

TRANSNATIONAL CORPORATIONS AND THE PHARMACEUTICAL INDUSTRY IN INDIA

**A THESIS
SUBMITTED TO THE
UNIVERSITY OF POONA
FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY
IN ECONOMICS**

**BY
SATWINDER SINGH**

**GOKHALE INSTITUTE OF POLITICS AND ECONOMICS
PUNE 411 004 (INDIA)**

MARCH 1983

FORM 'A'

CERTIFIED that the work incorporated in the thesis
'Transnational Corporations and the Pharmaceutical
Industry in India' submitted by Shri Satwinder
Singh was carried out by the candidate under my
supervision. Such material as has been obtained
from other sources has been duly acknowledged in
the thesis.



S. V. Bokil
Supervisor

ACKNOWLEDGEMENTS

A number of persons and institutions have directly or indirectly helped me in completing my work. I am primarily grateful to the authorities of Gokhale Institute of Politics and Economics for providing me with a UGC fellowship and extending all the necessary research facilities. I began working on the thesis in October 1977 and would have completed it at least an year earlier than now. It was delayed on account of a fire in my hostel room in November 1979 in which I lost a substantial part of my research material collected earlier. It is not possible to name all the persons who helped me in various capacities after this accident in sorting out a number of personal and academic problems. However, I would like to acknowledge some irrepayable debts without which it would not have been possible for me to continue and complete this task. Firstly, it was Prof. V. M. Dandekar then the Director of the Institute, and Prof. Mrs. K. Dandekar who with their abundant sympathy in fact dissuaded me from giving up this task in despair. My next debt goes to Dr. S. V. Bokil, my supervisor, who guided me patiently throughout my work. I shall always remain indebted to him for his contribution to my learning process through close association during all these years. He always demanded high academic standards but at the same time showed sympathetic understanding of my limitations.

His guidance has been immensely helpful in toning up the thesis. However, I am alone responsible for any shortcomings in it. Prof. B. S. R. Rao was one more important person who was instrumental in enabling me to obtain a large part of the data used in the thesis apart from other valuable suggestions that he made. I am grateful to him for this generosity on his part. Prof. K. K. Dasgupta was yet another teacher whose exceptional love and sympathy for his students came to my rescue and kept me working despite heavy odds. No words can express my gratitude towards him. I have gained from some very useful suggestions made by Prof. J. S. Uppal of State University of New York at Albany, during his visit to the Gokhale Institute. I am thankful to him for this kindly gesture. I also express my deep sense of gratitude for Dr. M. K. Datar for his generous assistance in going through the draft which saved me many mistakes. I would be failing in my duty if I do not mention Prof. N. Rath, Prof. A. S. Narkarni and Shri D. P. Apte for their assistance in several other problems that I faced.

Among friends, I would particularly like to acknowledge Mr. Ezat Mossallanejad, Mrs. Azar Mossallanejad, and Vikram D'Souza for their love and affection. They were always there in times of need, especially in the crisis-ridden days.

United Nations Centre on Transnational Corporations (UNCITC) and other related U.N. agencies, and the organisation of pharmaceutical producers of India (OPPI) made available to me many of their publications. I have liberally drawn on them.

(111)

I gratefully acknowledge their help in this regard. I would also like to thank the authorities of the Department of Company Affairs, Reserve Bank of India, Bombay Stock Exchange and Indian Institute of Public Administration (Prof. S. K. Goyal in particular) for their assistance in a number of ways.

Shri S. K. Athale showed his skills by deciphering my handwriting and typing the thesis efficiently. I thank him for his efforts.

