taxable income.

and the associated tax dues. Based on the Committee's recommendations, the 1975 Income-tax Amendment Act plugged this loophole, at least partly, by providing for compulsory maintenance of accounts by certain specified as well as other notified professionals irrespective of their income and by businessmen, other than the above professionals, with income and/or turnover above certain specified minima, during any one of three years preceding the previous year in the case of an existing business and in the previous year itself, in the case of a new business. The 1984 Finance Act carried this logic further by requiring *compulsory audit* wherever (income or) turnover of professionals and businessmen exceeded specified limits.

(i) *The system of permanent account numbers.* The 1975 Income-tax Amendment Act also enjoined on all assesseees the requirement to seek allotment of a Permanent Account Number (PAN), which was to be quoted in all correspondence with the tax authorities as well as in all documents (especially relating to commercial and financial transactions) as may be prescribed by the Central Board of Direct Taxes (CBDT). The potential for using a PAN-based system to check assesseees' income returns against other sources of information is obviously great, especially if the entire information system can be computerised.

Regrettably, the most recent official evaluation of the PAN system casts doubt on its current effectiveness. In its Report No. 26, the Economic Administration Reforms Commission (EARC) observes (EARC, 1983, p. 184):

"Unfortunately, it appears that the system is not operated effectively. In fact not only is the valuable information received not being utilised properly, but even the process of allotment of permanent account numbers to all taxpayers has not been completed, yet . . . At present, when the PAN system has not really begun to operate effectively, there is not much point in adding to the categories of transactions in which the PAN should be quoted."

(ii) *Canalising transactions through banks.* Transactions in cash clearly facilitate successful evasion of taxes. To make evasion difficult, Section 40A(3) of the Income-tax Act

provides for disallowance of any payment exceeding Rs 2,500 if it is not made by account payee cheque or bank draft. However, a proviso to a subsection waives this rule in certain circumstances. As the EARC has pointed out in its Report No. 26 (p.184), "the CBDT has framed Rule 6DD which enumerates more than thirty items of cases and circumstances in which no disallowances shall be made under Section 40 A (3). . ." together with a residuary clause 6DD (j), which is open to extremely liberal interpretation. Under the circumstances, it is doubtful if this particular statutory obligation on taxpayers has been effective in curbing evasion or facilitating its detection.

To discourage circulation of black funds in the form of deposits with banks, companies, firms and cooperative societies and to check the growth of "hawala" transactions, Section 269T was enacted in 1981. It prohibits the repayment of deposits (or deposits plus interest) to any person, or to the depositor in certain cases, by any of the above assesseees, in any form other than account payee cheques or drafts, whenever the amount in question exceeds Rs 10,000. A new provision in the 1984 Finance Act seeks to restrict any person other than those specifically excluded from *accepting* deposits and loans above Rs 10,000 each except in the form of account payee drafts. While this sort of provision undoubtedly creates a hurdle for tax evaders it can be circumvented through fragmenting deposits in "benami" accounts.

(iii) "*Benami*" provisions. Under Section 281 A, as it stood earlier, any person holding property valued at more than Rs 2,000 in the name of another, that is, benami, was required to include the income therefrom, or the value thereof, in his tax returns. Unless he did so, or gave due notice of such assets to his ITO, he was debarred from instituting any suit in any court to enforce any right in respect of such property. To enable the ITO to take timely action under the law, the 1984 Finance Act has sought to provide that such notice has to be given to the Commissioner within a period of one year from the date of acquisition of the property except where the value of such property does not exceed Rs 50,000. Simultaneously, the then existing requirement of

making a disclosure in the return of income or net wealth or giving a notice to the ITO was discontinued.

(iv) *Some other provisions.* Other provisions exist which cast obligations on different types of assessee; the goal of all these provisions is to discourage evasion of tax, or make such evasion easier to detect. For example, under Section 285A a contractor entering into a contract for carrying out any work or the supply of goods and services in connection therewith, valued in excess of Rs 50,000 is required to furnish, within a month of making the contract, the particulars relating to the contract to the ITO having jurisdiction over him. Section 285B casts somewhat similar obligations on film producers.

The purpose of these and other provisions is clear enough: to make it legally necessary for assessee to supply detailed information about their transactions and transactors with the hope that such information can be used to track down tax evaders. What is less clear is how effectively these provisions are actually enforced and how much actual use is made of the resulting information to combat tax evasion.

*b. Powers of the tax authorities.* The legal powers of the income tax authorities are wide-ranging and include the authority;

- i. To call for any accounts and other documents in support of returns filed: failure to comply can invite *ex parte* assessment, and/or penalty under Section 271 (1) (b) and prosecution under Section 276D;
- ii. To impound books of accounts and documents for 15 days under the ITO's authority and for longer with the Commissioner's approval;
- iii. To compel the assessee to get his accounts audited (or re-audited) at his expense by an accountant nominated by the Commissioner;
- iv. To compel outsiders to furnish information in respect of an assessee (for this purpose the ITO exercises the powers of a court under the Civil Procedure Code when trying a suit under specified matters);
- v. To carry out statutory survey of assessee in the ITO's



jurisdiction to gather information on ostentatious expenditure in connection with any function, ceremony or event;

vi. To acquire undervalued properties;

vii. To conduct search and seizure operations.

In addition to these and other statutory powers, income tax authorities can engage in general survey and intelligence-gathering activities of various kinds.

A thorough review of the effectiveness of each and every power of the income tax authorities is quite beyond the scope of this report. We shall limit ourselves to general comments in a few cases and somewhat more detailed reviews in a few others.

(i) *Scrutiny assessments.* Many of the powers noted above [(especially items (i) through (iv))] are designed to assist income tax authorities with detecting evasion through scrutiny assessments. But the basic system of scrutiny assessments suffers from grave weaknesses. The growth in the number of income tax assessments has far exceeded the Income Tax Department's resources to carry out effective scrutiny.

An attempt to solve the problem through the introduction of a scheme of summary assessments had not, until recently, achieved much success. According to the EARC (Report No. 24, p.166), the summary assessment "appears to have failed to achieve its intended purposes . . . Such guidelines have been set out for classifying cases as 'summary' or 'scrutiny', that the classification itself has become time-consuming, defeating the very purpose of the summary assessment scheme". Quite apart from some serious problems with the way in which summary assessments are conducted, the EARC concludes that "far too many cases are earmarked for scrutiny which are beyond the manpower and material resources of the Income Tax Department. Unduly heavy disposal targets have been fixed for scrutiny cases, with the result that officers shy away from making any worthwhile investigation or even detailed scrutiny. It would not be an exaggeration to say that the entire assessment system has

virtually broken down. There is an uncontrollable accumulation of arrears leading to ever-increasing demands for additional manpower which simply cannot be met". The summary scheme has, of course, since been drastically modified and detailed classification has been eliminated. All returns showing total income upto Rs 50,000 in salary cases are now to be accepted right away. In other cases, all returns showing income upto Rs 25,000 are to be similarly accepted without scrutiny.

Table 10.2.1 highlights the large number of scrutiny cases both in absolute terms as well as in relation to the number of assessments completed. Column (5) of the table records the total number of penalty orders passed for concealment. If we make the reasonable assumption that all of these arose from scrutiny assessments, the proportion of penalty orders to scrutiny assessments is far from impressive. It has rarely exceeded 3 per cent and in certain years has been less than 1 per cent. Furthermore, the amounts of concealed income associated with penalty orders in each of the years is very modest, averaging less than Rs 20 crore a year in the five years 1978-79 to 1982-83. If our estimates (Chapter 5) of tax-evaded income at several thousand crores of rupees per year are, at least, in the correct order of magnitude, we are obliged to conclude that the entire procedure of scrutiny assessments leads to the detection of a very small proportion of total concealed income. For example, even in relation to the lowest estimate of tax-evaded income for 1975-76 (assessment year 1976-77), the amount of concealment associated with penalty orders issued in that year was well under 1 per cent. Furthermore, we should reiterate that "detection" here refers to *prima facie* detection, which may not be sustained in appeal.

(ii) *General survey.* General or non-statutory survey may be internal or external. Internal survey denotes collection of information from internal sources such as assessment records. External survey comprises door-to-door surveys as well as collection of information from external sources such as government departments, financial institutions and commercial

**TABLE 10.2.1**  
**Assessment and Penalty**

Financial Year	Number of assessments completed	Number of scrutiny assessments out of (2)	Number of scrutiny assessments as percentage of number of assessments completed	Number of penalty orders passed
(1)	(2)	(3)	(4)	(5)
1970-71	3492163	3492163	100.00	23625
1971-72	3844219	1531872	39.85	18051
1972-73	3598057	944599	26.25	12544
1973-74	3436003	930108	27.07	12407
1974-75	3840846	1210809	31.52	8216
1975-76	4007644	1527025	38.10	8234
1976-77	3948879	1344873	34.06	6986
1977-78	4043813	1055886	26.11	8613
1978-79	3310327	898162	27.13	28776
1979-80	3489790	917776	26.30	23851
1980-81	4035213	953757	23.64	11977
1981-82	4547716	1089620	23.96	28142
1982-83	4435114	1136817	25.63	31184

*Note:* Column (2) has been arrived at by deducting the number of summary assessments from the total number of assessments completed in the respective years.

*Source:* Report of the Comptroller and Auditor General of India (C&AG), 1970-71 to 1982-83.

Number of penalty orders passed as percentage of number of assessments completed	Number of penalty orders passed as percentage of number of scrutiny assessments in (3)	Amount of concealment involved in (5) (in Rs crore)	Amount of penalty levied in (5) (Rs crore)	Amount of penalty levied in (9) as percentage of amount of concealment involved in (8)
(6)	(7)	(8)	(9)	(10)
0.68	0.68	70.69	14.08	19.92
0.47	1.18	33.93	9.57	28.21
0.35	1.33	25.48	12.19	47.84
0.36	1.33	23.65	16.22	65.88
0.21	0.68	19.45	15.48	79.59
0.21	0.54	16.35	13.67	83.61
0.18	0.52	13.21	12.57	90.82
0.21	0.82	13.84	13.06	94.36
0.87	3.20	14.96	11.96	79.95
0.83	3.14	31.48	22.30	70.84
0.30	1.26	10.15	9.29	91.53
0.62	2.58	11.62	8.29	71.34
0.70	2.74	16.09	13.11	81.48

organisations. Here we shall limit ourselves to considering external survey in two of its forms:

- i. Information gathering from outside agencies;
- ii. Door-to-door survey.

The goal of both forms of survey is to bring new assesseees into the tax net and strengthen the information base for detecting evasion by existing assesseees.

i. *Information gathering, dissemination and matching.* Since the restructuring of the survey organisation at the end of 1979, the responsibility for gathering, collating and dissemination of information from external sources rests with the Central Information Branch (CIB), which is attached to each Commissioner's charge [(in multi-commissioner charges the CIB unit reports to a designated AIAC (Survey)]. The working of these CIB units has also been revamped. They are now required to collect information, in a phased manner, from some 85 specified sources including government departments, autonomous bodies and private organisations. This information is then required to be properly organised and disseminated to ITOs in the relevant charges.

We could not compile any independent information with which to evaluate the effectiveness of such information gathering and its use. The EARC, in its Report No. 26, notes (p. 187): "The collection, dissemination and matching of information in general is a crucial aspect of income tax investigation, but it appears that this has been sadly neglected. Either the information is not called for systematically, or the information obtained is not properly utilised in the assessments."

On a related issue, information pertaining to income tax evasion can often emerge from the enforcement of other taxes such as excise, customs and sales. This is so because evasion of one tax usually entails evasion of other taxes. In principal, the necessary coordination of information is effected through the CIB units as well as various zonal and central coordination committees composed of representatives from different investigation agencies under the Department of Revenue. While the machinery for coordination clearly exists, our discussions with senior officers of the Revenue Department left the impression that the quality of coordination left much to be desired'

ii. *Door-to-door survey*. Until the late 1970s the conduct of door-to-door surveys occurred in a somewhat fitful and *ad hoc* manner. For example, after the Public Accounts Committee (PAC) noted, in its 70th Report to the Fourth Lok Sabha (1967-69), the stagnation in the number of assessments relating to property income in Delhi during the first half of the 1960s, the CIT Delhi allocated 15 inspectors to enquire into new constructions. The immediate result was some 2,500 new wealth tax returns.

During most of the 1970s, survey activity continued at a reasonable tempo (see Table 10.2.2). But it was only in 1977 that the Income Tax Department launched systematic door-to-door surveys which were planned to cover all the potential areas in the country within a specified time frame and then to repeat the process periodically. In 1979, some 500 new inspectors (survey) were appointed and the organisation of survey activity was restructured.

In multi-commissioner charges, responsibility for survey work is now centralised under the CIT (Investigation), with one or more IACs (Survey) and ITOs (Survey) under his jurisdiction. In single-commissioner charges, survey work is the responsibility of the Commissioner, though he may be assisted by an IAC (Survey) and ITOs (Survey). The inspectors (Survey) are given newly designed standard proformae for survey work and are required to submit fortnightly reports to their respective ITOs who, in turn, are expected to conduct random follow-up visits of premises to check the correctness of reports submitted by the inspectors. At the all-India level, a new Directorate of Survey was created, headed by a Director of Inspection (Survey) for coordination and supervision of all survey work, collection/compilation of data and the formulation of annual and long-term plans for all survey activities, including door-to-door survey, other external survey, internal survey and statutory survey.

The results achieved thus far under this revamped structure are summarised in Table 10.2.3. Compared to Table 10.2.2 it is quite clear that the new organisation and programme has resulted in the survey of many more premises annually and

**TABLE 10.2.2**  
**Progress of Detection of New Assesseees from External Survey during the Period 1972-73 to 1977-78**

	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78
1. Number of newly constructed properties surveyed	23,348	20,532	19,988	12,763	14,980	4,648
2. Number of other premises surveyed	1,05,927	88,646	1,44,611	1,62,655	1,42,429	1,44,532
3. Number of cases reported						
(a) Professionals	2,664	4,702	9,313	5,049	7,451	5,776
(b) Others	41,080	45,010	50,946	36,064	30,053	33,416
	<u>43,744</u>	<u>49,712</u>	<u>60,259</u>	<u>41,112</u>	<u>37,494</u>	<u>39,192</u>
4. Number of effective cases						
(a) Company cases	76	128	2,260	741	577	278
(b) Others	25,397	26,012	47,197	35,376	30,835	26,215
5. Number of assessments made	14,283	14,832	28,022	32,941	42,364	27,031
Amount of Direct taxes levied (Rs in thousands)	1,382	3,136	6,019	1,08,585	14,993	12,124

*Source:* Public Accounts Committee, Hundred and twenty-third Report (1978-79) (Sixth Lok Sabha).

has substantially increased the number of new assesseees falling into the tax net each year as a result of survey activity.

However, a careful look at Table 10.2.3 reveals some disquieting features:

- i. The number of premises surveyed to detect one new assessee is rather high in 1982-83 and 1983-84 compared to earlier years. This may reflect a decline in efficiency of inspectors, growth of corruption/collusion with potential assesseees, lack of proper supervision or poor choice of potential areas for external survey, or all of the above.
- ii. While the number of assessments conducted in survey circles has increased steadily, the percentage of *non-taxable* assessments for income tax cases has grown alarmingly from 12 per cent in 1980-81 to 59 per cent in 1983-84. Such a high proportion of infructuous cases points to serious weaknesses in the manner in which survey work is being conducted.

The weaknesses in the quality of survey work at the level of the circle or the Commissioner's charge cannot be easily corrected by any initiatives from the central Directorate of Survey. The DI (Survey) lacks any staff to conduct independent supervision through surprise checks of the field staff. Indeed, despite the onerous responsibilities of this Directorate, the only staff available to the DI (Survey) is one IAC and one lower division clerk.

To sum up, while the potential for detecting evasion through systematic survey work is very great, and significant achievements have been recorded in recent years, much remains to be done.

(iii) *Acquisition of properties.* Under-valuation of properties in registered sale deeds leads to substantial evasion of taxes and provides an important medium for the accumulation of black wealth. The State governments lose revenue in the form of registration fees and stamp duties, while the Central government loses tax on capital gains in the hands of the seller and taxes on income and wealth in the hands of the buyer. Following the recommendations of the Wanchoo Committee,



**TABLE 10.2.3**  
**Year-Wise Statistical Information Relating to Survey Operations in Financial Years 1979-80 to 1983-84**

Financial Year	Number of premises surveyed	Average number of inspectors deployed during the year	Premises surveyed per inspector	Number of new assessments booked		Number of premises per new assessee in IT	Number of assessments completed in survey circle		Number of taxable assessments in (8)		Number of non-taxable assessments in (8)						
				II	WT		IT	WT	IT	WT	IT		WT				
											Number	Percen- tage of total asstt.	Number	Percen- tage of total asstt.			
(1)	(2)	(3)	(4)	(5)		(6)	(7)		(8)		(9)						
1979-80	—	—	701	81764	7722	—	—	—	—	—	—	—	—	—	—	—	—
1980-81	551477	—	664	87304	3119	5.3	80165	3744	70347	2931	9818	12.25	813	21.72			
1981-82	435006	606	932	91165	2435	4.77	103342	3778	93510	2338	9382	9.08	1440	35.12			
1982-83	629697	489	1288	93386	3605	6.74	287073	5298	151513	3242	55869	26.9	2056	39.8			
1983-84+	40 172	524	781	63559	1327	6.43	200933	2553	82345	1681	118588	59.2	872	34.1			

Note: (—) Indicates 'not available'

+ Upto 31st December, 1983

- Source: 1. Directorate of Inspection (Survey) Annual Review of Survey Operations for the Financial Years 1981-82 and 1982-83, Survey Review for the month of December 1983.  
 2. Ministry of Finance, Government of India, Report for 1980-81.  
 3. No Statutory surveys [133A(1), 133A(5)] were completed during the period.

a new chapter XXA was added to the Income-tax Act in 1972, empowering income tax authorities to acquire properties at 15 per cent above the declared sale price whenever the market value of the asset exceeded the declared price by more than 15 per cent of the latter. The purpose was to deter evasion through undervaluation and to strengthen the means for detecting tax evasion.

In fact, the Annual Report of the Ministry of Finance for 1983-84 records that up through the end of November 1983, only 16 properties had been acquired through proceedings under Chapter XXA, though as many as 59,243 acquisition notices had been issued.

There are several reasons for this dismal record, but the principal one appears to be the virtual impossibility of fulfilling, to the satisfaction of the courts, the conditions necessary to issue preliminary notices for acquisition. According to Section 269C(1), the competent income tax authority can only assume jurisdiction to issue the preliminary notices under Section 269D(1) if he has reason to believe, on the basis of material or evidence in his possession, that the market value of the impugned property exceeds the consideration declared by more than 15 per cent *and* that such understatement has been resorted to with a view to facilitating evasion of tax either by the transferor or the transferee.

In practice, the courts have interpreted these provisions in such a way that the income tax authorities have found it virtually impossible to fulfil these conditions to the satisfaction of the courts. As a result, the overwhelming majority of preliminary notices issued have been struck down by the courts in writ petitions. In effect, judicial interpretations of Chapter XXA provisions have severely emasculated their potential for detecting and curbing tax evasion.

(iv) *Search and seizure.* Search and seizure is a drastic and extraordinary power given to income tax authorities to root out concealed income and assets. The relevant Section 132 of the Income-tax Act authorises empowered officers of the department to, *inter alia*, enter, forcibly if necessary, any building, place or vessel; to break open any safes, lockers, almirahs, etc., to search any person entering or leaving the

TABLE 10.2.4

## Search and Seizure

Financial year	Number of search and seizure cases (assesseees)	Number of assessments involved in (2) and started during the year	Number of assessments from search cases awaiting completion at the beginning of the year	Number of assessments due for completion during the year (3+4)	Number of assessments completed out of (5)	Number of assessments pending at end of the year (5-6)	Number of assessments pending (out of total number pending) for more than 2 years	Number of assesseees involved in (6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1972-73	532	—	—	—	441	—	—	—
1973-74	538	—	—	—	208	—	—	—
1974-75	2029	—	—	—	290	—	—	—
1975-76	2635	—	—	—	826	—	—	—
1976-77	3571	—	—	—	218	—	—	—
1977-78	617	—	—	—	47	—	—	—
1978-79	1345	2583	4424	7007	2907	4100	—	—
1979-80	2109	3312	4842	8154	3450	4704	—	—
1980-81	2105	4102	8194	12296	3738	8558	2404	1771
1981-82	1683	4434	9804	14238	4168	10070	2918	2261
1982-83	3070	5692	12663	18355	7860	10495	3285	4135

TABLE 10.2.4 (Contd.)

Financial Year	Number of assessees in (9) where concealed income has been determined	Amount of concealed income in (10) (Rs. in lakh)	Number of assessees involved in (9) where no concealment has been determined	Number of assessees in (9) where penalty has been levied during the year	Amount of penalty levied in (12) (Rs. in lakh)	Total number of prosecutions launched during the year irrespective of the date of search	Total number of convictions obtained during the year
	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1972-73	—	1007	—	—	—	2	1
1973-74	—	190	—	—	—	2	Nil
1974-75	—	278	—	—	—	5	1
1975-76	—	603	—	—	—	Nil	Nil
1976-77	—	140	—	—	—	1	Nil
1977-78	—	7	—	—	—	Nil	Nil
1978-79	—	—	—	—	—	24	13
1979-80	—	—	—	—	—	37	5
1980-81	849	2069	922	138	152	26	6
1981-82	805	1444	1455	134	173	77	Nil
1982-83	1455	3384	2670	120	345	265	17

Note: (—) Indicates 'not available'.

Source: Report of the C & A G (Civil) Vol.-II (Direct Taxes) from 1974-75 to 1982-83.

premises; to seize any books of accounts, documents and assets considered pertinent to the objective of establishing tax evasion; and to retain the seized material for a specified period.

After the search is over, the authorised officer, if he is not the assessing officer, has to hand over the seized materials to the assessing officer within 15 days of the search. Where valuable assets have been seized, the assessing officer is required within 90 days to make a summary estimate of the undisclosed income, determine the tax, interest and penalty payable, add this amount to any existing liability under direct tax Acts, retain the portion of seized assets necessary to discharge the total of such liabilities and return the rest to the person(s) from whom they were seized. And, depending on the material seized during the search, prosecutions may also be launched. Indeed, the CBDT has repeatedly pointed out that a successful search should invariably lead to prosecution.

Search and seizure of incriminating documents and unaccounted assets is not an end in itself but only a means to an end, namely, laying hands on definitive evidence of tax evasion to be utilised in prompt assessment, swift imposition of penalty, followed by prosecution wherever called for.

What has been the result of search and seizure operations? Table 10.2.4 draws together some summary information from the annual Reports of the Comptroller and Auditor General of India (Civil). A perusal of the table reveals some disquieting features. First, assessments arising from search cases do not appear to be completed with special dispatch. As column (7) indicates, the number of assessments pending at the end of each year has grown rapidly from 4,100 in 1978-79 to 10,495 in 1982-83. Moreover, as shown in column (8) a good number of these assessments have been pending for *more than two years* from the date of the search. Second, it is surprising to find that in the case of completed assessments for three recent years, 1980-81, 1981-82 and 1982-83, well over half the assesseees involved are found not to have any concealed income [see columns (9) and (12)]. This suggests that a high proportion of search cases are infructuous in

rooting out concealed income—not a happy conclusion for the most powerful and direct weapon for detecting evasion in the armoury of the income tax authorities.<sup>1</sup> Third, the number of convictions obtained on the basis of search cases is alarmingly low; in several years not a single conviction can be attributed to search and seizure. This is particularly disquieting given the enormous powers conferred on income tax authorities, in search cases, to seize and retain potentially incriminating material.

To further assess the effectiveness of search cases, we sought the cooperation of the Income Tax Department to obtain data on a sample of search cases carried out during the three calendar years 1976-78 and involving seizure of assets of more than Rs 5 lakh in each case. We chose 1976 as the initial year in order to exclude the effects of the 1975 Voluntary Disclosure Scheme. And, given the lags in assessments, penalty proceedings and prosecutions, there was little point in going beyond 1978. Standard proformae were circulated to the relevant income tax charges through the good offices of the CBDT. Apart from long delays, many charges (including important ones, such as Calcutta) failed to complete and return the proformae *despite repeated reminders*. Table 10.2.5 records information based on the partial returns received.

Out of a total of 425 assessments involved in the sample, concealment was determined in 310 cases, that is, in about two-thirds of the cases. But out of these 310 assessments in only 66 cases (that is, in a little over a fifth of the cases) was *penalty* levied. As for *prosecutions*, the results are even more disquieting. While a total of 60 prosecutions had been launched, 58 of these related to 10 assessees involved in just two cases of search and seizure involving companies in Madras. And of these, 29 had been discharged, dismissed or acquitted, while in the remaining 29 (plus two other cases from other jurisdictions), the cases were still pending. What is truly alarming is that out of all the search and seizure cases covered in our sample, *not a single conviction* had been obtained some five to seven years after the searches were originally conducted.

TABLE 10.2.5

Results of Sample Study of Search Cases Involving Seizure of Assets of More Than Rupees Five Lakh in Each Case Carried Out During the Calendar Years 1976 to 1978

Name of the charge	Number of assesses involved in search and seizure	Number of assesses involved	Number of assesses in respect of whom concealed income was determined	Number of assesses in (4) as percentage of number of assesses in (2)	Number of assesses where concealment has been determined	Number of assessments in (6) where penalty has been levied	Number of assessments in (7) as percentage of assessments in (6)	If no penalty levied	
								Not initiated	Quantum appeal pending
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	9	
1. Ranchi	2	4	2	100.00	3	Nil	Nil	2	Nil
2. Kanpur	9	19	9	100.00	19	4	22.22	5	3
3. Cochin	9	14	5	62.5	11	Nil	Nil	10	Nil
4. Kolhapur	3	6	1	50.00	4	2	50.00	2	Nil
5. Allahabad	2	2	1	50.00	1	Nil	Nil	Nil	Nil
6. Nasik	4	20	2	50.00	14	7	50.00	1	3
7. Rajkot	1	1	1	100.00	1	Nil	Nil	1	Nil
8. Jodhpur	4	4	4	100.00	4	1	25.00	Nil	2
9. Karnataka-I	6	13	3	50.00	8	Nil	Nil	7	Nil
10. Agra	4	11	3	75.00	10	Nil	Nil	Nil	10
11. Karnataka (Central)	1	5	1	100.00	5	Nil	Nil	5	Nil
12. Jalandhar	1	6	1	100.00	6	Nil	Nil	6	Nil
13. Gujarat (Central)	2	14	1	50.00	7	6	85.71	Nil	1
14. Lucknow	1	7	7	100.00	7	2	28.57	Nil	1

TABLE 10.2.5 (Contd.)

15. Gujarat-II	2	2	Nil	Nil	Nil	Nil	Nil	Nil	Nil
16. Meerut	1	5	1	100.00	5	Nil	Nil	Nil	Nil
17. Surat	1	6	1	100.00	1	Nil	Nil	1	Nil
18. Madras (Inv.)	1	2	1	100.00	2	Nil	Nil	2	Nil
19. Madurai	9	19	8	88.89	21	12	57.14	9	Nil
20. Patna	2	10	2	100.00	9	Nil	Nil	Nil	Nil
21. Jabalpur	2	2	2	100.00	2	Nil	Nil	Nil	Nil
22. Patiala	1	1	1	100.00	1	1	100.00	Nil	Nil
23. Visakhapatnam	1	1	1	100.00	1	Nil	Nil	1	Nil
24. Ludbiana	2	3	2	100.00	3	Nil	Nil	Nil	Nil
25. Kanpur (Central)	4	18	4	100.00	12	3	25.00	Nil	6
26. Vidarbha	3	3	1	33.33	1	Nil	Nil	Nil	Nil
27. Amritsar	1	2	1	100.00	2	2	100.00	Nil	Nil
28. Delhi	3	13	3	100.00	13	9	69.23	Nil	Nil
29. Bombay-I	12	54	9	75.00	29	10	34.48	12	Nil
30. Bombay-X	3	6	Nil**	Nil	Nil	Nil	Nil	Nil	Nil
31. Tamilnadu-1	19	84	11	57.89	40	6	15.00	29	Nil
32. Madras (Central)	10	68	10	100.00	68	1	1.47	67	Nil
<b>TOTAL</b>	<b>131</b>	<b>425</b>	<b>99</b>	<b>75.57</b>	<b>310</b>	<b>56</b>	<b>21.99</b>	<b>160</b>	<b>26</b>



TABLE 10.2.5 (Contd.)

Name of the Charge	the reasons therefor			Number of prosecutions launched	Present position of prosecution				Number of assessments pending with decided by the settle commissions
	Penalty proceeding pending	Dropped	Concealment addition deleted/reduced in appeal		Compounded	Convicted	Discharged/dismis- sed/ acquitted	Pending	
	--- (9) ---			(10)	(11)	(12)	(13)	(14)	(15)
1. Ranchi	Nil	Nil	1	Nil	Nil	Nil	Nil	Nil	Nil
2. Kanpur	1	1	5	Nil	Nil	Nil	Nil	Nil	7
3. Cochin	Nil	1	Nil	Nil	Nil	Nil	Nil	Nil	Nil
4. Kolhapur	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
5. Allahabad	Nil	Nil	1	Nil	Nil	Nil	Nil	Nil	Nil
6. Nasik	Nil	3	Nil	Nil	Nil	Nil	Nil	Nil	Nil
7. Rajkot	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
8. Jodhpur	Nil	1	Nil	Nil	Nil	Nil	Nil	Nil	Nil
9. Karnataka	Nil	1	Nil	Nil	Nil	Nil	Nil	Nil	6
10. Agra	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
11. Karnatka (Central)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	5
12. Jalandhar	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	6
13. Gujarat (Central)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	4

TABLE 10.2.5 (Contd.)

14. Lucknow	Nil	Nil	4	Nil	Nil	Nil	Nil	Nil	Nil
15. Gujarat-II	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
16. Meerut	Nil	Nil	5	Nil	Nil	Nil	Nil	Nil	Nil
17. Surat	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
18. Madras (Inv.)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
19. Madurai	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	2
20. Patna	8	1	Nil	Nil	Nil	Nil	Nil	Nil	Nil
21. Jabalpur	Nil	Nil	2	Nil	Nil	Nil	Nil	Nil	Nil
22. Patiala	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
23. Visahapatnam	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
24. Ludhiana	2	Nil	1	2	Nil	Nil	Nil	2	2
25. Kanpur (Central)	1	Nil	2	Nil	Nil	Nil	Nil	Nil	Nil
26. Vidarbha	Nil	1	Nil	Nil	Nil	Nil	Nil	Nil	Nil
27. Amritsar	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
28. Delhi	1	3	Nil	Nil	Nil	Nil	Nil	Nil	Nil
29. Bombay	7	Nil	Nil	Nil	Nil	Nil	Nil	Nil	4
30. Bombay X	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
31. Tamilnadu I	7	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
32. Madras (Central)	Nil	Nil	Nil	58	Nil	Nil	29	29	Nil
<b>TOTAL</b>	<b>25</b>	<b>12</b>	<b>21</b>	<b>60</b>	<b>Nil</b>	<b>Nil</b>	<b>29</b>	<b>31</b>	<b>30</b>

Notes: \* One of the two assesseees has gone to the Settlement Commission.

\*\* No assessment completed so far.

\* Twenty assessments covered by immunity granted by Settlement Commission. Twelve assessments have been completed as per agreement without levying penalty. In thirteen assessments concealed income has been declared in the return. Assessments are pending for seventy one cases. In eight assessments, assesseees died before penalty could be levied. The period stipulated for intimation of penalty expired in one case. No positive evidence was detected in respect of twenty assessments. No information available in respect of balance fifteen assessments.

Commissioners raised objection in twelve cases and no objection was raised in thirteen others. No information available in respect of the balance five cases.

Source:

Concerned Commissioners of Income Tax.

In view of this brief analysis, we are obliged to concur with the EARC's judgement (Report No. 26, p.185): "Search and seizure is among the most important of measures in the income tax statute for unearthing concealment. Unfortunately, the provisions do not seem to have been effective in practice."

The EARC (p. 185) attributes the apparent ineffectiveness of search operations to three main factors: "First, the numbers of such cases are large and beyond the capacity of the available manpower to cope with. As a result, enormous delays occur in the processing of cases after search and seizure. This gives plenty of time to parties concerned to invent explanations, fabricate evidence, etc . . . Secondly, ineffectiveness in handling such cases is also the result of divided responsibility. While one set of officers conduct the search and seizure, another group have the responsibility of follow-up . . . The third factor involved is the non-exclusiveness of the responsibility for search and seizure. The officers concerned are saddled with other assessments as well, and also have to meet high quotas of disposal."

Two other factors may dilute the effectiveness of search and seizure. First, we were told of instances where leaks of information from the tax authorities tipped off the targeted assessee, thus allowing the latter to dispose of incriminating evidence. Second, it appears that in recent years the Settlement Commission has acted as an escape route in the case of search cases (this aspect will be elaborated in a subsequent section dealing with prosecution).

(v) *Factors influencing the rate of Detection: A summing up.* Our summary review of these issues suggests some broad conclusions. First, the ability of the enforcement machinery to detect evasion appears to be rather weak. Second, this weakness cannot really be attributed to inadequacy of legal provisions; these seem to be quite ample both in regard to casting obligations on the taxpayers and in respect of conferring powers on the income tax authorities. Third, the real reasons for inadequate detection would seem to lie with weakness in implementation of the legal provisions and, in some cases, with constraints imposed by judicial decisions."

The weaknesses in implementation stem from a number of factors including inappropriate and outdated methods of work, lack of trained staff and insufficient equipment and facilities at the disposal of the tax authorities. In its Reports No. 24 and 26, the EARC has examined these issues and made a series of recommendations with which we broadly agree. The EARC has also (p. 189) highlighted the need for promoting integrity among revenue officials. This is not an issue that we could examine in depth. However, we should record that the numerous chartered accountants, businessmen and individual assesses whom we interviewed were virtually unanimous on two points: first, that corruption in tax administration was widespread (especially in the lower rungs of the administration); and second, that the extent of corruption had increased dramatically in the last two decades. Even allowing for the self-serving motives behind these responses, the universality of these opinions is disturbing, especially since they were echoed by some serving, and retired, senior revenue officials in informal discussions.

### 3. Punishment through Penalties

The purpose of monetary penalties is to deter tax evasion. Their effectiveness in doing so rests partly on the scale of penalties and partly on the likelihood of having to pay a penalty in the case of tax evasion. It is on the latter aspect that we shall concentrate here.

Section 271 (1) (c) of the Income-tax Act provides for the levy of monetary penalties for the concealment of income. Penalty orders issued under this section are subject to appeal, first to departmental appellate officials and then to the Income Tax Appellate Tribunal, which is the highest fact-finding authority on penalty cases. However, cases can be referred on *points of law* to the High Courts and the Supreme Court. As we shall see, the difficulties of sustaining penalties in appeal are immense, a fact which seriously dilutes the deterrent effect of penalties.

In this section we briefly review the record on penalties and seek explanations for the apparently unsatisfactory outcome.

a. *The record on penalties.* In Table 10.2.1. we have already pointed to the relatively small number of assessments for which penalty orders are issued. Furthermore, we have observed that the amount of concealment associated with these orders (what we might term *prima facie* detection of concealed income) is very small in relation to the range of estimates of tax-evaded income presented in Chapter 5. This suggests that the effectiveness of *prima facie* detection of evasion is very weak—for reasons which we have already reviewed in previous sections.

What happens to those relatively few cases where penalty orders are actually issued? To find out, we used the good offices of the CBDT in creating a sample of penalty cases where penalties above Rs 10,000 each were imposed in the years 1974-77 to 1978-79. As in the case of our search-seizure sample, many of the distributed proformae were not returned, and many that were, came after long delays and with incomplete or inconsistent information. Nevertheless, based on such data as were received, we constructed Table 10.3 1. What is shown is that out of a sample of 384 penalty cases, where full information was received, in 42 per cent the penalties were fully deleted at different levels of appeal within the Income Tax Department. In another 7 per cent of cases departmental appeals led to reductions in penalty, though in about 40 per cent of these cases the entire penalty was subsequently deleted by the Income Tax Appellate Tribunal. Of the 51 per cent (of total) cases where departmental appeals lead to no reduction in penalty, the Tribunal deleted the penalty in over 60 per cent of cases and reduced it in another 11 per cent. After allowing for all the stages of appeal, the original penalty levied was finally confirmed in less than 20 per cent of the cases in our sample.

Thanks to the cooperation of the Income Tax Appellate Tribunal, we were able to get a much clearer idea of what happened to penalty cases that were appealed to the Tribunal. At our request, the Tribunal collected information, in a prescribed proforma, on results of appeals decided by the various benches of the Tribunal during the five years 1978-79 to 1982-83 in cases where the penalties levied or sustained by

**TABLE 10.3.1**  
**Particulars Relating to Penalty Exceeding Rs. 10,000 Levied Under Section 271 (1) (c) in the Financial Years**  
**1976-77, 1977-78 and 1978-79**

Name of the charge	Number of cases reported (assessments)	Number of cases (assessments) where complete information has been received	Number of cases out of (3) where penalty has been deleted by departmental appellate officers	Number of cases in (4) as per cent of number of cases in (3)	Number of cases (assessments) out of (3) where penalty has been reduced by departmental appellate officers	Number of cases in (4) as per cent of number of cases in (3)	Number of cases out of (4) in which penalty deleted by the tribunal	Number of cases where no relief allowed by the departmental authority but penalty reduced by the tribunal	Number of cases where no relief allowed by the departmental authority but penalty deleted by the tribunal	Penalty confirmed fully
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Delhi	138	105	45	42.86	3	2.86	2	1	36	20
Madras	221	196	91	46.43	17	8.67	6	6	52	30
Calcutta	15	15	1	6.67	Nil	Nil	Nil	10	3	1
Gujarat—I	5	5	3	60.00	1	20.00	Nil	Nil	1	Nil
Gujarat (Central)	16	4	3	75.00	Nil	Nil	Nil	Nil	Nil	1
Bangalore	13	11	5	45.45	1	9.09	Nil	Nil	2	3
Hyderabad	13	4	Nil	Nil	Nil	Nil	Nil	2	Nil	2
Ludhiana	40	27	6	22.22	4	14.81	2	2	8	7
Bombay	20	17	9	52.94	Nil	Nil	Nil	Nil	Nil	9
<b>TOTAL</b>	<b>481</b>	<b>384</b>	<b>163</b>	<b>42.45</b>	<b>26</b>	<b>6.77</b>	<b>10</b>	<b>21</b>	<b>102</b>	<b>73</b>

Source: Concerned Commissioners of Income Tax.

the lower authorities exceeded Rs 5,000. The information is summarised in Table 10.3.2. The results are revealing. Out of a total of 4,752 "effective" cases, in 74 per cent (or nearly three-quarters) of cases the penalties were deleted. In another 8 per cent of cases the penalties were reduced. The Tribunal confirmed the judgement of earlier appellate levels in only 18 per cent of cases, that is, in *less than a fifth* of the cases.

We can combine the information from our two samples somewhat crudely, relying on our own sample for knowledge of what happens in departmental appeals and on the much larger sample from the Tribunal for the results of appeals at that stage. Then, it would appear that if we start with a 100 penalty cases, departmental appeals delete penalty in 42 cases. Of the remaining 58, the Tribunal deletes penalty in 43 cases (74 per cent) and reduces it in 5 cases (8 per cent). Thus, if we combine the information in this way, it would appear that out of the original 100 penalty cases, some penalty is paid in only 15 cases, while the original penalty is fully confirmed in only 10 cases. In other words, the chances of a penalty being even partially sustained are only 15 per cent. None of these figures is reassuring about the deterrence effect of penalty provisions.

b. *Why do penalty proceedings fail?* The extremely high rate of deletion of penalties levied calls for some explanation. The key problems appear to stem from the *judicial interpretations* of the relevant sections of the Income-tax Act. In a series of decisions, beginning with the judgement in 1970 on *Anwar Ali vs. CIT West Bengal I* (76 ITR 696), the Supreme Court established two principles for penalty cases:

- i. Because penalty proceedings were quasi-criminal in nature, the onus lay with the Income Tax Department to prove that the impugned amount was indeed income of the assessee; and
- ii. The Department had to show that the income had been *intentionally* concealed by the assessee (the doctrine of "mens rea", which requires not just the proof of a fact but also of a state of mind).

The first requirement contrasts with the situation in *assessment proceedings*. Here the governing principle is

TABLE 10.3.2

Statement Showing Results of Appeals Decided by the Benches of the Tribunal During the Period from 1978-79 to 1982-83 where the Penalty Levied or Sustained by the Lower Authorities Exceeded Rs 5,000/-

Sl. No.	Name of the bench	Total number of cases reported	Num-ber of cases with no positive result as yet and cases transferred	Total num-ber of effective cases (2)-(3)	Result of cases mentioned in (4)		
					Penalty confirm- ed (A)	Penalty deleted (B)	Penalty reduced (C)
(1)	(2)	(3)	(4)	(5)*			
1.	Bombay	255	128	127	24 (18.90)	91 (71.65)	12 (9.45)
2.	Ahmedabad	322	—	322	59 (18.32)	238 (73.91)	25 (7.76)
3.	Nagpur	129	—	129	17 (13.18)	109 (84.50)	3 (2.33)
4.	Pune	141	20	121	51 (42.15)	61 (50.41)	9 (7.44)
5.	Indore	227	—	227	37 (16.30)	180 (79.30)	10 (4.41)
6.	Madras	187	—	187	39 (20.86)	141 (75.40)	7 (3.74)
7.	Cochin	114	—	114	23 (20.18)	72 (63.16)	19 (16.67)
8.	Bangalore	108	—	108	17 (15.74)	80 (74.07)	11 (10.19)
9.	Cuttack	93	—	93	34 (36.56)	42 (45.16)	17 (18.28)
10.	Gauhati	53	3	50	9 (18.00)	38 (76.00)	3 (6.00)
11.	Allahabad	600	—	600	140 (23.33)	398 (66.33)	62 (10.33)
12.	Chandigarh	106	—	106	18 (16.98)	88 (83.02)	0 (0.00)
13.	Jaipur	349	37	312	67 (21.47)	236 (75.64)	9 (2.88)
14.	Jabalpur	163	—	163	23 (14.11)	127 (77.91)	13 (7.98)



15. Amritsar	347	—	347	40 (11.53)	295 (85.01)	12 (3.46)
16. Patna	168	—	168	20 (11.90)	141 (83.93)	7 (4.17)
17. Delhi	1137	103	1034	129 (12.48)	830 (80.27)	75 (7.25)
18. Calcutta	341	1	340	102 (30.00)	201 (59.12)	37 (10.88)
19. Hyderabad	204	—	204	26 (12.75)	149 (73.04)	29 (14.22)
<b>TOTAL</b>	<b>5044</b>	<b>292</b>	<b>4752</b>	<b>875 (18.41)</b>	<b>3517 (74.01)</b>	<b>360 (7.58)</b>

*Note:* Figures in parentheses in column (5) represent the percentage with reference to the total number of effective cases.

*Source:* Statements furnished by Benches of the Income Tax Appellate Tribunal.

embodied in Sections 106 and 110 of the Indian Evidence Act. Section 106 provides that when any fact is specifically within the knowledge of any person (which is the position for an assessee with regard to his income, assets and expenditure), the burden of proving that fact is *upon him*. Similarly, Section 110 lays down that when a person is shown to be in possession of anything, the burden of proving that he is not the owner is on the person who affirms that he is not the owner. Thus an assessee's failure to explain certain assets and expenditures allows the tax authorities to treat these as concealed income for purposes of assessment under the Income-tax Act. But when it comes to penalty proceedings, the deeming of income for assessment proceedings is not sufficient; the Department has to build a stronger case to prove that the disputed amount represents the income of the assessee.

Furthermore, the Department has to prove that such income was *intentionally* concealed by the assessee; mere falsity of the assessee's explanations is not enough.

These requirements, which have governed the decisions of the appellate authorities for many years, have made it extremely difficult to sustain penalties in appeal. The 1964

Finance Act contained an attempt to improve matters by amending the wording of Section 271 (1) (c) and adding an "Explanation". The gist of the Explanation was that where the income returned by an assessee was less than 80 per cent of the income finally assessed, such a person shall be deemed to have concealed his income unless he can prove that the difference does *not* arise from any fraud or gross or wilful neglect on his part. Basically, the Explanation attempted, in certain circumstances, to shift the onus of proof to the assessee.

The Explanation confirmed and highlighted the dichotomy between assessment proceedings and penalty proceedings. More important, it does not appear to have succeeded in shifting the burden of proving the concealment of income from the Department. Though there has been no decision of the Supreme Court yet, a number of High Court decisions, especially the Gujarat High Court's decision (1974) in the case of *CIT vs. S.P. Bhatt* (97 ITR 440) have established that:

- i. the standard of proof to be applied to the assessee in his proving the negative fact that his failure to return the correct income was not the result of fraud or gross or wilful neglect is far lower—and can be easily discharged than when the Department has to positively prove concealment beyond reasonable doubt; and
- ii. once the assessee proves the negative fact, the onus of proving the opposite shifts back to the Department together with higher standards of proof.

The weakness of the Explanation led to its substitution, through the 1975 Income-tax Amendment Act, by four new Explanations. There has, as yet, been no decision of any High Court on this amended Section 271 (1) (c). Yet a number of commentators have doubted their efficacy. For example, the EARC, in its Report No. 26 (p. 186) takes the following view:

"There is a provision which seeks to shift the onus of proof to the taxpayer in certain circumstances, but it is so hedged in with conditions that the onus ultimately shifts back to the tax authorities."

Furthermore, the continued dichotomy between assessment proceedings and penalty proceedings, and the need to complete the former before proceeding with the latter places another handicap on the tax authorities. While the Department has to support concealment only on the basis of materials collected till the completion of assessment, the assessee can rely upon evidence, fabricated or genuine, collected after the completion of assessment proceedings.

Finally, the sequential nature of the entire legal process for arriving at a final decision on contested cases of penalties can result in a particular penalty case being drawn out for many years. Such delay, in itself, further dilutes the deterrent force of penalty provisions.

#### **4. Punishment through Prosecution**

Prosecution and conviction can be an extremely powerful deterrent against tax evasion, provided conviction leads to imprisonment. The legal provisions with respect to prosecution have been tightened over the years. For example, the 1964 Finance Act made imprisonment mandatory on conviction, an important change which was motivated by the realisation that the prospect of landing in jail had much greater deterrent force than any monetary penalties. The Wanchoo Committee held the same view and, as a result of its recommendations, the 1975 Income-tax Amendment Act incorporated substantial changes aimed at widening the ambit of prosecutable offences to include, for example, wilful attempts to evade tax.

a. *Prosecution: the record.* The record with regard to successful prosecutions has, thus far, remained unimpressive. Table 10.4.1 summarises the information available over the period 1971-72 to 1982-83. The number of prosecutions launched for concealment has been very few, especially when compared with the number of penalty orders issued for concealment of income. Until 1979-80, and with the exception of the Emergency year of 1976-77, the absolute number of prosecutions launched in a year across the entire country never exceeded 150. In the three most recent years there has

TABLE 10.4.1

**Total Number of Prosecutions Launched, Convictions Obtained, Cases Acquitted by the Court & Compounded during the Years 1971-72 Onwards Relating to Non-Technical (Concealment) Offences**

Year	Number of prosecutions launched	Number of convictions obtained	Number of cases acquitted/ dismissed/ discharged by courts	Number of cases compounded after launching	Number of cases pending at the end of the year
	(1)	(2)	(3)	(4)	(5)
1971-72	13	10	4	—	—
1972-73	30	7	2	—	—
1973-74	108	7	4	—	—
1974-75	61	10	3	—	—
1975-76	111	15	6	8	82
1976-77	283	13	10	23	319
1977-78	132	13	13	16	409
1978-79	118	17	12	18	480
1979-80	116	29	26	11	530
1980-81	200	23	18	32	657
1981-82	390	29	31	30	927
1982-83	748	23**	66**	23	1593

*Notes:* \*Column (5) has been estimated on the assumption that no cases were pending at the end of 1974-75.

\*\*These figures are provisional.

(—) Indicates 'not available'.

*Source:* Central Board of Direct Taxes (CBDT).

been a marked step-up in the number of prosecutions launched.