Gokhale Institute of
Politics & Economics
Pune 411004

S. Singh
Satwinder Singh

March 1983

TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	(1)
LIST OF TABLES	(viii)
LIST OF FIGURES	(xiv)
Chapter	
I INTRODUCTION	1
Definitions of TNCs	3
TNCs : Dimensions and Characteristics	6
TNCs in India	18
Branches : Distribution by Country	23
Subsidiaries : Distribution by Country	25
Branches : Distribution by Industry	27
Subsidiaries : Distribution by Industry	30
Motivations Behind Foreign Investment	33
Consequences of Foreign Investment	41
Present Study and its Objectives	44
A Review of Literature	46
Methodology	50
Data/Information Sources	53
Chapter Scheme	54

Chapter		Page
II	THE ECONOMICS OF THE PHARMACEUTICAL INDUSTRY	61
	Prices and the Demand for Drugs	61
	Features on the Supply Side :	
	Research and Development	66
	Patents	75
	Production Stages and the Quality Control Measures therein	77
	Concentration in Production	78
	Implications of Concentration	94
	Summary	104
III	A PROFILE OF THE PHARMACEUTICAL INDUSTRY IN INDIA	110
	The Pharmaceutical Industry in Historical Perspective	110
	Pharmaceutical Industry in India : The Early Years	113
	Post-independence Development	116
	Structure of the Industry and its Ownership Pattern	124
	Features on the Demand Side : The Extent of Drug Consumption in India	128
	Features on the Supply Side : Research and Development in the Pharmaceutical Industry in India	135
	Production of Drugs	143
	Capacity Utilisation	149
	Concentration in Production	154

Chapter		Page
	Employment	160
	Capital Investment	169
	Imports of Drugs and Pharmaceuticals	172
	Exports of Drugs and Pharma- ceuticals	176
	Summary	182
IV	DRUG PRICES AND DRUG PRICE CONTROL (DPCO) ORDERS IN INDIA : AN ASSESSMENT	193
	Importance of Drug Price Controls	194
	Nature and Scope of Drug Price Control Orders in India	195
	Economic Consequences of DPCO	204
	Drug Prices and Modus Operandi of Drug Price Controls	221
	Summary	235
V	FINANCIAL STRUCTURE OF SOURCES AND USES OF FUNDS FOR DRUG TRANS- NATIONALS IN INDIA	241
	A General Structure of Sources of Funds for Transnational Corpora- tions	241
	Capital Structure of Drug TNCs	255
	Capital Investment Position of Drug TNCs	261
	Profit Appropriation	267
	Internal and External Sources of Finance	283

Chapter		Page
	Internal Sources : Share of Share Capital, Reserves and Provisions	286
	External Sources : Share of Paid-up Capital, Long Term Loans, Short Term Loans and Sundry Creditors	291
	Long Term Loans : Share of Banking and Non-banking Sources	297
	Non-banking Sources of Long Term Borrowings	300
	Short Term Loans : Share of Banking and Non-banking Sources	303
	Non-banking Sources of Short Term Borrowings	305
	Uses of Funds by Drug TNCs	313
	Summary	318
VI	DRUG TRANSNATIONALS AND INDIA'S BALANCE OF PAYMENTS	334
	Problems of Measurement	334
	Share of Drug TNCs in Total Remittances	340
	Drug TNCs' Foreign Exchange Earnings and Remittances	343
	Clandestine Remittances : The Transfer Pricing Practices	348
	Summary	354
VII	CONCLUSION	360
	BIBLIOGRAPHY	365

LIST OF TABLES

<u>Table No.</u>		<u>Page No.</u>
1.1	Stock of Direct Investment Abroad of Developed Market Economies by Major Country of Origin, 1967-1976	7
1.2	Stock of Direct Investment Abroad of Developed Market Economies by Host Country : 1967, 1971 and 1975	9
1.3	Selected Developed Market Economies : Stock of Direct Investment Abroad by Major Industrial Sector in 1971 and 1974	11
1.4	Firms with One or More Foreign Affiliates by the Number of Host Countries, 1973	14
1.5	Number and Assets Position of Branches and Subsidiaries of TNCs in India : 1968-69 - 1978-79	20
1.6	Country of Domicile, Number and Assets Position of the Branches Operating in India During 1969-70, 1973-74 and 1978-79	24
1.7	Country of Domicile, Number, Share Capital and Assets Position of Subsidiaries Operating in India During 1968-69, 1973-74 and 1978-79	26
1.8	Distribution of Branches by Industry in 1969-70, 1973-74 and 1978-79	28
1.9	Distribution of Subsidiaries by Industry in 1968-69, 1973-74 and 1978-79	31
2.1	R&D Expenditure as Per Cent of Pre-tax Profits of 18 U.S. Firms in 1975	69
2.2	Percentage of Innovational Output and Total Ethical Sales Accounted for by Four Largest US Drug Firms	70