The data on convictions are, perhaps, even more depressing. Given the long time lags involved, it is not possible to relate the number of convictions in a given year with the number of prosecutions launched in that year. However, the fact that the number of convictions obtained in a year has remained in the range of 10 to 30 for almost a decade, in a country where the number of assesseees has ranged from 35 to 45 lakhs over the same period, constitutes eloquent testimony to the ineffectiveness of prosecution as a deterrent against tax evasion.

It is, of course, possible that the recent acceleration in the tempo of prosecutions, combined with the substantive

strengthening of the legal provisions in 1975, will yield a richer harvest of convictions in future years. But the available data are sufficiently disquieting to merit some exploration of the factors which have thus far constrained the deterrent potential.

b *Prosecution: reasons for weakness.*

(i) *Legal (Substantive) problems with prosecutions.* A major hurdle to the success of prosecution continues to be the doctrine of "mens rea", which is built into the substantive provisions of the Income-tax Act relating to prosecution, though the degree of "mens rea" to be proved varies from section to section according to the gravity of the offence. Basically, the doctrine of "mens rea" requires that for purposes of conviction there must be proof of not only an overt act but also a guilty mind. The doctrine places a burden of proof on the Income Tax Department, which it is rarely able to fulfil. As a result there have been many instances where even after the finding that there has been suppression of income, the courts have quashed the prosecution on the plea that the Department has not succeeded in proving that the assessee was conscious of the offence he was charged with.

The desirability of retaining "mens rea" in statutes dealing with social and economic offences has been extensively analysed in the 29th and 47th Reports of the Law Commission. In essence, the Law Commission concluded in favour of elimination or substantial dilution of "mens rea" in the case of most social and economic offences. Indeed, the Commission observed that there was no requirement of "mens rea" in certain Acts relating to economic offences, such as the Prevention of Food Adulteration Act (1954), the Essential Commodities Act (1955) and the Foreign Exchange Regulation Act (1947). The Commission went on to recommend provisions for elimination or dilution of "mens rea" in the case of the Central Excise Act (1944), the Customs Act (1962) and the Gold Control Act (1968). Unfortunately, in its 47th Report the Commission shied away from making recommendations relating to the Direct Taxes Acts on the grounds that these were too complicated and changed too

frequently. And in the case of its 47th Report, the Law Commission specifically refrained from commenting on the Direct Taxes Acts, on the grounds that the Wanchoo Committee had already been charged with a fullscale review of these Laws. But since the Wanchoo Committee omitted to consider the issue of "mens rea" and its viability in Direct Taxes Laws, the doctrine continues to be a serious obstacle to securing convictions for tax evasion.

Another weakness in the substantive law in deterring tax evasion through prosecution and conviction stems from a loophole (and its liberal judicial use) in the provisions in the 1964 Act, which introduced mandatory imprisonment after conviction for tax evasion. Though the Act specified a minimum period, it explicitly permitted waiver of this minimum by the trial magistrate for "special" circumstances. In practice, trial magistrates have frequently interpreted this loophole in the law in favour of convicted assesseees. Table 10.4.2 presents data on the details of punishment on conviction for a sample of cases in three recent years. A quick look at the table reveals that in only half the cases (23 out of 46) the punishment exceeded imprisonment by more than one day! In most of the remaining cases punishment took the form of "imprisonment till the rising of the court" and "release on probation", neither of which constitutes particularly fearsome penalties to tax evaders.

TABLE 10.4.2  
Data on the Details of Punishment on Conviction for the Years  
1980-81 to 1982-83

Financial year	Release on probation	Fine only	Imprisonment till the rising of the court	Imprisonment for one day	Imprisonment exceeding one day	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1980-81	4	—	7	1	6	18
1981-82	2	2	—	1	11	16
1982-83	1	—	5	—	6	12

Source: Central Board of Direct Taxes (CBDT).

(ii). *Legal (procedural) problems with prosecutions.* While the substantive law relating to various offences is contained in the Income-tax Act, the *procedure* for trial in tax evasion cases, is, barring certain exceptions specified in the Act, governed by the Criminal Procedure Code (1973). The details of the procedure vary, depending on whether the case in question is a "Summons" case or a "Warrant" case.

Without going into the details of the procedures, two consequences can be highlighted. First, both in summons and warrant cases (and more so in the latter) pertaining to concealment of income, the accused (assessee) is called upon for the first time to enter his defence and produce evidence only *after* he has had time and opportunity to be fully conversant with the prosecution's case, including all the relevant documents and evidence of prosecution witnesses and after getting the opportunity to cross-examine such witnesses. Naturally, this places the Department at a substantial disadvantage as it gives the assessee ample opportunity to plan his strategy and, if necessary, fabricate evidence.

Second, the procedure entails long delays. It is now generally acknowledged that if prosecution is to be an effective deterrent, then the trial must be speedy—not just because "justice delayed is justice denied", but also to reduce the risk of manipulation by the accused, who are often wealthy and influential individuals. Unfortunately, the partial data presented in Table 10.4.1 point to a mounting backlog of prosecutions which are pending. The numbers given in column (6) are underestimates, since, in the absence of full information prior to 1975-76 we were obliged to make the conservative assumption that the number of prosecutions pending at the beginning of year was zero.

These problems are not unique to prosecutions under the Direct Taxes Laws. Indeed, with respect to the gamut of laws relating to economic and social offences (but excluding the Direct Taxes Laws) the Law Commission, in its 47th Report, had, *inter alia*, recommended:

- i. Constitution of Special Courts, with special procedures and rules of evidence, to exclusively try economic

offences, with provision for appeal only to the High Court<sup>2</sup>;

- ii. Need for provisions calling upon the accused to make a statement of his case after the charge is framed and copies of documents and statements supplied.

These recommendations of the Law Commission have not been implemented. Instead, the Central Government has accepted one of the Wanchoo Committee's recommendations and requested the Governments of Andhra Pradesh, Bihar, Delhi, Gujarat, Kerala, Karnataka, Maharashtra, Madhya Pradesh, Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal to earmark/set up courts for dealing exclusively with economic offences falling under specific Central Acts (including the Direct Taxes Laws—except the Estate Duty Act), for the speedy trial of these offences. Many of these governments have, since, earmarked existing courts for these offences.

While such specialisation may produce judges who are better equipped with the necessary aptitude, expertise and awareness to deal with economic offences, it is doubtful whether the procedural handicaps noted earlier will be overcome without undertaking the more radical reforms suggested by the Law Commission. The idea of creating Special Courts for trying economic offences has been enthusiastically supported also by the EARC (p.189).

(iii) *Administrative problems with prosecutions.* Successful use of prosecution as a deterrent weapon does not depend solely on legal provisions and procedures. There also has to be systematic identification, and vigorous pursuit, of potential prosecution cases by the Income Tax Department. The available evidence suggests that prosecutions have not, until recently, been given the priority they deserve within the Department.

For example, there was, until recently, no proper check mechanism for identifying potential cases for prosecution. While, legally, prosecutions can be sanctioned by Commissioners, they have been administratively required to obtain prior approval from the CBDT. But the initiative for sending prosecution proposals rested with the field offices. It was



only in the late 1970s that beginnings were made with instituting systematic, nation-wide procedures for selecting cases for prosecution. In 1978, Commissioners were made directly responsible for scrutinising Penalty Registers in their charge to assess the potential for prosecution. These administrative improvements, together with the inclusion of the fight against tax evasion as one of the elements in the revised 20-point programme, may account for the sharp increase in the number of prosecutions launched after 1980-81 (see Table 10.4.1).

Administrative weaknesses in pursuing prosecutions are also reflected in the long delays in completing assessments arising out of search cases, the mounting totals of pending assessments and the very small number of prosecutions launched on the basis of searches and seizures, all of which was described in a previous section. The poor yield of prosecutions from search cases is especially disappointing given the enormous powers bestowed on the Department to search and seize incriminating material. Another disquieting feature of search cases came to light during our discussions with officials of the CBDT. Apparently, in some charges Commissioners were *settling* the tax liabilities of assessees subject to search and seizure without reference to the CBDT. Aside from denying the Department the chance to levy penalties and launch prosecutions, such a practice is also open to abuse. We understand that the Board intends to issue specific instructions to curb such practices.

To gauge the nature of administrative weaknesses relating to the *conduct* of prosecution cases, we carried out a test check of 25 orders where the accused have been discharged by the trial court or acquitted on appeal, or the complaint dismissed by the trial court or the High Court. Though our causal analysis is subjective, it may be of some interest and is presented below:

Description of the causes	Number of case where found
<i>Failure to</i>	
a. Carry out proper enquiry and appraise the facts properly before launching prosecution	11

Description of the causes	Number of cases where found
<i>Failure to</i>	
b. Produce documentary evidence in court due to:	
i. Inadvertence though the document was otherwise available;	8
ii. The document in question not having been impounded either during assessment or appellate proceedings;	1
iii. The document having got lost.	1
c. Produce vital witnesses in Court or to incorporate their names in the list of witnesses	4
d. Appear either personally or through a lawyer on the date fixed for hearing	2
e. Launch prosecution against the proper person	1
f. Take steps to prove certain documents required to be proved for successful prosecution	2
g. Conduct the case properly before the magistrate	2
h. Get the complaint filed by the proper person	

The analysis suggests that failure to carry out proper enquiry and assessment of the facts prior to launching prosecutions is an important reason behind their lack of success in court. This view is supported by a month-wise profile of the prosecutions launched in the financial years 1978-79 to 1982-83. Table 10.4.3 shows that the overwhelming majority of prosecutions are launched in March, the final month of the fiscal year. This suggests that there may be pressure to boost year-wise totals, which, in turn, leads to the filing of ill-prepared cases by the year-end deadline.

TABLE 10.4.3

## Prosecutions Launched for Concealment-Month: Wise Break-up

S.No.	Year	April	May	June	July	August	Sept- ember	Octo- ber	Nove- mber	Dece- mber	January	Febr- uary	March	Total
1.	1978-79	3	1	—	3	1	2	1	3	4	6	5	89	118
2.	1979-80	..... Figures not available.....												
3.	1980-81	—		1	7	5	4	14	2	12	9	10	135	200
4.	1981-82	1	1	1	2	1	5	4	11	17	32	13	302	390
5.	1982-83	—	1	2	4	15	8	14	4	14	28	17	641	748

Source: Central Board of Direct Taxes (CBDT).

(iv) *Voluntary disclosure schemes*. Thus far there have been four such schemes, one in 1951, two in 1965 and one in 1975. Basically, these schemes seek to coax errant tax evaders to disclose their concealed income and wealth in return for taxation at concessional rates and immunity from penalties and prosecution.

By offering *de facto* amnesty for tax evasion, such schemes blunt the deterrent provisions of the tax laws, including the provisions for prosecution. Voluntary disclosure schemes have been severely criticised by a number of reports of the Lok Sabha's Public Accounts Committee (PAC)<sup>3</sup> and the Wanchoo Committee.

The main criticisms appear to be as follows:

- i. The quantitative results are disappointing in relation to even the lowest estimates of tax evasion;
- ii. Much of the income "disclosed" had already been "detected" through surveys or searches and seizures; so the disclosure schemes served to protect "detected" cases from the deterrent provisions of penalties and prosecutions, thus undermining their effectiveness;
- iii. The view that such schemes permit errant taxpayers to forswear their wayward paths is not supported by the large number of "repeat" beneficiaries of these schemes;
- iv. When such schemes are launched every few years, they reduce the incentives for voluntary compliance in the first place and weaken the morale of both honest tax payers and the tax administration.

We find these criticisms persuasive and can readily appreciate how such schemes dilute the effectiveness of prosecution as a deterrent.

(v) *The Settlement Commission*. Following a recommendation of the Wanchoo Committee, the Settlement Commission was established in 1976. The objective was to provide a mechanism for quick and final disposal of those cases where a tax evader was willing to make a "confession" and take the consequences. The leniency (or harshness) of the settlement would depend on the assessee's cooperation and truthfulness.

To prevent such a body from becoming a convenient escape route for "detected" tax evaders, the Wanchoo Committee was explicitly against proceeding with settlement of a case over the objection of the Income Tax Department.

Up until 1979, the Settlement Commission could not admit an application if the relevant CIT objected on the grounds that concealment of income had been established or was likely to be established. The 1979 Finance Act removed this crucial safeguard and left the Income Tax Department with no veto over applications for settlement.

This fact gains significance when one appreciates that an assessee can apply for settlement at any stage and that the Commission has wide powers to grant immunity from prosecution, not only under the Income-tax Act, but also under the Indian Penal Code and any other Central Act. The possibility of the Settlement Commission becoming an escape route for tax-evaders was also warned against by the Supreme Court in its only decision, thus far, on this Chapter XIXA of the Income-tax Act, namely in the case of *CIT (Central), Calcutta, vs. B.N. Bhattacharya and Another* (1979, 118 ITR 461).

The Supreme Court's warning was delivered in dramatic language:

"Secret understandings between high tax officials and big assessee businessmen are potential pollutants and convert Settlement Commissions into cover-ups—a consummation farthest from the Wanchoo Committee's intentions and Parliament's expectations . . ."

In this passage the Court was taking the Department to task for improperly exercising its *de facto* right to veto applications to the Settlement Commission in cases where concealment had been established or was likely to be established. Since then the situation has worsened, as the veto itself has been abolished by the 1979 Finance Act.

Has the Settlement Commission become an escape hatch for "detected" tax evaders? There are some indications which point in this direction. First, several senior revenue officials expressed this concern to us. Second, and more concretely

the Income Tax Department had, by the end of 1983-84, filed a dozen or so Special Leave Petitions to the Supreme Court to plead against improper admission of applications to the Settlement Commission. These are, presumably, cases where the Department felt it had very strong possibilities for bringing the assessee to book for concealment. In other words, this indicates a difference in perception between the Department and the Commission as to what constitutes detection of evasion or likelihood of such detection. Third, CBDT officials estimated that nearly 80 per cent of applications filed before the Settlement Commission related to search/seizure cases. Apparently, the Commission has taken the view that mere seizure (of potentially incriminating evidence) proves nothing unless the Department has acted on the matter by completing assessments and sustaining its position in the normal channels of appeal. But, if this really is the Commission's view, there is a "Catch-22" element to it, since once the Commission admits a case, the Department has no further jurisdiction; and what can the Department do if the Commission admits cases shortly after searches and seizures, *before* the Department has had time to process the incriminating material?

To further pursue the workings of the Settlement Commission, we sought information according to the proforma reproduced in Tables 10.4.4, 10.4.4 (A) and 10.4.4 (B). Unfortunately, neither the Commission nor the Department were able to provide the information requested. Thus we were severely handicapped in assessing the efficacy of the Settlement Commission. Such data as were available from other sources are reproduced in Table 10.4.5. A couple of comments are merited. First, the number of cases where penalty has been levied has been very small. This supports the concern that once applications are admitted the probability of lenient treatment with respect to penalty and prosecution is extremely high. Second, the mounting backlog of cases awaiting disposal has belied the Wanchoo Committee's hopes for rapid disposal.

The Taxation (Amendment) 1984 has very recently amended the provisions of Chapter XIXA in certain desirable

TABLE 10.4.4

Cases in which Penalty was Imposed by the Commission in 1981-82, 1982-83 and 1983-84  
(Upto 31-10-1983) for Concaalment of Income

Financial year	Number of cases in which penalty was imposed	Total tax demand raised by the Commission in cases at (2)	Total penalty levied in the cases at (2)	How much of tax raised in (3) was outstanding on 31-3-1982,31-3-1983 and 31-10-1983	How much of the penalty at (4) was outstanding on 31-3-1982,31-3-1983 and 31-10-1983
(1)	(2)	(3)	(4)	(5)	(6)

TABLE 10.4.4 (A)

"Search Cases" in which Objection had been Received from the Commissioner to the  
Admission of Settlement Application

Number of settlement applications admitted during the years 1981-82, 1982-83, and 1983-84 (Upto 31-10-1983)	In how many out of (1) the CIT had objected to their admission	In how many out of (2) was prior "Search" urged as an objection to entertainment of application	In how many cases settled during the period had searches been conducted and seizure made	In how many cases mentioned at (4) were seized accounts and papers permitted to be scrutinised by the revenue authorities after the admission of the application		
(1)	(2)	(3)	(4)	(5)		
<b>Analysis of the pendency of the search cases as on 31-10-1983</b>						
Cases for more than 5 years	Cases pending for more than 4 years but less than 5 years	Cases pending for more than 3 years but less than 4 years	Cases pending for more than 2 years but less than 3 years	Cases pending for more than one year but less than 2 years	Cases pending for less than a year	Total of (a) to (f) in (6)
(a)	(b)	(c)	(d)	(e)	(f)	(6)
						(7)



TABLE 10.4.4 (B)

Settlement Cases Position in 1981-82, 1982-83 and 1983-84 (Upto 31-10-1983)

Number of Settlement applications pending at the beginning of the year	Number of applications received during the year	Number of applications admitted out of (2)	Number of cases with reference to (3) in which details of income to be settled have not yet been filed	Total number of cases for disposal by the Commission during the year (1)+(3)-(4)	Number of cases in which final orders been passed by the Commission (out of 5)		
(1)	(2)	(3)	(4)	(5)	(6)		
Number of cases pending at the end of the year (1)+(3)-(6)	Details of Pendency						Total of (a) to (f)
	Number of cases pending for over 5 years	Number of cases pending for less than 5 years but more than 4 years	Number of cases pending for less than 4 years but more than 3 years	Number of cases pending for less than 3 years but more than 2 years	Number of cases of pending for less than 2 years but more than 1 years	Number of cases pending for less than 1 year	
(7)	(a)	(b)	(c)	(d)	(e)	(f)	(9)
			(8)				

TABLE 10.4.5

Statement giving Details of Receipt and Disposal of Applications by the Settlement Commission (IT + WT)

Financial year	Number of applications pending admission at the beginning of the year	Number of applications received during the year	Total number of applications awaiting admission (2+3)	Number of applications admitted	Number of applications admitted as a percentage of total number of applications awaiting admission [(5) as percentage (4)/]	Number of applications rejected
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1976-77	--	448	448	165	36.83	61
1977-78	222	550	772	288	37.31	149
1978-79	335	823	1158	406	35.06	76
1979-80	676	434	1110	227	24.95	99
1980-81	734	366	1100	354	32.18	184
1981-82	562	327	889	234	26.32	108
1982-83	547	489	1036	519	50.10	43
1983-84*	474	548	1022	381	37.28	62

Note: (-) indicates 'not available'

@ Covers both the years 1976-77 and 1977-78.

\* Up to December 1983.

Source: (i) Government of India, Ministry of Finance, Report for 1983-84, pp 218-219.

(ii) Columns (9) and (10) are from the Annual Reports of the C&AG from 1976-77 to 1982-83.

Number of applications disposed of by final order	Number of assessments involved in Col. (8)	Number of penalty orders levied for concealment	Amount of penalty levied (in Rs. lakh)	Number of balance applications pending disposal at the end of the year		
				Pending for admission	Admitted	Total
(8)	(9)	(10)	(11)	(12)		
14	54	—	—	222	151	373
96	411	3@	2.45@	335	343	678
181	1184	3	0.43	676	568	1244
172	664	4	1.39	734	673	1407
179	612	7	40.08	562	848	1410
137	336	Nil	Nil	547	945	1492
190	574	--	--	474	1274	1758
236	913	—	—	579	1419	1998

directions. Under one amendment, an assessee approaching the Commission is required to mention in the application form the extent of undisclosed income and how it was made, and no application can be filed unless the undisclosed income exceeds Rs 50,000. Under another amendment, no application can be filed for settlement in a search and seizure case before the expiry of 120 days from the date of seizure.<sup>4</sup>

Under another amendment, the previous option of withdrawing an appeal from the Tribunal and then approaching the Commission has been deleted.

While the intention behind the amendments is no doubt laudable, the logic behind barring assesseees with undisclosed income of less than Rs 50,000 from approaching the Commission is not self-evident. It may even smack of reserving the benefit of exemption from penalty and prosecution to only assesseees suspected of evading substantial taxes. It is also not clear why assesseees in search and seizure cases, especially where summary estimate of concealed income has been made under Section 132 (5), should at all be allowed to approach the Commission, when they have ample remedies under other provisions of the Act. After all, these are potential cases for prosecution and it can be argued that the Settlement Commission should not be permitted to frustrate the Department's efforts at successful prosecution and consequent imprisonment.

Finally, it is worth emphasising that even after the recent amendment, the basic question of the difference in perception between the Department and the Commission as to what constitutes detection (or the more amorphous condition, "likelihood of detection"), remains unresolved.

This review suggests that the Settlement Commission may indeed have provided a safe haven to tax evaders who might otherwise face severe penalties and prosecution. It is, at least, necessary to review the working of the Commission, a suggestion which was, incidentally, advanced by the Supreme Court in the decision referred to above

## 5. A Summing Up

This review of the principal factors determining the efficacy of deterrence (of tax evasion) permits some conclusions.

The most important, and inescapable, conclusion is that, *in practice*, deterrence is weak. For the tax evader the chances of detection are low and so is the likelihood of his paying a monetary penalty or undergoing imprisonment, when he is "caught".

With respect to the factors influencing the rate of detection (of evasion), the legal provisions appear to be quite adequate, both with respect to imposing statutory obligations on taxpayers and in conferring investigative powers on the tax authorities. The crux of the problem seems to be elsewhere, in weaknesses in implementation and administration. Such weaknesses undermine quality of regular scrutiny assessments as well as of special powers such as search and seizure. While there are some areas such as general survey, where improvements in administration have been recently instituted, the overall picture is quite unsatisfactory.

When we turn to the punishments for tax evasion, the evidence is compelling that in the overwhelming majority of cases where *prima facie* detection has occurred, the assessee neither pay penalty nor undergo imprisonment. With regard to penalty, a great part of the difficulty can be attributed to the doctrine of "mens rea" and its interpretation in judicial decisions. Repeated attempts to strengthen penalty provisions have been frustrated on these counts. As a result of this, and other factors, only in about 15 per cent of penalty cases are some penalties sustained on final appeal.

The problem of "mens rea" also undercuts efforts to prosecute tax evaders. It is compounded by other weaknesses in the law (both substantive and procedural), weaknesses in the administration of prosecution and special problems created by Voluntary Disclosure Schemes and the Settlement Commission. The cumulative impact of these handicaps is highlighted by the fact that the number of convictions (for tax evasion) obtained in a year has remained in the range of 10 to 30 for almost a decade, in a country where the number of assesseees has ranged from 35 to 45 *lakhs* over the same period.

### Notes

1. While it is possible that a search may involve a group consisting of a number of assesseees and proceedings may have to be started against all of them (in view of the difficulty in pinpointing to whom an unaccounted and/or undisclosed asset belongs) and many of the proceedings started may turn out to be infructuous, it, difficult to account for the high percentage of infructuous cases.
2. As a model, the Law Commission recommended adopting the pattern and the provisions of the West Bengal Special Courts Act, 1950 with such changes as may be considered necessary.
3. See, for example, the 17th and 76th Reports of the Fourth Lok Sabha.
4. This is perhaps to maintain consistency with the simultaneous amendment of Section 132(5).

## The Black Economy : Some Aspects

### 1. Introduction

In this chapter we briefly consider some aspects relating to the working of the black economy. The principal questions addressed are:

- i. which are the main sectors of activities where black income is generated?
- ii. what are the principal methods of black income generation?
- iii. which are the important forms in which black wealth is held?
- iv. which are the most common methods for converting income and wealth into white?

Initially we pursued these questions through a large number of informal interviews with businessmen, chartered accountants, tax officials, civil servants and other knowledgeable people. Two things soon become clear as we progressed with our interviews. First, there was every danger of our becoming buried in a mass of fascinating anecdotal detail, which highlighted the ubiquity of black economic transactions, but did not bring us all that much closer towards answering the specific questions at hand. Second, it also became apparent that there was little hope of achieving

definitive answers to our questions through any rigorous, quantitative procedures. All that we could reasonably aspire to was a set of impressions.

But to improve the basis for these impressions we decided to tap the enormous wealth of experience and knowledge of senior revenue officials. Accordingly, in consultation with revenue officials, we designed a simple questionnaire and distributed it to all Commissioners of Income Tax. The questionnaire, which is reproduced as an annex to this chapter, outlined alternative answers to each of the four basic questions and requested respondents to rank these alternatives in order of importance. We restricted the circulation of the questionnaire to senior revenue officials for several reasons: first, the respondents could be clearly expected to be knowledgeable about the subject; second, we could enlist the support of the CBDT in securing responses; and third, the sample was of manageable size. Of course, the restriction of the questionnaire to a relatively homogenous clientele has its obvious limitations.<sup>1</sup> Nevertheless, we feel the responses are informative—and, incidentally, are fairly consistent with the information gathered through our unstructured interviews.

## 2. Important Sectors for Black Income Generation

Our questionnaire listed some twenty sectors and activities in which black income is generated. Respondents were asked to rank the five sectors/activities which they regarded as most important for black income generation and for the others they were merely asked to indicate "very significant", "significant" or "minor". In fact, many of the 72 respondents attempted to rank all the sectors numerically, while others followed our instructions. We have amalgamated these differing classes of responses by treating ranks of 6 to 10 as "very significant", ranks 11 to 15 as "significant" and the rest as "minor". Though almost everybody gave numerical rankings for the top five sectors, we have combined them into one group called "most important".

Table 11.2.1 presents a tabulation of the responses according to this fourfold classification. The sectors/activities falling into the "most important" category are, on the whole,



TABLE 11.2.1

## Sector/Activities Generating Black Income: Percentage Breakdown of Questionnaire Responses

Sectors/activities	Most important	Very Significant	Significant	Minor	Total
(1)	(2)	(3)	(4)	(5)	(6)
✓ A. Capital gains on real estate (both land and buildings) transactions	83.3	9.1	6.1	1.5	100.0
B. Income from professions: doctors, lawyers, accountants, architects	50.0	27.9	20.6	1.5	100.0
C. Income in construction sector	49.2	28.4	22.4	0.0	100.0
D. Retail income from commercial and residential property	13.1	14.8	47.5	24.6	100.0
E. Wholesale trade	32.3	36.9	27.7	3.1	100.0
F. Retail trade	17.7	27.4	43.6	11.3	100.0
✓ G. Film industry (producers, directors, film stars, theatre owners, etc.)	67.2	23.9	8.9	0.0	100.0
H. Hotels, restaurants and other entertainments	19.4	24.2	53.2	3.2	100.0
✓ I. Large-scale manufacturing	77.6	11.9	10.5	0.0	100.0
J. Small-scale manufacturing	14.8	31.5	51.9	1.9	100.0
K. Mining and quarrying	12.1	10.3	67.2	10.3	100.0
L. Road transport	16.1	33.9	46.8	3.2	100.0
M. Financial services	19.7	24.6	50.8	4.9	100.0
N. Smuggling; under/over invoicing of foreign trade	63.3	27.5	8.7	0.0	100.0
☐ O. Gambling	3.6	5.4	64.3	26.8	100.0
✓ P. Prostitution	3.0	0.0	52.2	44.3	100.0
✓ Q. Selling of posts and transfers	3.7	3.7	64.8	27.8	100.0
R. Selling of licences and permits	25.8	22.6	43.5	8.1	100.0
S. Cuts and kickbacks on contracts, bribes and other financial malpractices	32.8	24.6	32.8	9.8	100.0
T. Any other	53.9	7.7	0.0	38.5	100.0

unsurprising. Some 83 per cent of respondents ranked capital gains from real estate transactions in the "most important" category (that is, made up the top five numerical ranks) for black income generation. This was followed by "large scale manufacturing" (78 per cent), the "film industry" (67 per cent), "smuggling, under/over invoicing of foreign trade" (64 per cent), "income from professions: doctors, lawyers, accountants, architects" (50 per cent) and "income from construction" (49 per cent). Also significant were "wholesale trade" (32 per cent), "cuts and kickbacks on contracts, bribes and other financial malpractices" (33 per cent) and "selling of licenses and permits" (26 per cent). Perhaps surprisingly, less than 20 per cent of respondents regarded black income generation in "retail trade" and "small scale-manufacturing" to be important enough to be placed in the "most important" category.

However, both of these latter two sectors figured prominently in the next category of "very significant" sectors for black income generation. So do some of the activities (such as "income from professions", "smuggling...", "selling of licenses and permits", "cuts and kickbacks..." and "wholesale trade") which had figured prominently in the "most important" category. What this suggests is that if we aggregate the groups of "most important" and "very significant", then the prominence of these sectors/activities (in the intersectoral comparison) would be accentuated.

We should reiterate that these "results" are no more than a summary of the qualitative impressions of a certain group of people. Their principal value lies in the accumulated knowledge and experience of people who are professionally concerned with black income and tax evasion.

### 3. Methods of Black Income Generation

Before we turn to our questionnaire responses, it is important to emphasise that the methods of black income generation are enormously diverse and vary tremendously across income-generating activities. This is borne out both by our numerous unstructured interviews and by the detailed

efforts at quantification of black income generation in selected sectors, which were described in Chapters 6, 7 and 8. It is also supported by the detailed studies of excise tax evasion in cotton fabrics (NIPFP, 1984a), copper (NIPFP, 1982) and plastics (NIPFP, 1983b). This recognition of diversity has two important implications. First, since the methods of black income generation vary across different income-generating activities, any operationally relevant effort at understanding the relative importance of alternative methods, should, ideally, be carried out at the disaggregated level of the sector or activity in question. Second, in an important sense, the alternative answers sketched in our questionnaire are, per force, pitched at a level of generality which cannot do justice to the underlying diversity in methods of black income generation.

With these important caveats, we turn to our questionnaire responses, which are summarised in Table 11.3.1. To avoid the impression of spurious precision, the first two numerical ranks have been grouped into the category "Very significant", the next two into the category "significant" and

TABLE 11.3 1

Methods of Black Income Generation : Percentage Breakdown of Questionnaire Responses

Sectors/activities	Very Significant	Significant	Minor	Total
(1)	(2)	(3)	(4)	(5)
A. Complete suppression of gross receipts	69.6	26.1	4.3	100.0
B. Understatement of gross receipts	61.8	32.3	5.9	100.0
C. Exaggeration of expenses	34.3	49.3	16.4	100.0
D. Undervaluation of assets (including property and investment)	26.5	57.3	16.2	100.0
E. Benami business	16.7	34.8	48.5	100.0
F. Others	0.0	10.0	90.0	100.0

the rest have been clubbed as "minor". Table 11. 3.1. Suggests that the most widely prevalent method of generating black income is to completely suppress (from tax authorities) the gross receipts earned from an income-generating activity. This is closely followed, in importance, by "understatement of gross receipts". Actually, since the distinction between these two was not highlighted in the questionnaire, it may be prudent to simply conclude that the questionnaire responses point to the complete or partial suppression of gross receipts as the commonest method of generating tax-evaded income. "Exaggeration of expenses" is considered to be a "very significant" method of black income generation by "only" a third of the respondents; in comparison about two-thirds of the respondents accorded such importance to the suppression of gross receipts.

#### 4. Forms in which Black Wealth is Held

When we turn to the *uses* of black income, it is important to appreciate that a very substantial proportion is spent on *consumption* of goods and services. If our informal interviews are any guide, the proportion of consumption out of black income is probably in the range of half to two-thirds. The proportion clearly varies enormously with the characteristics of the economic agents. Thus, we were told, that salary earners (that is, earners whose principal declared source of income is salary) and even self-employed professionals are much more likely to have a high propensity to consume out of tax-evaded income than businessmen, who, typically, have greater access to methods of reinvesting black income in forms where the fear of detection is limited and returns are attractive.

As for the forms in which black wealth is held, Table 11.4.1 summarises our questionnaire responses. The column "very significant" represents clubbing of the first three numerical ranks, "significant" aggregates the next three, while "minor" includes the rest. The table suggests that the most important vehicle for holding black wealth is provided by undervalued real estate, both residential and commercial. Next in significance is "undervalued stocks in business",

followed by "gold, silver and other precious metals", "benami financial investments", "undisclosed holdings of foreign assets" and "diamonds and other gems".

Table 11.4.1 points up two other interesting features. First, less than 7 per cent of the respondents considered cash to be a "very significant" form for holding black wealth; indeed, two-thirds of respondents put it in the category "minor". This is consonant with both our interview information and common sense. Unlike all the other asset forms, cash yields no return. Furthermore, large quantities of cash are vulnerable to detection in the raids by tax authorities, whereas in the case of most of the other assets problems of establishing ownership and of valuation serve as effective lines of defence. Second, it is interesting to note that less than a fifth of our respondents considered "undervalued (or undeclared) equipment in business" to be a "very significant" form for holding black wealth. This too is in conformity

TABLE 11.4.1

Forms in Which Black Wealth is Held : Percentage Breakdown of Questionnaire Responses

Sectors/activities	Very significant	Significant	Minor	Total
(1)	(2)	(3)	(4)	(5)
A. Undervalued commercial real estate (land and buildings)	65.2	31.8	3.0	100.0
B. Undervalued residential real estate (land and buildings)	69.6	26.1	4.3	100.0
C. Gold, silver and other precious metals	40.0	47.7	12.3	100.0
D. Diamonds and other gems	28.8	45.8	25.4	100.0
E. Cash	6.8	27.1	66.1	100.0
F. Benami financial investment	33.9	47.7	18.5	100.0
G. Undervalued (or undeclared) equipments in business	18.0	32.8	49.2	100.0
H. Undervalued stocks in business	58.8	27.9	13.2	100.0
I. Undisclosed holdings of foreign assets	29.5	21.3	49.2	100.0
J. Others	11.1	22.2	66.7	100.0

with our informal interview information and common sense. Though one did hear of some cases of factories operating (unlawfully) outside the tax net, most of our interviewees pointed out that except for very small-scale operations (typically carried out in households), the risks of discovery were high. Furthermore, given the various tax incentives related to fixed investment, undervaluation of equipment was usually a far less attractive proposition than alternative vehicles for holding black wealth.

Finally, although this is not revealed by our questionnaire responses, the portfolio distribution of black wealth is believed to vary significantly with categories of economic agents. Thus, professionals and salary earners are likely to hold a higher proportion of their black wealth as cash or precious metals and stones, than businessmen who have easy access to alternatives such as "undervalued stocks in business" and "benami financial investments", in their own enterprises or in those of interlinked business concerns.

##### 5. Methods of Converting Black Income and Wealth into "White"

There is, apparently, a bewildering array of methods for converting "black" into "white", with the different techniques catering to the varied situations and needs of individuals. Just to give one example, we were told of one case where a person sold a property for Rs 40 lakh, of which Rs 20 lakh was in the form of undeclared capital gain. To "whiten" this black income the person enlisted the assistance of experienced tax consultants. The latter "created" a series of H.U. Fs and dummy companies (complete with fictitious receipts for transactions) which, in effect, spawned a large number of "profit centres", where small amounts of profit were shown in each and declared for taxation.

A more widespread technique is through the use of "fictitious bills". The seller (allegedly of goods or services) sells only the bill to a buyer, there being no corresponding delivery of goods or services. The net result is that the buyer obtains a receipt for a deductible expense (which is used to artificially reduce taxable profits), while the seller, by showing (fictitious)

sales brings revenue and profits onto his books and thus "whitens" his black income. In this way, the interests of both buyer and seller are served and the latter successfully transforms some of his black money into white. Manipulations of stock market transactions constitute another significant avenue for converting black into white. More generally, anyone with business or professional income can always inflate sales and profits (against fictitious receipts, where necessary) to bring more income "onto the books", that is, to convert black to white. The trick lies in doing it in a manner which minimises the resulting, incremental tax liability.

Table 11.5.1 summarises our questionnaire responses regarding the methods of converting black income and wealth into white. As in the case of the previous question, the category "very significant" encompasses the top three numerical ranks, "significant" comprises the next three, while "minor" clubs the remainder. The table suggests that "hawala" loans are the most popular technique for converting black into white. In its simplest form, a "hawala" loan is simply a loan shown on the liabilities side of the balance sheet where the lender is either a fictitious person or a friend or relative. The important point is that no funds are actually loaned; the loan on the books is simply a method by which the owner of black resources brings them on to the books and thus converts black to white. On the asset side the corresponding entries can take the form of "cash" or other assets. There are more complicated variations of the "hawala" loan which involve brokers who lend their name to the essentially fictitious transaction.

The other methods of converting black to white shown in Table 11.5.1 are self-explanatory, and so is their relative significance in terms of our questionnaire responses. We should note that the transformation of black to white via foreign exchange (sometimes described as the "black to green to white" route) is believed to be growing rapidly in importance, in tandem with some of the recent schemes to attract investments and remittances from non-resident Indians.

Finally, we should not lose sight of one obvious method by which affective conversion of black to white occurs, namely through the medium of *consumption*. As was pointed out in

TABLE 11.5.1

Methods of Converting Black Income and Wealth into 'White':  
Percentage Breakdown of Questionnaire Responses

Sectors/activities	Very signi- ficant	Signi- ficant	Minor	Total
(1)	(2)	(3)	(4)	(5)
A. Show black income as income earned from agricultural activities	52.4	41.3	6.3	100.0
B. Arrange to receive a large number of monetary "gifts" from "friends" and relatives	52.2	47.8	0.0	100.0
C. Convert black money into foreign exchange through the black market in foreign exchange and have it remitted as "gifts" from abroad	36.9	53.9	9.2	100.0
D. Buy lottery tickets from the real winners	15.1	50.9	34.0	100.0
E. Arrange to 'distribute' money to friends and relatives with little or no income, have them pay income tax on these incomes and have them return the remaining in the form of white loans	66.2	27.7	6.1	100.0
F. Arrange for 'Hawala' loans	86.6	11.9	1.5	100.0
G. Bearer Bonds	16.9	44.1	39.0	100.0
H. Others	41.7	41.7	16.7	100.0

Chapter 2, any earner of black income can effectively launder it through high levels of consumption and then declare low levels of consumption against declared income, thus substantially augmenting his white wealth.

### Notes

1. Another obvious limitation is that of nature of the questionnaire. If the itemised alternatives exclude important possibilities, then the responses are likely to be correspondingly defective.



## ANNEXURE

### Questionnaire on Black Money

The purpose of this brief questionnaire is to obtain the benefit of the enormous wealth of experience and knowledge of senior officers of the Revenue Department on a few key points regarding Black Money. The questionnaire contains *only four* questions. Some possible answers to each question are suggested but these are not meant to be exhaustive. Each question asks the respondent to *rank* the possible answers in order of importance (1 for most important, 2 for next most important and so on). Where the suggested answers are deemed to be an inadequate list, the respondent is encouraged to expand it; but a full ranking of the possible alternative answers is resquested whenever possible.

*Question 1:* In recent years which are the sectors or activities of the economy in which most *black income* is generated? (For the purposes of this question black income comprises both (a) income from legal activities which evades tax, as well as (b) income from illegal activities such as smuggling, prostitution, etc., which also are, in principle, subject to tax but presumably are not declared).

*Answer:* The most important sectors/activities of the economy for black income generation, ranked in order of importance, are as follows:<sup>1</sup>

Specify rank

- (a) capital gains on real estate (both land and buildings) transactions

\_\_\_\_\_

Specify rank

- (b) Incomes from professions: doctors, lawyers, accountants, architects \_\_\_\_\_
- (c) Incomes in construction sector (civil work contracts) \_\_\_\_\_
- (d) Rental income from commercial and residential property \_\_\_\_\_
- (e) wholesale trade \_\_\_\_\_
- (f) retail trade \_\_\_\_\_
- (g) film industry (producers, directors, film stars, theatre owners, etc.) \_\_\_\_\_
- (h) hotels, restaurants and other entertainment \_\_\_\_\_
- (i) Large-scale manufacturing (specify industries, if possible)  
[Some important industries for black money generation are:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_]  
\_\_\_\_\_
- (j) Small-scale manufacturing (specify industries, if possible)  
[some important industries for black money generation are:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_]  
\_\_\_\_\_
- (k) mining and quarrying, (e.g., coal) \_\_\_\_\_
- (l) road transport \_\_\_\_\_
- (m) financial services (e.g., chit funds, indigenous banks) \_\_\_\_\_
- (n) smuggling; under-invoicing/over-invoicing of foreign trade \_\_\_\_\_
- (o) gambling \_\_\_\_\_
- (p) prostitution \_\_\_\_\_
- (q) "selling" of posts and transfers \_\_\_\_\_
- (r) "selling" of licenses and permits \_\_\_\_\_

Specify rank

- (s) cuts and kickbacks on contracts,  
bribes and other financial  
malpractices
- (t) any other (please specify)

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Note: Items (a) through (m) refer to legal activities, while the remainder are illegal activities.

*Question 2:* What are the most common methods for generating tax-evaded income? (Obviously, to a certain extent, the methods of evasion will be specific to particular sectors of activities in which black income is generated. Nevertheless, you are requested to rank the possible methods of evasion according to their overall significance).

*Answer:* The most common methods for generating black income are:

Specify rank

- (a) Complete suppression of gross receipts  
(presumably this is most widespread in cases where the activities are illegal, whether they be smuggling, sale of licenses, or some form of "kickbacks".)
- (b) Understatement of gross receipts
- (c) Exaggeration of expenses  
Indicate 3 or 4 of the most of common methods for this, drawn from your experience
- (i)
- (ii)
- (iii)
- (iv)
- (d) Undervaluation of assets (including property and inventories)
- (e) Benami business

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- (f) Others (please specify) \_\_\_\_\_  
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 \_\_\_\_\_  
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**Question 3:** Which are the most important forms in which *black wealth* is held? (Part of *black income* is spent on consumption, luxury or otherwise, part is used to “grease the wheels” of business, i.e., for obtaining various licences, permits, approvals etc.; and part is saved. This question refers to the last use of black income, that is the one which adds to holdings of wealth.)

**Answer:** The most important forms in which *black wealth* is held are, in order of importance:

- |   | Specify rank |
|---|--------------|
| (a) Undervalued commercial real estate<br>(land and buildings)  | _____        |
| (b) Undervalued residential real estate<br>(land and buildings) | _____        |
| (c) Gold, silver and other precious metals                      | _____        |
| (d) Diamonds and other gems                                     | _____        |
| (e) Cash  | _____        |
| (f) Benami financial investments                                | _____        |
| (g) Undervalued (or undeclared) equipment<br>in business        | _____        |
| (h) Undervalued (or undeclared) stocks in<br>business           | _____        |
| (i) Undisclosed holdings of foreign assets                      | _____        |
| (j) Others (please specify)                                     | _____        |
|   | _____        |
|   | _____        |
|   | _____        |
|   | _____        |
|   | _____        |

**Question 4:** Which are the most common methods used to convert black income and wealth into white income and wealth?

**Answer:** The most common methods are as follows:

- |  | Specify rank |
|--|--------------|
| (a) Show black income as income earned from agricultural activities  | _____        |
| (b) Arrange to receive a large number of monetary "gifts" from "friends" and relatives   | _____        |
| (c) Convert black money into foreign exchange through the black market in foreign exchange and have it remitted as gifts from abroad   | _____        |
| (d) "Buy" lottery tickets from the real winners  | _____        |
| (e) Arrange to "distribute" money to friends and relatives with little or no income, have them pay income tax on these "incomes" and have them return the remainder in the form of white "Loans" | _____        |
| (f) Arrange for "Hawala" loans   | _____        |
| (g) Bearer bonds   | _____        |
| (h) Others (please specify)  | _____        |

### Notes

As the number of possible answers to this question is large, it may be difficult to rank all the alternatives. You are requested to rank the *five* sectors/activities which you believe are the most important for black income generation. For all others, please indicate either "Very Significant", "Significant" or "Minor".

## Some Economic Consequences of the Black Economy

This vast and daunting subject is both outside the terms of reference for this study and beyond the limited time and resources at our disposal. Nevertheless, we believe it is important to give some qualitative flavour of the issues involved.<sup>1</sup>

### 2. Misinformation about the Economy

The most obvious consequence of a substantial black economy is misinformation about the *actual* state of the economy. In Appendix 2 to this report we argue that India's national income estimates are probably biased downwards because of the vulnerability of the sources and methods to tax evasion and related behaviour. Furthermore, we suggest that the degree of bias may have increased during the 1970s because of the rising share (recorded) of those sectors where the *prima facie* likelihood of underestimation of value-added is greatest. This means that not just the level, but also the rate of GDP may have been higher than recorded. Moreover, since the extent of underestimation of value added is likely to have differed across sectors, the sectoral composition of GDP shown in the official accounts may not be correct. For example, the shares of *manufacturing* and *trade*—two important

sectors which together accounted for about a third of GDP in 1980-81—may well have been greater than shown in the official data.

Other dimensions of the national accounts are also affected. For example, much has been made of the increase in savings performance of the Indian economy since the 1950s. The most commonly used indicator of savings performance has been the ratio of gross savings to GNP (or GDP). In principal, since both elements of the ratio are subject to measurement error, the direction of bias in the ratio, if any, is indeterminate. In practice, given the methods used for estimating gross savings (see Reserve Bank of India, 1982) the underestimation of savings because of evasion considerations is likely to be less, in proportionate terms, than the underestimation of GDP. Thus the *rate* of savings is likely to have been exaggerated. Less ambiguously the economy's tax ratio is biased upward to the extent that GDP estimates are downward biased. Again, the estimates of aggregate investment in the economy—based mainly on commodity-flow methods—may not be highly sensitive to evasion; but estimates of the distribution of this investment between public and private sectors may be seriously affected by such practices as "siphoning off" from public projects and programmes. In particular, public investment is likely to be less than shown, while private investment, notably non-corporate private investment, is correspondingly higher than shown in the official data.

The black economy also distorts the published data on foreign trade and payments. Two major types of malpractice with respect to foreign trade flows drive a wedge between the actual level and composition of these flows and what is recorded in the official statistics. First, there is manipulation of invoices for export and import. A number of studies, such as Nayak (1977) and Thiruvengkatachari (1984) have used partner country data to argue that in most years there has been considerable *net* underinvoicing of both exports and imports.<sup>2</sup> The annual scale of such underinvoicing was estimated by Nayak to range from \$ 67 million to \$ 167 million for exports in the 1960s and from \$ 54 million to \$ 332 million for imports. Thiruvengkatachari only provides

estimates for four principal trading partners (U.S.A., U.K., Japan and West Germany) but aggregation of his results suggests that the annual scale of underinvoicing was in the order of several hundred crores a year during the 1970s.

These not inconsiderable magnitudes are dwarfed by some recent newspaper estimates of the scale of smuggling. Thus Bidwai (1983) claims smuggling (presumably, both in and out of the country) "has in all probability crossed the Rs 7,000 crore-a-year mark". The officially recorded total of merchandise imports and exports in 1982-83 was about Rs 23,000 crore. In other words, according to Bidwai's estimate, trade outside official channels was almost a third of India's recorded foreign trade. While the basis for Bidwai's estimates can be questioned, there is little doubt that smuggling is big business and weakens the meaning and interpretations attached to recorded foreign trade data. This is true not just with respect to the foreign trade totals but also their composition, since smuggling is concentrated in certain product categories, such as gold, silver, consumer electronics and synthetic textiles.

The presence of a sizeable black economy also casts doubt on the validity of the data on the distribution of incomes and consumption. Typically, such information is compiled on the basis of household surveys. It is difficult to believe that those who receive illegal source incomes or who conceal legal source incomes from tax authorities would respond fully and honestly to household surveys. Furthermore, we would expect the probability and extent of underresponse to be associated with the scale of illegal or concealed incomes accruing to a household. Since, as we shall argue below, this is likely to be greater for richer households, the recorded distribution of income and consumption are likely to display less inequality than actually obtains.

These examples of misinformation attributable to a black economy are not meant to be an exhaustive catalogue. Rather, they illustrate the important general proposition that data on many of the key economic aggregates and parameters, which are considered crucial for monitoring the economy and making policy, are subject to an indeterminate,



but most probably significant, degree of error because of the black economy. Moreover, depending on the information in question such error may involve systematic bias. Nor are these problems peculiar to India. For example, Feige (1980) has argued that the existence of a sizeable unaccounted economy in the United States has seriously undermined the quality of information on important macroeconomic variables, which, in turn, has led to faulty diagnosis of economic problems and inappropriate policy actions.

## 2. Impact on the Fiscal System

Widespread tax evasion has serious consequences for the economy's fiscal system. The most obvious consequence is the loss of revenue that should have accrued to the exchequer. The long-run consequence of such revenue loss is to reduce the built-in elasticity of the tax system.<sup>3</sup> To raise a given target of revenue the government is obliged to depend increasingly on discretionary hikes in tax rates or to expand the array of taxes. The first option has the undesirable effect of increasing the inducements for avoidance and evasion, while the second runs the risk of further complicating an already complex tax structure which is associated with a number of undesirable allocative effects (see, for example, the Report of the Indirect Taxation Enquiry Committee, Government of India, Ministry of Finance, 1978).<sup>4</sup>

Large-scale tax evasion also undermines the equity of the tax system. "Horizontal equity" is breached since the effective burden of taxation differs widely across assesseees with comparable levels of economic income. For example, it is common knowledge that salaried individuals, who have their income tax deducted at source, bear a disproportionately high burden of this tax compared to the self-employed who have far greater opportunities for evasion. "Vertical equity" or the progressivity of the income tax structure also becomes a casualty when an assessee's tax liability has less to do with his ability to pay and more to do with his ability to evade. Indeed, we have suggested earlier, that a possible explanation for the dwindling relative role of personal income

taxation in India is the extent to which evasion has undermined its administration.<sup>5</sup>

Evasion also blunts the allocational signals of the tax system. When, in the case of a large number of manufacturers and traders, the tax dues are believed to be the end product of a complicated interaction between the tax statutes, the evasion opportunities, the enforcement machinery and its susceptibility to corruption, it is idle to pretend that only the first of these factors, namely the tax statutes, is solely responsible for the resource allocation implications of the tax system. In coming to decisions on investment, production and sale, a rational economic agent will consider not only the tax code but also the possibilities for reducing its bite through legal and illegal methods.

In a longer view, widespread tax evasion restricts the scope for tax reform. For example, the economic rationale of a last-stage, single-point sales tax is widely acknowledged: it avoids cascading and other distortionary allocative effects and can be designed to approximate a general tax on consumption. Yet, the administrative difficulty of stemming evasion under such a tax has been an influential argument against substituting this form of sales tax for the present (economically more "irrational") sales tax structures in many Indian States. Similarly, a number of studies, including the Report of the Indirect Taxation Enquiry Committee (Government of India, Ministry of Finance, 1978) and Ahmad and Stern (1983) have highlighted the distortionary effects entailed by the heavy reliance on indirect taxation of intermediate inputs, especially in the case of Central excises. But reforms have been partly inhibited by concerns about evasion if inputs are freed from the tax net. Evasion inhibits reform in two other ways. First, the beneficiaries of evasion in the current system can act as influential adversaries to any reform which would reduce their *de facto* tax advantages. Second, in an environment of large-scale evasion, proposals for tax reform are likely to face an uphill road, since the bogey of possible revenue loss is likely to be much more potent than if good tax compliance were an accepted fact of life.

Finally, to the extent black incomes are reaped through

“siphoning off” from public programmes and projects, the expenditure side of the fiscal system is also affected. We considered this issue in Chapter 8. Such “leakages” have several consequences for the efficiency of public expenditure. First, and most obviously, the value of assets created and services provided is often much less than what is shown in the budget documents and public accounts. Second, in the case of anti-poverty programmes, substantial leakages to intermediaries in the bureaucracy and the banking system diminish the benefits accruing to the target groups and thus reduce the effectiveness of these programmes. Third, the pattern of public expenditure is sometimes distorted by the relative possibilities for “siphoning off”. For example, it was suggested to us that some public sector investment decisions were biased in favour of new “greenfield plants” and against consolidation and expansion of existing units because the former offered much greater scope for illicit cuts and commissions on large foreign contracts. Fourth, the posts where such illegal cuts and commissions can be most easily arranged come to acquire a market price. Postings, transfers and promotions in respect of these posts become increasingly influenced by corrupt practices, at the expense of more regular considerations such as experience and competence. Not surprisingly, the concern for quality and accountability in public expenditure declines. The predictable consequence of all these factors is a decline in the efficiency of public projects and programmes.

### **3. Implications for Resource Allocation**

We have already touched on some allocative issues pertaining to the fiscal system. We turn now to a wider range of considerations relating to the black economy and the efficiency of resource allocation. One fundamental question is whether tax evasion, illegal incomes, corruption and other phenomena associated with the black economy lead to more or less output and growth than would have been the case in their absence. The issues involved are complex and their resolution is quite outside the scope of this report. We can only hope to pose some of the issues and present the more obvious arguments.

One view we encountered emphasised that in many instances of black-income-generating transactions economic efficiency is improved and national welfare enhanced. For example, it was argued, that strict compliance with onerous tax laws could lead to sharp reductions in work effort, enterprise and savings. Evasion reduces the effective burden of taxation to levels where disincentives to work and thrift are contained and the loss of potential output reduced. Alternatively, taking the case of illegal source incomes, smuggling of goods subject to quantitative restrictions can augment national welfare. Similarly, illegal resale of non-transferable permits and licenses often guides them to their most productive use. As for corruption, "speed money", as the term suggests, can reduce delays and costs and improve economic efficiency. As between competing claimants for scarce inputs or contracts, bribery can bring about an efficient allocation if the capacity to bribe is correlated with productive efficiency. For example, Rashid (1981) argues that bribery can effectively allocate a scarce public utility, such as telephone services, in favour of users with higher marginal productivity.

We readily concede that *given* the present structure of taxation and economic regulations many instances can be found where black transactions improve economic efficiency. But we would be loathe to accept any general proposition based on such examples. Our reluctance is founded on three sets of arguments.<sup>6</sup>

First, for any given class of black-income-generating transactions it is easy to find counter-examples where economic efficiency is reduced by such transactions. Take the case of government contracts. There is no guarantee that the capacity and willingness to bribe will be perfectly correlated with productive efficiency (Beenstock, 1979). Bribery frequently guides government contracts to high costs, inefficient suppliers. Even where the cost is competitive, the supplier's technology may be inappropriate or quality deficient. Alternatively, consider the case where systematic bribes allocate scarce capacity to more productive users of the telephone system. Rashid (1981) emphasises the fragility of such corruption-oiled gains in efficiency. The situation can degenerate

to a point where the favoured users pay only the illicit premia and are not billed at all. Public utility pricing and its allocative efficiency becomes irrelevant when "the telephone department treats the entire system as its personal property and attempts to maximise its own surplus" (p. 457).

Second, even if many controls lack economic rationality and their circumvention improves economic welfare, not all economic regulations are of this nature. Thus the evasion of controls on the rate of exploitation of forest resources could easily diminish economic welfare, basically because, in this case, there is a wide gulf between private and social profitability. Yet a system which cannot prevent, or tacitly encourages, evasion of economic controls will not be able to screen out the flouting of "rational" controls. Nor can it prevent the spread of corruption to non-economic areas, such as the administration of public order and the dispensation of justice.

The most important argument against complacency about the resource allocation implications of the black economy takes the form of a question: why retain apparently irrational systems of taxation and control and then applaud their evasion? One possible answer is that the necessary reform is politically and administratively difficult or inexpedient. But then it is important to recognise the allocative costs of operating a policy framework which looks to black transactions to restore some economic rationality. We illustrate this point by reference to controls and the economic waste they can engender through "rent-seeking".

Loosely speaking, *rent-seeking* refers to the diversion of real economic resources in pursuit of economic rents resulting from government regulation and control.<sup>7</sup> A standard example (Kreuger, 1974) relates to the scarcity premia on actual-user import licenses. In years past, the premia on these licenses were high and their allocation was typically related to plant capacity, with the result that firms found it profitable to expand capacity (even where existing capacity was not fully utilised) in order to obtain actual-user import licenses. The net-result was waste of real resources. In Kreuger's simple model the extent of waste in the economy directly equalled the total

of economic rents attributable to controls on imports, commodity prices, credit, etc. On this basis she estimated that in 1964, 7.3 per cent of India's national income was being wasted in competitive seeking of rents spawned by controls. A more recent application of the same methodology by Mohammad and Whalley (1983) yields an estimate of economic loss due to rent-seeking in the order of 30 to 45 per cent of GNP.

These estimates are subject to serious qualifications with respect to the underlying data, the assumptions and even the theory. The estimates of rents rely on piecemeal information and crude averages. The assumption that scarce licenses and commodities are allocated solely on the basis of competitive rent-seeking is clearly untenable and, at best an (upward biased) approximation. Finally, Bhagwati (1982) has raised some fundamental issues regarding whether directly unproductive activities actually lead to welfare loss, when the initial situation is characterised by all sorts of economic distortions.

Nevertheless, knowledgeable observers have emphasised the growth and importance of wasteful "rent seeking" in India. For example, Jha (1984) writes, "As more and more people have discovered how paying it is to exploit shortages, their interest in increasing production and sales to increase profits has visibly declined. With this the status of lobbyists, license peddlers, smugglers and black marketeers has arisen, while that of the orthodox profit seeking capitalist has declined."

The presumption is strong that the elimination of rent-generating controls could substantially improve economic welfare. Certainly, there is no firm grounds for believing that black economy transactions do much to alleviate their social costs. Nor is economic waste limited to seeking controls-induced premia. Tax evasion also absorbs the energy and resources of vast numbers of assesseees and their professional advisers. Alternative sets of accounts have to be created and kept, complicated financial transactions have to be managed, all of which uses up real resources which might have otherwise been deployed in more socially-productive pursuits.

a. *Public authority as "private taxation"*. The above discussion on rent-seeking has focussed on how resources might be wasted when government controls generate scarcity premia for imports, price-controlled commodities, credit and so forth. In each of these cases one way of gaining access to the scarce, controlled item is for economic agents to bribe officials (or their superiors) responsible for administering the controls. In such cases a part of the scarcity premium accrues to the bribed official, while the remainder is enjoyed by the successful recipient. The award of government contracts can be viewed similarly; that is, an effective monopoly over awarding contracts is exercised by a few officials who can abuse their position to split the economic rent implicit in such contracts between themselves and the chosen recipients. In this view bribes are seen as an instrument of competition to be used by competing economic agents to win the favour of the monopoly public purveyor of the item in question.

From another viewpoint such bribes can be seen as "taxes", collected by the officials, who wield the effective monopoly, for their *private* gain. This becomes more obvious when we consider situations where the government [actually its agent, the official (s)] does not allocate any good or service but only the right to go ahead with certain economic activities. A large array of regulations essentially confer on the regulators, monopoly potential to raise "taxes from those who have to seek their approval. Judging from our interview information such potential is exploited more often than not. Industrial licensing is one example. Even better examples are provided by the large number of inspectors from various government departments charged with administering the provisions of various acts and regulations. Their role is purely regulatory. For example, a boiler inspector or a sanitary inspector can, in principle, shut down a plant or commercial establishment by withholding his approval. The monopoly such officials exercise is over approvals of one form or another. This monopoly can be, and is often, turned to private advantage to exact tolls from the enterprises inspected. Jha (1984) contends that "Today there is hardly a single transaction left between the ordinary citizen and a

government servant from which the latter does not extract 'rent'. The term "private taxation" seems particularly apposite here since the tolls certainly have a mandatory aspect to them and they are quite obviously for private gain.

We argued in an earlier chapter that the need for regular payment of such private tolls is one reason why even otherwise honest enterprises have to generate black, "off the books" income. Here we emphasise the resource allocation significance of such tolls. Basically, such private taxation can be analysed in the same way as regular taxation. The issues of tax incidence are comparable. Other things equal, such private taxation will tend to raise the structure of costs and prices higher than it would otherwise have been.<sup>8</sup> We have no quantitative estimate of the economy-wide significance of such private taxes, but we *do* suggest that their dimensions may be far from trivial. Our impression is that such private taxes may be specially significant for small scale units, who have little recourse to appeals against such illicit tolls and for whom a number of relatively small payments can cumulate to a tidy percentage of profits or turnover. A similar story can be told for more or less mandatory political "contributions". These may be particularly significant in increasing the cost of capital structures.

b. *The black economy and illegal external transactions.* Smuggling, black marketeering in foreign exchange and invoice manipulations of trade are an integral part of the black economy, leading to the generation of black incomes and pressure on the country's official foreign exchange reserves. We should also recognise the possible consequences of mutually supportive links between illegal external transactions and the "domestic" generation of black incomes and wealth. Consider the following example.

As we noted in Chapter 11, undisclosed holdings of foreign assets constitute a significant form in which unspent black income is held. It is quite likely that the process of converting domestic black wealth into (undisclosed) foreign assets puts upward pressure on the black market rate for foreign exchange. Other things equal, this accentuates the incentives for under-invoicing exports and over-invoicing



imports and for outward smuggling of items such as silver. In other words, the portfolio decisions of holders of black wealth can, in certain circumstances, enhance the incentives for generating black income through illegal external transactions. This, in turn, can have significant adverse consequences on official foreign exchange reserves and the entire problem of managing the country's balance of payments.

c. *The costs of uncertainty.* There is another potentially serious and more general allocative cost of black economy, namely, that it amplifies the *uncertainty* with respect to costs, prices and returns. Uncertainty is a fact of economic life. It is likely to be greater in an economic system where the private returns to economic activity of a substantial proportion of economic agents depends on their ability to evade taxes, bribe or influence the right person for the appropriate and timely allocation of a scarce license or permit or input or contract and so on. The outcomes of these efforts are always dogged by uncertainty, especially since they involve the exercise of discretionary bureaucratic and political authority.

#### 4. Consequences for Income Distribution

Does the presence of a black economy imply that the distribution of income is more or less equal than it would have been in its absence? We have no means of exploring this counterfactual comparison systematically. All we can do is to assess whether, *given* the existence of the black economy, the actual distribution of household incomes is likely to be more or less egalitarian than that shown by the recorded data.

We suggested earlier that in responding to household surveys of income and consumption, households with a higher proportion of black income are more likely to understate their true incomes and to do so to a greater degree. In judging the nature of the bias embedded in the survey data on income distribution we have to assess where in the size distribution of incomes, black incomes are more likely to accrue.

To begin with, given the progressive structure of income taxation, the incentive to make black income through understatement of legal source incomes clearly increases with income. So we should expect richer households to earn proportionately greater black incomes through this means. As for illegal source black income, whether through illegal economic activity or illegal transfers, on balance, we suggest that the opportunities for earning such black incomes are skewed in favour of the 'haves' (such as industrialists, traders, real estate operators, contractors, lawyers, accountants, politicians, bureaucrats and artists), rather than 'have nots', such as small-holder farmers, landless rural labour and casual labour.<sup>9</sup> And, in the case of all types of black income, it is at least plausible that the secondary effects associated with expenditure from black incomes do not compensate for the initially greater skewedness in the opportunities for making these incomes.

Hence our tentative conclusion would be that the distribution of *actual* household income (from all sources) is likely to be even more skewed in favour of the rich (say, the top decile) than is indicated in surveys carried out by the NSS or the NCAER.

### 5. Implications for Monetary Policy

Thus far we have discussed some of the consequences associated with the *flow* dimension of the black economy. A number of analysis, including Chugh (1978), Kabra (1982) Rangnekar (1982) and Sunderam and Pandit (1976), have highlighted the destabilising potential of the *stock* of "black liquidity", defined as the cumulation of black savings (from black incomes) in the form of cash and other readily convertible assets such as gold and silver. The argument is that this stock of black liquidity can frustrate the aggregate and selective credit policy goals of the monetary authorities. As Chugh (1978, p. 295) puts it, "black liquidity, by becoming an alternative source of finance, often conflicts with the credit-rationing policies of the monetary authority."

It is difficult to assess the validity of this claim, not least because there has been very little empirical work exploring

the linkages between the formal and informal credit markets in India. Such work is a prerequisite for adequate appraisal of hypotheses regarding black liquidity, especially when we recognise that similar hypotheses could be plausibly advanced regarding the potentially destabilising role of informal credit markets.

In a recent paper Acharya and Madhur (1983) have explored the issue of whether the existence of an informal credit market and "black liquidity" undermines the operation of official monetary and credit policy at the aggregate level. Their results suggest that formal and informal markets interact in a non-perverse way, so that contractionary credit policy in the formal credit market *does* also impinge on the informal credit market by raising interest rates in the latter. Furthermore, their work tends to cast doubt on the hypothesis that black liquidity renders *aggregate* monetary policy impotent. However their paper does not address the issue of whether black liquidity frustrates *selective* credit policy. Their results have been challenged by Sunderam and Pandit (1984), a challenge which has provoked a rejoinder (Acharya and Madhur, 1984).

To sum up, the theoretical potential of black liquidity to destabilise official monetary policy has to be acknowledged. But, like much else relating to the black economy, there is little hard evidence to indicate the extent to which this potential is in fact exploited.

## 6. Some Wider Issues

The consequences of the black economy are not limited to the economic domain. As we have noted earlier, and numerous commentators have pointed out, they extend far beyond into politics, administration, social values and so forth. We are not competent to comment on (let alone assess) these consequences, but we would be remiss if we did not acknowledge their presence and significance, especially as their ramifications feed back into the functioning and management of the economic system.

The non-economic consequences of a burgeoning black economy and cumulative corruption include: growing arbitrariness in public policy which can be increasingly manipulated by money power; the progressive substitution of professionally trained and oriented techno-managerial elites by new classes of "fixers" and manipulators (and even criminals) who thrive on the symbiosis between complex and corruptible systems of taxation and rent-generating controls and corrupt politics; the associated decline of "old values" of honesty, thrift, cooperation and diligence and the rise of a far more amoral (if not immoral!) culture which defies the individual pursuit of material wealth, irrespective of the means employed; the steady erosion of public institutions as these are increasingly subverted to partisan or private profit; and, finally, the cumulative weakening of the entire politico-administrative system, as it becomes progressively undermined by the short-term pursuit of private profit and power (on the part of the incumbents) at the expense of long-range, public interest.

### Notes

- 1 Some of these issues have been discussed elsewhere, such as the Wanchoo Committee Report (Government of India, Ministry of Finance, 1971), Kabra (1982) and Acharya (1983a).
- 2 The direction of invoice manipulation cannot be determined *a priori*, since the various influences do not all work in the same direction. Thus, while an over-valued exchange rate and capital flight motives encourage underinvoicing of exports export subsidies work in the opposite direction. With imports, capital flight motives encourage overinvoicing, but customs duties have the opposite influence.
- 3 Most studies of major taxes in India indicate that such elasticities are disappointingly low. See, for example, Khadye (1981) and NIPFP (1984b).
- 4 Of course, the government has the alternative of forsaking its revenue target and curtailing expenditures accordingly or financing them through other means, including borrowing from the banking system, with its attendant inflationary implications.
- 5 It is not that the incidence of indirect taxes cannot be progressive. Chelliah and Lal (1978) found the indirect tax structure in India

- in 1974-74 to be progressive, though a recent re-examination of this issue by Ahmad and Stern (1983) suggests that the progressivity is less than originally believed. The point is that the progressivity (or otherwise) of indirect taxes is much harder to ascertain than for the personal income tax, which is generally regarded as the most powerful tax instrument available to pursue the goal of vertical equity.
6. Our reluctance is also buttressed by a recent survey of the effects of corruption in developing countries by Gould and Amaro-Reyes (1983) who conclude (p. 28) that "corruption has a deleterious effect on administrative efficiency and political and economic development."
  7. The seminal article is by Kreuger (1974). Tollinson (1982) provides a recent survey of this literature, while Bhagwati (1982) presents a synthesis in which rent-seeking of Kreuger's variety is seen as a special case of "Directly Unproductive, Profit-Seeking Activities".
  8. Of course, this may not be the case if the private tax substitutes for the regular tax. For example, if a bribe to a sales tax inspector reduces the assessee's *de facto* liability by a larger amount, then this form of bribery-cum-private-taxation will not exert immediate pressures on the cost-price level.
  9. This is not to deny that many petty bribes are received by low-level functionaries of the government, public sector agencies and the private corporate sector, But this is unlikely to vitiate the view advanced here.

## A Global Estimate of Black Income Generation

### 1. Introduction

The preceding chapters have dealt with various aspects of black income generation in India. The major sectors in which black income is generated, the methods of generation of black income, the uses to which such income is put and the major consequences of the existence of the parallel economy have been described and analysed on the basis of studies and surveys conducted by the staff of the Institute as well as of secondary data collected. In Chapter 5, an attempt was made to estimate the relative magnitude of generation of black income arising from the under-evaluation of output and income. Efforts were concentrated on this source of generation of black income because the Central Board of Direct Taxes are specially concerned about the understatement of taxable income. Capital gains are also taxable (if above the exemption level) under provisions of the income tax. Hence, we made an attempt to measure the understatement of receipts from the sale of real estate; however, given the constraint of time and resources, we could succeed in applying the methodology we had chosen—demanding considerable information and rigorous enough to inspire sufficient confidence—only to three cities.

During the course of our exercise, it became clear that developing and applying fairly rigorous methodologies to all the sectors generating black income would call for resources and time on a scale far larger than what was envisaged in the original terms of reference. Therefore, in the general body of the report, we were led to be content with providing some broad indicators as in the case of leakage from Government expenditure. However, a study of this kind would be considered incomplete and lacking in utility if it did not give some idea, however rough, of the broad order of magnitude of black income generation at least in respect of most of the major sectors generating such income. In view of this, in this chapter, we are making an attempt to arrive at a "global" estimate of black income generation in the Indian economy. In doing so, for lack of sufficient data, we have been forced to adopt in some cases what may be called "the minimum estimate approach"; that is to say, not being able to ascertain the most probable degree of under-declaration or leakage, we have fallen back on using a degree of under-declaration which could be safely regarded as the minimum in the relevant sector. Also, in several cases, we have made use of a range rather than a single figure of underestimation.

In Chapter 2, we had proposed two alternative definitions of black income and adopted what we termed definition 'A' because that suited our purpose better. We can derive a somewhat more comprehensive definition of black income in the following way:

In the modern economy, most business entities and a substantial number of households earning incomes are required to, or at least find it useful to, maintain monthly/yearly accounts of receipts and expenditures as well as statements of assets and liabilities. These accounts have to be maintained in order to compute profits/losses, surpluses/deficits and savings/dissavings. Apart from this, business and households are obliged by law to maintain accounts if they satisfy certain conditions. Examples are tax laws and the Companies Act. Black income can be defined as the sum total of items of receipts deliberately kept out the books of accounts by households and business in the economy. This definition of

black income is broader than definition 'A' which equated it to income evading taxation. But in principle, an estimate of black income should include all items of receipts kept out of books of accounts, even though such receipts accruing to many low income individuals may be too small to attract taxation. In any case, in estimating the generation of black income in particular sectors, it is difficult to distinguish between income that should have been returned to tax authorities and those that need not have been. It could be argued, however, that the total amount of small black incomes not liable to tax generated in a given year would be small or insignificant relatively to incomes legally subject to taxation so that in practice the two definitions would not point to significantly differing magnitudes.

## 2. A Global Estimate of Black Income Generation

Black income may be generated in relation to legal economic activities: production of goods and services within the precincts of law, sale and purchase of assets, capital formation and import and export of goods; or in relation to illegal activities: smuggling, payment and receipt of bribes, black market transactions in price-controlled goods and in foreign exchange, accepting kickbacks and prostitution. In our exercise at estimating the total amount of black income generated in the Indian economy, we have not been able to include income that is generated through smuggling, black market transactions, acceptance of bribes, kickbacks of some kind and prostitution. For the sake of ready reference, we enumerate below the sources of black income generation which are included in our attempt at a global estimate:

- (i) Factor incomes received either openly or covertly while participating in the production of goods and services.
- (ii) Capital receipts on sale of assets.
- (iii) Fixed capital formation in the public sector.
- (iv) Fixed capital formation in the private corporate sector.
- (v) Exports.
- (vi) Imports.



(i) *Black income associated with factor incomes received for participating in the production of goods and services.* In Chapter 5, adopting a fiscal approach, we have provided estimates of the scale of black income generated in relation to legal activities associated with the production of goods and services. The concept of black income pertinent to this approach is that part of factor income which should have been declared to the tax authorities, but was not. In estimating this type of black income, as mentioned in Section 8, Chapter 5 and Appendix 2, it was argued that NAS figures of GDP may themselves be biased downwards due to tax evasion through underreporting of output and sales or over-reporting of costs or misclassification of personal expenses by manufacturing/trading enterprises. To take care of this bias, we adjusted the official GDP figures upwards by 10 per cent and further assumed that half or three-quarters of this "increment" in GDP accrues to earners who are already liable to tax. We then derived two alternative estimates of black income for 1975-76 and 1980-81 as given below:

	(Rs crore)	
	1975-76	1980-81
(1) Amount of black income associated with gross personal income from current, legal economic activity and legal transfers, assuming official NAS data on GDP are correct	3741	9813
(2) Adjustment to (1) by assuming official GDP requires upward adjustment by 10 per cent and half to three-quarters of this 'increment' is tax-evaded	3318 to 4971	5713 to 8570

(ii) *Black income generation in relation to capital receipts on sale of assets.* As mentioned earlier, we have confined ourselves to the sale of real estate. In Chapter 7, we provided a detailed account of the forms and causes of black income generation in urban real estate transactions and attempted to measure the levels of black income generated in three metropolitan centres—Delhi, Bombay and Madras.

It was noted that the estimates for Delhi were far superior to those for the other two cities. The kind of data that we needed for undertaking a comprehensive study as was done for Delhi could simply not be collected for even all the major cities, given the time and resources at our disposal. We have been, thus, forced to adopt a much less rigorous methodology to obtain a rough estimate of black income generated by transactions in real estate in the country as a whole. Essentially, the method consists in ascertaining from official records the total registered value of immovable properties transferred in the different States of India during a given year and then applying to it a black-white ratio which could be assumed to be the minimum average for all India. The registered value of transferred property represents only the 'white' component of the 'true' value of property. Thus, if the registered value is Rs 1,000 and the black-white ratio is 40:60 then the true value of the sale could be taken to be  $1,000 \times \frac{5}{3} = \text{Rs } 1666$ .

Of course, the black-white ratio would not be the same for all the States in India nor in all the different areas, rural and urban, within a State. It could reasonably be expected to be high in urban centres like Bombay and Madras and low in rural areas. The black-white ratio may also vary temporally. For instance, as mentioned in Chapter 7, the sample survey of real estate brokers in Delhi indicated that the ratio of black to white components ranged from around 45 to 55 in 1978-79, 60 to 40 in 1980-81 and 65 to 35 in 1982-83. The data from the Valuation Cell of the Income Tax Department for Delhi also reveal variations in the black to white ratio in different years—33 to 67 in 1978-79, 40 to 60 in 1980-81 and 48 to 52 in 1982-83 (Table 7.4.1). Similar variations are noted also in relation to Bombay and Madras. We find a large difference between the black-white ratio derived from the Valuation Cell data and that derived from the brokers' sample. We have kept this difference in view in arriving at a minimum range of black-white ratio for the country. Keeping in mind all the data we had collected and on the basis of discussions with numerous individuals 'in the

know of this business', we have assumed an average black-white ratio of 40:60 to have been operative in the States taken together in the years 1975-76 and 1980-81.

We now turn to the 'base' of our computation of black income component, namely, the 'registered value of immovable property'. As noted in Chapter 7, while a transfer of immovable property requires registration under the Indian Registration Act, 1908, the transfers of shares of flats of Housing Cooperative Societies do not require registration. As such, our base excludes, by definition, the value of such property in flats transferred in Housing Cooperative Societies which have been prevalent in States like Maharashtra, Gujarat and Delhi. Similarly, the value of property under 'Power of Attorney' transfers is also not included in our base.<sup>1</sup> Thus, to that extent, our estimate is downward biased.

The data on the registered value of immovable properties transferred, that we obtained include the value of sale deeds, mortgages, gifts and leases. Of these, the concealment of true value may dominate only in the case of sale deeds. However, we could not separate out the value of sale deeds. To that extent, an upward bias is created in our estimate but it is not likely to be very significant as the value of sale deeds accounts for much the major part of the total registered value of transferred properties.

We have included, for our estimate, all the major States (16) in India (Table 13.2.1). For the year 1975-76, data on the value of immovable properties transferred were available for all States except Assam and Rajasthan, while for the year 1980-81, data were available only for seven of the 16 States. For those States for which the required data were not available, the registered values of properties were estimated by us using a regression equation; the details of the exercise are shown in Table 13.2.2.

The total registered values of the immovable properties in the major States came to Rs 3,384.71 crore in 1975-76 and Rs 5,253.95 crore in 1980-81. These values represent the 'white' component in the 'true' value of properties transferred. Applying a black to white ratio of 40:60 to the above values, we derived the values of black components, which worked

TABLE 13.2.1

Registered Value of Immovable Property Transfers in  
Major States in India

		(Rs crore)	
Sl. No.	States	1975-76	1980-81
1.	Andhra Pradesh	303.75	485.72
2.	Bihar	229.66	174.86*
3.	Haryana	125.01	517.02
4.	Maharashtra	689.93	557.01*
5.	Orissa	60.70	90.29*
6.	Punjab	296.95	463.36
7.	Uttar Pradesh	383.00	925.74*
8.	Karnataka	188.29	367.73*
9.	Tamil Nadu	399.96	652.95**
10.	Kerala	227.01	323.83*
11.	Madhya Pradesh	106.96	175.32
12.	West Bengal***	133.68	118.30
13.	Assam	31.61*	28.04*
14.	Rajasthan	75.19*	166.76*
15.	Gujarat	117.01	207.02
16.	Delhi	16.00	—
		3384.71	5253.95

Notes: \*: Estimates; for details see Table 13.2.2.

\*\* : Includes value of movable and immovable property.

\*\*\* : Value of 'Sale deeds' for seven districts in West Bengal.

Source: 1. *Annual Statistical Abstracts* of different States.

2. *Handbook of Statistical Information*, Bureau of Economics and Statistics of different States.

3. Inspector General of Registrations, Various States.

TABLE 13.2.2

**Forecasting of Registered Value of Immovable Property  
Transfers in some States for 1975-76 and 1980-81**

Estimated Equation: using cross-section data of States, pooled for the two years 1975-76 and 1980-81 is as follows:

$$\ln(\text{Val}) = 2.25 + 1.07 \ln(\text{STRF}) - 0.76(\text{D1}) - 0.26(\text{D80})$$

$$(7.50) \quad (25.10) \quad (-8.57) \quad (-2.62)$$

$$R^2 = 0.98; \text{D.W} = 1.67$$

where, Val = Declared Value of Immovable Property in a given State and year

STRF = State Revenue from Stamp Duty and Registrations fee.

D1 = Dummy to distinguish those States whose average rate of Stamp Duty is substantially higher

D80 = Dummy to distinguish the years 1980-81/1975-76:1 for 1980-81 and 0 for 1975-76

\* Figures in parentheses are t-ratios. All coefficients are significant at 1 per cent level.

TABLE 13.2.2 (Contd.)

Year	State	Independent Variable			Forecast value of dependent variable (VAL) (Rs crore)
		STRF (Rs crore)	D1	D80	
1975-76	Assam	2.29	0	0	31.71
1975-76	Rajasthan	5.15	0	0	75.19
1980-81	Bihar	14.51	0	1	174.86
1980-81	Orissa	7.82	0	1	90.29
1980-81	Uttar Pradesh	68.96	0	1	925.74
1980-81	Karnataka	29.08	0	1	367.73
1980-81	Kerala	25.82	0	1	323.83
1980-81	Assam	2.62	0	1	28.04
1980-81	Rajasthan	13.88	0	1	166.75
1980-81	Maharashtra	42.88	0	1	557.01

out to Rs 2,256 crore for the year 1975-76 and Rs 3,503 crore for the year 1980-81.

The 1980-81 figure excludes the estimate for Delhi for which the relevant data could not be obtained. In Chapter

7, black income generated through real estate transactions in Delhi was estimated to be Rs 161 crore taking into account only the registered sales of immovable property (i.e., excluding power of attorney sales). Adding this amount to the figure derived earlier, we arrive at an estimate of black income generated in real estate transactions in the country as a whole amounting to Rs 3,664 crore in 1980-81.

(iii) *Fixed capital formation in the public sector.* In Chapter 8, we dealt with the generation of black income through public expenditure, referring to evidence, mostly of anecdotal nature, of leakage through public expenditure. The key areas in which such leakages occur are found to be investments in construction and plant and machinery. It is well-known that considerable leakage takes place in relation to construction activities in the Government sector and also in large public enterprises. It is, however, extremely difficult to arrive at the degree of leakage. In earlier times, a 'mamool' or conventional magnitude of pay-off of 10-15 per cent, was generally taken to be prevalent. Talwar (1984) indicates that the amount of black money generated in construction in general amounted to about 9 per cent of expenditure. At the same time, he estimates that about 25-30 per cent of the recorded cost of public works in Delhi and neighbouring States could be assumed to be siphoned as black income received in the hands of Government functionaries, politicians and contractors. Discussions with knowledgeable individuals in other areas of the country indicate that the magnitude of rake-off amounts to much lower percentages. We have assumed a range of 10-15 per cent of the cost of construction to be siphoned as black income. We have further assumed that such leakage occurs in relation to construction in the administrative departments, departmental enterprises and non-departmental enterprises. The estimates of the range of amounts of black income generated in these three branches of the public sector are shown in Table 13.2.3.

The other component of fixed capital formation is 'plant and machinery'. Leakages are known to take place in relation to this component of investment. But the magnitude of such leakage is not likely to be much large in so far as Government

TABLE 13.2.3

## Fixed Capital Formation and Black Income Generation

<i>Fixed Capital Formation</i>	(Rs crore)	
<b>1. Administrative Department</b>	<i>1975-76</i>	<i>198. -81</i>
a) Construction		
i) New buildings	267	718
ii) New roads & bridges	372	983
iii) Other constructions works	385	1095
Construction Total	1024	2796
Black Income Generated in construction		
@ 10 per cent	102.40	279.60
@ 15 per cent	153.60	419.40
b) Plant & Machinery		
i) Transport equipment	2	32
ii) Machinery & equipment	129	293
Plant & Machinery Total	131	325
Black income generated in Plant & Machinery (@ 5 per cent )	6.55	16.25
<b>2. Departmental Enterprises</b>		
Construction		
i) New buildings	83	204
ii) New roads and bridges	19	31
iii) Other construction and works	1055	2402
Construction total	1157	2637
Black income generated in construction		
@ 10 per cent	115.70	263.70
@ 15 per cent	173.55	395.55
<b>3. Non-departmental enterprises</b>		
Construction		
i) New buildings	199	442
ii) Other construction & works	356	900
iii) Capital works in progress	423	158
iv) Expenditure during construction	134	105
Construction Total	1112	1605
Black income generated in construction		
@ 10 per cent	111.20	160.50
@ 15 per cent	166.80	240.75

Source: National Accounts Statistics, Government of India (CSO), February, 1983

departments are required to procure capital goods through the medium of Directorate General of Supplies and Disposals (DGS&D) and that departmental enterprises often buy plant and machinery from other public sector enterprises. In order to be on the safe side, we have assumed a 5 per cent leakage only in relation to investment in plant and machinery by administrative departments and no leakage at all in relation to investment in plant and machinery by departmental enterprises.

In regard to investment in plant and machinery by public sector non-departmental enterprises in so far as they buy machinery within the country from other public enterprises, there may not be much leakage from expenditure. But to the extent that machinery is bought from abroad, there is known to be considerable leakage. Some senior officials, now retired, and other knowledgeable people have confirmed to us the practice of a percentage cut being taken in relation to imports by the public sector. Foreign suppliers are generally supposed to provide for a 'cushion' of 3-7 per cent. We have, however, not been able to obtain figures of the value of plant and machinery imported by public sector enterprises in the two selected years (only figures of total Government imports are available). We have, therefore, not been able to give any estimate of leakages through expenditure on plant and machinery imported from abroad by public enterprises.<sup>2</sup>

It is our feeling that on the whole, we have under-estimated the amount of leakage through public expenditure including investment by public sector enterprises. Our estimates of black income generation in the public sector are given in Table 13.2.3.

(iv) *Black income generated in relation to private corporate sector investment.* According to present guidelines, the promoters' contribution to the equity capital of a new venture is to be at least 15 per cent of the total. It is widely believed that most often the intention of the promoters is to recoup this contribution in the initial stage of construction and investment. Of course, documentary evidence cannot be provided to substantiate this belief. It is also possible that all promoters do not



indulge in this nefarious practice of defrauding the shareholders. On the other hand, in certain family-controlled enterprises, the percentage of rake-off may be much higher; and in the case of several small closely held companies, over-statement of investment expenditure may be resorted to for tax avoidance reasons. On the basis of the discussions that we have had, we feel that it would be safe to assume a leakage of 10-15 per cent in relation to private corporate sector investment by way of kick-backs from suppliers and contractors. The estimated ranges of black income generated thus, for 1975-76 and 1980-81, are shown in Table 13.2.4.

TABLE 13.2.4

**Private Corporate Investment on New Assets and Black Income Generation**

	(Rs crore, current prices)	
	1975-76	1980-81
1. Total gross domestic fixed capital formation:		
a) Construction	209.20	274.14
b) Machinery & equipment	1480.68	1891.76
Total	1689.88	2165.90
2. <i>Estimates of black income from private corporate investment.</i>		
<i>Assumption:</i>		
a) 10% of investment is skimmed away	168.99	216.59
b) 15% of investment is skimmed away	253.48	324.88

*Source:* Same as for Table 13.2.3.

(v) *Black income generated in relation to exports.* It has been suggested that black income is often generated through the under-invoicing of exports. Discussions with those familiar with the practices of exporters indicate that there is not much evidence of under-invoicing in relation to non-traditional exports. Under-invoicing in relation to them may be on the whole unprofitable because fiscal concessions, Cash Compensatory Support (CCS) and duty draw-backs are related to

the total value of exports or profits earned therefrom. But under-invoicing is believed to exist in relation to 'traditional' exports. We assume a minimum of 10 per cent of FOB value of 'traditional' exports to be the amount of black income generation through under-invoicing. Table 13.2.5 provides data on the value of traditional exports and the estimated amounts of black income generated for the two years 1975-76 and 1980-81.

TABLE 13.2.5

## Black Incomes Generated by Under-invoicing Traditional Exports

	(Rs crore)	
Traditional exports on which duty/cess is imposed	1975-76	1980-81
1. Jute manufactures	250.9	330.0
2. Raw Cotton	41.3	164.9
3. Tea	236.9	425.5
4. Coffee	66.7	214.2
5. Pepper/spices	33.9	111.4
6. Tobacco	98.4	140.7
7. Leather and manufactures	201.5	337.1
8. Iron ore	213.9	303.3
9. Coir and manufactures	19.0	26.2
10. Manganese ore	17.6	12.7
11. Cashew kernels	96.1	140.1
12. Oil cakes	96.5	125.1
13. Mica	14.7	17.7
Total	1387.4	2348.9
Amount of black income generated assuming that 10 per cent of total value of traditional exports is under-invoiced	138.74	234.89

*Source:* For export values, *Economic Survey*, Government of India, (various issues).

(vi) *Black income generated through over-invoicing of imports by the private sector and sale of import licences.* It has been argued by many economists that over-invoicing of imports is a common practice among private importers. Over-invoicing could occur in relation to import of machinery. But

we have already assumed a 10-15 per cent leakage in relation to private corporate sector investment which includes imported machinery as well as machinery purchased domestically. It would, therefore, amount to double counting if we included a separate estimate of over-invoicing of imports of machinery by the private sector: Over-invoicing could also occur in relation to imported inputs and intermediates. Knowledgeable circles, however, feel that it would not be on the whole profitable to indulge in such a practice because that would result in smaller physical quantities being imported for a given expenditure of foreign exchange. One would not wish to waste one's foreign exchange allocation in this way unless, of course, the import licences have been obtained on inflated requirements. It is felt that in regard to imports, the generation of black income through the sale of import licences is far more important.

We have made an attempt to estimate black income generated through sale of import licences. We have been able to do this only in relation to the year 1983-84 for which we were able to obtain the required data.

Private sector imports in 1983-84 are estimated to have been Rs 5,153 crore.

This figure includes REP licences for about Rs 2,300 crore, of which freely transferable REP licences were for about Rs 1,200 crore. Approximately, half of these licences for Rs 1,200 crore are taken to be sold away and the remaining half to be used by the exporters themselves. The average premium on these licences would have been about 25 per cent in 1983-84. This means that transactions worth Rs 150 crore would have taken place in the legal transfer of licences. Although these are legal transactions, it is believed that the full premium realised is not shown in the books of account. At least about one-third can be estimated to be concealed, which gives us an estimated generation of black income in this regard amounting to Rs 50 crore.

The figure of Rs 5,153 crore of imports includes imports of dry fruits against quota licences worth about Rs 30 crore. It is estimated that about two-third of these licences are sold away in the black market at a premium of 50 per cent, thus generating black income amounting to Rs 10 crore.

In 1983-84, raw material licences to small-scale units amounted to Rs 215 crore. It is estimated that approximately one-third of these are sold in the black market: either the licences themselves or the goods imported against them. The premium was estimated to have been on the average 25 per cent. Thus, we can estimate that black income worth Rs 18 crore was generated on these sales.

We have so far taken into account imports worth Rs 2,545 crore. Of the remaining Rs 2,608 crore, it is estimated that some black marketing would have taken place. It has not been possible to estimate the probable fraction of these imports in relation to which black income would have been generated. To be on the safe side, we have been advised to assume that black marketing would have taken place only in relation to 5 per cent of these imports worth Rs 2,608 crore. This gives us a figure of Rs 130 crore. Taking the average premium at 25 per cent, the black income generation could be estimated to be Rs 32.45 crore (or roughly Rs 32 crore).

Out-of-account sales are also said to take place in respect of imports made through public sector canalising agencies. This happens where the imported materials distributed through canalising agencies are in short supply. In these circumstances, the allottees, mostly small-scale units, find it more profitable to sell them off than to use them in their own factories. For example, this is said to happen in the case of non-ferrous metals and steel where nearly 25 per cent of the material is estimated to have been sold away in the black market. The value of such sales by the small-scale sector is estimated to be around Rs 30 crore. With an average premium of 25 per cent, the black money generation could be taken to be Rs 7.5 crore. Taking all the above estimates together we arrive at a total figure of Rs 118 crore in relation to import licenses. Table 13.2.6 gives our estimates of black income generated in different sectors and the total of these estimates for the years 1975-76 and 1980-81. Since the estimate of black income generated against import licences could be obtained only for 1983-84, it is not included in this total. Excluding this, our global estimates of black income generation ranges from Rs 9,958 crore to Rs 11,870 crore in

**TABLE 13.2.6**  
**A Global Estimate of Black Income Generated in India for**  
**1975-76 and 1980-81**

		(Rs crore)	
S.No.	Item	1975-76	1980-81
1.	Amount of black income associated with gross personal income from current, legal economic activities and legal transfers (see Table 5. 9. 1)	3741	9813
2.	Adjustment to (1) by assuming official GDP requires upward adjustment by 10 per cent and half to two-thirds of this 'increment' accrues to earners as tax-evaded income	3318 to 4978	5713 to 8570
3.	Add possible under-declared value of registrations of immovable property transferred in the major States in India (see Tables 13. 2. 1 and 13. 2. 2)	2256	3664
4.	Add leakages from public sector investment (see Table 13. 2.3)	102 to	280 to
	a. Administrative departments construction	154	419
	Plant and machinery	6	16
	b. Departmental and non-departmental enterprises construction	227 to 343	424 to 636
5.	Add leakages from private corporate sector investment (see Table 13. 2.4)	169 to 253	217 to 325
6.	Add black income generated through underinvoiced 'traditional' exports (see Table 13. 2.5)	139	235
7.	Global estimates of black income	9958 to	20362 to
	Total of (1) to (6)	11870	23678
8.	GDP at factor cost, current prices	66370	114271
9.	Estimates of black income in India as a per cent of GDP	15 to 18	18 to 21

1975-76 and from Rs 20,508 crore to Rs 23,678 crore in 1980-81. In terms of per cent of GDP, these estimates range from 15 to 18 in 1975-76 and from 18 to 21 in 1980-81.

One of the major omissions from our estimates of black income generation is that generated through large-scale smuggling activities that have become such a pervasive phenomenon in our economy in recent years. Even to obtain rough estimates of the total value of smuggled imports for a

recent year would have required a time and resource-consuming independent study. Although we were told by several prominent individuals having good knowledge of market conditions in India that the value of goods other than gold smuggled into India could be placed at around Rs 5,000 to 8,000 crore, we have also known others placing the estimate around or above Rs 10,000 crore. We could not use these unsubstantiated estimates in our study. However, a perusal of some publications such as *Gold Review and Outlook*, (September 1984, J. Aron & Co.) and *Gold 1984*, Consolidated Gold Fields PLC and discussions with a number of people indicated that it would not be far off the mark to take a figure of 50 tonnes of gold to have been smuggled into India in 1983-84.<sup>8</sup> Taking an average price of Rs 185.04 per gram in the same year, we arrive at an estimated total value of gold smuggled at Rs 925 crore. Let us say roughly Rs 1,000 crore worth of gold was smuggled into the country in 1983-84. If we assume a minimum margin of 25 per cent, we get an estimate of black income generated amounting to Rs 250 crore.

Our detailed calculations of black income generation relate to the years 1975-76 and 1980-81. For 1980-81, our calculations indicated black income generation in the sectors covered could be placed in the range of 18-21 per cent of GDP. If it is assumed that the same percentage of GDP were generated as black income in those sectors in 1983-84, the absolute amount of black income generated could be estimated to range from Rs 31,216 crore to Rs 36,418 crore (Table 13. 2. 7). If we add to the above the amount of black income estimated to be generated in relation to import licences (Rs 118 crore) and that generated through smuggling of gold (Rs 250 crore), we arrive at estimates of black income generation ranging from Rs 31,584 crore to Rs 36,786 crore. This means that in 1983-84, black income generation as a proportion of GDP at factor cost was probably in the region of 18 to 21 per cent.

A total black income generation of Rs 36,786 crore or in round numbers Rs 37,000 crore out of a total GDP at factor cost of Rs 1,73,420 crore seems to be on the high side,

TABLE 13. 2.7

## Estimate of Black Income in India During 1983-84

	(Rs crore)
	Amount
1. Assuming the estimated proportion of black income in 1980-81 is constant and applicable to GDP at factor cost, current prices in 1983-84 (quick estimates) of Rs 173420 crore, Amount of black income generated	31216 to 36418
2. Add the amount of black income from illegal transactions pertaining to import licences and imported goods in 1983-84	118
3. Add the amount of black income from smuggling of gold	250
4. Total of (1) to (3)	31584 to 36786
5. Black income as a proportion of GDP at factor cost in 1983-84 (per cent)	18 to 21

although it turns out to be less than 30 per cent of GDP<sup>4</sup> as against some extravagant estimates placing it at 50 or even 100 per cent of GDP. It is possible that we have over-estimated black money generation in certain sectors. On the other hand, it is to be remembered that we have not been able to include black income generated through smuggling of goods other than gold, through black marketing in foreign exchange and other price-controlled commodities. Given the very nature of the problem, it is almost impossible to arrive at an estimate which could be called precise or accurate. Taking our lower estimate, what we would say with some degree of confidence is that black income generation in the Indian economy in 1983-84 cannot be placed below 18 per cent of GDP at factor cost or 16 per cent of GDP at market prices. Further painstaking study would be required to get sufficient evidence to say that it might even range upto 30 per cent of GDP at factor cost.

### Notes

1. In Delhi, transfer of DDA flats is one example of such 'Power of Attorney Sales'. A crude estimate of black income generated in such sales is provided in Chapter .7
2. It is also stated that leakages occur in relation to certain imports channelised through public sector agencies. It is difficult to know in which cases the leakage could or did occur. For example, market conditions may be such that it may be difficult to rig prices or show higher prices than what was paid to obtain a cut. We have not included in our estimate any leakage in relation to channelised imports. Also, we have assumed that no leakage occurs in relation to import of defence equipment.
3. Estimates range from 60 to 80 tonnes.
4. If GDP at market prices is taken at current prices, i.e., out of Rs 1,95,739 crore in 1983-84 the ratio would come to around 16-19 per cent.



## Policies for Scaling Down Black Income Generation

The terms of reference of the study do not extend to a consideration of policies for tackling the problem of black money generation. However, for the sake of completeness, we offer some suggestions in this regard which flow from our treatment of the character and causes of black income generation in India. We begin with a brief review of the principal policies that have been deployed in the past.

### 1. A Brief Review of Past Policies

In Chapters 9 and 10, we have already reviewed measures taken to improve the administration of direct taxes as well as the reductions in the nominal rates of personal income tax carried out in the 1970s and, more recently, in the 1984-85 budget, in the hope of inducing improvements in tax compliance. Here, we consider three other measures which have been deployed to combat black money: demonetisation, voluntary disclosure schemes and special bearer bonds.

a. *Demonetisation.* The government has resorted to demonetisation of high-denomination currency notes on two occasions, once in 1946 and again in 1978. A crude index of the penal success of this measure is given by the value of

high denomination notes which were not presented for conversion.<sup>1</sup> By this yardstick, neither venture was a success. In 1946 only about Rs 9 crore of high denomination notes, out of a stock of Rs 144 crore in circulation, were presented for conversion. In 1978 the value of unconverted high denomination notes was Rs 20 crore out of a circulation of Rs 145 crore (Srinivasan, 1980).

Quite apart from the relatively paltry results obtained on the two occasions on which it has been tried, there are other good reasons to doubt the efficacy of this measure in combating black income generation.

First, the measure is limited to inflicting penalties on those who hold their black wealth in the form of cash at the moment of demonetisation. There is every reason to believe that cash is not an important form for holding black wealth (see for example, the questionnaire responses in Chapter II), especially for those who are active participants in black income generation. So the distribution of the penalty is likely to have little correlation with the distribution of black wealth. Second, even for holders of cash, there exist avenues for converting high denomination notes into lower valued ones, at a discount, through intermediaries.

Third, and perhaps most importantly, the measure does not address the underlying causes of black income generation. Hence, subsequent generation of such incomes can continue unabated with due precautions for the form in which unspent black incomes are held. The once-and-for-all penalty exacted by demonetisation simply puts everyone on their guard for the future, but does nothing to alter the incentives which spawn the black incomes. Of course, since cash is the principal vehicle for conducting black transactions, there is undoubtedly a *temporary* dislocation in such activities. The point is that the dislocation is temporary.

b. *Voluntary disclosure schemes.* In essence, Voluntary Disclosure Schemes (VDS) are aimed at coaxing errant taxpayers to disclose their hitherto undeclared incomes (from past years), pay tax on these incomes (unusually at concessional rates) and, in return, enjoy exemption from penalty and

prosecution as well as the opportunity to bring their after-tax incomes on to the books. There have been four such schemes thus far, one in 1951, two in 1965 and one in 1975. These schemes have been critically reviewed by the Wanchoo Committee and several reports of the Public Accounts Committee<sup>2</sup> as well as by private scholars, such as Srinivasan (1980). The principal criticisms are as follows.

First, the amounts of past undisclosed income surfaced through the schemes [a total of Rs 267 crore in the first three schemes and Rs 727 crore in the final scheme, (Srinivasan, 1980)] are judged to be small in relation to the cumulated totals of tax-evaded incomes to which they should be compared. Second, disclosures made in the names of minors, ladies and "name-lenders" are believed to facilitate subsequent evasion. Indeed, the fact that over 40 per cent of disclosures in the third and fourth schemes related to persons who were not previously assessed to tax, suggests that the VDS may be used to "whiten" black income at relatively low cost. Reviewing the first three schemes, the Wanchoo Report (p.12) observed trenchantly: "They were more or less schemes for converting black money into white on payment of, what turned out to be in most cases, a small amount of conscience money."

Thirdly, much of the disclosed income had already been "detected" by the tax authorities; in the 1975 scheme even assesseees who had been the subject of search and seizure operations were able to claim immunity from penalty and prosecution. So the *net* effect of these schemes in surfacing past undisclosed income was considerably less than the gross numbers would suggest. Fourth, the fact that many assesseees benefited from several of the schemes belied the hope that beneficiaries of the schemes returned to the path of fiscal rectitude after their disclosures. Fifth, all reviewers have been severely critical of the VDS for, in effect, favouring tax-evaders as compared to honest taxpayers and thus reducing the morale of the tax administration and the level of compliance among assesseees in general.

To these valid criticisms, we would add the important point that the VDS do not blunt the underlying causes of

black income generation. If anything, by holding out hopes of repetition in the future, such schemes reduce whatever deterrent effect exists in the current provisions for penalty and prosecution. With the incentives for black income generation unaltered (or worse, enhanced), there is little reason to credit VDS with any long-term effectiveness in the fight against black incomes. About all that can be claimed in their favour is a *temporary* filip to revenue collections.

c. *Special bearer bonds*. In 1981, the government conducted a once-and-for-all sale of Special Bearer Bonds (SBB), with a maturity date of 1991 and a redemption value higher than purchase value by 20 per cent (i.e., an annual compound rate of return of 1.8 per cent). The return, at maturity, was exempt from income tax, while the value of the bond was exempt from wealth tax and gift tax and the bond was excluded from the definition of a capital asset for purposes of capital gains tax. In addition, the bond was transferable and purchasers were granted immunity from investigation about source.

As Bagchi (1981) has pointed out, the appeal of the SBBs lay not in the rate of return, which was very low relative to alternative uses and thus implied a substantial opportunity cost for purchasers, but in the anonymity, transferability and immunity characteristics of the bonds. In effect, Bagchi argues, the SBBs "can be used as a safer medium of exchange than ordinary currency". But if this is so, then the SBBs were correspondingly less successful in mopping up liquidity in the economy. What the scheme accomplished was to substitute one form of government liability (SBBs) for another (currency). In other words, from the viewpoint of the government the SBBs should be seen not as an instrument of taxation but as one for borrowing. Purchasers were prepared to buy the instrument because of its anonymity/immunity characteristics.

What the SBBs failed to do was to mitigate the underlying causes of black income generation. Like VDS, the SBB scheme provided a method of converting black incomes and wealth into white (at a price), but it did nothing to alter the incentives for black income generation.

## 2. Measures Recommended for Reducing Black Income Generation

The central weakness of the three sets of measures reviewed above is that they were concerned with past accretions of black income and could do nothing to tackle the underlying causes of black income generation. If the current and future extent of black income generation is to be reduced, then remedial policies have to grapple with the underlying causes.

It would be readily understood that a package of consistent measures are needed if any significant success is to be achieved in tackling the menace of black money. The measures should aim at reducing current and future generation of black income and also easing the transfer of black wealth already existing into the legitimate economy under specified conditions. But it must be emphasised that no measures are likely to succeed unless at the highest level there is determination to root out black income or at least to bring it down to tolerable proportions and the top political leadership at the Centre and the States observes high standards which they can exhort the population to emulate. Thus, the first requirement for tackling the problem of black income generation is clean administration at least at the level of political authority and top civil servants. Given this desideratum, a package of effective measures could be put forward which could be divided into the following heads:

- (i) Changes in economic and related policies designed to reduce black income generation;
- (ii) Policies designed to promote integrity and improve honesty among at least the senior officials (tax officials and those dealing with controls);
- (iii) Measures designed to bring down the amount of black wealth currently held;
- (iv) Policies relating to administration and enforcement of taxes, prosecution of tax-offenders and imposition of penalties for economic crimes.

It is important that these different policies should be initiated in the order in which they have been mentioned, i.e., ones mentioned earlier should come first.

**a. Changes in economic policies designed to reduce black income generation**

(i) *Reduction in tax rates.* We have noticed that direct taxes have been levied on a number of bases and that the cumulative burden of taxation works out to be quite high. As indicated in Chapter 9, the combined effect of current rates of income tax and wealth tax is quite strong and undoubtedly generates a powerful incentive for tax evasion. There are, of course, other taxes that are kept in mind by potential tax evaders. The rates of stamp duties on capital transactions levied by the State governments have also been pitched at a high level. Those who are engaged in production and trade have also to collect and pay excises and sales taxes which are the two major forms of internal indirect taxation. Thus, if a producer suppresses output, he would 'gain' not only to the extent of excises and sales taxes evaded but also through the under-statement of profits which would reduce the liabilities under the company income tax, if applicable, and the personal income tax. In the case of capital transactions, as we had indicated earlier, under-statement of sale value benefits the buyer through a lower amount of stamp duty to be paid and through lower liability in respect of wealth tax. Under-statement benefits the seller through a lower liability under the capital gains tax and lower wealth tax in subsequent years. Thus, since taxes are levied on a number of bases and there is linkage between liabilities under the direct taxes and the indirect taxes, black money generation could be effectively or significantly reduced only if the rates of taxes of all the major taxes are pitched at reasonable levels. It is, of course, not easy to agree on what should be considered reasonable. But experience has shown that rates of corporation taxes ranging from 57.5-63.2 per cent and maximum marginal rate of wealth tax at 5 per cent and that of estate duty at 85 per cent are altogether on the high side and would have to be scaled down considerably. We recommend that the tax on company profits, the personal income tax, the wealth tax, stamp duties and the estate duty be all reduced substantially by the Central government. Simultaneously,

stamp duties on real estate transactions as well as a number of other transactions should be brought down perhaps to the level of 5 per cent *ad valorem*. There is also need to scale down excise duties and sales taxes.

One of the causes for large-scale smuggling of goods other than gold into India is said to be the high excise and import duty structures in relation to number of commodities for which there is considerable demand within the country. Man-made fibres, electronic goods and watches and watch components are cases in point (the tax rates on the last mentioned items have recently been brought down). Reduction in the rates of excise and customs could, while improving tax compliance, also be expected to bring down the volume of smuggling.

Our results obtained in Chapter 4 indicated a positive link between the level of black income and the aggregate tax ratio of the economy. This would suggest that the tax ratio should not be increased any further if black income generation is to be controlled. However, it is quite doubtful whether as the economy develops and the scale and variety of the services to be provided by the Government increase, it would be possible to do without a rise in the tax ratio. A rise in the ratio brought about through an automatic increase in revenue derived from a moderately progressive, stable and uncomplicated tax structure should not contribute to an increase in the relative magnitude of tax evasion. But, it is important to note that if an increase in the tax ratio is obtained not through an interaction between a progressive tax system and increases in real incomes but merely through inflation acting upon the tax system, there would be a tendency to resist tax increase in the context of stagnant or falling real incomes, through tax avoidance and evasion. Therefore, we recommend that periodically tax exemption levels, allowances and tax brackets should be adjusted upward to neutralise the impact of inflation. This would not amount to automatic indexation but implies discretionary indexing to be applied at periodical intervals. Upward adjustments are needed in the case of all the taxes with a progressive rate structure such as the personal income tax, the wealth tax,

the gift tax and the estate duty. In the case of taxes such as the sales tax and excises exemption levels would also need to be indexed. We pointed out in Chapter 9 how three successive reductions in nominal income tax rates had been largely nullified, as far as effective burdens of taxation were concerned, by inflation. To prevent this happening, adjustments to inflation must be carried out periodically once the rates of different taxes are pegged at given levels of real income and wealth.

We would concede that it would be better to introduce a system of automatic inflation indexation of rate structures together with a commitment not to increase the nominal rates, but we desist from making a recommendation for automatic indexation because that might come in the way of government pursuing effective anti-inflationary policies.

The necessary reductions in the rates of indirect taxes, we concede, cannot be brought about in a stroke because of revenue considerations. What we are suggesting is phased reductions along with the process of rationalisation.

(ii) *Simplification of the tax structures.* The more complicated the tax structure and the larger the number of deductions, exemptions and concessions, the more difficult it is to enforce the concerned taxes. Besides, provisions relating to concessions are prone to generate litigation. Under a complex tax structure, tax officials have greater scope exercising discretion and, correspondingly, there is a greater scope for collusion between the tax authorities and the taxpayers. A country like India needs the simplest tax structure that can be constructed consistent with the requirements of revenue and equity. Moderate rates combined with broad bases without too many deductions and concessions are preferable to a regime of high rates moderated with a plethora of concessions. If our recommendation regarding the reduction of the company income tax is accepted, then many of the concessions could be removed leading to a relatively simple structure.

All detailed studies of the structure of indirect taxes in India (including previously cited studies of excise evasion in three commodity groups and studies of State sales taxes)



indicate that the complexity of the rate structures invites evasion through various forms of misclassification (including under-valuation). Moreover, these studies suggest that the degree of complexity is rarely warranted by considerations of equity or economic efficiency. Simplification of the structure of excise and sales taxes would considerably help in reducing the scope for evasion both through misclassification and through collusion with tax officials.

If there is a shift from quantitative import controls to protection through tariffs, it may be necessary to keep the rates of import duty on a number of commodities at a high level. However, rates of duty on goods that could be easily smuggled should be kept as low as possible given the requirement of protection. Apart from the level of customs duties, it is to be remembered that the structure is very complicated with multiplicity of duties and multifarious rates and a number of exemptions, concessions, etc. A rationalisation and simplification of the structure of customs duties would also help in reducing the generation of black income.

b. *Reduction in the complexity and the number of controls.* Reforms in the structure of taxes are unlikely to have much influence on illegal source black incomes. In earlier chapters, we have indicated the variety of sources for such illegal incomes. We have also indicated that a large part of such illegal incomes is attributable to the plethora of controls on economic activity which spawn all kinds of (mainly illegal) premia on scarce goods, services and factors of production.

As the Indian economy has grown in size and complexity, the *economic* rationale for detailed regulation of economic activity has diminished. For example, a growing body of analysis has favoured extensive deregulation of controls on foreign trade and industrial activity.<sup>3</sup> In a nutshell, these analysts have argued that costs of regulation, in terms of misallocated resources and lost opportunities for growth, have far outweighed their alleged benefits. Similar sentiments have been voiced by official reports such as those of the Dagli Committee (Government of India, Ministry of Commerce, 1978).

We believe that the economic case for substantial deregulation is strong. It grows even stronger when we recognise the importance of controls in spawning illegal source black incomes. The cement industry is a case in point. Up until 1982, price controls on cement had stifled production, depressed declared company profits and spawned massive illegal premia in black market operations. The shift to partial decontrol in 1982 appears to have been thrice-blessed by subsequent increases in cement production and taxable profits, and declines in black market incomes from cement allocation. There is little reason to believe that similar rewards cannot be reaped in respect of most other economic controls.

Greater reliance on the price mechanism should not only improve the economic efficiency of resource allocation but also diminish the opportunities for reaping illegal black incomes. While the desired direction of policy change seems clear enough, specific policies can only be suggested after more detailed investigations (which are quite outside the scope of this report). However, we would recommend that priority should be given to the following measures of decontrol in the context of reducing the generation of black income:

- (i) Shifting from quantitative import controls and a system of import licences to regulation through tariffs. This is important because as we have seen a substantial amount of black money is being generated through the sale of import licences; besides, often those who produce output on the basis of inputs obtained through other peoples' import licences are not likely to report all of the output and hence, there is likely to be consequential downstream generation of black income.
- (ii) Simplifying and rationalising the procedures for capital goods clearance. Here again, shifting from physical goods controls to tariff controls should be the guiding principle, but for some years to come, capital goods clearance in some areas might be a necessity. In such cases, the procedures should be so modified and simplified that bribery and corruption would be minimised.

- (iii) Removal of price control wherever possible and the introduction of the dual price system where price control cannot be done away with.
- (iv) Easing controls on foreign exchange receipts and payments. While it may not be possible to do away with exchange control until our industries and exports become competitive and we would have attained balance of payments equilibrium without physical controls, it may be necessary to continue with exchange control in some form or the other. Nevertheless, suitable adjustments in the value of the rupee and easing of exchange control could help in cutting down black money generation.
- (v) Relaxing rent control laws. As is well known, keeping down controlled rents far below markets rents indefinitely leads to under-hand payments of rent and of pugris. Since out-of-account payments of rents are not disclosed to the tax authorities, there is corresponding loss of revenue under the property tax and income tax. What is needed is a gradual upward adjustment of controlled rent without undermining the security of tenure provided to tenants.

We must hasten to add that it is not possible to remove all controls in the name of reducing the generation of black income. As we have indicated earlier, not all economic controls lack rationality. Furthermore, there are many non-economic laws and regulations which are necessary for the orderly functioning of society. If corrupt police officials extort money from traders and transporters in their jurisdiction and this leads to the "marketing" of police postings, we can hardly applaud this encroachment of market forces on the administration of law and order! The appropriate response here must be to root out the corruption and restore integrity to the administration. In a civilised society some things should *not* be for sale. The administration of laws and regulations should, ideally, be immune from money power. But, equally, there has to be restraint in the promulgation of rules, both in regard to their number and their scope.

c. *Financing of election expenses.* Even if economic policies, such as tax and industrial import policies, are changed to scale down the generation of black income, so long as there is a persistent demand for the clandestine receipt of unaccounted money on the part of the politicians, some of whom may be already in authority and others who are likely to assume leadership, businesses would have the need and the temptation to spawn black income. Of course, to the extent that permits and controls are done away with, there would be less need for businessmen to depend upon politicians. However, in a modern economy, government has of necessity to play an active role in ensuring the growth of the economy and the maintenance of stability and there are many ways in which it is to intervene for these purposes. As it is found that politicians have to depend to a considerable extent on funds to be supplied by businesses for defraying election expenses, one of the important measures to be undertaken to remove one major source of demand for black money would be to permit companies and businesses to make donations to recognised political parties out of after-tax profits. This should be supplemented by State funding of election expenses at least in respect of Lok Sabha and State Assembly elections. The mechanics of the scheme could take a variety of forms, including for example, linking government contributions (to recognised parties) to past and present election results according to some sort of weighing formula. Some means will also have to be devised for recompensing independent candidates. Whatever the precise mechanics of the schemes, the basic objective should be clear: to substantially relieve candidates for electoral office from the virtual necessity of using funds which are 'contributed' from black incomes. Rough calculations show that an amount of Rs 500 crore should be sufficient to meet the genuine needs of the candidates seeking election to the Lok Sabha and the State Assemblies (assuming an average of four contenders per seat from recognised political parties, and a grant of Rs 2 lakh per State Assembly candidate and Rs 5 lakh per Lok Sabha candidate).

Of course, given our system of competitive politics and the fact that many unsocial elements have entered the fray on the

basis of ill-gotten wealth, it would be naive to expect that State funding can wholly substitute for the current system of (largely) illicit fund raising. We have suggested in addition that companies should be permitted to make donations to political parties. Even then as long as money matters in elections, it is likely that more of it will be sought. Besides, money is required not only for elections but also for various inter-election political activities which are not always above board. And, finally we cannot forget the motive of personal enrichment in the minds of several politicians. Only a strong public opinion can prevent such people as well as those associated with illegal activities like smuggling and bootlegging from succeeding in politics. Nevertheless, the availability of a "floor level" of State funding should blunt the *necessity* for some of the present practices and greatly enhance the option of honesty in politics because many honest people who are not rich would find it easier to fight elections. Where the political leadership is seriously committed to clean practices, State funding of elections will strengthen their hands.

d. *Policies designed to promote integrity among senior officials.* These policies fall in the field of public administration in which the authors of this report do not have an expertise. We are not, therefore, attempting to spell out in detail policies needed to achieve the objective specified above. We would content ourselves with merely stating that two major requirements for promoting high standards of honesty among senior officials are: a system of rewards and punishments—rewards for the hard-working and the honest officials and harsh punishments for those who are negligent of duty or dishonest; and significantly higher levels of remuneration than existing at present. Relatively low and stagnant levels of remuneration in the context of inflation put severe temptations in the minds of officials whose power could be exercised to harm and harass citizens on the one hand or to enrich them on the other. We recognise that raising of the salaries of senior officials is not an easy proposition because extreme disparities in the levels of remuneration between junior and senior officials cannot be maintained and raising of the salaries of the junior

officials would be extremely costly because of the large numbers involved. At least, as far as Tax Department is concerned, if over a time the numbers could be reduced, the average level of salaries could be increased and this is an important goal towards which the Government should work.

*e. Measures to bring down the amount of black wealth currently held.* Once the required changes in tax and other economic policies have been brought about to scale down the amount of black income generation and once the government is in a position to argue that it is no longer necessary for an individual who is enriching himself through honest means to evade or avoid taxes (because the moderate rates of tax would leave a substantial proportion of income and wealth in the hands of the taxpayers), certain measures could be initiated to induce the conversion of black wealth into white money, i.e., to ease the entrance of accumulated black money into the legitimate economy. To achieve this purpose, a two-pronged approach is needed. First, the government should devise a scheme or some schemes to induce the black wealth-holders to bring the wealth out in the open. Such a scheme would have to give immunity to those who do so but some condition could be imposed to ensure that they would make at least some contribution to society. The scheme so devised should not also create moral repugnance in the minds of honest citizens. The Bearer Bond Scheme, to which a reference was made earlier, fulfils the first two requirements we have indicated, but as the Bearer Bond is freely traded among those having and needing black money and begins to enjoy a premium, the honest citizens get the feeling that the tax-evaders are openly flaunting their immunity and wealth in front of society.

We may mention two possible schemes which would not suffer from the defects which disqualify the Bearer Bond Scheme.

i. It is possible that society may not seriously object if black money is obtained by Government, while giving immunity to those who are giving it, for achieving a noble social objective. The clearance of slums is one such goal which should be considered most desirable and urgent by all sections

of our society. Indeed, the slums in the major metropolitan cities of our country are a blot on our society and speedy remedial action is called for. In view of the overall shortage of resources, it would be morally defensible to try to divert part of the large volume of black money which exists today for the amelioration of the conditions of our fellow citizens living in these slums. Towards this end, it is suggested that a National Fund for the elimination of slums be constituted. The Fund may be started with a seed capital of Rs 100 crore or so from the Central and State Budgets. The Central government may then float debentures having a maturity period of 7 to 10 years and bearing an interest rate of 8 per cent. Individuals, associations of persons and non-profit institutions would all be invited to subscribe to these debentures and no questions would be asked by the Income Tax Department as to the source of funds. But the interest on the debentures may be subject to income tax as any other legitimate source of income and the value of the debentures would be subject to wealth tax. The debentures may be exempted from gift tax.

It has been suggested by some that these debentures should be bearer debentures. Since the debentures and the income from them would be subject to tax, not much advantage could be secured by the holders if they are made bearer debentures. If they are declared free from taxation and the accumulated interest is paid at the end of the maturity period, then they would become like bearer bonds which we have ruled out.

(ii) A second possibility is to try to induce wealth in particular forms held as black wealth to be brought into the open through granting immunity from prosecution. Under this scheme, black wealth in the form of real estate, bank and company deposits, debentures and ordinary shares of Indian companies could be declared by the holders to the income tax authorities who would require them to pay income tax at the rate of 50 per cent on the estimated income from these assets during the previous financial year and wealth so declared would become liable to wealth tax (if the individual's total wealth exceeds the exemption level) from the year of declaration. In order to be eligible for this concession, the

black wealth-holder would have to show that he held the declared wealth as on 31st March of the previous year. The scheme would be announced, say, in the month of July or so of a given financial year and black wealth-holders would be given approximately six months in which to make the disclosures. It is implied in the scheme that only those who had, so to speak, productively employed the black wealth would be eligible for the concession.

Simultaneously with the announcement of one or both of these schemes or some other scheme which the government may devise, it should be made clear to those liable to taxation that having brought down the tax rates to reasonable levels and having given an opportunity to those who have erred in the past to disclose their black wealth and to return to the straight path, Government would strongly come down on tax-evaders in the future. In order to make people believe that the Government means serious business and that they would ignore the Government's warning at their own peril, it is necessary that the enforcement machinery and the penal provisions should be suitably strengthened.

f. *Policies relating to better enforcement of taxes and punishment of economic offenders.* We have argued earlier that the first pre-condition for bringing down the generation of black income to manageable proportions is to reduce the rates of direct and indirect taxes to reasonable levels. The major taxes whose rates are quite high in India and which should be reduced are:

The corporate income tax (including the surcharge and surtax), the personal income tax (including the surcharge), the wealth tax, the estate duty, the gift tax, stamp duties on real estate transactions, the excises and sales taxes on a number of commodities and customs duties on goods that are easy to be smuggled.

Simultaneously with the reduction in the rates of the above-mentioned taxes, steps must be initiated to bring about substantial improvements in tax administration and to tighten and strengthen the provisions relating to punishment of tax-evaders.



It is not generally known that tax administration is perhaps the most neglected and archaic branches of public administration in India. The winds of modern methods of scientific management have not yet touched it. While, in general, the level of qualification and training of the Central government revenue staff (as far as the officers are concerned) can be said to be up to the mark, the calibre and training of the average run of officials in the tax departments of the States and local authorities are much below par if one keeps in view the requirements of a modern system of tax administration which has to be efficient, effective and acceptable, if not actively helpful, to the public. The training given to tax officials even at the Central level is far from adequate. They are rarely taught economics or methods of management. A long-term programme of improving the standards of knowledge and training of tax officials should be launched forthwith. The status of tax officials particularly at the State and local levels will have to be raised considerably. Tax administration could be made far more efficient with the aid of modern computers and along with it, there should be a change from a system of universal checking. Another major change to be brought about is to make the system more officer-based than clerk-based, which should be possible once computer technology is inducted into tax administration.

While several departments of Government at the Central and State levels have grown faster than is warranted by the need to provide adequate public services, there have not been adequate increases, generally speaking, in the staff strengths of the tax departments. We feel that it is necessary and would be profitable, both in revenue terms and in terms of checking evasion, to sanction sufficient increase in the strength of the staff administering the major taxes so that research, survey, intelligence and enforcement activities could be undertaken on a more comprehensive scale. It could be objected that sizeable increases in the staff of the tax departments could not be brought about merely in the hope that the cost of such increases would be more than offset by the increase in revenue collections, particularly under the present conditions of financial stringency. We would suggest that the increase

in staff should be sanctioned on a pilot basis in selected areas and results of the experiments should be watched before extending the new pattern of staffing o the entire country/ State.

Finally, we come to strict enforcement of taxes and punishment of tax-evaders. All the measures that we have indicated above for curbing the scale of black income generation would have to be backed up by swift and effective punishment of tax-evaders. The improvement in the quality and status of tax officials, the increase in their number and the change in the composition of the staff (with a larger component of officers) which we have recommended are pre-requisites for better enforcement of taxes. Additionally, as we have suggested above, instead of the present ineffectual practice of trying to "scrutinise" a very large number of returns, the emphasis in assessments should shift towards effective scrutiny of a selected sample of returns, the selection being made on a scientific basis by the computer which would have a master file of all assessees. This principle would apply to all taxes based on assessments.

It is beyond the scope of this report to make detailed recommendations regarding the manner in which the enforcement of each of the major taxes levied in the country should be improved. In what follows, we shall confine ourselves to make a few suggestions in regard to the enforcement of the income tax. The present system of door-to-door surveys should be strengthened by giving it statutory backing. Second, search and seizure operations should be launched with greater discrimination. But when they are undertaken, administrative steps should be taken to ensure that the seized material is examined promptly, assessments completed swiftly and penalties levied and prosecution launched, where appropriate, without the kind of delay that is now commonplace. Furthermore, legislative amendments should be enacted to limit the jurisdiction of the Settlement Commission in all cases (especially search and seizure cases), where the Income Tax Department believes it is likely to establish concealment.

Fifth, Chapter XXA of the Income-tax Act should be suitably amended to reduce the present vulnerability fo

acquisition notices issued under Section 269 D (1) to judicial interpretations of Section 269 C (1). One possible line of legislative amendment is to provide that the proceedings under this Chapter will be deemed to have commenced as soon as the officer registering the document forwards to the Competent Authority the relevant statement mentioned in Section 269 P (2).

These measures should significantly enhance the likelihood of *prima facie* detection of evasion of legal source incomes. But, as we saw in Chapter 10, this will not be enough. Measures have also to be undertaken to improve the probability that penalties are sustained in appeal and prosecutions lead to conviction. The key weakness here is the shifting of onus on the Department, not only to prove default or the offence, but also to establish *mens rea* on the part of the assessee. To get over this difficulty, the doctrine of *mens rea* has either to be eliminated or substantially diluted in cases of tax evasion. One possibility is to accept the Law Commission's recommendation (advanced in its 47th report and already incorporated into several statutes dealing with economic offences) to amend the law so as to shift the initial burden on to the accused by requiring the prosecution to prove only that the accused committed the *actus reus* of the particular offence and leaving it to the accused to prove that he committed the *actus reus* innocently.

To make prosecution an effective deterrent and to reduce risks of manipulation by the accused, trials of evasion cases have to be speedy and, in guilty cases, the award of punishment effective. We showed in Chapter 10 how present procedures militate against these objectives. A possible remedy is to establish Special Courts for tax offenders, along with special rules of procedures and evidence, which would reduce delays and require the accused to make a statement of his defence as soon as the charge has been framed and copies of the prosecution's documentary evidence have been furnished. A possible model along these lines is the West Bengal Special Courts Act, 1950, which was commended by the Law Commission for trial of economic offences.

Special courts, special procedures and special rules of evidence may all be necessary, but they cannot substitute for effective prosecution of evasion cases by the Income Tax Department. To reduce the incidence of administrative lapses, noted in Chapter 10, it is necessary for the Department to make use of better legal expertise at every level. Furthermore, in selecting cases for prosecution, the Department should be motivated less by the number of prosecutions launched and more by the number of convictions obtained for *serious* tax evasion. Prosecutions of minor cases should be eschewed.

Finally, effective administration of tax codes requires integrity and probity among revenue officials at all levels. To the extent this is lacking, there is no shortcut to the long haul of restoring these necessary virtues through exemplary leadership and disciplinary actions against errant revenue officials. Much will depend on the integrity of the political leadership, including its willingness to abstain from using the fiscal administration for narrow political ends.

### Notes

1. The argument is that those with hoards of unaccounted cash in high value notes are unable to convert their holdings for fear of fiscal retribution.
2. See the *17th and 76th Reports* (PAC) of the Fourth Lok Sabha and the *23rd Report* of the Sixth Lok Sabha.
3. See, for example, Bhagwati and Desai (1969), Bhagwati and Srinivasan (1975), Jha (1980), Chelliah (1983) and Acharya (1984a).

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## **APPENDICES**

## APPENDIX 1

### Background Material for a Fiscal Approach to Estimating Black Income in India

This appendix, comprising 10 sections, provides details of estimation procedures adopted for gauging the scale of black income in India, for the two years 1975-76 and 1980-81. It thus substantiates the analysis contained in Chapter 5. The section scheme is as follows:

Section 1 briefly describes the basic NCAER data used in our exercise.

Section 2 presents the procedures to derive the urban and rural frequency distributions by income ranges for earners.

Section 3 details population adjustments made to the NCAER estimates of urban and rural earners and their gross income.

Section 4 presents the statistical procedure adopted to fit the two-parameter lognormal function to frequency data of earners.

Section 5 records the results of lognormal fits and the modifications in the estimated lognormal parameters which are required to derive the scaled-up distributions of gross personal income for urban and rural India, separately.

Section 6 gives the procedure for converting the NCAER based component level income distributions for households into equivalent distributions for earners.

Section 7 presents details of the method for deriving the income distributions for selected components of income,



which are consistent with the total of scaled-up gross personal income.

Section 8 describes the estimation procedures of various tax exclusions, exemptions and deductions that have been attempted in our study.

Section 9 outlines the procedural details of estimating the income below exemption limit and, finally,

Section 10 provides the computational details of blow-up factors required to adjust for undercoverage in the information published by the AIITS on incomes assessed to tax for different categories of non-corporate assesseees.

## SECTION 1

### The Basic NCAER Survey Data

Tables A.1.1 and A.1.2 show the survey-based data on gross household income distribution and the frequency distribution of reporting households by income ranges of households respectively for *urban* India for the year 1975-76. Tables A.1.3 and A.1.4 put together similar distributions for *rural* India for the same year. These data are taken from the computer printout made available to us by the National Council of Applied Economic Research (NCAER). They, however, do not appear in their published report (NCAER, 1980). The salient features of these data are summarised as follows:

- a. The income ranges of the distributions refer to the annual income per household.
- b. For a given income range, the incomes earned from different sources by the households are given in columns (2) to (11), while their gross income is shown in column (12) of Tables A.1.1. (for urban India) and A.1.3 (for rural India). It should be mentioned that columns (2) to (11) add up to yield column (12).
- c. The frequencies of reporting households given under different source components of income, in different columns of Tables A.1.2 (for urban India) and A.1.4 (for rural India) are not column-wise additive because a given household may earn income from more than

one source component and so may appear in more than one column.

- d. These tables are classified by households of varying earner-density, i.e., by households having 'one earner', 'two earners', 'three earners', 'four earners' and 'more than four earners'.

The subtotals for different income ranges of the two distributions for urban India (Tables A.1.1 and A.1.2) are culled out and presented as a summary version in Tables 5.3.1 and 5.3.2 of the text.

For the estimation of taxable income, our starting point is to estimate how the gross (personal) household income is distributed among earners rather than households. In other words, we need a frequency distribution arranged according to income ranges of earners for urban and rural India, separately. It is to this problem that we now pass on in the next section.

## SECTION 2

### Conversion Procedure for Deriving Frequency Distribution of Earners

In Chapter 5 of the text, we gave the rationale and need for converting the NCAER household frequency distribution into the corresponding earnerwise frequency distributions by earner's income ranges. The conversion procedure was illustrated with the case of 'two-earner' urban households (see Table 5.3.5 in the text) from which a frequency distribution of earners combined for the 'one-earner' and 'two-earner' urban households was obtained. The same procedure needs to be applied repeatedly to the cases of 'three earner', 'four earner' and 'more than four-earner' urban households so as to finally derive an aggregated frequency distribution by (earner's income ranges) that corresponds to all earners in urban India. A similar procedure may be followed to obtain an aggregated frequency distribution of earners relating to rural India. This section presents these details.

We begin with the first stage of aggregation for urban India (already obtained and shown in Table 5.3.5). It refers to the earnerwise frequency distribution obtained from 'one-earner' and 'two-earner' urban households. The same procedure may now be applied to the 'three-earner' urban households. Table A.1.5 contains the details relating to the aggregation of earners derived from the 'three-earner' urban households. In this table, column (2) presents the NCAER distribution of gross personal income for 'three-earner' urban households and column (3) gives the distribution of earners

in the 'three-earner' urban households. For each (household) income range, the average per-earner income is computed and recorded in column (4). We now assume that the *average* per-earner income is also the *actual* income for all earners in the relevant (household) income range. This assumption allows us to allocate all earners in the 'three-earner' households to appropriate income ranges (for earners) on the basis of the data in columns (3) and (4). Thus, the 0.24 million earners corresponding to the household income range Rs 1201-2400 are all assumed to earn Rs 643 each. Similarly, the 0.48 million earners in the next household income range are assumed to earn Rs 954 each. Hence, the sum of these two elements of column (3) gives the total number of earners (from 'three-earner' urban households) whose per-earner income falls in the range of Rs 0-1200. This total, of 0.72 million, is recorded as the first entry in column (6). Proceeding in this manner, all of column (6) is formed, which gives a derived frequency distribution of earners relating to three-earner urban households. By addition with the frequency distribution obtained earlier for 'one-earner' and 'two-earner' urban households, as in column (5), column (7) contains a derived frequency distribution of earners relating to the urban households of *at most* three-earner density arranged according to the income ranges for *earners*.

Tables A.1.6 and A.1.7 show analogous details pertaining to 'four-earner' and 'more than four-earner' urban households, respectively. The process of "conversion" and aggregation ultimately ends with column (7) of Table A.1.7 which yields a derived frequency distribution of all earners in urban India for 1975-76. Similarly, by a repeated application of the conversion procedure to rural households of varying earner-density, we obtain corresponding derived frequency distributions of earners, classified by income ranges for earners for rural India. Tables A.1.8 through A.1.11 present the details relating to rural India for 1975-76.

Lognormal function has to be 'fitted' to the frequency distributions of urban and rural earners derived above. The details of fitting the lognormal function and the results of this exercise are given in subsequent sections.

### SECTION 3

## Population Adjustments and Changes in the NCAER Estimates for 1975-76

The population figures used in the NCAER survey for the year 1975-76 are based on an extrapolation of the 1971 population census results. With the availability of more recent information from the 1981 population census, the sampling fractions of the survey estimates need to be adjusted. Therefore, the total number of earners and gross household (personal) income (for urban and rural India, separately) should also be adjusted for our purposes. This section brings together all such adjustments and presents the "revised" NCAER estimates.

First, a Population Adjustment Factor for 1975-76 is defined as a ratio of the Population (New) for 1975-76 to the population (NCAER) for the same year. The numerator of this ratio can be obtained, as shown below, on the basis of the census information, while the denominator is based on the survey information.

1. All-India population totals:
  - (a) As on April 1, 1971 = 548.16 million
  - (b) As on March 1, 1981  
(from the 1981 census) = 685.18 million
2. All-India population (New)  
as on April 1, 1976  
(interpolated from above data) = 616.68 million

3. All-India population (old)  
as on April 1, 1976  
(from the NCAER survey) = 588.90 million
4. Population Adjustment  
Factor (PAF)  $\frac{616.68}{588.90}$  million  
= 1.047

Now, applying the PAF to the NCAER estimates of the total (All-India) number of earners as well as gross (personal) household income for 1975-76, we obtain the population-adjusted estimates. The calculations are as follows:

Total number of earners in 1975-76 (NCAER)	= 177.26 million
Total number of earners (revised in 1975-76)	= $177.26 \times 1.047$ = 185.59 million
Gross household (personal) income in 1975-76 (NCAER)	= Rs 45151 crore
Gross household (personal income in 1975-76 (revised)	= $45151 \times 1.047$ = Rs 47281 crore

The revised urban and rural sub-totals are obtained by partitioning the revised all-India totals in the same proportions as reported in the NCAER survey. These details are as follows.

Proportion of urban earners in the all-India total (NCAER)	= $\frac{30.35}{177.26}$
Number of earners (Revised)	= $\frac{30.35}{177.26} \times 185.59$ = 31.78 million
Proportion of rural earners in the all-India total (NCAER)	= $\frac{146.91}{177.26}$
Number of rural earners (Revised)	= $\frac{146.91}{177.26} \times 185.59$ = 153.81 million

Proportion of urban gross personal

$$\text{Income in the all-India total (NCAER)} = \frac{14984}{45151}$$

Amount of urban gross personal

$$\begin{aligned} \text{income (revised)} &= \frac{14984}{45151} \times 47281 \\ &= \text{Rs } 15691 \text{ crore} \end{aligned}$$

Proportion of rural gross personal

$$\text{income in the all-India total (NCAER)} = \frac{30167}{45151}$$

Amount of rural gross personal income

$$\begin{aligned} &= \frac{30167}{45151} \times 47281 \\ &= \text{Rs } 31590 \text{ crore} \end{aligned}$$

(revised)



## SECTION 4

### Fitting a Two-Parameter Lognormal Function

*Definition:* A Lognormal distribution may be defined as follows: (see Croxten *et. al.*, 1975, p. 528)

If  $x$  be a positive variate ( $0 < x < \infty$ ) such that  $z = \log_e x$  is normally distributed with mean  $\mu$  and variance  $\sigma^2$ , then we say that  $x$  is lognormally distributed. The probability density function of  $x$  is given by

$$\text{p.d.f. (x)} = \frac{1}{x \sigma \sqrt{2\pi}} \exp \left[ \frac{-1}{2\sigma^2} (\log x - \mu)^2 \right] \cdot dx$$

for  $0 < x < \infty$

and  $\text{p.d.f. (x)} = 0$  for  $x < 0$

The above function describes a lognormal curve. The mean  $\alpha$  and variance  $\beta^2$  of the lognormal distribution are given by

$$\alpha = \exp \left( \mu + \frac{1}{2} \sigma^2 \right)$$
$$\beta^2 = \alpha^2 [\exp (\sigma^2) - 1]$$

Notice that by definition and from the above expressions, the two parameters  $\mu$  and  $\sigma$  characterise the lognormal distribution completely. The logarithmic transformation of  $x$  ( $z = \log_e x$ ) allows us to make use of the standard normal distribution properties for practical purposes of fitting the lognormal curve to any frequency data. The principal steps of fitting the lognormal function are as follows:

- i. The income ranges of the frequency distribution are first transformed into logarithmic form. If  $(x_{i-1}, x_i)$  be the  $i$ th income range, it is transformed into  $(y_{i-1}, y_i)$  where  $y_i = \log_e x_i$ .

- ii. The sample mean and the sample variance of the distribution are computed by using the following formulae:

$$\text{The sample mean, } \bar{y} = \frac{1}{N} \sum_{i=1}^n \frac{1}{2} (y_i + y_{i-1}) x f_i$$

where  $f_i$  is the observed earner frequency of the  $i$ th income range and  $N$ , the total frequency of earners.

$$\text{The sample variance, } S^2 = \frac{1}{N-1} \sum_{i=1}^n f_i$$

$$.\left[\frac{1}{2} (y_i + y_{i-1}) - \bar{y}\right]^2$$

- iii. Standard normal variates are calculated for the appropriate limit of each income range of the distribution. The lower limits are considered for the income ranges which lie below the sample mean ( $\bar{y}$ ) while upper limits are chosen for the income ranges above the sample mean. The standard normal variate ( $z_i$ ) in each case is given by the formulae

$$z_i = \frac{y_i - \bar{y}}{s} \quad \text{for } i = 1, 2, \dots, n$$

- iv. The areas under the normal curve are readily available for different values of  $z_i$  from the standard normal distribution tables. As the total area under the curve is normalised to unity (total probability being one) the specific areas read off from the statistical table against a given value of  $z_i$  give the corresponding proportionate frequency of earners. Using the total frequency of earners,  $N$ , we compute the expected frequencies, say,  $E_i$  for different income ranges.
- v. The test of 'goodness of fit' is then conducted according to the chi-square ( $\chi^2$ ) test-statistic at  $(n-3)$  degree of freedom. The  $\chi^2$  statistic is given by the formula

$$\chi^2 = \sum_{i=1}^n \frac{(E_i - F_i)^2}{E_i}$$

where  $F_i$  is the observed frequency of the  $i^{\text{th}}$  income range. The expected frequency of the last ( $n$ )th income range ( $E_n$ ) is adjusted such that sum of the expected frequencies is equal to  $N$ , i.e.,

$$E_n = N - \sum_{i=1}^{n-1} E_i$$

Notice that in computing the  $\chi^2$  - statistic, it is necessary to use the estimated values of  $\bar{y}$  and  $\sigma$  as well as  $N$ . Thus, the degrees of freedom are reduced from  $n$  to  $n-3$  (see Fisher and Yates, 1975).

- vi. The hypothesis that the original data come from a population of lognormal distribution can be examined by comparing the computed value of the chi-square test statistic with the table value obtainable from the chi-square distribution tables. The fit is said to be satisfactory if the computed chi-squared value is lower than the corresponding table value for a given level of significance at  $(n-3)$  degrees of freedom.

#### *Point Estimation of $\mu$ and $\sigma^2$*

When an earnerwise frequency distribution closely resembles the lognormal pattern as evidenced by the test of hypothesis, the underlying values of the sample mean ( $\bar{y}$ ) and sample variance ( $s^2$ ) are taken as the point estimates of  $\mu$  and  $\sigma^2$  respectively.

Statistical theory suggests that the sample mean and the sample variance thus obtained are the minimum variance unbiased estimators of the lognormal distribution (for more details, see Aitchison and Brown, 1976, p. 39 and Olkin, *et. al.*, 1980, pp. 289-302).

#### *Interpretation of $\mu$ and $\sigma^2$*

$\mu$  is termed as the location parameter which has no special interpretation other than that it is the logarithm of the geometric mean income of the lognormal distribution.

$$\begin{aligned} \text{i.e. } \mu &= \ln (x_1 \cdot x_2 \dots x_N)^{1/N} && \text{or} \\ &= \frac{\sum_{i=1}^N \log_e X_i}{N} \end{aligned}$$

However,  $\sigma$ , the distribution parameter, has a special meaning in the sense that it can be interpreted as an indirect measure of concentration of incomes. In a two-parametric lognormal world, concentration of incomes is gauged by the Lorenz measure (L) or the Gini Coefficient of the mean-difference (G).

L and G are given by the following relationships:

$$L = 2N \left( \frac{\sigma}{\sqrt{2}} \mid 0, 1 \right) - 1; \quad G = 2L \alpha$$

where  $\alpha$  is the arithmetic mean income of the lognormal distribution.

$$\text{i.e., } \alpha = \frac{\sum_{i=1}^N X_i}{N}$$

Notice that  $\sigma$  is monotonically related to L, which implies that the concentration of incomes will increase as  $\sigma$  increases.

## SECTION 5

### Result of Lognormal Fits and Modifications

This section presents the results of the lognormal fits and the parametric values relating to the NCAER-based frequency distributions of earners for urban and rural India. Subsequently, we shall present the procedure to modify the lognormal parametric values which will be used to derive the urban and rural income distributions consistent with our scaled-up gross personal income (to match with the NAS total).

#### *Results of Lognormal Fits*

Column (7) of Table 5.3.5 of the text and of Tables A.1.5 through A.1.7 of this Appendix gives the frequency data of urban earners by income ranges (for earners) derived from urban households of varying earner-density. Similarly, column (7) of Tables A.1.8 through A.1.11 contains the frequency data of rural earners derived from rural households of varying earner-density. We fitted lognormal function to each of the earnerwise frequency distributions and examined the 'goodness of fit' using the chi-square ( $\chi^2$ ) statistic. The fits have been found to be good in all the five urban cases. (See Table A.1.12 for results). However, for rural India, it showed a satisfactory fit only in the case of frequency distribution of earners derived from 'one-earner' rural households, while for the remaining cases, the value of chi-square statistic, being very high, is not found to be statistically significant at an acceptable level of confidence.

We are interested in the estimates of related parametric values of  $\mu$  and  $\sigma$ , provided the underlying lognormal fits are satisfactory. For urban India, the selected values of  $\mu$  and  $\sigma$  are 1.266 and 0.859 respectively, which refer to the frequency data of earners derived from urban households of 'all earner-density'. For rural India, however, we decided to choose the values of  $\mu$  and  $\sigma$  to be 0.936 and 0.768 respectively. These refer to the earnerwise frequency distribution derived from rural households of one-earner density.

It may be worthwhile to note that the pair of these parametric values reflects the distribution characteristics of the urban and rural earners that are based on the NCAER survey information. As noted earlier, the parameter  $\sigma$  represents the concentration of incomes, while  $\mu$  stands for the location or the logarithm of the geometric mean of the income distribution, associated with the earners data.

Since the survey data of earners and the gross income have been adjusted upwards for population changes in 1975-76 and also because the gross income has been scaled up further to match with the NAS controlling total, the parametric values of  $\mu$  and  $\sigma$  need to be modified appropriately. We now turn to this problem.

#### *Modification in the Lognormal Parameters for Scaled-up Gross Income Distributions*

We start with the details of scaling up of population-adjusted NCAER estimates of gross income (the adjusted figures of urban, rural and all-India totals are given in Section 3 of this Appendix). We note that the NCAER (population adjusted) estimate of the gross personal income for 1975-76 was Rs 47281 crore while the NAS total for the same year was Rs 64502 crore, which give rise to a difference of Rs 17221 crore. This difference is attributed to underreporting by the urban and rural households. Under three alternative assumptions of underreporting, we allocated this 'missing income' (the difference of Rs 17221 crore) between the urban and rural sectors. These allocations correspond to three scenarios of our scaling-up procedure which are given below:

The first scenario refers to the allocation of the 'missing income' to urban India in the ratio of 1/3 (or U:R = 1:2), the second scenario to the ratio of 1/2.5 (U:R = 1:1.5) and the third to the ratio of  $\frac{1}{2}$  (U:R = 1:1). Accordingly, we computed the scaled-up gross personal income for urban India and rural India under the three scenarios. The results are recorded in Table A.1.13, in which the figures of the population-adjusted urban and rural earners are also shown. They are used to compute the respective mean incomes (gross income per earner) as shown in the same table. Now, we proceed to obtain the modified values of  $\mu$  and  $\sigma$  that are consistent with the scaled-up urban and rural gross incomes under different scenarios.

At the outset, we assume that the part of missing income to be allocated within urban (or rural) India, among the urban (or rural) earners, is such that the concentration of urban (or rural) incomes remains invariant with respect to different scenarios. This means, we keep the value of  $\sigma$  parameter constant for different scenarios of the corresponding urban (or rural) distributions. The value of  $\mu$  is, however, modified and made constant with the scaled-up gross personal income. This can be accomplished by using the following lognormal relationship between  $\mu$ ,  $\sigma$  and  $\alpha$ .

$$\mu = \ln \alpha - \frac{1}{2} \sigma^2$$

Given a value of  $\alpha$  which changes from scenario to scenario and a value of  $\sigma$  which is a constant for different scenarios of urban (or rural) distribution, we can easily compute the corresponding value of  $\mu$  for each scenario. Table A.1.13 provides the modified parametric values of  $\mu$  together with the retained values of  $\sigma$  and N, under different scenarios of the urban and rural cases for 1975-76.

For the year 1980-81, however, no survey-based estimates of gross income or the number of earners exist similar to the NCAER estimates for 1975-76. Thus, we are required to obtain our information from other sources. Our main purpose is to construct the related parametric values of  $\mu$ ,  $\sigma$  and N for 1980-81 so as to use them for deriving the corresponding gross income distributions. For doing this, we proceed as follows.

First, we compute the number of urban and rural earners in 1980-81 on the basis of the 1981 census results. We assume that the ratio of earners to population is the same (for urban and rural India, separately) as it was in 1975-76.

The details of this computation are given below.

Proportion of urban earners in Urban population in 1975-76	=	$\frac{31.785}{128.68}$	(based on NCAER figures adjusted for population)
Urban population as on April 1, 1981	=	159.73	million
Estimated number of urban earners in 1980-81	=	$\frac{31.785}{128.68} \times 159.73$	
	=	39.45	million
Proportion of rural earners in rural population in 1975-76	=	$\frac{153.84}{488.00}$	(based on NCAER figures adjusted for population).
Rural population as on April 1, 1981	=	526.45	million
Estimated number of rural earners in 1980-81	=	$\frac{153.84}{488.00} \times 526.46$	
	=	165.65	million

As for gross personal income for 1980-81, we begin with the all-India figure taken directly from the official NAS (Rs 1,11,529 crore, see Table 5.2.1). However, we need to find a plausible method for partitioning this total income into urban and rural sub-totals. This is done as follows.

The method of partitioning assumes that the urban-to-rural ratio of per-earner gross income remains the same as in 1975-76. This ratio varies across our three basic scenarios. Thus, it would provide us three alternative ways of partitioning the total gross personal income for 1980-81 into urban and rural sub-totals, which correspond to our three scenarios of 1975-76.

Under the above assumption, the method of partitioning involves two equations in two unknowns (the urban and rural sub-totals of gross personal income for 1980-81) which are set up as follows.



Let UY = gross personal income for urban India in 1980-81,  
 RY = gross personal income for rural India in 1980-81,  
 UN = number of urban earners in 1980-81 and  
 RN = number of rural earners in 1980-81.

Then our first equation is

$$\frac{UY/UN}{RY/RN} = \frac{\text{Per earner urban gross income}}{\text{Per earner rural gross income}} \dots\dots (2)$$

2.41 for the first scenario<sup>1</sup>  
 = 2.60 for the second scenario  
 2.93 for the third scenario

The second equation is the same for all three scenarios. It is given by  $UY + RY = \text{Rs } 1,11,529$  crore. Further,  $UN = 39.449$  million and  $RN = 165.655$  million for the year 1980-81. Using this information we evaluated UY and RY under different scenarios. The results are shown in Table A. 1.14.

For deriving the gross income distributions for 1980-81, we assume that for each scenario the concentration of incomes remains unchanged between 1975-76 and 1980-81. It means that the values of  $\sigma$  parameter (for urban and rural India, separately) estimated for 1975-76 also apply to corresponding distributions of 1980-81. The location parameter,  $\mu$  may, however, be changed because the mean earner incomes ( $\alpha$ ) would be different in 1980-81. The computational details are shown in Table A.1.14. Thus, we now have the parametric values of  $\mu$  and  $\sigma$  for 1975-76 and 1980-81.

Employing these parametric values, we estimated the frequency distribution of earners by narrow income ranges, adopting the procedure mentioned in steps (i) and (iii) of the method given in Section 4 of this Appendix.<sup>2</sup> Then, for each narrow income range, gross income was derived by multiplying the estimated frequency of earners with the corresponding mid-point of the narrow income range. The resultant amounts of gross incomes were aggregated over the narrow income ranges, finally to arrive at a gross income distribution according to a pre-specified set of 14 broad income ranges.<sup>3</sup> This was done for our three scenarios, for urban

and rural India, separately for the two years 1975-76 and 1980-81. The results for 1975-76 are shown in Tables 5.4.3 through 5.4.5 of the text and those for 1980-81 are given in Table A.1.15 of this Appendix.

### Notes

1. According to our assumption, these values are derived from the related information for 1975-76.
2. The NCAER frequency data of earners and their income distributions are available by 14 broad income ranges (not necessarily of equal width), viz.; Rs 0-1200, 1201-2400, 2401-3600, 3601-4800, 4801-6000, 6001-7500, 7501-10000, etc. It is possible to derive a frequency distribution of earners for a different set of income ranges by employing the lognormal parametric values of  $\mu$  and  $\sigma$  estimated on the basis of original data. The new set of selected income ranges can be such that their width is as narrow as possible so that the mid-point of a given narrow income range could be better approximation to represent an average (per earner) income of those earners belonging to that particular narrow income range. For our purposes, the 14 broad income ranges are subdivided into a total number of 326 narrow income ranges of varying widths. For instance, the first few broad income ranges upto Rs 7500 are subdivided into 150 narrow intervals each of width 50, the next income range, Rs 7501-10,000 is subdivided into 25 narrow intervals each of width 100, and so on.
3. As the last income range is an open-ended interval, (Rs 60,000 and above), the distribution has been truncated at a sufficiently higher level of gross income per earner (at Rs 1,41,000). For practical purposes, it is assumed that the probability density of the lognormal distribution beyond this point is negligible. Since we have information on the total (gross) income for all income ranges together, we computed the statistical discrepancy in the estimates obtained from the truncated distribution and included the difference in the last income range.

## SECTION 6

### Estimation Procedure for Component Level Income Distribution Classified by Income Ranges for Earners

From the NCAER household income distributions (Tables A.1.2 and A.1.4), the incomes from different source components are available according to household income ranges. For two reasons, these are not comparable and consistent with our gross income distributions, estimated in the previous section. First, the income ranges of the estimated gross income distribution refer to *earners' income*, whereas, those of NCAER distributions refer to household income. Second, our estimated gross incomes have been scaled up to match with the NAS controlling totals. In this section, we rearrange the (NCAER) component level incomes according to income ranges for *earners* while, in the next section, we will scale them up to be consistent with our gross income distribution.

The conversion procedure is basically similar to the one used in Section 2 of this Appendix. Where earlier, earners were reshuffled across income ranges, this time it is the income of these earners, disaggregated by source components, which is to be regrouped by income ranges for *earners*. The procedure can be illustrated with the case of two-earner urban households. Note that the one-earner households present no problem in such a conversion, if we treat the NCAER income ranges as those of earners rather than of households (see Table A.1.16). The information pertaining to

different source components of income, gross personal income and the number of earners of the 'two-earner' urban household distribution are available from the NCAER data and shown in columns (2) to (10), (11) and (12) of Table A.1.17 respectively. For each (household) income range the average per-earner (gross) income is computed and recorded in column (13) of the same table. We now assume that the *average* income per-earner is also the *actual* income for all earners in the relevant (household) income range. Thus, the 0.800 million earners corresponding to the household income range Rs 0-1200 are all assumed to earn Rs 452 each. Similarly, the 1.5488 million earners in the next household income range are assumed to earn Rs 880 each. (See rows 1 and 2 of Table A.1.17.) Therefore, according to our assumption, these two rows can be merged together. That is, incomes from the corresponding source components in these two rows are added up and placed against the (earners) income range Rs 0-1200, which is further added to the respective source components of income of 'one-earner' households (first row of Table A.1.16). Thus, on the basis of the data in columns (12) and (13) of Table A.1.17, we can now obtain distributions of gross income, disaggregated at a component level by income ranges for earners. By addition with the corresponding rows of Table A.1.16, we obtain, in Table A.1.18, the derived income distributions at a component level for 'one-earner' and 'two-earner' urban households, arranged according to income ranges for *earners*. The same procedure is repeated for all other multi-earner households to yield equivalent income distributions at a component level for *all* urban earners. A similar procedure is used to generate component level income distributions for rural earners by income ranges for *earners*. The final results are shown in text Tables 5.5.2 and 5.5.3 for urban India and rural India, respectively.

## SECTION 7

### Estimation of Scaled-up Component Level Income Distribution

We note that there exists a need for estimating the income distributions at a component level such that they will be consistent with our scaled-up gross income distributions. These constitute basic building blocks for the estimation of tax exclusion, exemptions and deductions. In the previous section, we classified the component level income distributions according to the income ranges for *earners* using the NCAER survey information. In this section, we describe the procedure to make them consistent with our scaled-up gross income distribution.

For our convenience, we reduced the nine survey components of income into four selected components, namely, 'Agricultural income', 'Business income', 'Salary income' and the 'Other income'. The correspondence between our components and the survey components is as follows:

<i>Sl. No.</i>	<i>Our components</i>	<i>Survey components</i>
1.	Agricultural income	a) Agricultural income b) Agricultural wages c) Livestock income
2.	Business income	a) Business income
3.	Salary income	a) Salary income b) Non-agricultural wages

- |                 |   |
|-----------------|---|
| 4. Other income | a) Transfer income<br>b) Housing income<br>c) Dividends, interest, etc. |
|-----------------|---|

The same classification (as above) is applied to urban India and rural India except for the rural 'non-agricultural wage' component which is included in 'Other income'. Accordingly, the data set given in Tables 5.5.2 and 5.5.3 is regrouped and presented in Tables A.1.19 and A.1.20. We now attempt to estimate the urban and rural distributions of the first three components of income explicitly.<sup>1</sup>

Before deriving the component level distributions, it is pertinent to note that the total amount of component income (not the distribution) can be derived directly from the scaled-up gross personal income (NAS total) for urban and rural cases, separately, under our three scenarios. To do this, we assume that the scaling up of gross personal income (from the NCAER base to the NAS) is neutral with regard to different source components. Under this assumption, we first derive the component's total share in the unscaled (NCAER) gross personal income using the information given in Tables A.1.19 and A.1.20 and apply the same share to the scaled-up (NAS) gross personal income. The resulting amount is referred to as the scaled-up total component income. Since we have three scenarios of scaled-up gross income for both urban and rural cases, we obtain correspondingly, scaled-up urban and rural component incomes under three scenarios. Table A.1.21 presents the details of these calculations for 1975-76 and 1980-81.

We note that the neutrality assumption, used above at a component level, can also be applied for different income ranges within each component income. We computed the component shares in gross income (row total in Table A.1.19 or A.1.20) for different income ranges of each of the three selected components for urban and rural cases, separately. The shares thus computed for the 14 broad income ranges form a weighting scheme in each case. These are recorded in Table A.1.22.

By applying the relevant weighting scheme to the scaled-up

gross income distribution, we may derive the corresponding scaled-up component distribution by the same 14 broad income ranges. But, we adopted this procedure only for 'Agricultural Income' and 'Business Income' components.<sup>2</sup>

*Scaled-up Distributions for 'Agricultural Income' and 'Business Income'*

For the 'Agricultural Income' and 'Business Income' components, we applied the relevant weighting schemes to the scaled-up *gross income* distribution by the 14 broad income ranges and derived the corresponding scaled-up component level income distributions. It should be mentioned that for a given component, the weighting schemes are different for urban and rural India, but, the weighting scheme is the same for all three scenarios of urban (or rural) India. Thus, for instance, for 'Agricultural Income', the weighting scheme relevant for rural India, as shown in column (2) of Table A.1.22, has been applied to the scaled-up gross rural income distribution under our three scenarios for 1975-76. Likewise, for the urban cases, the weighting scheme given in column (5) has been used to multiply the gross urban income distribution for 1975-76 under our three scenarios and the corresponding scaled-up urban 'Agricultural Income' distributions for 1975-76 have been derived. A similar procedure has been adopted for 'Business Income' distributions for 1975-76.

Along the same lines, we derived the corresponding 1980-81 distributions, by assuming that the *shares* of different components of income in total gross income (for different income ranges) are the same for 1980-81 as they were in 1975-76.

We note that the weighted component incomes thus obtained for 'Agricultural' or 'Business' components for 1975-76 and 1980-81 (by the 14 broad income ranges), *need not* sum up to the corresponding total component income that was derived earlier from the scaled-up gross income. We regard the latter totals as the controlling figures, since they are consistent with the NAS totals. Thus, the difference bet-

ween the weighted sum and the component total (as given in Table A.1.21) is adjusted among the 14 broad income ranges on a *pro-rata* basis. We did this adjustment in all the above cases of component level income distribution. The results obtained after the adjustment are presented in Tables A.1.23 A.1.24.

### *'Salary Income' Distribution*

As noted earlier, the total amount of 'Salary Income' can be derived directly from the scaled-up gross personal income and the total share of salary component in gross income (unscaled) for the urban and rural sectors, separately. However, there exists a need for estimating this distribution by a different and *desired set of income ranges* (for earners) due to the following reasons:

- (a) The underlying formula of standard deductions applicable for salary earners involves the use of *narrow* ranges of salary income, if not the *actual* salary income of each earner.
- (b) The estimation of related tax exclusions, namely, the house rent allowances, also require the salary income ranges to be suitably arranged. These income ranges do not coincide with the earlier 14 broad ranges. We will discuss these pertinent problems in more detail in the next section. But now, having recognised the problem, we will estimate the salary income distribution in such a manner that it may become useful for deriving the tax deductions allowed for salary earners.

We adopted two different methods of estimation, one for the urban salary distribution and the other for the rural salary distribution. These methods have been found to be appropriate to deal with the nature of the problem faced in these two cases. We present below these two methods.

#### *Salary Income Distribution for Urban India*

This method involves mainly three steps:



- (a) First, a weighted frequency distribution of salary earners is obtained by the 14 broad income ranges by applying the salary weights, derived earlier, to the estimated frequencies of earners relating to the scaled-up gross income.<sup>3</sup> The results of this step are shown in Table A.1.25. These weighted frequencies are referred to as salary earners. In doing so, it is implicitly assumed that salary earners and non-salary earners are mutually exclusive (the total of salary and non-salary earners equals the gross income earners). It is tantamount to saying that salary earners have no other source of income which is probably not true. However, this approximation is necessary for our purpose. The sum of weighted frequencies of salary earners over the 14 broad income ranges yields an estimate of total number of salary earners in urban India. See Table A.1.25 for results.
- (b) In the second step, the lognormal function is fitted to the weighted frequency distribution of salary earners and the 'goodness of fit' is examined. We did this and the fit was found to be statistically significant. The estimated lognormal values of  $\mu$  and  $\sigma$  for the urban salary earner distribution are shown in Table A.1.26.
- (c) In the third step, the value of  $\mu$  is modified in the same manner as adopted for scaled-up gross income distributions. (see Section 5 of this Appendix.) For this purpose, we have made use of the estimated value of  $\sigma$  and the known value of (lognormal) mean salary income ( $\alpha$ ). We note that the value of  $\alpha$  can be derived from the total number of salary earners (N) and the total amount of 'Salary Income' (shown in Table A.1.21) that is consistent with our scaled-up gross personal income. Since we have three scenarios of gross income, we also have three scenarios for the total 'Salary Income', which implies three alternative values for  $\alpha$ . For each value of  $\alpha$  and the estimated value of  $\sigma$ , we obtain a new value for  $\mu$  under each scenario from the following lognormal relationship.

$$\mu = \ln \alpha - \frac{1}{2} \sigma^2$$

For every scenario, the  $\sigma$  value is assumed to be constant, which implies that the concentration of 'Salary Income' remains the same across the three scenarios. Table A.1.27 presents the modified parametric values for each scenario. Using them we have determined the corresponding distributions of 'Salary Income' arranged according to the desired set of income ranges.<sup>4</sup> Table A.1.28 shows the results of estimated urban salary distributions under different scenarios for 1975-76 and 1980-81.

### *Salary Income Distribution for Rural India*

The aforementioned method (used for urban India) could, in principle, also be employed for rural India. In fact, we tried to do so. We attempted to fit a lognormal function to the (weighted) rural frequency distribution of 'Salary Income' along the same lines as for urban India, but found the underlying lognormal fits to be statistically insignificant. Thus, the problem of estimating a distribution for rural 'Salary Income' still remains unsolved. Briefly, the problem is as follows.

On the one hand, we have rural salary weights, computed as in the case of urban India. These are available according to a set of 14 broad income ranges (as shown in Table A.1.22). On the other hand, for our purposes, we are required to generate a rural 'Salary Income' distribution, using these weights, but arranged according to a different set of income ranges which are shown in column (1) of Table A.1.26. On a close comparison of these two sets of income ranges, we find that while a rural salary weight is available for the income range Rs 4801-6000, we would need salary weights for a couple of subdivided income ranges, viz Rs 4801-5000 and Rs 5001-6000, which fortunately, do not overlap.<sup>5</sup> However, we do not have any survey information on the salary incomes for these two subdivided income ranges. The problem, thus, calls for an *ad hoc* solution.

Notwithstanding its limitations, we assumed that the rural salary weight available for the broader income range (Rs 4801-6000) is also the *actual* weight common for the subdi-

vided (non-overlapping) income ranges. We recognise that such an assumption may *not* be consistent with the true distribution of the rural 'Salary Income' for those subdivided income ranges. But we are obliged to make the assumption to circumvent the problem of mismatching income ranges.

For estimating the rural 'Salary Income' distributions, we proceeded as follows. First, we tabulated the rural salary weights, under the above assumption, according to the desired set of income ranges. Then, we obtained the scaled-up rural *gross* income distributed according to the same income ranges under our three scenarios by employing the related lognormal parametric values of  $\mu$  and  $\sigma$  that were already determined in Section 5 (as shown in Table A.1.13). Finally, multiplying the rural salary weights with the scaled-up gross income, we generated the scaled-up 'Salary Income' for each desired income range of the distribution under different scenarios. The results are recorded in Table A.1.26, along with similar results for urban India for the years 1975-76 and 1980-81.

### Notes

1. However, the last component is not estimated here separately. It will be considered implicitly when we quantify the significance of Chapter VI A deductions in the next section.
2. In the case of 'Salary-Income,' however, the scaled-up income distributions are required by a different set of income ranges. The method of estimation will, therefore, differ from what is being followed for the other two selected components.
3. Section 5 of this Appendix and Table A.1.13 provide information on the lognormal parametric values ( $\mu = 1.540$  and  $\sigma = 0.859$ ) relating to the scaled-up urban gross income under the first scenario (U:R = 1:2). Using these values, we have derived the earner-wise frequency distribution of gross income by the same 14 broad income ranges.
4. Given the parametric values of  $\mu$  and  $\sigma$ , the procedure to estimate the underlying distribution of income is given in detail, in Section 5 of this Appendix.
5. The mismatch problem of income ranges would have been severe, if it involved (i) an overlapping of the income ranges and (ii) a greater number of subdivided income ranges.

## SECTION 8

### Estimation of Tax Deductions

In this section we present the details of procedures adopted for estimating the major tax exclusions, deductions and exemptions that are considered in our study. The following is the list of tax exclusions, deductions and exemptions that are explicitly considered for our purpose:

- (a) 'Agricultural Income' (including all income from agriculture, livestock and agricultural wages). Its estimation has already been explained in the previous section.
- (b) Tax deductions for depreciation from business income.
- (c) Tax deductions pertaining to 'Salary Income' (including non-agricultural wages). These are:
  - (i) standard deduction,
  - (ii) deductions by way of house rent allowance (HRA), and
  - (iii) exclusion of employers' contributions to provident fund.
- (d) Chapter VIA deductions that relate to all income, irrespective of source.

The estimation procedures used for the abovementioned categories are as follows.

#### *Agricultural Income*

All income from agriculture and allied activities is treated as exempt from tax and is therefore deductible from gross

income. In the previous section, we gave the details of estimated 'Agricultural Income' distributions under three scenarios, separately for urban and rural cases (see Table A.1.23). For further use, the results are reproduced in column (3) of text Tables 5.5.4 through 5.5.9 for 1975-76 and Appendix Tables A.1.36 through A.1.41 for 1980-81.

### *Depreciation*

It is assumed that 10 per cent of business income is accounted towards depreciation. We applied the same rate *across-the-board* for different income ranges of business income distribution under our three scenarios (see Table A.1.24) and derived the corresponding quanta of deductions towards depreciation, classified by the same income ranges. The results are recorded in column (4) of Tables 5.5.4 through 5.5.9 for 1975-76 and A.1.36 through A.1.41 for 1980-81.

### *Standard Deductions*

The Finance Act of 1974, Government of India, provides us the formula for computing standard deductions. The formula remained the same for the assessment years 1976-77 and 1981-82 (which correspond, respectively, to the financial years 1975-76 and 1980-81, the income earned during which years is under our consideration). According to the formula, the rate of deduction was 20 per cent of salary income upto Rs 10,000 per annum plus 10 per cent of excess over Rs 10,000 subject to a maximum limit of Rs 3500. Obviously, to apply this formula we need the frequency distribution of 'Salary Income' by income ranges for salary earners. Moreover, we need such a distribution by narrow income ranges, as otherwise, the quantification of standard deductions for broad income ranges might entail large errors. For a narrow income range, however, the mid-point can be designated as the 'representative salary income' of all those earners who belong to that particular income range; the ranges being small, the mid point approximation would be close to the actual 'Salary Income' per earner. Thus, our objective is to derive the fre-

quency distribution of salary earners by narrow income ranges and then apply the standard deduction formula for different small income ranges. This can be accomplished by the use of lognormal parametric values ( $\mu$  and  $\sigma$ ) pertaining to the 'Salary Income' distribution.

It may be recalled that in the previous section, we estimated these ( $\mu$  and  $\sigma$ ) values for urban India, under our three scenarios for the two years 1975-76 and 1980-81 (as shown in Table A.1.27). Using these values, we derived the corresponding frequency distributions of salary earners by narrow income ranges. Applying the standard deduction formula to the midpoints of different narrow income ranges, we have computed the quantum of standard deduction per earner for these income ranges. In the next step, we multiply the per-earner amount of standard deduction with the estimated number of salary earners for the corresponding narrow income ranges and arrive at the corresponding total amount of standard deduction. The resulting amounts are then aggregated over the narrow income ranges to yield a distribution of standard deduction by our 14 broad income ranges. The final results (for urban India) are shown in column (5) of Table 5.5.6 for 1975-76 and A.1.36 through A.1.38 for 1980-81.

#### *Standard Deductions for Rural India*

As noted earlier, the application of the standard deduction formula requires the salary earners' frequency distribution to be arranged, preferably, by narrow income ranges. In the case of rural India, it was found that such a distribution cannot be derived directly since the lognormal function could not be fitted to the underlying rural (weighted) frequency distributions. Therefore, we adopted an *ad hoc* method as follows.

In the first step, a frequency distribution of earners is obtained corresponding to rural gross income ranges, that is, Rs 1-100, Rs 101-200, and so on.<sup>1</sup> Care is taken so that these ranges do not overlap with our 14 broad income ranges for which the rural salary weights are available.

In the second step, we assume that the rural salary weight

available for a broad income range is also the *actual* weight common for all its subdivided (non-overlapping) income ranges. For example, from Table A.1.22, we have a rural salary of 1.13 per cent for the income range Rs 1-1200. Under our assumption, the same weight is applied for all its constituent sets of narrow ranges, like Rs 1-100, Rs 101-200,..... Rs 1100-1200. Similarly, the salary weight (5.70 per cent) available for the next (broad) income range Rs 1201-2400, is used for all its subdivided narrow ranges, i.e., Rs 1201-1300, Rs 1301-1400,.....Rs 2301-2400. Likewise, the salary weights available for the rest of the 14 broad income ranges are applied to their respective sets of subdivided (small) ranges.<sup>2</sup> Thus, for each narrow income range, the frequency of salary earners was obtained by applying the corresponding rural salary weight to the frequency of gross income earners under our three scenarios for 1975-76 and 1980-81.

In the third step, the formula for standard deduction is applied to the midpoint of each narrow income range and the amount of standard deductions *per earner* is obtained. For this purpose, we designated the midpoint of each (narrow) income range as the 'Salary Income' of a representative earner for that income range.

In the final step, the total amount of standard deductions is derived from multiplying the frequency of salary earners (obtained in the second step) by the amount of per-earner standard deduction for different narrow income ranges. These are then aggregated to generate a rural distribution of standard deduction by our 14 broad income ranges for rural India. This is done for our three scenarios for each of the years, 1975-76 and 1980-81. The results are shown in column (5) of Tables (relating to rural India) 5.5.7 through 5.5.9 for 1975-76 and A.1.39 through A.1.41 for 1980-81.

As an alternative to the above method, we could also estimate the quanta of standard deduction for the 14 broad income ranges *without* subdividing them into narrow ranges. In this case, however, a larger error would be involved when we apply the formula of standard deductions to the midpoint of a *broad* income range. For purposes of comparison, we did, in fact, derive the results following this alternative method

for the first scenario ( $U : R = 1 : 2$ ) for rural India for 1975-76. The results are shown in Table A.1.29. We observe that this latter method gives a marginally higher estimate of standard deductions (Rs 1000.33 crore) as compared to the first approach (about Rs 976.58 crore) where narrow income ranges were used. The difference is relatively small, Rs 23.75 crore, or about 2 per cent of the total estimated standard deduction for rural India. Note that much of this difference occurs only in the initial income ranges upto Rs 10,000, which are not likely to fall in the tax net. We have chosen the estimates obtained from the first approach for all our three scenarios of rural India for 1975-76 and 1980-81.

#### *Tax Deductions Towards House Rent Allowance (HRA)*

For estimating the HRA deductions, the procedure is straightforward. For this purpose, we make use of Bagchi's estimated rates (Bagchi, 1975, p. 293) of HRA deductions (as a percentage of 'Salary Income') and the 'Salary Income' distribution estimated in the previous section. Note that the 'Salary Incomes' for urban and rural India are already arranged according to a set of income ranges, for which the information on HRA rates is available from Bagchi's study. Bagchi's rates are shown in column (2) of Table A.1.30. These relate to house rent plus conveyance allowances. He computed the average rates as a percentage of gross income (assumed to be total salary income). Since 1975, the tax deductions towards conveyance allowances have, however, been included in the standard deductions. Thus, to exclude their effect (which is partially reflected in Bagchi's rates) we have considered 'two-thirds' of Bagchi's rates as HRA rates of deductions. These are applied to 'Salary Incomes' (both for urban and rural cases) under our three scenarios given in Table A.1.28. The results of this exercise are presented in Table A.1.31 for the years 1975-76 and 1980-81. We should mention that the same HRA rate structure is used for deriving the estimates for both the years.

#### *Tax Exclusion of Employers' Contribution to Provident Fund (PF)*



The information regarding the total contribution (employee and employer) to Provident Fund is available from the Central Provident Fund Commissioner, New Delhi (for non-government servants) and the Union Budget of the Government of India (for government servants). The total (Urban plus Rural) Provident Fund contributions were Rs 964.22 crore for the financial year 1975-76 (Rs 225.66 crore for non-government servants and Rs Rs 735.56 crore for government servants). For the financial year, 1980-81, the total P.F. figure was Rs 1076.79 crore (Rs 300 crore for non-government servants and RS 776.79 crore for government servants). Assuming that all employees and employers contribute equally to the Fund, the latter's share worked out to be Rs 482.11 crore for 1975-76 and Rs 538.39 crore for 1980-81.

These are further divided between urban and rural sectors in the same ratio as the split of 'Salary Income' between urban and rural India under our three scenarios for the two years. The details are shown in Table A.1.32.

In order to derive the corresponding distributions by income ranges, we applied the same average rates of employers' P.F. contribution (as shown in Table A.1.32) to the 'Salary Incomes' for different income ranges *across-the board* for a given scenario and year. The results are shown in Table A.1.33 for all three scenarios of urban and rural India, separately, for 1975-76 and 1980-81.

#### *Estimation of Chapter VIA Deductions*

Chapter VIA deductions include those relating to employees' contribution to P.F., life insurance premia paid, savings in other specified forms that come under Section 80C, and those such as interest on bank deposits and certain specified securities that come under Section 80L of the Income Tax Act. According to the tax norms, these deductions are applicable to all incomes, irrespective of sources, but 'net' of all other tax exclusions and deductions thus far estimated (that is, after subtracting from gross income, the five types of tax exclusions and deductions mentioned earlier). The first step in estimating the quantitative significance of these deductions

is to derive an average rate structure of Chapter VIA deductions as a percentage of 'net income' by different income ranges. This is done as follows.

The annual AIITS publications provide data on Chapter VIA deductions (plus 'losses set off') by status of assesseees and also by income ranges. These published data pertain to the assessments *completed* during a financial year, not to assessments of incomes earned during a particular year, which is what we really need for our purpose. In other words, the assessments of incomes earned during 1975-76 get reflected in the AIITS data relating to the financial year 1976-77 and beyond. It is known that a majority (perhaps 70-80 per cent) of them are covered in the first two years, that is, 1976-77 and 1977-78 (see NIPFP, 1983a). Therefore, we averaged the data for these two years for our purpose. However, for the assessments of incomes earned during 1980-81, we were confined to the AIITS data pertaining to their financial year 1981-82, the latest year for which data are available.

For computing the average rates of Chapter VIA deductions for 1975-76, first, we summed up the amounts of Chapter VIA deductions for all the non-corporate assesseees comprising (i) individuals, (ii) Hindu Undivided Families (HUFs), (iii) association of persons and (iv) unregistered firms, from the AIITS publications for the two financial years, 1976-77 and 1977-78. These are arranged according to different income ranges and are recorded in Table A.1.34. The same table also reports the corresponding figures of gross income (AIITS) by the same income ranges. Using this information we computed the rates of Chapter VIA deductions as a percentage of gross income (our 'net income'). These are presented in column (12) of Table A.1.34 and applied to our 'net income'. The same average rates are used for both urban and rural cases under our three scenarios to obtain the quantum of Chapter VIA deductions in each case. [see columns (7), (10) and (11) of text Tables 5.5.4 through 5.5.9 for the results relating to 1975-76].

Using the AIITS data for the financial year 1981-82, we did a similar exercise for obtaining the total amount of Chapter VIA deductions under different scenarios for urban

and rural India for the year 1980-81. The computed rates are presented in Table A.1.35 while the results of quantum of Chapter VIA deductions are shown in columns (7), (10) and (11) of Tables A.1.36 through A.1.41.

### Notes

1. It is possible to derive such frequency distributions by a set of pre-defined income ranges, using the pair of lognormal parameters. These were estimated for rural gross income under our three scenarios for 1975-76 and 1980-81. (see Section 5 and Tables A.1.13 and A.1.14 for parametric estimates).
2. We note that this assumption is restrictive in the sense that the implied distribution *within* the subdivided income ranges may differ from the true distribution of rural 'Salary Income'. However, as income ranges are narrow, their midpoints could be good approximations to the underlying 'Salary Income' per earner.

## SECTION 9

### Estimation of Income below Exemption Limit

The exemption limit is typically applicable to per-earner gross income *minus* the amount of all tax exclusions, exemptions and deductions. Thus, notionally, it closely coincides with our 'net income'. Consider, for example, the first scenario for urban India in 1975-76. The text Table 5.5.4 shows the derivation of the quanta of 'net income' from gross income for different income ranges. But this information cannot directly give us the total amount of income below exemption limit, as the income ranges relate to gross personal income. Thus, the crux of the problem lies in determining an appropriate 'cut-off point' in terms of gross income per earner that corresponds to the exemption limit specified with respect to 'net income' per earner. Given a cut-off point, we can easily obtain the income below exemption limit by cumulating the 'net income' upto the cut-off point from columns (12) and (13) of Table 5.5.4.

The principal steps in determining an appropriate cut-off point are as follows:

a. We choose *a priori* two (or three) adjacent income ranges (among the 14 broad income ranges shown in Table 5.5.4) that are above the exemption limit (Rs 8000 for financial year 1975-76 and Rs 12000 for financial year 1980-81). For example, in the case of urban India, for 1975-76, the income ranges initially selected were Rs 7501-10,000 and Rs 10,001-15,000. Then we merge together these two ranges, and

compute the ratio of 'gross income' to 'net income' for the combined income range (i.e., Rs 7501-15000).

b. We multiply this ratio by the given exemption limit and the product is referred to as the 'preliminary cut-off point'.

c. We check whether the 'preliminary cut-off point' falls in the span of the (selected) combined income range. If so, we accept this as the final cut-off point. If it falls outside the combined income range thus far selected, we *extend* our combined income range upto that particular income class (inclusive) to which the 'preliminary cut-off point' belongs. Then, we recompute the ratio for the revised (broader) combined income range, multiply the ratio by our exemption limit, and check again if the product falls in the revised combined income range. If not, the iterative procedure is repeated until this occurs.

d. Given a final 'cut-off point', we have the information about the exemption limit in terms of gross income per earner. If the 'cut-off point' happens to coincide with the upper (or lower) limit of any of the selected income ranges, the income below exemption limit is nothing but the cumulated net income, in column (13) upto the coinciding income range. But if it doesn't coincide, but falls *within* an income range (say, the 'cut-off income range'), we have to compute the net income cumulated up to the 'cut-off point'. For doing this, we compare the upper limit of the 'cut-off income range' with our 'cut-off point' and adjust the corresponding 'net income', in column (12) proportionately.<sup>1</sup>

The adjusted 'net income' is now added to the total net income, in column (13), which is cumulated upto the immediately preceding income range. The result of this labour gives us the amount of income below the exemption limit.

We conducted this exercise and computed the total amount of income below the exemption limit for our three scenarios of urban and rural India, separately for the two years 1975-76 and 1980-81. The results of the selected income ranges, the ratio of gross income to net income, the 'preliminary' and 'final cut-off points', and the income below the

exemption limit are shown in Tables A.1.42 and A.1.43 respectively for 1975-76 and 1980-81.

### Notes

1. The adjustment is done as follows:

$$\text{Net income (adjusted)} = \frac{\text{Value of the 'cut-off point'}}{\text{Upper limit of the 'cut-off income range'}} \times \text{Net income with respect to the 'cut-off income range'}$$

## SECTION 10

### Computation of Blow-up Factors

We now develop an appropriate indicator to adjust for the undercoverage inherent in the AIITS published data on "assessed income". The indicator is given by the ratio of the number of *assesseees* that existed on the rolls of the Income-tax department at the end of a given assessment year as mentioned in the annual reports of the Comptroller and Auditor General (C&A.G) to the total number of *assessments* as reported in the AIITS publication on an assessment year basis. This ratio is computed separately for different statuses of non-corporate assesseees (such as individuals, HUF, association of persons and unregistered firms) and is used to blow up the corresponding AIITS published information on 'assessed income'.

For the two types, *viz.*, individuals and unregistered firms, however, the numerator of this ratio needs to be adjusted before it is used for blowing-up purposes. This need arises due to the fact that assessment (AIITS) in respect of these two types exclude those that did not result in either (tax) demand or refund. Such assessments are typically referred to as 'N.A. and filed' cases. It has been found that they were running at about 10 per cent of *all* assessments in the late 70s. In other words, the C&AG number of assesseees includes N.A. & filed cases, while the AIITS number of assessments excludes such cases. To make them (the numerator and denominator of our ratio) comparable, we have adjusted the C&AG number of assesseees downwards by

reducing the same by 12 per cent in respect of individuals and unregistered firms.

Table A.1.44 puts together the data on the number of assessees taken from C&AG's annual reports, the number of assessments from AIITS publication, by status of assessees. Unfortunately no data are available separately for unregistered firms from the C&AG reports. Thus, we considered data on all firms (registered plus unregistered) and used these to compute the blow-up factor for unregistered firms. This table provides the calculations involved in computing blow-up factors for the assessment year 1976-77.

For the incomes earned during 1980-81 (or assessed during 1981-82), the AIITS data on the number of assessments are available only on a financial-year basis. These are used together with the C&AG number of assessees on record at the end of the financial year 1981-82 to compute the blow-up factors. In respect of individuals and firms, the C&AG number of assessees has been adjusted downwards by 10 per cent to account for the 'N.A. and filed' cases. The results of the computed blow-up factors are recorded in Table A.1.45.



TABLE A.1.1

Household Distribution of Income (NCAER) by Households of Varying Earner-Density  
and by Source Components of Income : Urban India for  
1975-76

(Rs million)										
Income Range and earner-density of households (Rs)	Agricultural income	Livestock income	Business income	Salary income	Agricultural wage income	Non-Agricultural wage income	Housing income	Dividend interest income	Current transfer income	Gross income (sum of cols. 2 to 10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<b>Income Range Rs. 0-1200</b>										
One-earner	24.40	nil	44.17	42.45	25.70	41.12	17.87	nil	16.02	211.72
Two-earner	2.00	nil	nil	nil	nil	31.92	2.28	nil	nil	36.20
<b>TOTAL</b>	<b>26.40</b>	<b>nil</b>	<b>44.17</b>	<b>42.45</b>	<b>25.70</b>	<b>73.04</b>	<b>20.15</b>	<b>nil</b>	<b>16.02</b>	<b>247.92</b>
<b>Income Range Rs 1201-2400</b>										
One-earner	55.96	9.09	313.10	253.20	110.52	2121.23	96.91	nil	13.81	2973.82
Two-earner	24.95	-8.00	109.14	nil	222.92	966.77	28.96	nil	18.00	1362.74
Three-earner	nil	nil	nil	nil	28.00	119.20	7.04	nil	nil	154.24
Four-earner	35.40	nil	nil	nil	nil	36.00	-0.40	nil	nil	71.00
<b>TOTAL</b>	<b>116.31</b>	<b>1.09</b>	<b>422.24</b>	<b>253.20</b>	<b>361.44</b>	<b>3243.19</b>	<b>132.51</b>	<b>nil</b>	<b>31.81</b>	<b>4561.80</b>

Table A.1.1 (Contd.)

1	2	3	4	5	6	7	8	9	10	11
<b>Income Range</b>										
<b>Rs. 2401-3600</b>										
One-earner	316.50	220.13	1938.93	2297.53	88.15	3284.60	340.04	3.44	516.03	9005.36
Two-earner	32.75	- 0.74	374.40	8.05	nil	1382.37	72.31	nil	3.20	1872.34
Three-earner	38.00	-3.60	nil	85.40	nil	347.68	-9.32	nil	nil	458.16
<b>TOTAL</b>	<b>387.25</b>	<b>215.79</b>	<b>2313.33</b>	<b>2390.98</b>	<b>88.15</b>	<b>5014.65</b>	<b>403.03</b>	<b>3.44</b>	<b>519.23</b>	<b>11335.86</b>
<b>Income Range</b>										
<b>Rs. 3601-4800</b>										
One-earner	212.04	7.28	1499.39	5433.56	48.00	1405.86	591.99	2.04	154.21	9354.37
Two-earner	220.83	93.76	1025.80	859.26	8.00	2042.92	138.88	0.40	132.00	4529.85
Three-earner	68.08	-2.80	80.00	nil	nil	150.00	7.20	nil	nil	302.48
<b>TOTAL</b>	<b>508.95</b>	<b>98.24</b>	<b>2605.19</b>	<b>6292.82</b>	<b>56.00</b>	<b>3598.78</b>	<b>738.07</b>	<b>2.44</b>	<b>286.21</b>	<b>14186.70</b>
<b>Income Range</b>										
<b>Rs. 4801-6000</b>										
One-earner	587.62	114.75	2749.25	7379.81	nil	641.39	375.56	36.83	623.32	12508.52
Two-earner	nil	61.40	543.98	762.20	nil	826.16	135.74	8.40	2.70	2340.58
Three-earner	nil	nil	176.92	142.40	nil	149.65	1.80	nil	nil	471.07
Four-earner	nil	nil	15.95	18.19	207.99	23.40	1.39	nil	2.16	269.08
<b>TOTAL</b>	<b>587.62</b>	<b>176.15</b>	<b>3486.10</b>	<b>8302.60</b>	<b>207.99</b>	<b>164.90</b>	<b>514.49</b>	<b>45.23</b>	<b>628.18</b>	<b>15589.25</b>

Table A.1.1 (Contd.)

1	2	3	4	5	6	7	8	9	10	11
<b>Income Range Rs. 6001-7500</b>										
One-earner	363.71	263.94	1643.33	6887.50	nil	228.00	326.72	29.42	732.60	10475.22
Two-earner	45.68	41.48	1021.16	743.92	nil	505.04	107.05	2.08	1.80	2468.20
Three-earner	124.40	-5.84	210.56	186.57	nil	417.94	12.31	nil	nil	945.95
Four-earner	nil	nil	nil	7.02	nil	258.01	6.00	nil	52.39	323.42
More than four-earner	nil	nil	200.00	76.00	nil	nil	nil	nil	4.00	280.00
<b>TOTAL</b>	<b>533.79</b>	<b>299.58</b>	<b>3075.05</b>	<b>7901.01</b>	<b>nil</b>	<b>1408.99</b>	<b>452.08</b>	<b>31.50</b>	<b>790.79</b>	<b>14492.79</b>
<b>Income Range Rs. 7501-10000</b>										
One-earner	486.26	191.41	2776.24	8755.54	nil	nil	422.42	20.60	603.19	13264.67
Two-earner	89.86	98.80	1648.55	2405.95	nil	418.45	207.46	7.80	20.16	4897.03
Three-earner	16.22	9.43	739.28	237.06	nil	233.00	126.85	1.52	123.96	1487.32
Four-earner	16.58	15.34	223.00	96.37	nil	21.60	22.50	1.07	160.00	556.45
More than four-earner	10.43	2.11	22.32	15.82	nil	nil	1.21	nil	nil	51.90
<b>TOTAL</b>	<b>619.35</b>	<b>317.09</b>	<b>5409.39</b>	<b>11510.74</b>	<b>nil</b>	<b>673.06</b>	<b>780.44</b>	<b>39.99</b>	<b>907.31</b>	<b>20257.38</b>
<b>Income Range Rs. 10001-15000</b>										
One-earner	313.04	43.38	3660.66	5864.61	nil	13.15	1264.03	63.23	223.13	11445.22
Two-earner	360.09	30.16	1516.67	5177.97	nil	69.12	371.02	30.61	180.63	7736.27

Table A.1.1. (Contd.)

1	2	3	4	5	6	7	8	9	10	11
Three-earner	68.41	13.65	414.43	1104.30	8.64	75.96	81.75	1.67	26.70	1795.51
Four-earner	30.79	8.53	136.30	125.59	nil	25.33	21.31	nil	17.93	365.78
More than four-earner	49.44	132.78	227.99	46.01	10.80	nil	132.12	nil	nil	599.14
<b>TOTAL</b>	<b>821.77</b>	<b>228.50</b>	<b>5956.05</b>	<b>12318.48</b>	<b>19.41</b>	<b>183.56</b>	<b>1870.23</b>	<b>95.51</b>	<b>448.39</b>	<b>21941.92</b>
<b>Income Range Rs. 15001-20000</b>										
One-earner	334.82	78.71	2860.93	4669.16	nil	nil	461.03	86.69	466.12	8957.47
Two-earner	26.19	18.51	664.53	3099.36	nil	nil	137.23	18.12	72.00	4036.94
Three-earner	78.08	11.67	408.30	1104.16	nil	nil	149.75	13.50	47.78	1813.23
Four-earner	nil	nil	97.38	276.10	nil	16.42	10.96	0.22	nil	401.08
More than four-earner	41.32	5.08	nil	21.82	nil	nil	5.85	nil	nil	74.07
<b>TOTAL</b>	<b>480.41</b>	<b>113.97</b>	<b>4031.14</b>	<b>9170.60</b>	<b>nil</b>	<b>16.42</b>	<b>764.82</b>	<b>118.53</b>	<b>585.90</b>	<b>15281.79</b>
<b>Income Range Rs. 20001-25000</b>										
One-earner	128.56	12.69	1032.70	2444.10	nil	nil	216.02	35.03	63.99	3933.10
Two-earner	212.53	-2.88	633.44	2599.18	nil	nil	147.87	8.08	34.51	3632.74
Three-earner	32.86	26.20	620.06	818.23	nil	2.27	123.30	6.37	7.12	1636.41
Four-earner	3.11	1.39	181.22	288.80	nil	nil	42.11	2.98	3.06	522.67
More than four-earner	nil	0.26	87.56	29.57	nil	nil	5.67	nil	2.16	125.22
<b>TOTAL</b>	<b>377.06</b>	<b>37.66</b>	<b>2554.99</b>	<b>6179.87</b>	<b>nil</b>	<b>2.27</b>	<b>534.97</b>	<b>52.46</b>	<b>110.85</b>	<b>9850.14</b>

Table A.1.1 (Contd.)

1	2	3	4	5	6	7	8	9	10	11
<b>Income Range</b>										
<b>Rs. 25001-30000</b>										
One-earner	79.44	-1.29	840.50	1742.29	nil	nil	194.18	9.63	71.82	2936.57
Two-earner	19.08	8.69	714.38	819.66	nil	nil	92.75	28.37	29.76	1712.68
Three-earner	1.80	nil	315.50	490.10	nil	nil	93.93	4.64	16.38	922.35
Four-earner	nil	2.01	136.94	160.00	nil	nil	25.08	1.50	nil	325.52
More than four-earner	17.33	78.85	920.00	25.90	nil	nil	81.24	nil	nil	1123.32
<b>TOTAL</b>	<b>117.65</b>	<b>88.26</b>	<b>2927.32</b>	<b>3237.94</b>	<b>nil</b>	<b>nil</b>	<b>487.18</b>	<b>44.14</b>	<b>117.96</b>	<b>7020.44</b>
<b>Income Range</b>										
<b>Rs. 30001-40000</b>										
One-earner	187.32	57.79	582.57	1441.49	nil	1.26	207.27	7.49	nil	2485.20
Two-earner	15.42	6.37	453.47	1717.82	nil	nil	122.61	36.30	40.62	2392.61
Three-earner	14.72	8.65	153.56	543.15	nil	nil	24.65	0.41	30.89	776.01
Four-earner	78.21	0.46	282.38	316.90	nil	5.27	75.67	2.44	10.04	771.36
More than four earner	nil	nil	125.46	97.78	nil	nil	0.52	nil	nil	223.76
<b>TOTAL</b>	<b>295.67</b>	<b>73.27</b>	<b>1597.44</b>	<b>4117.12</b>	<b>nil</b>	<b>6.53</b>	<b>430.72</b>	<b>46.64</b>	<b>81.55</b>	<b>6648.94</b>
<b>Income Range</b>										
<b>Rs. 40000-60000</b>										
One-earner	34.83	-0.68	364.42	330.51	nil	nil	47.55	5.87	nil	782.49
Two-earner	71.36	2.59	595.92	509.31	nil	nil	172.69	34.56	2.16	1388.59

Table A.1.1 (Contd.)

1	2	3	4	5	6	7	8	9	10	11
Three-earner	179.41	16.60	422.19	345.33	nil	nil	92.25	1.87	5.40	1063.04
Four-earner	8.38	3.74	105.80	208.94	nil	nil	9.41	0.30	nil	336.58
More than four-earner	17.10	2.97	74.88	42.52	nil	nil	27.51	0.97	nil	165.95
<b>TOTAL</b>	<b>311.08</b>	<b>25.22</b>	<b>1563.20</b>	<b>1436.60</b>	<b>nil</b>	<b>nil</b>	<b>349.41</b>	<b>43.57</b>	<b>7.56</b>	<b>3736.65</b>
<b>Income Range Over Rs. 60000</b>										
One-earner	66.71	6.35	412.48	251.20	nil	nil	41.00	1.67	nil	779.41
Two-earner	13.61	-3.22	834.94	193.12	nil	nil	40.44	0.19	nil	1079.08
Three-earner	74.28	0.10	356.12	14.12	nil	nil	66.58	0.05	nil	511.25
Four-earner	25.10	0.02	425.53	51.04	nil	nil	51.60	0.04	nil	553.33
More than four-earner	59.34	12.64	1481.86	124.21	nil	nil	84.68	0.74	nil	1763.47
<b>TOTAL</b>	<b>239.04</b>	<b>15.89</b>	<b>3510.93</b>	<b>633.70</b>	<b>nil</b>	<b>nil</b>	<b>284.29</b>	<b>2.70</b>	<b>nil</b>	<b>4686.54</b>
<b>All Income Ranges</b>										
One-earner	3191.22	1003.57	20718.67	47792.94	272.36	7736.60	4602.60	310.94	3484.24	89113.14
Two-earner	1142.35	346.91	10136.39	18895.78	230.92	6242.75	1777.29	174.91	537.54	39484.85
Three-earner	696.25	74.06	3896.90	5070.81	36.64	1496.01	778.08	30.03	258.24	12337.02

Table A.1.1 (Contd.)

1	2	3	4	5	6	7	8	9	10	11
Four-earner	197.57	31.49	1604.49	1548.95	207.99	386.03	265.63	8.55	245.58	4496.28
More than four-earner	194.96	234.69	3140.08	479.63	10.80	nil	338.80	1.71	6.16	4406.83
TOTAL	5422.36	1690.72	39496.54	73788.10	758.72	15861.39	7762.39	526.14	4531.76	149838.12

Source: Computer printouts relating to the survey on "Household Income and Its Disposition",  
NCAER, New Delhi (1980).

**TABLE A.1.2**  
**Frequency Distribution by Households (NCAER) of Varying Earner-Density and by Source Components**  
**of Income: Urban India for 1975-76**

Income ranges and earner density of households	Agricul-tural income	Livestock income	Business income	Salary income	Agricul-tural wage income	Non-Agri-cultural wage income	Housing income	Divi-dend interest	(Numbers in '00)	
									Current transfer	Gross income
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<b>Income Range Rs.0—1200</b>										
One-earner	800.	0	800	36.	400.	800.	1272.	0.	836.	2436.
Two-earner	400.	0	0	0.	0.	400.	400.	0.	0.	400.
<b>TOTAL</b>	<b>1200.</b>	<b>0</b>	<b>800</b>	<b>36.</b>	<b>400.</b>	<b>1200.</b>	<b>1672.</b>	<b>0.</b>	<b>836.</b>	<b>2836.</b>
<b>Income Range Rs. 1201—2400</b>										
One-earner	544.	2072	2072	1272.	800.	11308.	5888.	0.	472.	15524.
Two-earner	872.	836	872	0.	1600.	6036.	3308.	0.	800.	7744.
Three-earner	0.	0	0	0.	400.	800.	800.	0.	0.	800.
Four-earner	40.	0	0	0.	0.	400.	400.	0.	0.	400.
<b>TOTAL</b>	<b>1816.</b>	<b>2908</b>	<b>2944</b>	<b>1272.</b>	<b>2800.</b>	<b>18544.</b>	<b>10396.</b>	<b>0.</b>	<b>1272.</b>	<b>24468.</b>
<b>Income Range Rs. 2401—3600</b>										
One-earner	3317.	3744	7236	8418.	436.	12845.	15398.	2800.	3200.	30207.
Two-earner	436.	36	2000	36.	0.	6036.	3308.	0.	400.	6508.
Three-earner	400.	400	0	400.	0.	1600.	1200.	0.	0.	1600.
<b>TOTAL</b>	<b>4153.</b>	<b>4180</b>	<b>9236</b>	<b>8854.</b>	<b>436.</b>	<b>20481.</b>	<b>19906.</b>	<b>2800.</b>	<b>3600.</b>	<b>38315</b>



Table A.1.2 (Contd.)

1	2	3	4	5	6	7	8	9	10	11
<b>Income Range Rs. 3601—4800</b>										
One-earner	2800.	2800	4063	13816.	400.	4436.	11816.	1200.	1236.	22715.
Two-earner	2436.	2836	3308	2908.	400.	6908.	6144.	400.	836.	10980.
Three-earner	400.	400	400	0.	0.	400.	800.	0.	0.	800.
<b>TOTAL</b>	<b>5636.</b>	<b>6036</b>	<b>7771</b>	<b>16724.</b>	<b>800.</b>	<b>11744.</b>	<b>18760.</b>	<b>1600.</b>	<b>2072.</b>	<b>34495.</b>
<b>Income Range Rs. 4801—6000</b>										
One-earner	2108.	2872	5717	14324.	0.	1200.	8225.	2436.	3272.	23349.
Two-earner	0.	800	1609	2036.	0.	2000.	3645.	400.	9.	4445.
Three-earner	0.	0	436	400.	0.	872.	36.	0.	0.	908.
Four-earner	0.	0	72	36.	400.	108.	436.	0.	36.	508.
<b>TOTAL</b>	<b>2108.</b>	<b>3672</b>	<b>7834</b>	<b>16796.</b>	<b>400.</b>	<b>4180.</b>	<b>12342.</b>	<b>2836.</b>	<b>3317.</b>	<b>29210.</b>
<b>Income Range Rs. 6001—7500</b>										
One-earner	2418.	1798	2832	11592.	0.	400.	6603.	2144.	3335.	15597.
Two-earner	108.	472	2162	1452.	0.	836.	2733.	436.	9.	3686.
Three-earner	400.	400	472	472.	0.	872.	508.	0.	0.	1344.
Four-earner	0.	0	0	36.	0.	436.	400.	0.	436.	436.
More than four-earner	0.	0	400	400.	0.	0.	0.	0.	400.	400.
<b>TOTAL</b>	<b>2926.</b>	<b>2670</b>	<b>5866</b>	<b>13952.</b>	<b>0.</b>	<b>2544.</b>	<b>10244.</b>	<b>2580.</b>	<b>4180.</b>	<b>21463.</b>

Table A.1.2 (Contd.)

1	2	3	4	5	6	7	8	9	10	11
<b>Income Range Rs. 7501—10000</b>										
One-earner	1740.	2032	3678	11412.	0.	0.	6587.	2617.	3605.	15751.
Two-earner	288.	1160	2990	3728.	0.	1780.	3058.	616.	108.	5666.
Three-earner	36.	117	1133	580.	0.	400.	1241.	436.	472.	1677.
Four-earner	72.	36	508	108.	0.	36.	580.	36.	400.	652.
More than four-earner	18.	18	36	45.	0.	0.	54.	0.	0.	54.
<b>TOTAL</b>	<b>2154.</b>	<b>3363</b>	<b>8345</b>	<b>15873.</b>	<b>0.</b>	<b>2216.</b>	<b>11520.</b>	<b>3705.</b>	<b>4585.</b>	<b>23800.</b>
<b>Income Range Rs. 10001—15000</b>										
One-earner	720.	985	3679	5534.	0.	36.	6153.	1431.	859.	9483.
Two-earner	895.	985	1714	5402.	0.	144.	3747.	1089.	612.	6464.
Three-earner	234.	189	567	1134.	0.	252.	918.	144.	72.	1476.
Four-earner	36.	72	117	153.	0.	72.	261.	0.	36.	297.
More than four-earner	436.	436	472	72.	0.	0.	544.	0.	0.	544.
<b>TOTAL</b>	<b>2321.</b>	<b>2667</b>	<b>6549</b>	<b>12295.</b>	<b>0.</b>	<b>504.</b>	<b>11623.</b>	<b>2664.</b>	<b>1579.</b>	<b>18264.</b>
<b>Income Range Rs. 15001 — 20000</b>										
One-earner	499.	598	2244	2911.	0.	0.	2420.	1655.	751.	5236.
Two-earner	90.	99	576	2007.	0.	0.	1215.	585.	243.	2340.
Three-earner	81.	81	441	792.	0.	0.	621.	216.	261.	1017.
Four-earner	0.	0	90	189.	0.	36.	126.	36.	0.	234.
More than four-earner	45.	45	0	36.	0.	0.	45.	0.	0.	45.
	715.	823	3351	5935.	0.	36.	4427.	2492.	1255.	8872.

Table A.1.2 (Contd.)

1	2	3	4	5	6	7	8	9	10	11
Income Range Rs. 20001—25000										
One-earner	153.	117	522	1197.	0.	0.	954.	270.	54.	1764.
Two-earner	180.	135	441	1219.	0.	0.	738.	216.	63.	1597.
Three-earner	63.	153	441	513.	0.	9.	567.	117.	54.	747.
Four-earner	18.	45	135	162.	0.	0.	180.	63.	18.	225.
More than four-earner	0.	9	54	27.	0.	0.	54.	0.	9.	54.
TOTAL	414.	459	1593	3118.	0.	9.	2493.	666.	198.	4387.
Income Range Rs. 25001—30000										
One-earner	135.	63	378	684.	0.	0.	657.	126.	90.	1080.
Two-earner	27.	72	360	378.	0.	0.	513.	99.	72.	630.
Three-earner	36.	0	153	252.	0.	0.	306.	45.	45.	342.
Four-earner	0.	27	81	72.	0.	0.	72.	27.	0.	117.
More than four earner	9.	409	400	18.	0.	0.	418.	0.	0.	418.
TOTAL	207.	571	1372	1404.	0.	0.	1966.	297.	207.	2587.
Income Range Rs. 30001—40000										
One-earner	162.	144	198	441.	0.	9.	468.	126.	0.	720.
Two-earner	9.	63	171	585.	0.	0.	558.	117.	108.	702.
Three-earner	18.	9	81	189.	0.	0.	144.	18.	63.	225.
Four-earner	45.	18	90	144.	0.	9.	180.	45.	54.	225.
More than four-earner	0.	0	36	27.	0.	0.	18.	0.	0.	63.
TOTAL	234.	234	576	1386.	0.	18.	1368.	306.	225.	1935.

Table A.1.2 (Contd.)

1	2	3	4	5	6	7	8	9	10	11
<b>Income Range Rs. 40001—60000</b>										
One-earner	9.	9	90	72.	0.	0.	90.	36.	0.	162.
Two-earner	36.	45	144	144.	0.	0.	261.	54.	9.	288.
Three-earner	72.	72	126	99.	0.	0.	198.	54.	9.	216.
Four-earner	9.	27	45	54.	0.	0.	63.	18.	0.	72.
More than four-earner	9.	9	27	18.	0.	0.	27.	9.	0.	36.
<b>TOTAL</b>	<b>135.</b>	<b>162</b>	<b>432</b>	<b>387.</b>	<b>0.</b>	<b>0.</b>	<b>639.</b>	<b>171.</b>	<b>18.</b>	<b>774.</b>
<b>Income Range Over Rs. 60000</b>										
One-earner	27.	18	45	36.	0.	0.	63.	9.	0.	90.
Two-earner	9.	36	108	54.	0.	0.	108.	9.	0.	117.
Three-earner	27.	18	63	18.	0.	0.	63.	18.	0.	63.
Four-earner	9.	9	45	9.	0.	0.	54.	9.	0.	54.
More than four-earner	18.	63	144	72.	0.	0.	135.	27.	0.	144.
<b>TOTAL</b>	<b>90.</b>	<b>144</b>	<b>405</b>	<b>189.</b>	<b>0.</b>	<b>0.</b>	<b>423.</b>	<b>72.</b>	<b>0.</b>	<b>468.</b>
<b>All Income Ranges</b>										
One-earner	15432.	17252	33554	71745.	2036.	31034.	66594.	14850.	17710.	144114.
Two-earner	5786.	7575	16455	19949.	2000.	24140.	29736.	4021.	3269.	51567.

Table A.1.2 (Contd.)

1	2	3	4	5	6	7	8	9	10	11
Three-earner	1767.	1839	4313	4849.	436.	5205.	7402.	1048.	976.	11215.
Four-earner	589.	234	1183	963.	400.	1097.	2752.	234.	980.	3220.
More than four-earner	535.	989	1569	715.	36.	0.	1295.	36.	409.	1753.
<b>TOTAL</b>	<b>24109.</b>	<b>27889</b>	<b>57074</b>	<b>98221.</b>	<b>4908.</b>	<b>61476.</b>	<b>107779.</b>	<b>20189.</b>	<b>23344.</b>	<b>211874.</b>

*Source:* Computer printouts relating to the survey on 'Household Income and Its Disposition', NCAER, New Delhi (1980).

TABLE A.1.3

Household Distribution of Income (NCAER) by Households of Varying Earner-Density and by Source Components of Income: Rural India for 1975-76

(Rs million)

Income Ranges and Earner-Density of Households	Agricultural income	Livestock income	Business income	Salary income	Agricultural wage income	Non-Agricultural wage income	Housing income	Dividend and interest income	Transfer income	Gross income
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<b>Income Range Rs. 0-1200</b>										
One-earner	1046.49	12.36	222.89	nil	1324.50	1125.54	200.58	0.50	163.48	4096.37
Two-earner	406.22	27.11	70.99	nil	842.15	80.50	59.22	nil	23.40	1509.59
Three-earner	68.51	-4.07	nil	nil	197.50	nil	6.30	nil	10.80	279.04
Four-earner	0.72	nil	nil	nil	38.48	nil	2.02	nil	nil	41.22
<b>TOTAL</b>	<b>1521.94</b>	<b>35.43</b>	<b>293.88</b>	<b>nil</b>	<b>2402.63</b>	<b>1206.04</b>	<b>268.12</b>	<b>0.50</b>	<b>197.68</b>	<b>5926.22</b>
<b>Income Range Rs. 1201-2400</b>										
One-earner	6552.41	953.02	1373.40	320.30	6047.65	2308.16	965.92	43.88	716.20	19280.93
Two-earner	4575.08	317.60	452.35	124.96	8310.82	2546.22	526.65	0.29	173.59	17027.56
Three-earner	982.14	83.09	307.69	62.64	2159.75	314.50	113.00	0.09	14.25	4037.15
Four-earner	215.86	-17.06	4.43	69.12	634.06	159.66	16.38	nil	nil	1082.45

Table A.1.3 (Contd.)

1	2	3	4	5	6	7	8	9	10	11
More than four-earner	56.57	-7.22	nil	nil	88.75	nil	4.57	nil	nil	142.67
No-earner	33.04	nil	nil	nil	nil	32.40	-0.14	nil	nil	65.30
<b>TOTAL</b>	<b>12415.10</b>	<b>1329.43</b>	<b>2137.87</b>	<b>577.02</b>	<b>17241.03</b>	<b>5360.94</b>	<b>1626.38</b>	<b>44.26</b>	<b>904.05</b>	<b>41636.07</b>
<b>Income Range Rs. 2401—3600</b>										
One-earner	10998.27	1609.97	1881.16	901.21	2149.16	3073.27	869.06	2.42	1057.79	22542.33
Two-earner	9176.84	856.28	1585.82	794.08	4286.28	3296.43	585.70	1.02	440.90	210.23.35
Three-earner	1924.76	58.51	90.73	53.61	2958.86	1926.40	140.50	0.11	64.81	7218.69
Four-earner	1140.05	41.58	40.32	22.32	1395.65	401.22	77.04	nil	14.18	3132.36
More than four-earner	463.39	84.86	162.50	nil	393.91	159.22	37.87	nil	39.24	1341.00
<b>TOTAL</b>	<b>23703.32</b>	<b>2651.20</b>	<b>3760.53</b>	<b>1771.22</b>	<b>11183.87</b>	<b>8856.55</b>	<b>1710.57</b>	<b>3.55</b>	<b>1616.92</b>	<b>55257.73</b>
<b>Income Range Rs.3601—4800</b>										
One-earner	7936.72	1815.30	2202.56	2491.45	630.42	1950.95	773.25	1.58	1157.41	18959.64
Two-earner	8510.13	1780.49	1498.61	1509.07	2043.89	1568.36	554.76	0.36	470.70	17936.38
Three-earner	3302.92	175.71	272.69	84.08	1412.18	1173.69	103.62	nil	34.92	6559.71
Four-earner	960.26	185.65	nil	77.76	947.70	49.43	25.99	nil	nil	2246.80
More than four-earner	359.45	19.41	nil	nil	211.25	181.36	4.10	nil	nil	783.58
<b>TOTAL</b>	<b>21069.50</b>	<b>3976.55</b>	<b>3973.86</b>	<b>4162.36</b>	<b>5245.45</b>	<b>4931.78</b>	<b>1451.63</b>	<b>1.94</b>	<b>1663.04</b>	<b>46486.11</b>
<b>Income Range Rs. 4801—6000</b>										
One-earner	6921.01	908.29	1643.32	2830.95	138.60	394.58	627.39	3.56	427.44	13895.15
Two-earner	5499.37	948.04	795.31	1589.80	667.87	1008.43	471.07	2.70	447.29	11429.88

Table A.1.3 (Contd.)

	1	2	3	4	5	6	7	8	9	10	11
Three-earner	2795.42	567.13	115.20	478.73	597.96	707.27	171.77	0.83	117.37	5551.68	
Four-earner	1877.26	921.60	104.40	118.80	539.53	381.35	154.08	nil	40.32	4137.34	
More than four-earner	1387.69	372.89	25.20	129.60	278.28	591.26	68.85	nil	115.20	2968.97	
<b>TOTAL</b>	<b>18480.76</b>	<b>3717.95</b>	<b>2683.43</b>	<b>5147.88</b>	<b>2222.24</b>	<b>3082.89</b>	<b>1493.16</b>	<b>7.09</b>	<b>1147.62</b>	<b>37983.02</b>	
<b>Income Range Rs. 6001—7500</b>											
One-earner	4442.99	1116.30	408.40	1418.34	5.18	nil	476.80	0.22	251.60	8119.82	
Two-earner	4378.31	700.81	538.33	1461.98	174.60	617.19	330.56	1.97	90.74	8294.49	
Three-earner	3132.98	422.11	76.32	672.87	163.40	421.02	161.80	nil	18.00	5068.50	
Four earner	1921.57	210.38	30.60	66.96	275.54	205.20	80.08	nil	43.20	2883.53	
More than four-earner	731.57	264.42	nil	nil	472.68	8.68	38.54	nil	14.40	1530.30	
<b>TOTAL</b>	<b>14607.42</b>	<b>2714.02</b>	<b>1053.64</b>	<b>3620.15</b>	<b>1091.41</b>	<b>1252.09</b>	<b>1087.78</b>	<b>2.19</b>	<b>417.94</b>	<b>25846.64</b>	
<b>Income Range Rs. 7501—10000</b>											
One-earner	4158.91	370.89	980.15	1689.84	nil	1.94	439.01	75.19	293.66	8009.60	
Two-earner	4832.48	485.34	636.25	1572.62	12.97	26.37	324.78	5.84	167.92	8064.58	
Three-earner	2732.14	563.11	145.46	565.80	69.35	59.71	203.56	0.07	21.60	4360.81	
Four-earner	2065.14	323.94	385.20	280.84	2.88	56.16	79.96	nil	nil	3194.12	
More than four-earner	1167.41	332.04	225.42	182.66	496.83	30.68	94.59	0.01	10.80	2540.045	
<b>TOTAL</b>	<b>14956.08</b>	<b>2075.33</b>	<b>2372.49</b>	<b>4291.77</b>	<b>582.03</b>	<b>174.86</b>	<b>1141.90</b>	<b>81.11</b>	<b>493.98</b>	<b>26169.56</b>	



TABLE A.1-3 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<b>Income Range Rs. 10001—15000</b>										
One-earner	4312.42	248.01	749.08	581.78	nil	nil	355.31	26.55	193.70	6466.95
Two-earner	4624.39	670.06	451.50	2896.42	nil	nil	374.57	1.58	33.96	9052.49
Three-earner	3631.33	807.59	795.19	1190.32	nil	87.26	272.74	1.55	71.42	6857.40
Four-earner	1055.43	162.19	73.89	511.86	nil	19.24	27.06	nil	nil	1849.67
More than four-earner	1969.08	405.20	126.81	737.22	68.52	220.84	88.59	1.11	8.77	3626.14
<b>TOTAL</b>	<b>15592.65</b>	<b>2293.16</b>	<b>2196.47</b>	<b>5917.61</b>	<b>68.52</b>	<b>327.34</b>	<b>1118.27</b>	<b>30.78</b>	<b>307.85</b>	<b>27852.65</b>
<b>Income Range Rs. 15001—20000</b>										
One-earner	2688.06	—13.88	253.72	205.28	nil	nil	116.74	5.13	43.24	3298.29
Two-earner	3504.65	172.88	549.89	756.68	nil	nil	133.94	nil	28.14	5146.18
Three-earner	988.46	98.92	118.02	198.94	nil	8.07	35.87	nil	nil	1448.24
Four-earner	576.51	118.26	54.00	188.89	7.20	nil	66.82	nil	39.83	1051.51
More than four-earner	1807.87	241.84	169.02	295.32	nil	nil	65.87	2.66	45.29	2627.87
<b>TOTAL</b>	<b>9565.55</b>	<b>617.99</b>	<b>1144.65</b>	<b>1645.11</b>	<b>7.20</b>	<b>8.07</b>	<b>419.23</b>	<b>7.79</b>	<b>156.50</b>	<b>13572.09</b>
<b>Income Range Rs. 20001—25000</b>										
One-earner	1619.28	69.89	662.40	nil	nil	nil	70.26	51.88	23.76	2497.47
Two-earner	1331.70	16.50	71.28	158.59	nil	nil	38.88	nil	93.95	1710.91
Three-earner	1651.86	—4.18	204.11	171.60	nil	28.77	49.32	nil	nil	2101.49

TABLE A.1.3 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Four-earner	860.22	119.72	21.60	220.70	nil	nil	24.95	0.43	5.18	1252.80
More than four-earner	542.90	65.81	6.48	112.90	nil	10.80	19.82	nil	7.20	765.91
<b>TOTAL</b>	<b>6005.96</b>	<b>267.74</b>	<b>965.87</b>	<b>663.79</b>	<b>nil</b>	<b>39.57</b>	<b>203.23</b>	<b>52.31</b>	<b>130.10</b>	<b>8328.58</b>
<b>Income Range Rs. 25001—30000</b>										
One-earner	202.46	2.36	79.20	58.10	nil	nil	33.35	127.44	nil	502.91
Two-earner	2280.48	-27.08	424.38	73.05	nil	nil	42.16	nil	103.94	2896.93
Three-earner	1221.01	9.99	78.05	204.74	nil	nil	44.01	nil	nil	1557.80
More than four-earner	286.80	16.18	nil	79.01	nil	nil	8.54	nil	nil	390.54
<b>TOTAL</b>	<b>3990.75</b>	<b>1.45</b>	<b>581.63</b>	<b>414.91</b>	<b>nil</b>	<b>nil</b>	<b>128.06</b>	<b>127.44</b>	<b>103.94</b>	<b>5348.18</b>
<b>Income Range Rs. 30001—40000</b>										
One-earner	74.89	12.27	nil	nil	nil	nil	21.01	nil	nil	108.17
Two-earner	101.77	5.06	7.20	95.69	nil	nil	9.71	0.04	13.80	230.27
Three-earner	1649.02	13.18	128.88	137.49	nil	nil	29.91	0.46	nil	1958.94
Four-earner	16.92	9.72	97.20	nil	nil	nil	2.52	nil	nil	126.36
More than four-earner	258.77	24.29	nil	62.17	nil	nil	5.61	nil	nil	350.84
<b>TOTAL</b>	<b>2101.37</b>	<b>64.52</b>	<b>233.28</b>	<b>295.35</b>	<b>nil</b>	<b>nil</b>	<b>68.76</b>	<b>0.50</b>	<b>10.80</b>	<b>2774.58</b>
<b>Income Range Rs. 40001—60000</b>										
One-earner	190.10	-3.29	nil	nil	nil	nil	2.79	nil	9.00	198.60
Two-earner	64.01	6.33	443.51	nil	nil	nil	37.98	nil	nil	551.83

Table A.1.3 (Contd.)

	1	3	3	4	5	6	7	8	9	10	11
four-earner	62.91	14.81	370.08	248.45	nil	nil	30.74	nil	390.20	1117.20	
More than four-earner	237.85	60.05	nil	nil	nil	nil	7.18	nil	216.00	521.08	
<b>TOTAL</b>	<b>554.87</b>	<b>77.90</b>	<b>813.59</b>	<b>248.45</b>	<b>nil</b>	<b>nil</b>	<b>78.69</b>	<b>nil</b>	<b>615.20</b>	<b>2388.7</b>	
<b>Income Range Over Rs. 60000</b>											
One-earner	nil	nil	1705.68	nil	nil	nil	109.08	nil	nil	1814.76	
Four-earner	223.16	-4.68	64.80	nil	nil	nil	4.32	nil	nil	287.60	
<b>TOTAL</b>	<b>223.16</b>	<b>-4.68</b>	<b>1770.48</b>	<b>nil</b>	<b>nil</b>	<b>nil</b>	<b>113.40</b>	<b>nil</b>	<b>nil</b>	<b>2102.36</b>	
<b>All Income Ranges</b>											
One-earner	51144.02	7101.61	12161.94	10497.26	10295.51	8854.43	5060.55	338.36	4337.29	109790.99	
Two-earner	49285.42	5959.42	7525.43	11032.95	16338.59	9143.51	3489.99	13.80	2085.34	104874.44	
Three-earner	24080.56	2791.06	2332.34	3820.81	7559.01	4726.68	1332.70	3.11	353.19	46999.46	
Four-earner	10978.00	2086.12	1246.52	1805.71	3841.05	1272.26	591.96	0.43	532.91	22352.96	
More than four-earner	9269.37	1879.78	715.43	1598.89	2010.23	1210.84	444.13	3.78	456.90	17589.35	
No-earner	33.04	nil	nil	nil	nil	32.40	-0.14	nil	nil	65.30	
<b>TOTAL</b>	<b>144788.41</b>	<b>19817.99</b>	<b>23981.67</b>	<b>28755.62</b>	<b>40044.38</b>	<b>25240.12</b>	<b>10919.19</b>	<b>359.47</b>	<b>7765.63</b>	<b>301672.50</b>	

Source: Computer printouts relating to the NCAER survey on "Household Income and Its Disposition", NCAER, New Delhi (1980).

**TABLE A.1.4**  
**Frequency Distribution by Households (NCAER) of Varying Earner-Density and by Source Components of**  
**Income: Rural India for 1975-76**

(Numbers : in hundred)

Income Ranges and Earner-Density of households	Agricultural income	Livestock income	Business income	Salary income	Agricultural wage income	Non-Agricultural wage income	Housing income	Dividend and interest income	Current transfer	Gross income
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<b>Income Range</b>										
<b>Rs. 0 — 1200</b>										
One-earner	18215.	10224.	3240.	0.	18360.	14760.	34776.	720.	3672.	45576.
Two-earner	7920.	6840.	1080.	0.	11880.	1440.	10080.	0.	1080.	15480.
Three-earner	1800.	1080.	0.	0.	2520.	0.	2160.	0.	360.	2880.
Four-earner	360.	0.	0.	0.	360.	0.	360.	0.	0.	360.
<b>Total</b>	<b>28296.</b>	<b>18144.</b>	<b>4320.</b>	<b>0.</b>	<b>33120.</b>	<b>16200.</b>	<b>47376.</b>	<b>720.</b>	<b>5112.</b>	<b>64295.</b>
<b>Income Range</b>										
<b>Rs. 1201 — 2400</b>										
One-earner	58356.	51912.	9396.	2160.	47808.	16344.	91692.	4320.	9144.	109404.
Two-earner	51264.	44424.	6480.	1440.	65520.	18792.	73800.	360.	3240.	94032.
Three-earner	11808.	10008.	2880.	720.	16416.	2880.	13608.	72.	432.	20520.

TABLE A.1.4 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Four-earner	2520.	2520.	360.	720.	5040.	720.	3960.	0.	0.	5760.
More than 4-earner	360.	360.	0.	0.	720.	0.	720.	0.	0.	720.
No-earner	360.	0.	0.	0.	0.	360.	360.	0.	0.	360.
<b>Total</b>	<b>124668.</b>	<b>109224.</b>	<b>19116.</b>	<b>5040.</b>	<b>135504.</b>	<b>39096.</b>	<b>184140.</b>	<b>4752.</b>	<b>12816.</b>	<b>230736.</b>
<b>Income Range</b>										
<b>Rs. 2401 — 3600</b>										
One-earner	56124.	55440.	9072.	3672.	14976.	14040.	67860.	1800.	9216.	77292.
Two-earner	52740.	50652.	8568.	3960.	29700.	17640.	61092.	432.	5400.	71604.
Three-earner	12744.	11232.	792.	1080.	13896.	8784.	19368.	72.	1080.	24408.
Four-earner	8136.	8064.	432.	360.	6840.	2232.	7776.	0.	72.	10296.
More than 4-earner	2880.	3384.	792.	0.	1800.	864.	3384.	0.	720.	4104.
<b>Total</b>	<b>132624.</b>	<b>128772.</b>	<b>19656.</b>	<b>9072.</b>	<b>67212.</b>	<b>43560.</b>	<b>159480.</b>	<b>2304.</b>	<b>16488.</b>	<b>187704.</b>
<b>Income Range</b>										
<b>Rs. 3601 — 4800</b>										
One-earner	33336.	31320.	7272.	7776.	5112.	6840.	43560.	1152.	6408.	46512.
Two-earner	34776.	33264.	7704.	5544.	12816.	6696.	38952.	360.	3024.	43416.
Three-earner	12816.	11016.	1080.	432.	5904.	4454.	13968.	0.	864.	15768.
Four-earner	3672.	3672.	0.	360.	2880.	792.	4752.	0.	0.	5472.
More than 4-earner	1872.	1872.	0.	0.	1152.	792.	0.	0.	0.	1872.
<b>Total</b>	<b>86472.</b>	<b>81144.</b>	<b>16056.</b>	<b>14112.</b>	<b>27864.</b>	<b>19512.</b>	<b>102024.</b>	<b>1512.</b>	<b>10296.</b>	<b>113040.</b>

TABLE A.1.4 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<b>Income Range</b>										
<b>Rs. 4801—6000</b>										
One-earner	20700.	19835.	4968.	6840.	1152.	1512.	23292.	504.	2664.	26460.
Two-earner	16992.	18108.	2412.	4896.	4032.	4176.	20412.	216.	2376.	21132.
Three-earner	8856.	8352.	360.	1944.	2520.	2592.	9216.	432.	1152.	10368.
Four-earner	7272.	7272.	1080.	720.	3672.	1872.	7632.	0.	504.	7632.
More than 4-earner	5184.	4464.	432.	260.	1440.	1800.	4104.	0.	720.	5544.
Total	59004.	58032.	9252.	14760.	12816.	11952.	64656.	1152.	7416.	71136.
<b>Income Range</b>										
<b>Rs. 6001—7500</b>										
One-earner	10332.	11088.	936.	2952.	72.	0.	10980.	360.	504.	12132.
Two-earner	10080.	11160.	1368.	3384.	1296.	1440.	11664.	432.	864.	12456.
Three-earner	7128.	6732.	288.	1404.	1008.	1224.	7128.	0.	72.	7560.
Four-earner	4248.	4248.	720.	144.	1440.	1152.	4248.	0.	360.	4248.
More than 4-earner	2304.	2304.	0.	0.	1440.	72.	1944.	0.	72.	2304.
Total	34092.	35532.	3312.	7884.	5256.	3888.	35964.	792.	1872.	38700.
<b>Income Range</b>										
<b>Rs. 7501—10000</b>										
One-earner	6876.	6660.	1440.	2520.	0.	72.	8460.	648.	1152.	9108.
Two-earner	8532.	8460.	1728.	3060.	72.	216.	9288.	396.	936.	9432.

TABLE A.1.4 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Three-earner	4860.	4572.	504.	1224.	792.	288.	4932.	72.	72.	5076.
Four-earner	3672.	3672.	576.	504.	72.	216.	3024.	0.	0.	3672.
More than 4-earner	2772.	2916.	720.	540.	1368.	72.	2484.	72.	108.	2916.
Total	26712.	26280.	4968.	7848.	2304.	864.	28188.	1188.	2268.	30204.
Income Range										
Rs. 10001—15000										
One-earner	4860.	5076.	864.	792.	0.	0.	5292.	360.	504.	5436.
Two-earner	6084.	6300.	1116.	3240.	0.	0.	6876.	288.	252.	7452.
Three-earner	5580.	5472.	1404.	2052.	0.	252.	5544.	144.	252.	5760.
Four-earner	1404.	1440.	216.	1008.	0.	72.	1404.	0.	0.	1476.
More than 4-earner	2700.	2772.	360.	1656.	288.	576.	2700.	504.	144.	2844.
Total	20628.	21060.	3960.	8748.	288.	900.	21816.	1296.	1152.	22968.
Income Range										
Rs. 15001—20000										
One-earner	1764.	1800.	288.	216.	0.	0.	1836.	108.	36.	1944.
Two-earner	2916.	2916.	540.	828.	0.	0.	2916.	0.	144.	3024.
Three-earner	864.	864.	108.	252.	0.	72.	756.	0.	0.	864.
Four-earner	612.	612.	36.	288.	72.	0.	612.	0.	108.	612.
More than 4-earner	1584.	1584.	504.	504.	0.	0.	1296.	36.	72.	1584.
Total	7740.	7776.	1512.	2088.	72.	72.	7416.	144.	360.	8028.

TABLE A.1.4 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<b>Income Range</b>										
<b>Rs. 20001 - 25000</b>										
One-earner	1152.	828.	360.	0.	0.	0.	1080.	108.	36.	1152.
Two-earner	792.	792.	72.	180.	0.	0.	792.	0.	180.	792.
Three-earner	936.	900.	144.	396.	0.	72.	936.	0.	0.	936.
Four-earner	540.	540.	72.	324.	0.	0.	504.	36.	72.	540.
More than 4-earner	360.	360.	36.	108.	0.	36.	360.	0.	72.	360.
Total	3780.	3420.	684.	1008.	0.	108.	3672.	144.	360.	3780.
<b>Income Range</b>										
<b>Rs. 25001—30000</b>										
One-earner	180.	108.	72.	72.	0.	0.	180.	72.	0.	180.
Two-earner	1008.	1008.	252.	72.	0.	0.	1044.	0.	72.	1044.
Three-earner	540.	576.	144.	180.	0.	0.	576.	0.	0.	576.
More than 4-earner	144.	144.	0.	108.	0.	0.	144.	0.	0.	144.
Total	1872.	1836.	468.	432.	0.	0.	1944.	72.	72.	1944.
<b>Income Range</b>										
<b>Rs. 30001—40000</b>										
One-earner	36.	36.	0.	0.	0.	0.	36.	0.	0.	36.
Two-earner	36.	72.	36.	36.	0.	0.	72.	36.	36.	72.



TABLE A.1.4 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Three-earner	540.	540.	72.	144.	0.	0.	576.	36.	0.	576.
Four-earner	36.	36.	36.	0.	0.	0.	36.	0.	0.	36.
More than 4-earner	108.	108.	0.	36.	0.	0.	108.	0.	0.	108.
Total	756.	792.	144.	216.	0.	0.	828.	72.	36.	828.
<b>Income Range</b>										
<b>Rs. 40001—60000</b>										
One-earner	36.	36.	0.	0.	0.	0.	36.	0.	36.	36.
Two-earner	36.	36.	108.	0.	0.	0.	108.	0.	0.	108.
Four-earner	36.	36.	252.	216.	0.	0.	252.	0.	216.	252.
More than 4-earner	108.	108.	0.	0.	0.	0.	108.	0.	72.	108.
Total	216.	216.	360.	216.	0.	0.	504.	0.	324.	504.
<b>Income Range</b>										
<b>Over 60000</b>										
One-earner	0.	0.	216.	0.	0.	0.	216.	0.	0.	216.
Four-earner	36.	36.	36.	0.	0.	0.	36.	0.	0.	36.
Total	36.	36.	252.	0.	0.	0.	252.	0.	0.	252.

TABLE A.1.4 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<b>All Income Ranges</b>										
One-earner	211968.	194364.	38124.	27000.	87480.	53568.	289296.	10152.	33372.	355484.
Two-earner	193176.	184032.	31464.	26640.	125316.	50400.	237096.	2520.	17604.	280044.
Three-earner	68472.	61344.	7776.	9828.	43056.	20628.	78768.	828.	4284.	95292.
Four-earner	32544.	32148.	3816.	4644.	20376.	7056.	34596.	36.	1332.	40392.
More than										
4-earner	20376.	20376.	2880.	3312.	8208.	4140.	18144.	612.	1980.	22608.
No-earner	360.	0.	0.	0.	0.	360.	360.	0.	0.	360.
Total	526896.	492264.	84060.	71424.	284436.	136152.	658260.	14148.	58572.	774180.

*Source:* Computer printouts relating to the survey on "Household Income and Its Disposition", NCAER, New Delhi (1980).

TABLE A.1.5

Frequency Distribution by Income Ranges for Earners Derived for 'Three-Earner' Urban Households, 1975-76

Income-ranges (Rs)	Three-earner households			Derived frequency distribution of earners from		
	Gross income (Rs million)	Number of earners (million)	Per-earner income (Rs)	1 + 2 + 3 + 4- earner households	Three-earner households	One + Two + Three-earner households
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0-1200	Nil	Nil	Nil	1.8720	0.7200	2.5920
1201-2400	154.24	0.2400	643	5.0500	0.9156	5.9656
2401-3600	458.16	0.4800	954	4.6470	0.5031	5.1501
3601-4800	302.48	0.2400	1260	3.4050	0.4428	3.8478
4801-6000	471.07	0.2724	1729	3.6280	0.3051	3.9331
6001-7500	945.95	0.4032	2346	1.5600	0.2241	1.7841
7501-10000	1487.32	0.5031	2956	2.0430	0.1026	2.1456
10001-15000	1795.51	0.4428	4055	1.3940	0.0675	1.4615
15001-20000	1813.23	0.3051	5943	0.6640	0.0648	0.7288
20001-25000	1636.41	0.2241	7302	0.2340	Nil	0.2340
25001-30000	922.35	0.1026	8990	0.1080	0.0189	0.1269
30001-40000	776.01	0.0675	11497	0.0720	Nil	0.0720
40001-60000	1063.04	0.0648	16405	0.0400	Nil	0.0400
60001 & above	511.25	0.0189	27050	0.0090	Nil	0.0090
<b>TOTAL</b>	<b>12337.01</b>	<b>3.3645</b>	<b>—</b>	<b>24.7260</b>	<b>3.3645</b>	<b>28.0905</b>

Source: As explained in Appendix 1.

**TABLE A.1.6**  
**Frequency Distribution by Income Ranges for Earners Derived for 'Four-Earner' Urban Households, 1975-76**

Income-ranges (Rs)	Four-earner households			Derived frequency distribution of earners from		
	Gross income (Rs million)	Number of earners (million)	Per-earner income (Rs)	1 + 2 + 3- earner households	4-earner households	1 + 2 + 3 + 4- earner households
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0-1200	Nil	Nil	Nil	2.5920	0.1000	2.7520
1201-2400	71.00	0.1600	444	5.9655	0.6384	6.6040
2401-3600	Nil	Nil	Nil	5.1501	0.1188	5.2689
3601-4800	Nil	Nil	Nil	3.8478	0.0936	3.9414
4801-6000	269.08	0.2032	1324	3.9331	0.0900	4.0231
6001-7500	323.42	0.1744	1854	1.7841	0.0468	1.8309
7501-10000	556.46	0.2608	2134	2.1456	0.0900	2.2356
10000-15000	365.78	0.1188	3079	1.4615	0.0288	1.4903
15001-20000	401.08	0.0936	4285	0.7288	Nil	0.7288
20001-25000	522.67	0.0900	5807	0.2340	Nil	0.2340
25001-30000	325.52	0.0468	6956	0.1269	0.0216	0.1485
30001-40000	771.36	0.0900	8571	0.0720	Nil	0.0720
40001-60000	336.58	0.0288	11687	0.0400	Nil	0.0400
60001&above	553.33	0.0216	25617	0.0090	Nil	0.0090
<b>TOTAL</b>	<b>4496.28</b>	<b>1.2880</b>	<b>—</b>	<b>28.0905</b>	<b>1.2880</b>	<b>29.3785</b>

Source: As explained in Appendix 1.

TABLE A.1.7

Frequency Distribution by Income Ranges for Earners Derived for 'More than Four-Earner' Urban Households 1975-76

Income-ranges (Rs)	More than Four-Earner households			Derived frequency distribution of earners from		
	Gross income (Rs million)	Number of earners (million)	Per-earner income (Rs)	1 + 2 + 3 + 4- earner households	More than 4-earner households	All earners house-holds
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0-1200	Nil	Nil	Nil	2.7520	Nil	2.7520
1201-2400	Nil	Nil	Nil	6.6040	0.5521	7.1561
2401-3600	Nil	Nil	Nil	5.2689	0.0249	5.2938
3601-4800	Nil	Nil	Nil	3.9414	0.0299	3.9713
4801-6000	Nil	Nil	Nil	4.0231	0.2312	4.2543
6001-7500	280.00	0.2213	1265	1.8309	0.0348	1.8657
7501-10000	51.90	0.0299	1738	2.2356	0.0199	2.2555
10001-15000	599.14	0.3009	1991	1.4903	Nil	1.4903
15001-20000	74.07	0.0249	2976	0.7288	Nil	0.7288
20001-25000	125.22	0.0299	4192	0.2340	0.0796	0.3136
25001-30000	1123.32	0.2312	4858	0.1485	Nil	0.1485
30000-40000	223.76	0.0348	6421	0.0720	Nil	0.0720
40001-60000	165.95	0.0199	8335	0.0400	Nil	0.0400
60000 & above	1763.47	0.0796	22140	0.0090	Nil	0.0090
<b>TOTAL</b>	<b>4406.83</b>	<b>0.9724</b>	<b>—</b>	<b>29.3785</b>	<b>0.9724</b>	<b>30.3509</b>

Source: As explained in Appendix I.

**TABLE A.1.8**  
**Frequency Distribution by Income Ranges for Earners Derived for 'Two-Earner' Rural Households, 1975-76**

Income-ranges (Rs)	Two-earner households			Derived frequency distribution of earners from		
	Gross income (Rs million)	Number of earners (million)	Per-earner income (Rs)	1-earner households	2-earner households	1 + 2- earner households
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0—1200	1509.59	3.0960	488	4.5576	21.9024	26.4600
1201—2400	17027.56	18.8064	905	10.9404	23.0040	33.9444
2401—3600	21023.35	14.3208	1468	7.7292	6.7176	14.4468
3601—4800	17936.38	8.6832	2066	4.6512	1.8864	6.5376
4801—6000	11429.88	4.2264	2704	2.6460	Nil	2.6460
6001—7500	8294.49	2.4912	3329	1.2132	1.4904	2.7036
7501—10000	8064.58	1.8864	4275	0.9108	0.6048	1.5156
10001—15000	9052.49	1.4904	6074	0.5436	0.3672	0.9108
15001—20000	5146.18	0.6048	8509	0.1944	0.0144	0.2088
20001—25000	1710.91	0.1584	10801	0.1152	Nil	0.1152
25001—30000	2896.93	0.2088	13874	0.0180	0.0216	0.0396
30001—40000	230.27	0.0144	15991	0.0036	Nil	0.0036
40001—60000	551.83	0.0216	25548	0.0036	Nil	0.0036
60001 & above	Nil	Nil	Nil	0.0216	Nil	0.0216
<b>TOTAL</b>	<b>104874.44</b>	<b>56.0088</b>	<b>—</b>	<b>33.5484</b>	<b>56.0088</b>	<b>89.5572</b>

Source: As explained in Appendix 1.

TABLE A.1.9

Frequency Distribution by Income Ranges for Earners Derived for 'Three-Earner' Rural Households, 1975-76

Income-ranges (Rs)	Three-earner households			Derived frequency distribution of earners from		
	Gross income (Rs million)	Number of earners (million)	Per-earner income (Rs)	1 + 2- earner households	3-earner households	1 + 2 + 3- earner households
				(million)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0-1200	279.04	0.8640	323	26.4600	14.3424	40.8024
1201-2400	4037.16	6.1560	656	33.9444	10.1088	44.0532
2401-3600	7218.69	7.3224	986	14.4468	1.5228	15.9696
3601-4800	6559.71	4.7304	1387	6.5376	1.7280	8.2656
4801-6000	5551.68	3.1104	1785	2.6460	0.2592	2.9052
6001-7500	5068.50	2.2680	2235	2.7036	0.2808	2.9844
7501-10000	4360.81	1.5228	2864	1.5156	0.1728	1.6884
10001-15000	6857.40	1.7280	3968	0.9108	0.1728	1.0836
15001-20000	1448.24	0.2592	5587	0.2028	Nil	0.2088
20001-25000	2101.49	0.2808	7484	0.1152	Nil	0.1152
25001-30000	1557.80	0.1728	9015	0.0396	Nil	0.0396
30001-40000	1958.94	0.1728	11336	0.0036	Nil	0.0036
40001-60000	Nil	Nil	Nil	0.0036	Nil	0.0036
60001 & above	Nil	Nil	Nil	0.0216	Nil	0.0216
TOTAL	46999.46	28.5876	—	89.5572	28.5876	118.1448

Source: As explained in Appendix 1.

**TABLE A.1.10**  
**Frequency Distribution by Income Ranges for Earners Derived for 'Four-Earner' Rural Households, 1975-76**

Income-ranges (Rs)	Four-earner households			Derived frequency distribution of earners from		
	Gross Income (Rs million)	Number of Earners (million)	Per-earner Income (Rs)	1 + 2 + 3- earner households	4-earner households	1 + 2 + 3 + 4 earner households
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0—1200	41.22	0.1440	286	40.8024	8.7552	49.5576
1201—2400	1082.45	2.3040	470	44.0532	6.2208	50.2740
2401—3600	3132.36	4.1184	761	15.9696	0.5904	16.5600
3601—4800	2246.80	2.1888	1026	8.2656	0.2448	8.5104
4801—6000	4137.34	3.0528	1355	2.9052	0.2160	3.1212
6001—7500	2833.53	1.6992	1668	2.9844	Nil	2.9844
7501—10000	3194.12	1.4668	2175	1.6884	0.0144	1.7028
10001—15000	1849.67	0.5904	3133	1.0836	0.1008	1.1844
15001—20000	1051.51	0.2448	4295	0.2088	0.0144	0.2232
20001—25000	1252.80	0.2160	5800	0.1152	Nil	0.1152
25001—30000	Nil	Nil	Nil	0.0396	Nil	0.0396
30001—40000	126.36	0.0144	8775	0.0036	Nil	0.0036
40001—60000	1117.20	0.1008	11083	0.0036	Nil	0.0036
60001 & above	287.60	0.0144	19972	0.0216	Nil	0.0216
<b>TOTAL</b>	<b>22352.96</b>	<b>16.1568</b>	<b>—</b>	<b>118.1448</b>	<b>16.1568</b>	<b>134.3016</b>

Source: As explained in Appendix 1.



TABLE A.1.11

Frequency Distribution by Income Ranges for Earners Derived for 'More than Four-Earner' Rural Households, 1975-76

Income-ranges  (Rs)	More than four-earner households			Derived frequency distribution of earners from		
	Gross income (Rs million)	Number of earners (million)	Per-earner income (Rs)	1 + 2 + 3 + 4-earner households	More than four-earner households	All-earner households
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0—1200	Nil	Nil	Nil	49.5576	8.1520	57.7096
1201—2400	142.67	0.4036	707	50.2740	3.2285	53.5025
2401—3600	1341.00	2.3003	583	16.5600	0.8878	17.4478
3601—4800	783.58	1.0493	747	8.5104	0.2018	8.7122
4801—6000	2968.97	3.1074	955	3.1212	0.1412	3.2624
6001—7500	1530.30	1.2914	1185	2.9844	Nil	2.9844
7501—10000	2540.45	1.6344	1554	1.7028	0.0605	1.7633
10001—15000	3626.14	1.5941	2275	1.1844	Nil	1.1844
15001—20000	2627.87	0.8878	2960	0.2232	Nil	0.2232
20001—25000	765.91	0.2018	3796	0.1152	Nil	0.1152
25001—30000	390.54	0.0807	4839	0.0396	Nil	0.0396
30001—40000	350.84	0.0605	5796	0.0036	Nil	0.0036
40001—60000	521.08	0.0605	8608	0.0036	Nil	0.0036
60001 & above	Nil	Nil	Nil	0.0216	Nil	0.0216
<b>TOTAL</b>	<b>17589.35</b>	<b>12.6718</b>	<b>—</b>	<b>134.3016</b>	<b>12.6718</b>	<b>146.9734</b>

Source: As explained in Appendix 1.

TABLE A.1.12

Results of 'Goodness of Fit' and Parametric Estimates of Lognormal Distributions  
Fitted to Earners-Data: Urban and Rural India for 1975-76

(Numbers : in millions)

Income ranges	Urban India					Rural India				
	Earners Derived from					Earners Derived from				
	One- earner house- holds	One+two- earner households	One+Two +Three- earner households	One+ Two+ Three+ Four- earner house- holds	All- earner house- holds	One-earner households	One+Two- earner households	One+Two +Three- earner households	One+Two +Three+ earner Four- earner house- holds	All- earner house- holds
1	2	3	4	5	6	7	8	9	10	11
1—1200	0.2436	1.8720	2.5920	2.7520	2.7520	4.5576	26.4500	40.8024	49.5576	57.7095
1201—2400	1.5524	5.0500	5.9656	6.6040	7.1561	10.9404	33.9444	44.0532	50.2740	53.5025
2401—3600	3.0207	4.6470	5.1501	5.2689	5.2938	7.7292	14.4468	15.9696	16.5600	17.4478
3601—4800	2.2715	3.4050	3.8478	3.9414	3.9713	4.6512	6.5376	8.2656	8.5104	8.7122
4801—6000	2.3349	3.6280	3.9331	4.0231	4.2543	2.6460	2.6450	2.9052	3.1212	3.2624
6001—7500	1.5597	1.5600	1.7841	1.8309	1.8657	1.2132	2.7036	2.9844	2.9844	2.9844
7501—10000	1.5751	2.0430	2.1456	2.2356	2.2555	0.9108	1.5156	1.6884	1.7028	1.7633
10001—15000	0.9483	1.3940	1.4615	1.4903	1.4903	0.5436	0.9108	1.0836	1.1844	1.1844
15001—20000	0.5236	0.6040	0.7288	0.7288	0.7288	0.1944	0.2088	0.2088	0.2232	0.2232

Table A.1.12 (Contd.)

1	2	3	4	5	6	7	8	9	10	11
20001—25000	0.1764	0.2340	0.2340	0.2340	0.3136	0.1152	0.1152	0.1152	0.1152	0.1152
25001—30000	0.1080	0.1080	0.1269	0.1485	0.1485	0.0180	0.0396	0.0396	0.0396	0.0396
30001—40000	0.0720	0.0720	0.0720	0.0720	0.0720	0.0036	0.0036	0.0036	0.0036	0.0036
40001—60000	0.0162	0.0400	0.0400	0.0400	0.0400	0.0036	0.0036	0.0036	0.0036	0.0036
60001&Above	0.0090	0.0090	0.0090	0.0090	0.0090	0.0216	0.0216	0.0216	0.0216	0.0216
TOTAL N =	14.4114	24.7260	28.0905	29.3785	30.3509	33.5484	89.5572	118.1448	134.3015	146.9734
(Chi-Square)	3.809*	2.553*	3.414*	3.440*	4.229*	8.204**	11.858	12.136	16.599	12.266
Sample Mean	1.610	1.339	1.285	1.268	1.266	0.936	0.556	0.460	0.412	0.375
Sample Devia- tion	0.684	0.836	0.859	0.861	0.859	0.768	0.817	0.816	0.810	0.809

Notes: \*Statistically significant at 95 per cent level of confidence.

\*\*Statistically significant at 90 per cent level of confidence.

Source: As explained in Appendix 1.

TABLE A.1.13

Results of Modified Parametric Values for Scaled-Up Gross Personal Income Distributions: Urban and Rural India—1975-76

Sl. No.	Item	Urban India	Rural India
1.	Gross personal income (Unscaled, population-adjusted NCAER estimates) Rs crore	15691.0	31590.0
2.	Missing income <sup>1</sup> in Rs crore		
	a. U:R = 1:2	5740.3	11480.7
	b. U:R = 1:1.5	6888.4	10332.6
	c. U:R = 1:1	8610.5	8610.5
3.	Scaled-up gross personal income in Rs crore (Y)		
	a. U:R = 1:2	21431.3	43070.7
	b. U:R = 1:1.5	22579.4	41922.6
	c. U:R = 1:1	24301.5	40200.5
4.	Total number of earners (N) in million (Adjusted for population changes)	31.785	153.840
5.	Mean income ( $\alpha = \frac{Y}{N}$ ) (in Rs thousand)		
	a. U:R = 1:2	6.743	2.800
	b. U:R = 1:1.5	7.104	2.725
	c. U:R = 1:1	7.646	2.613
6.	Estimated $\sigma$ value (Assumed to be constant for all scenarios)	0.859	0.768
7.	Modified $\mu$ value <sup>2</sup>		
	a. U:R = 1:2	1.540	0.735
	b. U:R = 1:1.5	1.592	0.709
	c. U:R = 1:1	1.665	0.665

Notes: 1. Missing income for all-India was Rs 17221 crore in 1975-76. For the first scenario (U:R = 1:2) the scaled-up urban total has been derived by adding one-third of 17221 to the unscaled urban (NCAER) estimate. A similar procedure was followed for the other two scenarios.

Table A.1.13 (Contd.)

\* For example  $\mu$  value for urban India is obtained as shown below:

When U:R = 1:2,  $\alpha = 6.743$

and  $\sigma = 0.859$ , then

$$\begin{aligned}\text{as } \mu &= \ln \alpha - \frac{1}{2} \sigma^2 \\ &= \ln 6.743 - \frac{1}{2} (0.859)^2 = 1.540.\end{aligned}$$

Similarly, modified value of  $\mu$  is derived for the other two scenarios.

---

*Source:* As explained in Appendix I.

TABLE A.1.14

Results of Derived Parametric Values for Gross Personal Income Distribution for 1980-81

Sl. No.	Item	Urban India	Rural India
1.	Gross personal income (Y) under different scenarios <sup>1</sup> (Rs crore)		
	a. U:R = 1:2	40668	70861
	b. U:R = 1:1.5	42648	68881
	c. U:R = 1:1	45837	65692
2.	Total number of earners (N) (million)	39.449	165.655
3.	Mean income ( $\alpha = Y/N$ ) under different scenarios (Rs thousand)		
	a. U:R = 1:2	10.309	4.278*
	b. U:R = 1:1.5	10.811	4.158
	c. U:R = 1:1	11.619	3.966
4.	$\sigma$ value	0.859	0.768
5.	$\mu$ value under different scenarios <sup>2</sup>		
	a. U:R = 1:2	1.964	1.158
	b. U:R = 1:1.5	2.012	1.130
	c. U:R = 1:1	2.084	1.083

Notes: 1. For the first scenario (U:R = 1:2), the urban income (UY) and the rural income (RY) are derived from the following two equations:

$$UY + RY = 111529 \dots\dots(1)$$

$$\frac{UY/UN}{RY/RN} = 2.41 \dots\dots(2)$$

Given UN = 39.449 and RN = 165.655 Equation (2) after adjustment becomes  $UY/RY - 57391.62 = 0 \dots\dots(3)$

Solving equations (1) and (3), we get UY = 40668 and RY = 70861 Similarly, the values of UY and RY are derived for the other two scenarios.

Table A.1.14 (Contd.)

2. For the first scenario (U:R = 1:2) of urban India, the  $\mu$  - value is derived by using the corresponding value of  $\alpha$  (=10.309) and of  $\sigma$  (=0.859) in the following relationship

$$\begin{aligned}\mu &= \ln \alpha - \frac{1}{2} \sigma^2 \\ &= \ln 10.309 - \frac{1}{2} (0.859)^2 = 1.964\end{aligned}$$

Similarly,  $\mu$  - values for the other two scenarios are derived.

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*Source:* As explained in Appendix 1.

TABLE A.1.15

Gross Personal Income Distributions under Different Scenarios: Urban and Rural India for 1980-81

(Rs crore)

Income ranges for earners (Rs)	Rural India			Urban India			All India		
	Case 1 <sup>1</sup>	Case 2	Case 3	Case 1	Case 2	Case 3	Case 1	Case 2	Case 3
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1—1200	1436.08	1553.34	1696.35	65.34	59.05	47.26	1501.42	1612.39	1743.61
1201—2400	7406.13	7512.58	7662.48	571.51	551.31	467.73	7977.64	8063.89	8130.21
2401—3600	9665.07	10069.11	9624.28	1299.03	1221.22	1154.70	10964.10	11290.33	10778.98
3601—4800	9264.52	9277.87	8912.53	1739.53	1639.71	1530.93	11004.05	10917.58	10443.46
4801—6000	8137.22	7932.45	7312.63	2003.51	1961.61	1970.47	10140.73	9894.06	9283.10
6001—7500	8271.21	7454.83	7242.63	2737.63	2712.86	2685.90	11008.84	10167.79	9928.53
7501—10000	9016.99	8365.05	8125.82	4238.79	4551.64	4320.20	13255.78	12916.69	12446.02
10001—15000	9199.54	8478.12	7592.98	7515.18	7617.07	8216.19	16714.72	16095.19	15719.17
15001—20000	3747.14	3555.62	2998.02	5249.49	5712.47	5823.34	8996.63	9269.09	8821.36
20001—25000	1733.09	1571.63	1295.24	3766.39	4040.74	4491.30	5499.48	5612.37	5786.54
25001—30000	867.57	776.40	653.45	2656.60	2874.34	3274.19	3524.17	3650.74	3927.65



Table A.1.15 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
30001—40000	699.99	619.08	512.24	3408.89	3654.25	4362.10	4108.88	4273.33	4874.34
40001—60000	332.79	289.82	233.71	2941.94	3342.80	3972.53	3274.73	3632.62	4206.24
Above 60000	1083.65	1424.09	1829.63	2474.15	2708.93	3610.16	3557.80	4133.02	5439.79
All income ranges	70861.00	68881.00	65692.00	40668.00	42648.00	45837.00	111529.00	111529.00	111529.00

*Note:* 1. Case 1 refers to the scenario when the 'missing income' is allocated to urban and rural sectors in the ratio 1:2, case 2 to the ratio 1:1.5 and case 3 to the ratio 1:1.

*Source:* As explained in Appendix 1.

TABLE A.1.16

**Income Distribution (NCAER) of 'One-Earner' Urban Households  
by Source Components of Income for 1975-76**

Income ranges for earners (Rs)	Agricul- tural income	Livestock income	Business income	Salary income	Agricult- ural wage income
(1)	(2)	(3)	(4)	(5)	(6)
0—1200	24.40	nil	44.17	42.45	25.70
1201—2400	55.96	9.09	313.10	253.20	110.52
2401—3600	316.50	220.13	1938.93	2297.53	88.15
3601—4800	212.04	7.28	1499.39	5433.56	48.00
4801—6000	587.62	114.75	2749.25	7379.81	nil
6001—7500	363.71	263.94	1643.33	6887.50	nil
7501—10000	486.26	191.41	2776.24	8755.55	nil
10001—15000	313.04	43.38	3660.66	5864.61	nil
15001—20000	334.82	78.71	2860.93	4669.16	nil
20001—25000	128.56	12.69	1032.70	2444.10	nil
25001—30000	79.44	-1.29	840.50	1742.29	nil
30001—40000	187.32	57.79	582.57	1441.49	nil
40001—60000	34.83	-0.68	364.42	330.51	nil
Above 60000	66.71	6.35	412.48	251.20	nil
All income ranges	3191.22	1003.57	20718.67	47792.94	272.36

*Source:* As explained in Appendix 1. Columns 1 to 11 are based on Table A.1.1 and Column 12 is based on Table A.1.2.

Table A.1.16 (Contd.)

(Rs million)					
Non-Agric- ultural wage income	Housing income	Dividend and interest income	Transfer income	Gross income	Number of earners (million)
(7)	(8)	(9)	(10)	(11)	(12)
41.12	17.87	nil	16.02	211.72	0.2436
2121.23	96.91	nil	13.81	2973.82	1.5524
3284.60	340.04	3.44	516.03	9005.36	3.0207
1405.86	591.99	2.04	154.21	9354.37	2.2715
641.39	375.56	36.83	623.32	12508.52	2.3349
228.00	326.72	29.42	732.60	10475.22	1.5597
nil	422.42	29.60	603.19	13264.67	1.5751
13.15	1264.03	63.23	223.13	11445.22	0.9483
nil	461.03	86.69	466.12	8957.47	0.5236
nil	216.02	35.03	63.99	3933.10	0.1764
nil	194.18	9.63	71.82	2936.57	0.1080
1.26	207.27	7.49	nil	2485.20	0.0720
nil	47.55	5.87	nil	782.49	0.0162
nil	41.00	1.67	nil	779.41	0.0090
7736.60	4602.50	310.94	3484.24	89113.14	14.4114

TABLE A.1.17

Income Distribution (NCAER) of 'Two-Earner' Urban Households by Source Components of Income for 1975-76

Household income ranges (Rs)	Agricultural income	Livestock income	Business income	Salary income	Agricultural wage income
(1)	(2)	(3)	(4)	(5)	(6)
0-1200	2.00	nil	nil	nil	nil
1201-2400	24.95	-8.00	109.14	nil	222.92
2401-3600	32.75	-0.74	374.40	8.05	nil
3601-4800	228.83	93.76	1025.80	859.26	8.00
4801-6000	nil	61.40	543.98	762.20	nil
6001-7500	45.68	41.48	1021.16	743.92	nil
7501-10000	89.86	98.80	1648.55	2405.95	nil
10001-15000	360.09	30.16	1516.67	5177.96	nil
15001-20000	26.19	18.51	664.53	3099.35	nil
20001-25000	212.53	-2.88	633.44	2599.12	nil
25001-30000	19.08	8.64	714.38	819.66	nil
30001-40000	15.42	6.37	453.47	1717.82	nil
40001-60000	71.36	2.59	595.92	509.31	nil
Above 60000	13.61	-3.22	834.94	193.12	nil
All income ranges	1142.35	346.91	10136.39	18895.78	230.92

Source: Columns 1 to 11 are based on Table A.1.1 and Column 12 is based on Table 5.3.5 of the text.

Table A.1.17 (Contd.)

(Rs million)						
Non-Agri- cultural wage income	Housing income	Dividend and interest income	Transfer income	Gross income	Number of earners (million)	Per earner income (Rs) (Col.11 ÷ 12)
(7)	(8)	(9)	(10)	(11)	(12)	(13)
31.52	2.28	nil	nil	36.20	0.0800	452
966.77	28.96	nil	18.00	1362.74	1.5488	880
1382.37	72.31	nil	3.20	1872.34	1.3016	1438
2042.92	138.88	0.40	132.00	4529.85	2.1960	2063
826.16	135.74	8.40	2.70	2340.58	0.8890	2633
505.04	107.05	2.08	1.80	2468.20	0.7372	3348
418.46	207.46	7.80	20.16	4897.03	1.1332	4321
69.12	371.02	30.61	180.63	7736.27	1.2928	5984
nil	137.23	18.12	72.00	4035.94	0.4680	8624
nil	147.87	8.08	34.51	3632.74	0.3194	11374
nil	92.75	28.37	29.76	1712.68	0.1260	13593
nil	122.61	36.30	40.62	2392.61	0.1404	17041
nil	172.69	34.56	2.16	1388.59	0.0576	24107
nil	40.44	0.19	nil	1079.08	0.0234	46114
6242.75	1777.29	174.91	537.54	39484.85	10.3134	—

TABLE A.1.18

Income Distribution by Income Ranges for Earners Derived for  
 'Two-Earner' Urban Households by Source Components of  
 Income for 1975-76

Income ranges for earners (Rs)	Agricul- tural income	Livestock income	Business income	Salary income	Agricul- tural wage income
(1)	(2)	(3)	(4)	(5)	(6)
0—1200	51.35	—8.00	153.31	42.45	48.62
1201—2400	317.54	102.11	1713.30	1120.51	118.52
2401—3600	362.18	323.01	3504.07	3803.65	88.15
3601—4800	301.90	106.08	3147.94	7839.51	48.00
4801—6000	347.71	144.86	4265.92	12557.77	nil
6001—7500	363.71	263.94	1643.33	6887.50	nil
7501—10000	512.45	209.92	3440.77	11854.91	nil
10001—15000	544.65	49.13	5008.48	9283.39	nil
15001—20000	348.50	84.67	3299.52	63 2.71	nil
20001—25000	199.92	15.28	1628.60	2953.36	nil
25001—30000	79.44	—1.29	840.50	1742.29	nil
30001—40000	187.05	57.71	581.73	1439.40	nil
40001—60000	48.44	—3.90	1199.13	523.63	nil
Above 60000	66.71	6.35	412.48	251.20	nil
All income ranges	4333.57	1350.48	30855.06	66688.72	503.28

Source: As explained in Appendix 1, derived from Tables A.1.16 and A.1.17.

Table A.1.18 (Contd.)

(Rs million)					
Non-Agri- cultural wage income	Housing income	Dividend and interest income	Transfer income	Gross income	Number of earners (million)
(7)	(8)	(9)	(10)	(11)	(12)
1039.81	49.11	nil	34.02	1610.66	1.8720
5546.52	308.10	0.40	149.01	9376.01	5.0500
4615.80	582.83	13.92	520.53	13814.14	4.6470
1824.32	799.45	9.84	174.37	14251.40	3.4050
710.51	746.58	67.44	803.95	20244.79	3.6280
228.00	326.72	29.42	732.60	10475.22	1.5600
nil	559.65	47.72	675.19	17300.61	2.0430
13.15	1504.65	99.68	287.40	16790.64	1.3940
nil	581.24	122.54	504.31	11350.08	0.6640
nil	388.71	69.59	66.15	5321.69	0.2340
nil	194.18	9.63	71.82	2936.57	0.1080
1.26	206.97	7.48	nil	2485.20	0.0720
nil	87.99	6.06	nil	1861.57	0.0400
nil	41.00	1.67	nil	779.41	0.0090
13979.35	6379.89	485.85	4021.78	128597.99	24.7260

TABLE A.1.19

**Income Distribution for Selected Components of Income by Income Ranges for Earners :  
Urban India for 1975-1976**

(Income : Rs million)

Income ranges for earners	Gross income	Selected Source Components			Component shares in gross income		
		Agricul- tural in- come	Business income	Salary income	Agricul- cultural income	Business income	Salary income
(Rs)					(per cent)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
0-1200	2294.06	338.29	167.58	1696.79	14.75	7.30	73.96
1201-2400	13175.51	1167.51	2870.04	8276.30	8.86	21.78	62.82
2401-3600	15741.31	885.25	4379.53	9068.88	5.62	27.82	57.57
3601-4800	16573.21	549.08	3747.32	11166.20	3.31	22.61	67.37
4801-6000	23704.01	1278.27	5787.96	14703.04	5.39	24.42	62.03
6001-7500	12660.91	689.56	2525.46	8193.33	5.45	19.95	64.71
7501-10000	19160.27	822.91	4113.53	12709.69	4.29	21.47	66.33
10001-15000	17903.23	634.29	5261.96	10040.88	3.54	29.39	56.08
15001-20000	12413.12	675.83	3721.69	6707.99	5.44	29.98	54.04
20001-25000	7085.16	287.67	3110.32	3077.56	4.06	43.90	43.44
25001-30000	4001.15	178.03	1621.84	1807.43	4.45	40.53	45.17



Table A.1.19 (Contd.)

1	2	3	4	5	6	7	
30001—40000	2485.20	244.76	585.33	1440.66	9.85	23.55	57.97
40001—60000	1861.57	47.54	1191.50	518.72	2.55	64.65	27.86
Above 60000	779.41	73.06	412.48	251.20	9.37	52.92	32.23
All income ranges	149838.12	7871.80	39496.54	89649.49	5.25	26.36	59.83

Source : As explained in Appendix 1.

TABLE A.1.20

Income Distribution for Selected Components of Income by Income Ranges for Earners: Rural India for 1975-76

(Income : Rs million)

Income ranges for earners	Gross income	Selected source components			Component shares in gross income		
		Agricultural income	Business income	Salary income	Agricultural income	Business income	Salary income
(Rs)					(per cent)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
0—1200	47437.76	36005.16	1376.53	540.00	75.90	2.90	1.14
1201—2400	91752.13	65310.45	5791.82	5234.06	71.18	6.31	5.70
2401—3600	51105.05	33707.91	3596.81	5322.58	65.96	7.04	10.41
3601—4800	35699.04	21453.25	3692.91	5553.61	60.09	10.34	15.56
4801—6000	17337.57	10611.11	1780.96	3388.37	61.20	10.27	19.54
6001—7500	19273.80	12415.83	1054.37	4459.42	64.42	5.47	23.14
7501—10000	15361.02	9751.10	1703.44	2648.61	63.48	11.09	17.24
10001—15000	14150.93	9806.87	1725.14	1192.84	69.30	12.19	8.43
15001—20000	3816.16	2997.00	325.48	300.78	78.53	8.53	7.88
20001—25000	2497.47	1689.17	662.40	nil	67.63	26.52	nil
25001—30000	1054.74	275.16	552.72	58.10	26.09	49.56	5.51
30001—40000	108.17	17.55	nil	nil	16.22	nil	nil

Table A.1.20 (Contd.)

1	2	3	4	5	6	7	8
40001—60000	198.60	186.82	nil	nil	94.07	nil	nil
Above 60000	1814.76	nil	1705.68	nil	nil	93.99	nil
All income ranges	301607.20*	204227.38	23938.26	28698.37	67.71	7.94	9.51

*Note :* \*Excludes 'No-earner' income of Rs. 65.30 million.

*Source :* As explained in Appendix 1.

**TABLE A.1.21**  
**Composition of Gross Income under Different Scenarios by Selected Source Components of Incomes:**  
**Urban and Rural India for 1975-76 and 1980-81**

(Rs billion)

Selected source component of income	Component shares in gross income	1975-76					
		Gross Income			Amount of Income by Source Component		
		Case 1	Case 2	Case 3	Case 1 (Col. 1×2)	Case 2 (Col. 1×3)	Case 3 (Col. 1×4)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
<b>Salary Income</b>							
(includes salary income and non-agricultural wages)							
Urban:	0.598309	214.33	225.81	243.03	128.23	135.10	145.41
Rural:	0.095151	430.70	419.22	402.00	40.96	39.93	38.23
<b>Business Income</b>							
Urban:	0.263595	214.33	225.81	243.04	56.50	59.52	64.06
Rural:	0.079369	430.70	419.22	402.00	34.20	33.34	31.92
<b>Agricultural Income</b>							
(includes agricultural income, agricultural wages and livestock income)							
Urban:	0.052535	214.33	225.81	243.04	11.86	11.86	12.76
Rural:	0.677130	430.70	419.22	402.00	291.64	283.87	272.21

Table A.1.21 (Contd.)

		1980-81					Rs billion)
Selected source component income		Gross Income			Amount of Income Source Component		
		Case 1	Case 2	Case 3	Case 1 (col. 1×8)	Case 2 (Col. 1×8)	Case 3 (Col. 1×10)
		(8)	(9)	(10)	(11)	(12)	(13)
<b>Salary Income</b> (includes salary income and non-agricultural wages)							
	Urban:	406.68	426.48	458.37	243.32	255.61	274.25
	Rural:	708.61	688.81	656.92	67.38	65.51	62.47
<b>Business Income</b>							
	Urban:	406.68	426.48	458.37	107.20	112.42	120.82
	Rural:	708.61	688.81	656.92	56.26	54.59	52.16
<b>Agricultural Income</b> (includes agricultural income, agricultural wages and livestock income)							
	Urban:	406.68	426.48	458.37	21.36	22.39	24.07
	Rural:	708.61	688.81	656.92	479.82	466.41	444.82

Source : As explained in Appendix 1,

TABLE A.1.22

Weighting Schemes for Selected Components of Income: Urban and Rural India for 1975-76

(per cent)

Income ranges for earners (Rs)	Rural India			Urban India		
	Agricultural Income	Business income	Salary Income	Agricultural income	Business income	Salary income
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0—1200	75.90	2.90	1.14	14.75	7.30	73.96
1201—2400	71.18	6.31	5.70	8.86	21.78	62.82
2401—3600	65.96	7.04	10.41	5.62	27.82	57.57
3601—4800	60.09	10.34	15.56	3.31	22.61	67.37
4801—6000	61.20	10.27	19.54	5.39	24.42	62.03
6001—7500	64.42	5.47	23.14	5.45	19.95	64.71
7501—10000	63.48	11.09	17.24	4.29	21.47	66.33
10001—15000	69.30	12.19	8.43	3.54	29.39	56.08
15001—20000	78.53	8.53	7.88	5.44	29.98	54.04
20001—25000	67.63	26.52	nil	4.06	43.90	43.44
25001—30000	26.09	49.56	5.51	4.45	40.53	45.17
30001—40000	16.22	nil	nil	8.85	23.55	57.97

Table A.1.22 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
40001—60000	94.07	nil	nil	2.55	64.05	27.86
Above 60000	nil	93.99	nil	9.37	52.92	32.23
All income ranges	67.71	7.94	9.51	5.25	26.36	59.83

Source : Based on Tables A.1.19 and A.1.20.

TABLE A.1.23

Estimated Distribution of 'Agricultural Income' : Urban and Rural India for 1975-76 and 1980-81

(Rs crore)

Income ranges for earners (Rs)	Rural India 1975-76			Urban India 1975-76	
	Case 1	Case 2	Case 3	Case 1	Case 2
(1)	(2)	(3)	(4)	(5)	(6)
1—1200	2353.21	2375.64	2565.41	28.49	25.53
1201—2400	6369.40	6577.40	6432.24	82.52	76.71
2401—3600	5855.52	5683.54	5622.18	87.61	85.11
3601—4800	3877.61	3651.51	3603.24	56.74	55.73
4801—6000	2785.54	2730.24	2360.14	96.92	93.94
6001—7500	2465.91	2317.36	2178.27	114.07	112.21
7501—10000	2315.32	2200.50	1968.52	128.10	133.41
10001—15000	2041.43	1864.25	1665.56	140.61	149.94
15001—20000	747.99	686.43	573.15	122.01	126.45
20001—25000	247.36	216.36	183.89	56.56	65.72
25001—30000	39.45	35.63	29.91	40.09	47.66
30001—40000	17.89	15.07	12.66	97.74	112.16
40001—60000	37.36	32.72	25.45	17.53	20.55
Above 60000	0.00	0.00	0.00	56.69	80.88
All income ranges	29163.99	28386.64	27220.63	1125.68	1185.98

Note : Totals may not tally due to rounding.

Source : As explained in Appendix 1.



(Rs crore)

		Rural India 1980-81			Urban India 1980-81		
Case 3	Case 1	Case 2	Case 3	Case 1	Case 2	Case 3	
(7)	(8)	(9)	(10)	(11)	(12)	(13)	
21.00	1149.95	1249.24	1373.06	11.93	10.78	8.48	
71.07	5561.84	5666.27	5816.59	52.28	50.38	42.05	
80.90	6725.64	7037.21	6769.69	75.37	70.78	65.84	
57.72	5873.81	5907.81	5711.77	59.27	55.81	51.26	
98.77	5254.23	5144.24	4772.86	110.63	108.22	106.94	
115.94	5621.31	5088.48	4975.50	153.72	152.19	148.23	
137.11	6038.86	5626.56	5500.89	187.93	201.61	188.25	
161.03	6726.23	6225.68	5611.65	272.55	275.98	289.65	
152.07	3104.70	2959.64	2510.89	274.68	298.62	299.47	
75.93	1236.67	1126.33	934.24	157.59	168.91	184.69	
54.03	238.78	214.62	181.79	121.74	131.60	147.47	
140.10	119.82	106.43	88.63	346.58	371.17	435.87	
25.52	330.27	288.88	234.45	72.22	81.98	95.85	
85.25	0.00	0.00	0.00	239.42	261.89	343.34	
1276.42	47982.11	46641.39	44482.02	2135.92	2239.92	2407.40	

TABLE A.1.24

Estimated Distributions of 'Business Income': Urban and Rural India for 1975-76 and 1980-81

(Rs. crore)

Income ranges for earners (Rs)	Rural India 1975-76			Urban India 1975-76	
	Case 1	Case 2	Case 3	Case 1	Case 2
(1)	(2)	(3)	(4)	(5)	(6)
1-1200	59.6	68.8	73.9	10.3	9.0
1201-2400	372.6	442.0	430.0	177.9	161.8
2401-3500	412.1	459.5	452.2	380.3	361.4
3601-4800	440.3	476.3	467.6	340.9	327.5
4801-6000	308.4	347.2	298.6	383.1	363.2
6001-7500	38.1	149.1	139.4	366.7	352.9
7501-10000	266.8	291.3	259.2	561.5	572.0
10001-15000	236.5	248.5	220.3	1031.5	1076.0
15001-20000	53.6	56.5	46.9	632.8	641.6
20001-25000	64.0	64.3	54.4	537.1	610.5
25001-30000	49.4	51.3	42.8	321.0	373.3
30001-40000	0.0	0.0	0.0	203.7	228.7
40001-60000	0.0	0.0	0.0	409.2	469.1
Above 60000	1016.6	672.5	704.7	280.7	391.7
All income ranges	3418.4	3327.3	3190.6	5636.8	5938.7

Note : Totals may not tally due to rounding.

Source : As explained in Appendix 1.

Table A.1.24 (Contd.)

(Rs. crore)

Rural India			Urban India			
1980-81			1980-81			
Case 3	Case 1	Case 2	Case 3	Case 1	Case 2	Case 3
(7)	(8)	(9)	(10)	(11)	(12)	(13)
7.3	30.1	31.6	33.1	3.9	0.9	2.7
147.2	337.7	331.7	325.4	100.1	26.2	78.8
337.3	491.4	495.8	455.8	290.5	74.2	248.4
333.1	692.4	671.4	620.3	316.2	81.0	267.6
375.0	603.9	570.0	505.4	388.4	103.3	367.4
358.1	326.9	285.3	266.6	439.0	110.2	414.3
577.2	722.3	648.9	606.3	731.5	213.5	717.2
1134.5	810.2	723.1	622.8	1775.6	489.0	1846.9
756.0	230.9	212.2	172.0	1265.2	374.1	1350.1
692.7	332.1	291.6	231.1	1329.1	387.5	1524.6
415.5	310.6	269.2	217.9	865.6	2545.1	1026.3
280.4	0.0	0.0	0.0	641.4	1868.6	789.6
571.8	0.0	0.0	0.0	1496.6	4621.4	1944.1
405.4	735.8	936.4	1157.1	1052.5	313.2	1477.4
6391.6	5624.2	5467.0	5213.9	10695.6	11215.3	12055.5

TABLE A.1.25

Weighted Frequency Distribution of Salary Earners: Urban India for 1975-76 and 1980-81

(Earners in lakh)

Income ranges for earners	Frequency of earners for gross income	Weights for salary income	Frequency distri- bution of salary earners	Frequency of earners for gross income	Weights for salary earners	Frequency distribu- tion of salary earners
		1975-76	(Col.2×3)	1980-81	(Col.5×6)	
(Rs)						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1-1200	17.847168	73.96	13.20	7.189729	73.96	5.32
1201-2400	49.901906	62.82	31.35	31.661232	62.82	19.89
2401-3600	50.179392	57.57	28.89	43.322699	57.57	24.94
3601-4800	40.065321	67.37	26.99	42.604730	67.37	28.70
4801-6000	32.459109	62.03	20.13	37.168682	62.03	23.06
6001-7500	30.116535	64.71	19.49	40.703297	64.71	26.34
7501-10000	33.193348	66.33	22.02	48.877093	66.33	32.42
10001-15000	31.726458	56.08	17.79	61.587504	56.08	34.54
15001-20000	13.461058	54.04	7.27	30.407154	54.04	16.43
20001-25000	6.031889	43.44	2.62	16.933408	43.44	7.36

Table A.1.25 (Contd.)

1	2	3	4	5	6	7
25001—30000	3.176937	45.17	1.43	9,737942	45.17	4.40
30001—40000	2.794973	57.97	1.62	9.958461	57.97	5.77
40001—60000	1.500487	27.86	0.42	6.172518	27. 6	1.72
Above 60000	5.398029	32.23	1.74	5.675018	32.23	1.83
All income ranges	317.852610	N.A. <sup>1</sup>	194.96	394.48824	N.A.	232.72

*Note:* <sup>1</sup> N.A. means not applicable.

*Source:* For Columns 3 and 6, Table A.1.22; other columns are as explained in Appendix 1.

TABLE A.1.26

Results of Lognormal Fits and Estimated Parametric Values for  
Salary Income Distributions: Urban India 1975-76 and 1980-81

Income ranges (Rs)	Salary earners 1975-76		Salary earners 1980-81	
	Observed (weighted) frequency (in lakh)	Expected frequency (in lakh)	Observed (weighted) frequency (in lakh)	Expected frequency (in lakh)
(1)	(2)	(3)	(4)	(5)
1-1200	13.210	14.045	5.320	5.036
1201-2400	31.350	33.065	19.890	21.251
2401-4800	55.880	54.128	53.640	53.782
4801-7500	39.620	36.113	49.400	47.215
7501-10000	22.020	19.416	32.420	30.089
10001-15000	17.790	19.100	34.540	34.060
15001-20000	7.270	8.392	16.430	17.231
20001-25000	2.620	4.334	7.360	9.070
25001-30000	1.430	2.286	4.400	5.131
30001-40000	1.620	2.105	5.770	5.152
40001-60000	0.420	1.264	1.720	2.119
60001-80000 (Truncated)	1.740	0.712	1.830	2.584
<b>TOTAL</b>	194.960	194.960	232.720	232.720
Value of Chi-Square : 9.723			—	2.287
Sample mean : 1.519			—	1.910
Estimates of standard deviation : 0.914			—	0.856

Source: As explained in Appendix 1.

TABLE A.1.27

Modified Parametric Values Used in Estimating Salary Income  
Distribution for Urban India : 1975-76 and 1980-81

Parameters of lognormal distribution	Case 1	Case 2	Case 3
	U:R 1:2	U:R 1:1:5	U:R 1:1
(1)	(2)	(3)	(4)
<b>Number of salary earners (N) (lakh)</b>			
a. 1975-76	194.960	194.960	194.960
b. 1980-81	232.720	232.720	232.720
<b>Location parameter (<math>\mu</math>)</b>			
a. 1975-76	1.466	1.518	1.592
b. 1980-81	1.981	2.030	2.100
<b>Distribution parameter (<math>\sigma</math>)</b>			
a. 1975-76	0.914	0.914	0.914
b. 1980-81	0.856	0.856	0.856
<b>Total salary income (Y) (Rs crore)</b>			
a. 1975-76	12823.00	13510.00	14541.00
b. 1980-81	24332.00	25561.00	27425.00
<b>Salary income per earner (<math>\alpha = \frac{Y}{N}</math>)</b>			
a. 1975-76	6.577	6.930	7.458
b. 1980-81	10.455	10.983	11.784

Source : As explained in Appendix 1.

TABLE A.1.28

Estimated Salary Income Distributions : Urban and Rural India for  
1975-76 and 1980-81

Income ranges for earners (Rs)	(Rs crore)					
	Rural India 1975-76			Urban India 1975-76		
	Case 1	Case 2	Case 3	Case 1	Case 2	Case 3
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1—1200	27.86	28.39	31.22	132.90	114.78	102.14
1201—2400	401.31	420.08	418.27	594.30	583.64	536.53
2401—3600	726.90	715.20	720.33	937.89	916.60	842.54
3601—4800	789.15	753.31	756.84	957.65	1014.84	968.72
4801—5000	131.65	126.60	120.33	190.20	154.37	154.64
5001—6000	587.64	568.18	491.18	832.32	762.43	859.77
6001—7500	696.30	663.31	634.81	1123.88	1110.95	1194.85
7501—10000	494.42	476.32	433.85	1622.83	1703.38	1794.90
10001—15000	195.21	180.70	164.38	2193.31	2356.82	2800.67
15001—20000	39.02	54.90	46.67	1329.85	1504.37	1682.52
20001—25000	0.00	0.00	0.00	874.53	932.70	1066.89
25001—30000	6.55	6.00	5.12	560.34	632.91	738.01
30001—40000	0.00	0.00	0.00	644.79	747.71	889.49
40001—50000	0.00	0.00	0.00	336.59	374.08	455.81
50001—60000	0.30	0.00	0.00	181.53	215.51	266.57
Above 60000	0.00	0.00	0.00	320.07	385.02	486.94
All income ranges	4096.00	3993.00	3823.00	12823.00	13510.00	14541.00

*Note:* Totals may not tally due to rounding.

*Source:* As explained in Appendix 1.



Table A.1.28 (Contd.)

(Rs crore)

Rural India 1980-81			Urban India 1980-81		
Case 1	Case 2	Case 3	Case 1	Case 2	Case 3
(8)	(9)	(10)	(11)	(12)	(13)
12.15	13.32	14.60	37.09	31.66	27.16
314.07	322.94	330.44	346.01	303.49	267.16
748.29	790.25	757.76	764.03	705.03	654.91
1071.39	1087.63	1048.15	1015.73	874.72	954.56
241.27	155.20	230.84	208.67	200.64	193.51
940.92	753.40	149.54	1030.88	1002.25	930.66
1422.62	1299.76	1266.80	1504.93	1611.65	1530.94
1155.75	1086.88	1059.18	2711.40	2717.76	2673.56
576.16	538.53	433.85	4368.75	4583.20	4369.92
219.86	211.24	178.63	3287.11	3461.53	3747.89
0.00	0.00	0.00	2296.22	2456.93	2731.31
35.53	32.23	27.21	1618.80	1761.69	1989.85
0.00	0.00	0.00	2083.49	2300.78	2558.06
0.00	0.00	0.00	1140.49	1288.51	1517.95
0.00	0.00	0.00	663.61	758.36	914.30
0.00	0.00	0.00	1255.79	1500.79	1824.05
6738.00	6551.00	6246.00	24332.00	25561.00	27425.00

TABLE A.1.29

Illustration of Procedures to Compute Standard-Deductions for the Scenario U:R=1:2 : Urban and Rural India for 1975-76

Income ranges for earners	Representative 'salary income' per earner	Amount of standard deduction <sup>1</sup> per earner	Estimated frequency of salary earners		Total amount of standard deduction		Revised estimates of standard deduction	
			Urban	Rural	Urban	Rural	Urban	Rural
(Rs)	(Rs)	(Rs)	(lakhs)		(Rs crore)		(Rs crore)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
0-1200	600	120	15.60	4.12	18.72	4.94	26.32	6.69
1201-2400	1800	360	33.58	28.19	120.89	101.48	117.71	96.38
2401-3600	3000	600	31.09	29.89	186.54	179.34	185.77	174.57
3601-4800	4200	840	23.19	23.51	194.80	197.48	189.68	189.52
4801-6000	5400	1080	18.85	15.65	203.58	169.02	202.53	167.94
6001-7500	6750	1350	16.58	12.54	223.83	169.29	222.61	167.22
7501-10000	8750	1750	18.59	6.95	325.33	121.63	321.46	118.75
10001-15000	12500	2250	17.89	1.98	402.52	44.55	396.11	43.23
15001-20000	17500	2750	7.68	0.42	211.20	11.55	208.53	11.26
20001-25000	22500	3250	3.90	0.00	126.75	0.00	125.61	0.00

Table A.1.29 (Contd.)

1	2	3	4	5	6	7	8	9
25001—30000	27500	3500	2.03	0.03	71.05	1.05	71.06	1.02
30001—40000	35000	3500	1.84	0.00	64.40	0.00	64.43	0.00
40001—60000	50000	3500	1.08	0.00	37.80	0.00	37.90	0.00
Above 60000	—	3500	3.06	0.00	107.10	0.00	98.70	0.00
All income ranges	—	—	194.96	123.29	2294.51	1000.33	2268.42	976.58

*Notes:* 1 Computed according to the standard deduction formula for the Assessment Year 1976-77—20 per cent of 'Salary Income' per earner up to Rs 10,000 per annum plus 10% over the excess of Rs 10,000 subject to a maximum limit of Rs 3500.

2 Obtained by employing a similar methodology at a disaggregated level for 'narrow Income ranges for earners' and then by aggregating the resulting estimates over these income ranges.

*Source:* As explained in Appendix 1.

TABLE A.1.30

**Bagchi's Estimated Rates and Average HRA Rates by Salary  
Income Ranges**

Income ranges	Bagchi's estimated rates of HRA + conveyance allowances <sup>1</sup> (as a percentage of salary income)	Average HRA rates 2/3 of column (2) (as a percentage of salary income)
(Rs)		
(1)	(2)	(3)
0—1200	Nil	Nil
1201—2400	Nil	Nil
2401—3600	Nil	Nil
3601—4800	Nil	Nil
4801—5000	Nil	Nil
5001—6000	9.01	6.01
6001—7500	9.01	6.01
7501—10000	9.01	6.01
10001—15000	7.52	5.01
15001—20000	7.61	5.07
20001—25000	10.01	6.67
25001—30000	10.46	6.97
30001—40000	12.39	8.26
40001—50000	6.46	4.31
50001—60000	3.63	2.42
Above 60000	3.63	2.42

*Note* : 1. Rates are taken from Bagchi's study. (See Bagchi, 1975, p. 293)

*Source*: As explained in Appendix 1.

TABLE A.1.31

Estimated Results of HRA—Deductions: Urban and Rural India  
for 1975-76 and 1980-81

(Rs. crore)

Income ranges for earners (Rs)	Rural India 1975-76			Urban India 1975-76	
	Case 1	Case 2	Case 3	Case 1	Case 2
(1)	(2)	(3)	(4)	(5)	(6)
1—1200	0.00	0.00	0.00	0.00	0.00
1201—2400	0.00	0.00	0.00	0.00	0.00
2401—3600	0.00	0.00	0.00	0.00	0.00
3601—4800	0.00	0.00	0.00	0.00	0.00
4801—6000	34.12	34.15	29.52	50.02	45.82
6001—7500	41.85	39.86	38.15	67.55	66.77
7501—10000	29.71	28.63	26.07	97.53	102.37
10001—15000	9.78	9.05	8.24	109.88	118.08
15001—20000	2.99	2.78	2.37	67.42	76.27
20001—25000	0.00	0.00	0.00	58.33	62.21
25001—30000	0.46	0.42	0.36	39.06	44.11
30001—40000	0.00	0.00	0.00	52.43	61.76
40001—60000	0.00	0.00	0.00	18.90	21.34
Above 60000	0.00	0.00	0.00	7.12	8.64
<b>All income ranges</b>	<b>118.91</b>	<b>114.89</b>	<b>104.71</b>	<b>568.24</b>	<b>607.37</b>

Note: Totals may not tally due to rounding.

Source: As explained in Appendix 1.

Table A.1.31 (Contd.)

(Rs crore)

Case 3	Rural India 1980-81			Urban India 1980-81		
	Case 1	Case 2	Case 3	Case 1	Case 2	Case 3
(7)	(8)	(9)	(10)	(11)	(12)	(13)
0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00
51.67	55.55	70.21	51.06	61.95	60.24	55.93
71.81	85.50	78.12	76.13	90.45	96.86	92.01
107.87	69.46	65.32	63.66	152.96	163.34	160.68
125.28	28.88	26.98	24.24	218.87	229.62	240.98
85.30	11.13	10.71	9.06	166.66	175.50	190.02
71.16	0.00	0.00	0.00	153.09	163.88	182.18
51.44	2.48	2.25	1.90	112.83	122.79	138.64
73.47	0.00	0.00	0.00	172.10	190.04	219.56
26.10	0.00	0.00	0.00	65.22	73.58	87.55
11.06	0.00	0.00	0.00	29.16	34.17	42.76
675.16	254.00	253.59	226.05	1233.30	1310.02	1410.31

TABLE A.1.32

Estimates of Salary Income and Employers' Contribution to Provident Fund for Urban, Rural and All-India for 1975-76 and 1980-81

Item (1)	(Rs crore)		
	Scenarios		
	Case 1 (2)	Case 2 (3)	Case 3 (4)
<b>All-India salary income</b>			
a. 1975-76	16919.00	17503.00	18364.90
b. 1980-81	31070.00	32112.00	33672.00
<b>Urban salary income</b>			
a. 1975-76	12823.00	13510.00	14541.00
b. 1980-81	24332.00	25561.00	27425.00
<b>Rural salary income</b>			
a. 1975-76	4096.00	3993.00	3823.00
b. 1980-81	6738.00	6551.00	6247.00
<b>All-India Employers' P.F.</b>			
a. 1975-76	482.11	482.11	482.11
b. 1980-81	538.39	538.39	538.39
<b>Urban Employers' P.F.<sup>1</sup></b>			
a. 1975-76	365.39	372.12	381.74
b. 1980-81	421.63	428.56	438.51
<b>Rural Employers' P.F.<sup>1</sup></b>			
a. 1975-76	116.72	109.99	100.37
b. 1980-81	116.76	109.83	99.88
<b>Average rate of P.F. common for urban and rural cases (as a per cent of salary income)</b>			
a. 1975-76	2.85	2.75	2.62
b. 1980-81	1.73	1.68	1.60

Note: 1. All-India employers' PF amount is divided between urban and rural sectors in the same proportion of their respective salary incomes in All-India total.

Source: As explained in Appendix 1.

TABLE A.1.33

**Estimated Results of Employers' Contributions to Provident Fund by  
Income Ranges: Urban and Rural India for 1975-76 and 1980-81**

Income ranges for earners (Rs)	Rural India 1975-76			Urban India 1975-76	
	Case 1	Case 2	Case 3	Case 1	Case 2
(1)	(2)	(3)	(4)	(5)	(6)
1-1200	0.80	0.78	0.82	3.79	3.17
1201-2400	11.45	11.59	11.00	16.96	16.10
2401-3600	20.74	19.73	18.94	26.77	25.29
3601-4800	22.52	20.78	19.90	27.33	28.00
4801-6000	19.96	19.17	16.08	29.18	25.29
6001-7500	19.87	18.30	16.69	32.07	30.65
7501-10000	14.11	13.14	11.41	46.31	46.99
10001-15000	5.57	4.99	4.32	62.59	65.02
15001-20000	1.68	1.51	1.23	37.95	41.50
20001-25000	0.00	0.00	0.00	24.96	25.73
25001-30000	0.19	0.17	0.13	15.99	17.46
30001-40000	0.00	0.00	0.00	18.12	20.63
40001-60000	0.00	0.00	0.00	14.79	16.27
Above 60000	0.00	0.00	0.00	8.39	9.85
All income ranges	116.90	110.16	100.53	365.21	371.94

*Note* : Totals may not tally due to rounding.

*Source* : As explained in Appendix 1.



Table A.1.33 (Contd.)

(Rs. crore)

Case 3	Rural India 1980-81			Urban India 1980-81		
	Case 1	Case 2	Case 3	Case 1	Case 2	Case 3
(7)	(8)	(9)	(10)	(11)	(12)	(13)
2.69	0.21	0.22	0.23	0.64	0.53	0.43
14.11	5.45	5.43	5.29	6.01	5.10	4.28
22.16	12.99	13.29	12.14	13.26	11.86	10.46
25.47	18.60	18.29	16.79	17.63	14.71	15.29
26.67	20.52	19.65	17.30	21.51	20.23	18.00
31.42	24.69	21.86	20.29	26.12	27.10	24.52
47.20	20.06	18.28	16.96	47.06	45.70	42.82
65.76	10.01	9.06	7.75	75.83	77.08	77.04
44.24	3.81	3.55	2.86	57.05	58.21	60.03
28.05	0.00	0.00	0.00	39.84	41.32	43.74
19.41	0.62	0.54	0.44	28.10	29.63	31.86
23.39	0.00	0.00	0.00	36.16	38.69	42.57
19.00	0.00	0.00	0.00	31.31	34.30	38.95
12.02	0.00	0.00	0.00	20.91	23.74	28.30
381.58	116.95	110.17	100.05	421.45	428.21	438.33

**TABLE A.1.34**  
**Estimated Results of Average Rates for Chapter VIA Deductions for 1975-76 (Assessment Year, 1976-77)**

(Rs thousand)

Ranges of income assessed	Total Amount of Chapter VIA Deductions for Financial Years 1976-77 and 1977-78 (Losses set-off + Deduction) by Statuses					Gross Income (AIITS) for Financial Years 1976-77 and 1977-78 by Statuses					Average rates of chapter VIA Deductions for assessment year 1976-77 Col. (6) ÷ (11) (per cent)
	Indivi- duals	HUFs	Associa- tion of persons	Unregi- stered firms	Total	Indivi- duals	HUFs	Associa- tion of persons	Unregi- stered firms	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Below—5000	108225	36	16462	28	124751	374116	441	18527	267	393351	31.71
5001—7500	580236	2903	10515	36	593690	4501240	89602	28406	33335	4652583	12.76
7501—10000	1162160	12075	11913	181	1186329	10854094	320168	45082	73028	11292372	10.51
10001—15000	1815534	25427	21805	75	1862841	16645523	595780	68188	83809	17393300	10.71
15001—20000	986518	20504	14983	39	1022044	9786367	445310	51129	58666	10341972	9.88
20001—25000	471610	16090	6412	92	494204	5805665	361969	40630	44809	6253073	7.90
25001—30000	306588	13501	69287	48	389424	3830117	293477	98825	37264	4259683	9.14
30001—40000	325092	16803	13982	182	356059	4508114	377274	58969	54062	4998419	7.12
40001—60000	333043	16316	14097	115	363571	4526901	348056	74746	72248	5021951	7.24
Above 60000	318999	25007	96486	193	440685	6064092	531471	632145	305439	7533147	5.85

Source : *All-India Income Tax Statistics (AIITS) for Financial Years 1976-77 and 1977-78*, Directorate of Inspection (Research, Statistics and Public Relations), New Delhi.

TABLE A.1.35

Estimated Results of Average Rates for Chapter VI A Deductions for 1980-81 (Assessment Year 1981-82)

(Rs crore)

Ranges of income assessed	Total Amount of Chapter VIA Deductions for Financial Year 1981-82 (Losses Set-off + Deduction) by Statutes					Gross Income (AIITS) for Financial Year 1981-82 by Statutes					Average rates of Chapter VIA Deductions Col. (6) ÷ (11)
	Indivi- duals	HUFs	Associa- tion of persons	Unregis- tered firms	Total	Indivi- duals	HUFs	Associa- tion of persons	Unregis- tered firms	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Below—10000	48465	165	3728	N.A.	52358	265711	2418	6227	1104	275460	0.190075
10001—15000	571328	10596	8614	276	690814	7283975	210049	30496	42581	7567101	0.091292
15001—20000	458256	7959	2102	61	468378	4722088	160223	17446	23117	4922874	0.095143
20001—25000	206415	6369	816	7	213607	2877341	132806	14017	17158	3041322	0.070235
25001—30000	138693	5221	52174	34	196122	1799308	110361	63340	17567	1990576	0.098525
30001—40000	115792	7458	1472	50	124772	1930756	143501	18104	22817	2115178	0.058989
40001—50000	50931	4351	1076	32	56390	1118153	81851	13175	21503	1234682	0.045672
Above 50000	279113	14319	29990	1463	324885	4077592	314871	191940	225186	4809589	0.067549
<b>GRAND TOTAL</b>	<b>1968993</b>	<b>56438</b>	<b>99972</b>	<b>1923</b>	<b>2127326</b>	<b>24074924</b>	<b>1156080</b>	<b>354745</b>	<b>371033</b>	<b>25956782</b>	<b>0.031956</b>

Source: AIITS, Financial Year 1981-82. Directorate of Inspection (Research, Statistics and Public Relations), New Delhi.

TABLE A.1.36

**Step-wise Derivation of the Distribution of "Net Income" from  
Gross Income for Urban India 1980-81, Case 1 ("Missing  
Income" Allocated in Ratio of U:R=1:2)**

Income ranges for earners (Rs)	Gross income	Agricultural income	Depre- ciation	Standard deductions	H.R.A. deduc- tions
(1)	(2)	(3)	(4)	(5)	(6)
1—1200	65.34	11.93	0.39	7.29	0.00
1201—2400	571.51	52.28	10.01	68.01	0.00
2401—3600	1299.03	75.37	29.05	150.18	0.00
3601—4800	1739.53	59.27	31.62	199.66	0.00
4801—6000	2003.51	110.63	38.84	243.66	61.96
6001—7500	2737.63	153.72	43.90	295.82	90.45
7501—10000	4238.79	187.93	73.15	533.02	162.96
10001—15000	7515.18	272.55	177.56	779.58	218.87
15001—20000	5249.49	274.68	126.52	510.46	166.66
20001—25000	3766.39	157.59	132.91	326.65	153.09
25001—30000	2656.60	121.74	86.56	203.92	112.83
30001 - 40000	3408.89	346.58	64.14	209.08	172.10
40001—60000	2941.94	72.22	149.66	130.09	65.22
Above 60000	2474.15	239.42	105.25	129.85	29.16
All income ranges	40668.00	2135.92	1069.56	3787.27	1233.30

*Note :* Totals may not tally due to rounding.

*Source :* As explained in Appendix 1.

Table A.1.36 (Contd.)

(Rs. crore)

Employers' contribution to P.F.	Chapter VIA rates	Sum of column 3 through 7	Column 2 minus column 9	Amount of chapter VIA deductions	Net income (columns 10-11)	Cumulative of column 12
(7)	(8)	(9)	(10)	(11)	(12)	(13)
0.64	0.1901	20.25	45.09	8.57	36.52	36.52
6.01	0.1901	136.31	435.21	82.73	352.47	388.99
13.26	0.1901	267.86	1031.17	196.03	835.14	1224.13
17.63	0.1901	308.17	1431.36	272.13	1159.26	2383.39
21.51	0.1901	476.60	1526.91	290.27	1236.65	3620.04
26.12	0.1901	610.01	2127.62	404.46	1723.16	5343.20
47.06	0.1901	1004.13	3234.66	614.91	2619.75	7962.95
75.83	0.0913	1524.40	5990.79	546.96	5443.83	13406.78
57.05	0.0951	1135.37	4114.12	391.25	3722.87	17129.65
39.84	0.0702	810.09	2956.30	207.53	2748.77	19878.42
28.10	0.0985	553.15	2103.45	207.19	1896.26	21774.68
36.16	0.0590	828.06	2580.83	152.27	2428.56	24203.24
31.31	0.0457	448.51	2493.43	113.95	2379.48	26582.72
20.91	0.0675	524.59	1949.56	131.60	1817.97	28400.69
421.45	N.A.	8647.50	32020.50	3619.81	28400.69	28400.69

TABLE A.1.37

Step-Wise Derivation of the Distribution of "Net Income" from Gross Income for Urban India 1980-81. Case 2 ("Missing Income" Allocated in Ratio of U:R =1:1.5)

Income ranges for earners (Rs)	Gross income	Agricultural income	Depreciation	Standard deductions	H.R.A. deductions
(1)	(2)	(3)	(4)	(5)	(6)
1—1200	59.05	10.78	0.09	6.26	0.00
1201—2400	551.31	50.38	2.62	60.00	0.00
2401—3600	1221.22	70.78	7.42	139.39	0.00
3601—4800	1639.71	55.81	8.10	172.94	0.00
4801—6000	1961.61	108.22	10.33	237.83	60.24
6001—7500	2712.86	152.19	11.82	318.65	96.86
7501—10000	4551.64	201.61	21.35	537.38	163.34
10001—15000	7617.07	275.98	48.90	824.24	229.62
15001—20000	5712.47	298.62	37.41	540.93	175.50
20001—24000	4040.74	168.91	38.75	352.05	163.88
25001—30000	2874.34	131.60	254.51	223.38	122.79
30001—40000	3654.25	371.17	186.86	232.69	190.04
40001—60000	3342.80	81.98	462.14	148.14	73.58
Above 60000	2708.93	261.89	31.32	161.00	34.17
All income ranges	42648.00	2239.92	1121.63	3954.88	1310.02

Notes: Totals may not tally due to rounding.

Source: As explained in Appendix 1.

Table A.1.37 (Contd.)

(Rs crore)

Employers contribution to P.F.	Chapter VIA rates	Sum of columns 3 through 7	Column 2 minus column 9	Amount of Chapter VIA deductions	Net income (Column 10-11)	Cumulative of column 12
(7)	(8)	(9)	(10)	(11)	(12)	(14)
0.53	0.1901	17.66	41.39	7.87	33.52	33.52
5.10	0.1901	118.10	433.21	82.35	350.85	384.37
11.86	0.1901	229.45	991.77	188.53	803.03	1187.61
14.71	0.1901	251.55	1388.16	263.89	1124.27	2311.87
20.23	0.1901	436.85	1524.76	289.86	1234.90	3546.78
27.10	0.1901	606.62	2106.24	400.40	1705.84	5252.62
45.70	0.1901	969.38	3582.26	680.99	2901.27	8153.89
77.08	0.0913	1455.83	6161.24	562.52	5598.72	13752.61
58.21	0.0951	1110.68	4601.79	437.63	4164.16	17916.77
41.32	0.0702	764.91	3275.83	229.96	3045.87	20962.64
29.63	0.0985	761.91	2112.43	208.07	1904.35	22866.99
38.69	0.0590	1019.45	2634.80	155.45	2479.34	25346.34
34.30	0.0457	800.14	2542.66	116.20	2426.45	27772.80
23.74	0.0675	512.11	2196.82	148.29	2048.53	29821.33
428.21	N.A.	9054.66	33593.34	3772.01	29821.33	29821.33

TABLE A.1.38

Step-Dise Derivation of the Distribution of "Net Income" from Gross Income for Urban India 1980-81, Case 3 ("Missing Income" Allocated in Ratio of U:R = 1:1)

Income ranges for earners (Rs)	Gross income	Agricultural income	Depreciation	Standard deductions	H.R.A. deduction
(1)	(2)	(3)	(4)	(5)	(6)
1-1200	47.26	8.48	0.27	5.35	0.00
1201-2400	467.73	42.05	7.88	52.60	0.00
2401-3600	1154.70	65.84	24.84	128.94	0.00
3601-4800	1530.93	51.26	26.76	187.94	0.00
4801-6000	1970.47	106.94	36.74	221.33	55.93
6001-7500	2685.90	148.23	41.43	301.42	92.01
7501-10000	4320.20	188.26	71.72	526.43	160.68
10001-15000	8126.19	289.65	184.69	860.00	240.98
15001-20000	5823.34	299.47	135.01	582.72	190.02
20001-25000	4491.30	184.69	152.46	389.16	182.18
25001-30000	3274.19	147.47	102.63	250.86	138.54
30001-40000	4362.10	435.87	78.96	266.87	219.56
40001-50000	3972.53	95.85	194.41	175.19	87.55
Above 60000	3610.16	343.34	147.74	107.80	42.76
All income ranges	45837.00	2407.41	1205.55	4056.61	1410.31

Note: Totals may not tally due to rounding.

Source: As explained in Appendix 1.



Table A.1.38 (Contd.)

(Rs crore)

Employers' contribut- to P.F.	Chapter VIA rates	Sum of col- umns 3 through 7	Column 2 minus column 9	Amount of chapter VIA de- ductions	Net in- come (column 10-11)	Cumulative of col- umn 12
(7)	(8)	(9)	(10)	(11)	(12)	(13)
0.43	0.1901	14.53	32.73	6.22	26.51	26.51
4.28	0.1901	106.81	360.92	68.61	292.31	318.81
10.49	0.1901	230.10	924.60	175.77	748.83	1067.64
15.29	0.1901	281.25	1249.68	237.56	1012.12	2079.76
18.00	0.1901	438.94	1534.53	291.14	1240.39	3320.15
24.52	0.1901	607.61	2078.29	395.08	1683.21	5003.35
42.12	0.1901	989.91	3330.29	633.09	2697.20	7760.56
77.04	0.0913	1652.37	6473.82	591.06	5882.76	13583.32
60.03	0.0951	1267.25	4556.08	433.28	4122.80	17706.12
43.74	0.0702	952.24	3539.06	248.44	3290.62	20996.74
31.86	0.0985	671.46	2602.73	256.37	2346.36	23343.10
42.57	0.0590	1043.84	3318.26	195.78	3122.49	26465.58
38.95	0.0457	591.95	3380.58	154.49	3226.09	29691.67
28.30	0.0675	669.94	2940.22	198.46	2741.75	32433.42
438.33	N.A.	9518.21	36318.79	3885.37	32433.42	32433.42

TABLE A.1.39

Step-wise Derivation of "Net Income" from Gross Income  
for Rural India 1980-81, Case 1 ("Missing Income" Allocated  
in Ratio of U:R 1:2)

Income ranges for earners (Rs)	Gross income	Agricul- tural in- come	Depre- ciation	Stand- ard de- ductions	H.R.A. deduc- tions
(1)	(2)	(3)	(4)	(5)	(6)
1 — 1200	1436.08	1149.95	3.01	3.27	0.00
1201 — 2400	7406.13	5561.84	33.77	84.50	0.00
2401 — 3600	9665.07	6725.64	49.14	201.32	0.00
3601 — 4800	9264.52	5873.81	69.24	288.25	0.00
4801 — 6000	8137.22	5254.23	60.39	318.06	56.56
6001 — 7500	8271.21	5621.31	32.69	382.74	85.50
7501 — 10000	9016.99	6038.86	72.23	310.97	69.46
10001 — 15000	9199.54	6726.23	81.02	142.37	28.88
15001 — 20000	3747.14	3104.70	23.09	46.86	11.13
20001 — 25000	1733.09	1236.67	33.21	0.00	0.00
25001 — 30000	867.57	238.78	31.06	6.17	2.48
30001 — 40000	699.99	119.82	0.00	0.00	0.00
40001 — 60000	332.79	330.27	0.00	0.00	0.00
Above 60000	1083.65	0.00	73.58	0.00	0.00
All income ranges	70961.00	47982.11	562.42	1784.50	254.00

*Note:* Totals may not tally due to rounding.

*Source:* As explained in Appendix 1.

(Rs. crore)

Employers' contribution to P. F.	Chapter VIA rates	Sum of column 3 through 7	Column 2 minus column 9	Amount of Chapter VIA deductions	Net income (Column 10—11)	Cumulative of column 12
(7)	(8)	(9)	(10)	(11)	(12)	(13)
0.21	0.1901	1156.44	279.64	53.16	226.48	226.48
5.45	0.1901	5685.56	1720.57	327.08	1393.49	1619.97
12.99	0.1901	6989.06	2675.99	508.70	2167.28	3787.25
18.60	0.1901	6249.89	3014.63	573.63	2441.55	6228.80
20.52	0.1901	5709.74	2427.48	461.46	1966.02	8194.82
24.69	0.1901	6146.92	2124.29	403.83	1720.46	9915.28
20.06	0.1901	6511.58	2505.41	476.28	2029.13	11944.41
10.01	0.0913	6988.51	2211.03	201.87	2009.17	13953.58
3.81	0.0951	3189.59	557.55	53.02	504.53	14558.11
0.00	0.0702	1269.88	463.21	32.52	430.69	14888.80
0.62	0.0985	279.12	588.45	57.96	530.49	15419.29
0.00	0.0590	119.82	580.17	34.23	545.94	15965.23
0.00	0.0457	330.27	2.52	0.11	2.40	15967.63
0.00	0.0675	73.58	1010.07	68.18	941.89	16909.53
116.95	N.A.	50699.98	20161.02	3251.49	16909.53	16909.53

TABLE A.1.40

State-wise Derivation of the Distribution of "Net Income" from  
Gross Income for Rural India 1980-81, Case 2 ("Missing Income"  
Allocated in Ratio of U:R = 1:1.5)

(Rs. crore)

Income ranges for earners	Gross income	Agricul- tural income	Depre- ciation	Stand- dard deduc- tions	H.R.A. deduc- tions
(1)	(2)	(3)	(4)	(5)	(6)
1 — 1200	1553.34	1249.24	3.16	3.54	0.00
1201 — 2400	7512.58	5666.27	33.17	85.71	0.00
2401 — 3600	10069.11	7037.91	49.58	209.74	0.00
3601 — 4800	9277.87	5907.81	67.14	288.67	0.00
4801 — 6000	7932.45	5144.24	57.00	310.06	70.21
6001 — 7500	7454.83	5088.48	28.53	344.97	78.12
7501 — 10000	8365.05	5625.56	64.89	288.50	65.32
10001 — 15000	8478.12	6225.68	72.31	131.27	26.98
15001 — 20000	3556.62	2959.64	21.22	44.53	10.71
20001 — 25000	1571.63	1125.33	29.16	0.00	0.00
25001 — 30000	776.40	214.62	26.92	5.51	2.25
30001 — 40000	619.08	106.43	0.00	0.00	0.00
40001 — 60000	289.82	288.88	0.00	0.00	0.00
Above— 60000	1424.09	0.00	93.64	0.00	0.00
All income ranges	68881.00	46641.39	546.70	1712.50	253.59

*Note:* Totals may not tally due to rounding.

*Source:* As explained in Appendix 1.

Table A.1.40 (Contd.)

(Rs. crore)

Employers' contribution to P. F.	Chapter-VIA rates	Sum of column 3 through 7	Column 2 minus column 9	Amount of chapter VIA deductions	Net income (column 10—11)	Cumulative of column 12
(7)	(8)	(9)	(10)	(11)	(12)	(13)
0.22	0.1901	1256.16	297.18	56.49	240.69	240.69
5.43	0.1901	5790.58	1722.00	327.35	1394.65	1635.34
13.29	0.1901	7309.81	2759.30	524.54	2234.75	3870.09
18.29	0.1901	6281.91	2995.96	569.53	2426.43	6296.52
19.65	0.1901	5601.16	2331.29	443.18	1888.11	8184.63
21.86	0.1901	5561.96	1892.87	359.84	1533.04	9717.67
18.28	0.1901	6063.55	2301.50	437.51	1863.98	11581.65
9.06	0.0913	6465.30	2012.82	183.77	1829.05	13410.70
3.55	0.0951	3039.65	516.97	49.16	467.81	13878.51
0.00	0.0702	1155.49	416.14	29.21	386.93	14265.44
0.54	0.0985	249.84	526.56	51.87	474.69	14740.14
0.00	0.0590	106.43	512.65	30.25	482.41	15222.54
0.00	0.0457	288.88	0.94	0.04	0.90	15223.44
0.00	0.0675	93.64	1330.45	89.81	1240.65	16464.09
110.17	N.A.	49264.35	19616.65	3152.56	16464.09	16464.09

TABLE A.1.41

Step-wise Derivation of the Distribution of "Net Income" for Rural India 1980-81, Case 3 ("Missing Income" Allocated in Ratio of U:R = 1:1)

Income ranges for earners (Rs)	Gross Income	Agricultural income	Depreciation	Standard deduction	H.R.A deductions
(1)	(2)	(3)	(4)	(5)	(6)
1-1200	1696.35	1373.06	3.31	3.86	0.00
1201-2400	7662.48	5816.59	32.54	87.42	0.00
2401-3600	9624.28	6769.69	45.58	200.47	0.00
3601-4800	8912.53	5711.77	62.03	277.30	0.00
4801-6000	7312.63	4772.86	50.54	285.83	51.06
6001-7500	7242.63	4975.50	26.66	335.15	76.13
7501-10000	8125.82	5500.89	60.63	280.23	63.66
10001-15000	7592.98	5611.65	62.28	117.65	24.24
15001-20000	2998.02	2510.89	17.20	37.49	9.06
20001-25000	1295.24	934.24	23.11	0.00	0.00
25001-30000	653.46	181.79	21.79	4.64	1.90
30001-40000	512.24	88.63	0.00	0.00	0.00
40001-60000	233.71	234.45	0.00	0.00	0.00
Above 60000	1829.63	0.00	115.71	0.00	0.00
All income ranges	65692.00	44482.02	521.39	1630.04	226.05

Note: Totals may not tally due to rounding.

Source: As explained in Appendix 1.

(Rs crore)

Employers' contribution to P.F.	Chapter VI A rates	Sum of column 3 through 7	Column 2 minus column 9	Amount of chapter VIA deductions	Net income (column 10-11)	Cumulative of collections umn 12
(7)	(8)	(9)	(10)	(11)	(12)	(13)
0.23	0.1901	1380.45	315.89	60.05	255.34	255.84
5.29	0.1901	5941.84	1720.64	327.09	1393.54	1649.38
12.14	0.1901	7027.88	2596.40	493.58	2102.83	3752.21
16.79	0.1901	6067.89	2844.64	540.77	2303.88	6056.09
17.30	0.1901	5177.59	2135.04	405.87	1729.17	7785.25
20.29	0.1901	5433.73	1808.90	343.87	1465.03	9250.28
16.96	0.1901	5922.37	2203.45	418.88	1784.57	11034.85
7.75	0.0913	5823.58	1769.40	161.55	1607.86	12642.71
2.86	0.0951	2577.50	420.52	39.99	380.53	13023.24
0.00	0.0702	957.35	337.89	23.72	314.17	13337.41
0.44	0.0985	210.57	442.89	43.62	399.27	13736.68
0.00	0.0590	88.63	423.61	24.99	398.62	14135.29
0.00	0.0457	234.45	Neg.	Neg.	Neg.	14134.58
0.00	0.0675	115.71	1713.92	115.69	1598.23	15732.81
100.05	N.A.	46959.55	18732.45	2999.64	15732.81	15732.81

TABLE A.1.42

Estimated Results of Applying the Exemption Limit in Terms of Gross Income under Different Scenarios:  
Urban and Rural India for 1975-76

Description of scenarios and selected income ranges for earners	Gross income	Net income	Ratio column 2÷3	Preliminary 'cut-off figure' (ratio × exemption limit) column (4) × Rs 8000	Final cut-off figure	Adjusted net income for the 'cut-off income range'	Income below exemption limit for the income range preceding the 'cut-off income range'	Cumulative net income for all income ranges	Taxable income (Assessable) column (9) - (8)
(Rs)	(Rs crore)		(Rs)	(Rs)	(Rs)	(Rs crore)	(Rs crore)	(Rs crore)	(Rs crore)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>Rural India, Case 1</b>									
7501 - 20000	7123.23	1543.82	4.614029	36912.23	—	—	—	—	—
7501 - 40000	7715.34	1796.02	4.295798	—	34366.39	68.81	8276.19	9649.15	1372.96
<b>Rural India, Case 2</b>									
7501 - 20000	6747.47	1530.89	4.407547	35260.38	—	—	—	—	—
7501 - 40000	7274.73	1757.96	4.138166	—	33105.33	56.93	8461.97	9264.42	802.45



TABLE A-1.42 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>Rural India, Case 3</b>									
7501—20000	5982.06	1360.88	4.395729	35165.83	—	—	—	—	—
7501—40000	6427.82	1552.30	4.140836	—	33126.69	47.84	8022.10	8864.74	842.64
<b>Urban India, Case 1</b>									
7501—15000	6712.18	4692.40	1.430436	—	11443.49	2066.56	8776.11	14148.45	5372.34
<b>Urban India, Case 2</b>									
7501—15000	7097.28	4968.07	1.428579	—	11428.63	2207.13	8889.38	15018.62	6129.24
<b>Urban India, Case 3</b>									
7501—15000	7453.90	5215.26	1.429248	—	11433.98	2367.75	9116.92	16293.13	7176.21

*Note:* For computing columns (7) through (9), relevant information is used from Tables 5.5.4 through 5.5.9.

*Source:* As explained in Appendix 1.

TABLE A.1.43

Estimated Results of Applying the Exemption Limit in Terms of Gross Income  
under Different scenarios : Urban and Rural India for 1980-81

Description of scenarios and selected income ranges for earners under each scenario	Gross income	Net income	Ratio column 2÷3	Preliminary 'cut off figure' (ratio × exemption limit) column (4) x Rs 12000	Final cut-off figure	Adjusted net income for the 'cut off income range'	Income below exemption limit for the income range preceding the 'cut-off income range'	Cumulative net income for all income ranges (9) - (8)	Taxable income column (9) - (8)
(Rs)	(Rs crore)			(Rs)	(Rs)	(Rs)	(Rs crore)	(Rs crore)	(Rs crore)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Rural India, Case 1</i>									
7501-20000	21963.67	4542.83	4.834799	58017.59	—	—	—	—	—
7501-60000	25597.11	6049.95	4.230962	—	50771.55	797.02	6754.65	16909.53	144.88
<i>Rural India, Case 2</i>									
7501-20000	20399.79	4160.84	4.902806	58833.67	—	—	—	—	—
7501-60000	23656.72	5505.77	4.296714	—	51560.57	7734.08	15223.31	16464.09	1240.78

TABLE A.1.43 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Rural India, C. se 3</i>									
7501—60000	18716.82	3772.96	4.960779	59529.35	—	—	—	—	—
7501—60000	21411.47	4864.31	4.383725	—	52604.70	6224.89	14134.67	15732.81	1598.14
<i>Urban India, Case 1</i>									
7501—15000	11753.97	8063.53	1.457661	17491.94	—	—	—	—	—
7501—20000	17003.46	11786.45	1.442628	—	17311.53	3222.43	16629.21	28400.69	11771.48
<i>Urban India, Case 2</i>									
7501—15000	12168.71	8499.99	1.431615	17179.38	—	—	—	—	—
7501—20000	17881.18	12564.15	1.411963	—	16943.43	3527.76	17280.37	29821.33	12540.96
<i>Urban India, Case 3</i>									
7501—15000	12445.39	8579.96	1.450538	17407.62	—	—	—	—	—
7502—20000	18269.73	12702.76	1.438249	—	17258.99	3557.77	17141.09	32433.42	15292.33

*Note* : For computing columns [7] through [9] relevant information is used from Tables A.1.36 through A.1.41.

*Source* : As explained in Appendix 1.

TABLE A.1.44

Estimated Values of "Blow-up" Factors by Status of Assesseees for the Assessment Year 1976-77

Status of assesseees	Number of assesseees		Adjusted C&AG Col.(2)— Col.(3)	Number of as- sess- ments (AIITS) Col.(4)÷ Col.(5)	Blow-up factor ratio of Col.(4)÷ Col.(5)
	C&AG	Cases of N.A. and filed @ 10 per cent of col.(2)			
(1)	(2)	(3)	(4)	(5)	(6)
Individuals	2876971	287697	2589274	1825000	1.4188
HUFs	197734	N.A.	197734	69000	2.8657
Association of persons (AOP)	47061	N.A.	47061	21000	2.2410
Firms (Registered and Unregistered)	596750	59675	537075	280000	1.9181

*Note* : N.A. refers to 'not applicable'.

*Source* : Figures in column (2) are taken from 'Annual Report' of the Comptroller and Auditor General of India (C&AG) for 1976-77, those in column (5) are from AIITS annual publication for Assessment years 1976-77 to 1978-79 and those in column (3) are based on Personal Discussions with Director of Statistics, Directorate of Inspection, New Delhi.

TABLE A.1.45

Estimated Values of "Blow-up" Factors by Status of Assesseees for the Assessments Completed in the Year 1981-82

Status of assesseees	Number of assesseees			Number of assessments AIITS	Blow-up factors ratio of Col. (4) ÷ Col.(5)
	C & AG	Cases of N.A. & filed	Adjusted C&AG Col. (2) — Col. (3)		
(1)	(2)	(3)	(4)	(5)	(6)
Individuals	3521156	352116	3169040	1112885	2.8476
HUFs	232521	N.A.	232521	43732	5.3169
Association of persons (AOP)	74532	N.A.	74532	17288	4.3112
Firms (Registered and unregistered)	786321	78632	707689	232211	3.0476

Note: N.A. 'not applicable'.

Source: Same as in Table A.1.43, but relating to the AIITS, financial year, 1981-82.

## APPENDIX II

### Tax Evasion: Some Implications for National Income Estimates

The purpose of this brief appendix is to outline, in a qualitative way, the vulnerability of India's national income estimates to evasion of taxes and economic regulations. The intent is to convey some flavour of the sources and methods deployed by the CSO for estimating value-added in the *major* sectors of the economy and to comment on how these sources and methods might be sensitive to evasion. Some caveats are in order. First, our purpose is not to attempt a comprehensive critique of the existing sources and methods. Second, our descriptions of the sources and methods only touch on salient aspects and cannot substitute for the comprehensive treatment in the CSO's "Pink Book" on Sources and Methods (Government of India, CSO, 1980). Except where otherwise stated, all quotations in this appendix are from that document. Third, we refrain from attempting *quantitative* estimates of the degree to which estimates of value-added for each sector may be biased because of evasion considerations. Fourth, we confine ourselves to the estimates of value-added and do not explore the implications of evasion for all aspects of national income accounting.

Table A.2.1 presents the current price estimates of gross domestic product at factor cost by industry of origin for 1970-71 and 1980-81, as percentage of total GDP at factor cost. Our comments are limited to sectors which accounted for more than 3 per cent of total value-added in 1980-81.

TABLE A.2.1

Gross Domestic Product at Factor Cost and Current by Industry of Origin for 1970-71 and 1980-81: Percentage Distribution

Industry	1970-71	1980-81
1. Agriculture and allied activities	45.7	35.5
2. Forestry and logging	1.1	1.0
3. Fishing	0.7	0.8
4. Mining and quarrying	1.0	1.5
5. Manufacturing	14.2	17.2
a. Registered	9.3	11.3
b. Unregistered	4.9	5.9
6. Construction	5.3	4.8
7. Electricity, gas and water supply	1.2	1.7
8. Transport, storage and communication	5.1	5.6
a. Railways	1.6	1.0
b. Transport by other means and storage	2.8	3.9
c. Communication	0.7	0.7
9. Trade, hotels and restaurants	11.0	15.6
10. Banking and insurance	1.8	3.0
11. Real estate, ownership of dwelling and business services	3.9	3.6
12. Public administration and defence	4.4	4.7
13. Other services	4.6	5.0
14. Total: gross domestic product at factor cost	100.0	100.0

Source: Government of India, CSO (1983).

### *Agriculture and Allied Activities*

Agriculture and allied activities accounted for 35.5 per cent of GDP in 1980-81 and was by far the largest sector of the economy. Within agriculture, nearly 90 per cent of gross value-added is attributable to crop agriculture, with livestock accounting for most of the remainder.

For the 35 "principal crops" which dominate crop agriculture the estimates of area and output are mostly based on the results of crop estimation surveys conducted annually by the State government agencies. In view of the nature of the crop estimation surveys and the fact that incomes and outputs from agriculture are largely free of tax, there is no good

reason to believe that tax evasion is a significant factor which biases the results systematically. Crop outputs are valued at average wholesale prices prevailing in the primary markets during peak marketing periods. Again, motives of tax evasion should not distort this information.

Livestock products are divided into eight groups. For each group information on yield rates (in relation to the total number of the relevant type of livestock) is compiled from a large number of diverse sources, principally surveys at the State level. These are combined with information on livestock numbers based on the quinquennial Indian Livestock Censuses to yield annual estimates of livestock output for the eight different categories. These outputs are valued at prices obtained from the same sources as for crop agriculture. Once again tax evasion motives are not likely to be a significant source of bias in the estimates. With somewhat less confidence the same claim can be maintained for the estimates of values of inputs used in crop agriculture and livestock, which are based on a wide variety of sources and norms.

To sum up, we do not believe that the estimates of value-added in agriculture and allied activities are significantly biased by tax evasion and related motives.

### *Manufacturing*

In 1980-81 manufacturing was the second largest sector in the economy accounting for 17.2 per cent of GDP at factor cost. The sources and methods of estimating value-added are very different for *Registered* and *Unregistered* sectors of manufacturing. We consider each in turn.

#### *Registered Manufacturing*

This subsector accounted for 11.3 per cent of GDP in 1980-81. The estimates of value-added for this subsector are based on the Annual Surveys of Industry (ASI) carried out by the National Sample Survey Organisation (NSSO). All factories employing "50 or more workers with power or 100



or more workers without power" are surveyed on a census basis, while the remainder of registered units are sampled. Our discussions with ASI authorities confirmed that the information entered in the ASI questionnaires is normally consistent with the financial accounts of the factories, which are made available to tax authorities. Put another way, any falsification of accounts for tax purposes will normally be reflected in the estimates of value-added compiled through the ASI. And the presumption would be in favour of *underestimation* of true value-added.<sup>1</sup>

For this reason the vulnerability of the value added estimates to evasion is perhaps more direct and acute in this sector than in any other.

### *Unregistered Manufacturing*

In 1980-81 this subsector accounted for 5.9 per cent of current price GDP. Gross value-added estimates are first prepared for the benchmark year of 1970-71. These are then carried forward to other years on the basis of physical indicators to yield constant price estimates, which are converted to current price estimates using price indices for different subsectors.

The benchmark estimates are prepared separately for the two subsectors of *household manufacturing* and *non-household manufacturing*. For both subsectors the key data inputs are the estimates of value-added per worker and of the number of workers engaged in each of 16 industry groups.

For household manufacturing, the estimates of value-added per worker are based on National Sample Surveys (NSS) of the 23rd (1968-69) and 29th (1974-75) Rounds. For non-household manufacturing the main sources are the results of the 1970-71 Centrally Sponsored Scheme on Survey of Small Scale Industries (CSSI) and the 1972 census of small-scale industries published by the Development Comm-

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1. While this is the most likely case, there are instances where production and value data in smaller factories are inflated to secure the benefit of various concessions with respect to tax and inputs, which are specifically targeted towards small-scale units.

issioner, Small Scale Industries (DCSSI). The benchmark estimates of value-added per worker are subject to potential downward bias because of underreporting of financial and physical data in the NSS and CSSI/DCSSI surveys and census for motives of evasion.<sup>2</sup> The CSSI and DCSSI sources also suffer from significant undercoverage (notably with respect to rural units) of the population of small-scale units. Though some of this undercoverage may be traced to the unwillingness of small-scale units to enter the official statistical net because of apprehensions with respect to tax liability, the resulting error in the estimates of value-added per worker are likely to be minor.

The other main ingredient for the benchmark estimates is information on the number of workers in each of the sixteen subsectors, separately for household and non-household manufacturing. The principal sources of information are the 1961 and 1971 population censuses. Here, too, it is possible that tax evasion motives could distort the industry-wise data on distribution of workers (both within manufacturing and in respect to manufacturing in relation to other sectors), particularly for those engaged in household manufacturing. We can offer no view on the gravity of this possible bias.

Finally, the physical indicators used to move the benchmark estimate forward to other years suffer from major weaknesses [see, for example, Narottam Shah (1984)]. In nine out of the sixteen subsectors of manufacturing the indicators used are based on the indices of industrial production for the registered manufacturing sector. Thus, evasion-related errors in the estimates of output for registered manufacturing units have repercussions for the estimates of value-added in unregistered manufacturing.

Clearly, there are several points at which information used in the estimates of value-added can be influenced by evasion considerations. In most cases the probable bias is

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2. The presumption is that survey respondents are unlikely to provide accurate information, if this is substantially different from the information supplied to tax authorities.

towards underestimation. However, we have no means to gauge the extent of such underestimation or of its trend over time.

### *Construction*

In 1980-81 the share of construction in current price GDP was 4.8 per cent. Of all the sectors in the economy the estimation of value-added in construction is perhaps the most complicated and roundabout.<sup>3</sup> The sources of information are diverse and the number of norms and ratios (which are estimated for a given year and then held constant) is large.

The basic steps are as follows. Two kinds of construction are distinguished, "pucca" and "kutcha". For "pucca" construction a commodity flow approach is used to gauge "the value at site in each accounting year, of five basic construction input materials, *viz.*, cement, iron and steel products, timber and roundwood, bricks and tiles and permanent fixtures and fittings" (p. 96). Sample surveys indicate that these five inputs accounted for 66 per cent of the value of construction materials used in "pucca" construction in a benchmark year. This information, together with data on price trends, is used to estimate the total value of construction materials used in "pucca" construction each year. For 1970-71 gross value-added is taken to be 60 per cent of the value of material inputs. For other years adjustments are made for differing trends in the indices for wages of construction workers and prices of construction materials.

The most obvious ways in which evasion could affect the estimates relate to evasion-induced under-estimation of the total available quantities of the five key inputs. This is particularly true for cement, iron and steel products and fixtures and fittings. For the latter two the ASI information is the key source, with the potential problems alluded to, earlier. Underreporting of outputs and values may have been

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3. The description provided in the CSO's "Pink Book" is somewhat opaque. A much clearer treatment can be found in the Raj Committee's Report on Saving and Capital Formation (Reserve Bank of India, 1982).

particularly serious for cement and iron and steel products during periods of price control.

The estimates of value-added in "kutcha" construction are based on estimates of *total* value of construction of different types (such as urban residential buildings, rural residential buildings, etc.) from which estimates of corresponding "pucca" construction are first deducted to obtain values of "kutcha" construction of different types. To each of these, certain ratios (based on diverse surveys) are applied to yield estimates of gross value-added by "kutcha" construction.

The estimates of total value of construction of different types are susceptible to underestimation for evasion motives. On the other hand, any downward bias should imply an opposite bias in the estimates of values of different types of "kutcha" construction. So the net bias is indeterminate.

To sum up, while there is some reason to believe that evasion motives lead to underestimation of value-added in "pucca" construction, no such presumption can be confidently entertained for "kutcha" construction. In any case, given the complex and indirect methodology, any errors attributable to evasion motives are likely to be much smaller than those arising from weaknesses in the underlying information base and the unreliability of the numerous norms and ratios used.

### *Transport, Storage and Communication*

This sector generated 5.6 per cent of current price GDP in 1980-81, with railways accounting for 1.0 per cent, communication for 0.7 per cent and "transport by any other means and storage" for 3.9 per cent. Value-added estimates for the first two subsectors are prepared on the basis of budget documents, annual reports and appropriation accounts pertaining to the Railways and the Post and Telegraphs Department. There is no question of tax evasion distorting these estimates. Much of the value-added classified under "transport by any other means and storage" is also compiled from the accounts of various public sector undertakings such

as Air India, Indian Airlines, Shipping Corporation of India, State Road Transport Corporations/Companies etc., where evasion considerations are unlikely to significantly influence the basis of the estimates.

The main subsector where the influence of evasion considerations on the value-added estimates may be significant is *private mechanised road transport*, which may have accounted for about 2 per cent of GDP in 1980-81. The method of estimations requires data on value-added per worker and the number of workers. Benchmark estimates of the latter are based on the population censuses; these are then moved forward using year-wise estimates of the population of different kinds of vehicles. For estimates of value-added per worker, the key sources are the annual surveys of private road transport undertakings carried out in Punjab and Kerala. It is here that the possibility of evasion-induced bias (downside) is greatest, though once again we have no means of gauging its degree.

#### *Trade, Hotels and Restaurants*

In 1980-81 this was the third largest sector of the economy, accounting for 15.6 per cent of current price GDP. Of the total value-added in this sector the share of trade was over 90 per cent, and it is on this subsector that we shall focus.

In summary, the estimate of value-added in trade in current prices is obtained by the following steps:

- (i) For *registered* trade (covered under Sales Tax Acts/Regulated Market Acts) benchmark estimates of value-added per worker for 1970-71 are prepared on the basis of surveys of distributive trade carried out in 8 States in the period 1964-65 to 1971-72.
- (ii) This benchmark estimate is multiplied by an estimate of the number of workers in registered trade based on the 1971 population census and the distributive trade surveys of Haryana and Andhra Pradesh (the only two States which estimated the division of workers between the registered and unregistered sectors).

- (iii) For *unregistered* trade the estimate of value-added per worker in 1970-71 is based on the NSS 24th Round (1969-70). This is multiplied by the estimate of number of workers in unregistered trade to obtain value-added.
- (iv) For current price estimates of value-added in subsequent years trade is subdivided into *organised* and *unorganised* subsectors. Estimates for the *organised* subsector are based on the annual reports of public sector companies and details of finances of joint stock companies and cooperative societies. For the *unorganised* subsector (approximately 90 per cent of the total) annual constant price estimates are first obtained and then converted to current prices using the wholesale price index of all commodities.
- (v) For the *total trade* sector constant price estimates are obtained by moving the benchmark estimate "by a specially prepared index of volume of goods handled" (p.45), based on trends in the marketable surplus of the commodity producing sectors (manufactured goods have a weight of about 65 per cent in this index).
- (vi) The estimates of value-added at constant prices in the *organised* trade sector are obtained independently by applying quantum indices of purchases to the 1970-71 estimate. For example, the quantum index for joint stock companies and cooperative societies is obtained by deflating annual data on the current value of sales by the private corporate sector (based on Reserve Bank sample studies of company finances) by a wholesale price index of selected commodities.

Value-added in constant prices in the *unorganised* subsector can now be obtained as a residual.

The estimates are vulnerable to evasion-induced distortions at several points. The most obvious of these relates to the surveys which underpin the estimates of value-added per worker in the benchmark year. Discussions with the organisers of one of the distributive trade surveys supported

the presumption that estimates of turnover and value-added reported by respondents could be substantially below the true levels, with respondents wishing to maintain some consistency with their sales tax returns. Second, the "index of volume of goods handled" used to move the benchmark estimate for total trade forward (step v) is heavily dependent on estimates of production of manufactured goods, which, as we noted earlier, are likely to be biased downwards because of incentives to evade tax. This would certainly depress the base year level of the index; whether it would distort its growth trend is an open question. Furthermore, evasion-induced underreporting of data on value-added and sales in organised trade could introduce errors in steps (iv) and (vi), though the resulting direction of bias in overall estimate of current price value-added in trade would be in opposite directions.

On balance, these considerations point to a possibility of significant underestimation of value-added in trade, with most of it attributable to underreporting in the surveys underpinning the benchmark estimate of value-added per worker.

### *Real Estate, Ownership of Dwellings and Business Services*

The share of this sector in current price GDP in 1980-81 was 3.8 per cent. Nearly 90 per cent of this value-added was attributable to the subsector, ownership of dwellings, to which we confine ourselves here. Value-added is computed separately for urban and rural residential dwellings, with the former accounting for about 55 per cent of the total.

Value-added consists of gross rentals less the cost of repairs and maintenance. Gross rental is estimated as a product of average gross rental (including imputations for owner-occupied housing) per dwelling and the number of census dwellings. For *urban* residential dwellings the key information on rentals consists of "annual assessed rentals of municipal houses subject to house tax . . ." (p.50) obtained from a sample of reporting municipalities. This reliance on information tendered for urban property taxes is a major

source of downward bias in the estimates of value-added, though only a part of this can, strictly, be attributed to evasion considerations. For one thing, property tax assessments are done after long periods during which the gap between market rentals for tax assessment can widen greatly. Second, rent control regulations effectively freeze the base for assessment. As Ghosh and Mohan (1983, p.11) observe "even if the rent transacted is higher than the standard rent as determined by rent control laws, property tax may only be assessed at standard rent". Third, where rent control does not apply, rents *shown* as transacted may be far below rents actually transacted if the landlord engages in evasion to reduce liability for both income tax and house property tax. For these and other reasons, Ghosh *et. al.* (1981, p.7) suggest that "the extent of underestimation of income from urban residential housing may be 50 per cent of the actual, if not more."

The estimates of value-added from *rural* residential dwellings are based on very limited data and involve assumptions which link rural rentals to the estimates for urban rentals. Though little of the data weakness is directly attributable to evasion, there is a presumption of a downward bias in these estimates because of the link to urban rentals.

#### *Public Administration and Defence*

In 1980-81 this sector accounted for 4.7 per cent of current price GDP. By definition value-added in this sector comprises only compensation of employees. The information is obtained from the budget documents and accounts of the Centre, States, Union Territories and local authorities. Such budget information is likely to be insensitive to tax evasion.

#### *Other Services*

This sector, which accounted for 5 per cent of current price value-added in 1980-81, includes *education* (53.7 per cent), *medical and health services* (15.8 per cent), *legal services*



(2.2 per cent), *recreation and entertainment services* (1.5 per cent) and various personal services (16.3 per cent).<sup>4</sup>

The methods of estimation of value-added vary somewhat across subsectors. For education, which accounts for more than half the sectoral total, gross value-added is composed predominantly of the wages and salaries to teachers and other workers in educational institutions. For "recognised educational institutions" (which account for 98 per cent of the value-added in education) this information is compiled annually by the Ministry of Education. While there is little reason to believe that this information is distorted by considerations of tax evasion, there is good reason to suspect that many teachers "moonlight" to augment their salaries through private tuition, and *these* incomes are neither reported to the Ministry of Education nor the tax authorities. So, for reasons, which include tax evasion, the estimate of value-added in education may involve a significant underestimate.

For *public sector* medical and health services, budget data are relied upon. As with education, these totals will exclude the incomes earned from "moonlighting". For *private sector* medical services and all other (except sanitary) services the methodology followed is to estimate the annual working force in each subsector (from population censuses and other sources) and multiply this with an estimate of value-added per worker.

The principal sources of estimates for value-added per worker are the NSS surveys for the 18th (1963-64) and 29th (1974-75) Rounds. These two data sources are combined with information on price and wage indices and the estimates of working force in each subsector to yield *annual* estimates of value-added in each subsector.

Obviously, the value-added per worker estimates based on the NSS surveys are subject to downward bias from respondents who wish to maintain some consistency between their survey responses and their tax returns, where the latter

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4. The percentages in parentheses refer to respective shares of the subsectors in the 1980-81 sectoral total.

may incorporate substantial underreporting (or may not have been filed on the implicit claim of earning falling below exemption limits).

Thus, on balance, evasion considerations may entail a significant underestimate of the value-added in "Other Services".

### *An Overall Assessment*

We have tried, in this appendix, to indicate the manner in which evasion may influence the estimates of GDP by sector of origin. It is clear that there is a strong *pr:ma facie* case for suspecting significant underestimation of total GDP. Based on our qualitative appraisal we suggest that such underestimation may be most pronounced in the following sectors:

- Manufacturing (Registered and Unregistered)
- Transport by Other Means and Storage
- Trade, Hotels and Restaurants
- Other Services.

It is interesting to observe that between 1970-71 and 1980-81 the share of each of these four sectors in current price GDP increased (Table A.2.1). Their total share grew from 32.6 per cent in 1970-71 to 41.7 per cent in 1980-81. This means that recorded growth has been fastest in those sectors in which the estimates of value-added are deemed most susceptible to underestimation for reasons of evasion. This, in turn, suggests that the degree of underestimation of total GDP, for this reason, may have increased over time.

## References in Appendices

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## CORRIGENDUM

<i>Page</i>	<i>For</i>	<i>Read</i>
32 (Col. 8)	4.61	46.1
58 Col. 3 in 1975-76	45483	46483
58 Col. 4 in 1976-77	23555	23656
58 Col. 6 in 1953-54	2.77	2.27
59 Col. 9	FRI 2	ERI 2
59 Col. 11	ERI	ERI 4
64 (Col. 5)	-3.58304	-3.68304
-do-	-360780	-3.60780
-do-	-0.0042	-0.00042
64 (Col. 6)	3.45397	3.35397
65 (Col. 9)	$R^{-2}$	$\bar{R}^2$
66	RAV	RAVE
66 (Col. 4)	KGQ	RGNP

<i>Page</i>	<i>For</i>	<i>Read</i>
66 (Col. 5)	-.149361	-1.49361
67 (Col. 8)	R12—RI	R12-ERI
67 (Col. 9)	$R^{-2}$	$\bar{R}^2$
69 (Col. 4)	per cent	Rs crore
69	page no. 96	69
69 (Col. 5)	Rs. crore	per cent
71 (Col. 2)	$M_1 \div (c^1 - c'')$	$M_1 - (c^1 - c'')$
71 Col. 4	$\frac{Y}{L M_1 - (c^1 - c'')}$	$V_L \cdot \frac{Y}{M - (c^1 - c'')}$
71 Col. 7	$2(V_L \text{ TICD})$	$\frac{1}{2} V_L (\text{TICD})$
71 Col. 8	$[(7) \div (4)]$ $\times 100$	$[(6) \div (3)]$ $\times 100$
71 Col. 9	$[(8) \div (4)]$ $\times 100$	$(7) \div (3)]$ $\times 100$
79 Table 5.3.1 Col(4)	595.056	5956.05
80 Col(10)	7.35	7.56
82 Col(6)	430	400

<i>Page</i>	<i>For</i>	<i>Read</i>
86 Heading	Households, 1975-76	Households, 1975-76
103 (Col.11)	22294.06	2294.06
104 Col.5	1192.98	1192.84
105 Col.(6)	0.09	0.00
107 Col.(8)	0.1270	0.1276
109 Col.13	15019.62	15018.62
115 Col.(8) Row(7)	0.1071	0.1051
115 Col.12	9262.42	9264.42
130 Col.(3)	17280.27	17280.37
130 Col.(4)	15223.31	15292.33
131 Col.(8)	33393.67	33393.86
133 Col.(4)	2373.35	2375.35

On p. 138, add following to Table footnote 3

“Furthermore, it should be noted that a part of these illegal transfers may already be included under different heads in the GDP total. To this extent, adding the full estimated amount here may involve some double counting.”

<i>Page</i>	<i>For</i>	<i>Read</i>
146 Col.(4)	1190.98	1180.88
166 Col.(4)	20928	203928
166 Footnote (1)	6.2	6.2.1
176 Col.(8)	138.	135
196 (Col.7)	(4)A5	(4)×(5)
196 Col.8	(4)A(6)	(4)×(6)
-do-	12.69	126.9
196 Col(10)	(9)A(7)	(9)×(7)
196 Col(11)	(9)A(8)	(9)×(8)
201 (Heading)	of Income	of Black Income
202 under Headings for Cols.(13)&(14)	Rs 00	Rs 000
206 Heading of Table 7.5.2	in sale of	in registered sale of

<i>Page</i>	<i>For</i>	<i>Read</i>
206 under year below 1981-82		1982-83
206 Col(9)	5800	5000
206 Col(11)	196512	961512
230 Col.(2)	90 000	50 000
-do-	158 000	150000
230 Col(3)	27328	78328
230 Col(4)	78750	28750
-do-	453750	153750
265 Col.8	21.99	21.29
<b>Total</b> 266(Col.15)	7	1
267 Col.1	Bombay	Bombay-I
267 Col.2 against 31 S.No. 31	7	5
277 Col(5)	927	957
291 Col(5)	227	277



**CORRIGENDUM**

**531**

<i>Page</i>	<i>For</i>	<i>Read</i>
292 Col.12 (Total)	1758	1748
343	4971	4978

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