<u>Table No.</u>		<u>Page No.</u>
2.3	New Drugs Introduced During 1970-75	72
2.4	Concentration of Pharmaceuticals Production : 1970 and 1974	80
2.5	Top Nineteen International Pharmaceutical Companies Ranked in Terms of Sale in 1978	81
2.6	Percentage Share of Foreign Sales to Total Sales of 50 Drug TNCs in 1977	83
2.7	Market Structure of Formulations Pro- duction (in the Jacket of the thesis)	88
2.8	Product Range of Firms	89
2.9	Frequency Distribution of Product Range and the Number of Firms Producing them	90
2.10	Table Showing the Number of Products and the Producers thereof	91
2.11	Fortyeight Products Having no Competitor (in appendix)	107
2.12	Seventeen Products Having One Competitor (in appendix)	108
2.13	Six Products Having Two Competitors (in appendix)	109
2.14	Standard Breakdown of a Manufacture's Dollar Worth of Sales	98
2.15	Drugs Marketed by Pharmaceutical Companies : Name, Year Introduced, Sales & Promotion Expenditure	99
3.1	Time Pattern of Entry of Foreign Drug Firms in India	122
3.2	Industry Structure and the Ownership Pattern of the Pharmaceutical Industry (1971-72 : Registered Sector)	126
3.3	Financial Statement of Hindustan Anti- biotics Limited - 1970-71 - 1977-78 (in appendix)	186

<u>Table No.</u>		<u>Page No.</u>
3.4	Financial Statement of Indian Drugs and Pharmaceuticals Limited - 1970-71 - 1977-78 (in appendix)	187
3.5	Data Base of Regression Equations (in appendix)	188
3.6	Regression Equations (in appendix)	189
3.7	Percentage of Sales Revenue Invested in R&D by 42 Foreign Drug Companies in India : 1973-75 and 1977-79	140
3.8	Production of Formulations at Current and Constant (1961-62) Prices : 1947-48 to 1978-79	144
3.9	Production of Bulk Drugs at Current and Constant (1961-62) Prices	145
3.10	Sectoral Distribution of Production of Formulations and Bulk Drugs	147
3.11	Capacity Utilisation of Seven Essential Categories of Drugs : 1970-77	150
3.12	Excess Drug Production by 12 Foreign Drug Companies : 1974-76 (in appendix)	190
3.13	Market Share of Drug Sales of 30 Lead- ing Companies in India in 1976	156
3.14	India's Share in the Total Foreign Sales of 12 Drug Transnationals in 1977	159
3.15	Direct and Indirect Employment in the Pharmaceutical Industry	161
3.16	Distribution of Employees by Occupa- tional Divisions in 654 Pharmaceutical Units	163
3.17	Total Emoluments of Personnel Drawing Rs. 36,000 Per Annum or more Employed Full or Part Time During the Year and their Share in Total Wage Bill	166

<u>Table No.</u>		<u>Page No.</u>
3.18	Capital Investment in the Pharmaceutical Industry	170
3.19	Imports of Drugs and Pharmaceuticals : 1947-48 - 1979-80	173
3.20	Import Dependence of Indian and Foreign Sector	175
3.21	Exports of Drugs and Pharmaceuticals : 1947-48 - 1979-80	177
3.22	Exports as Percentage of Production of Indian and Foreign Sector	181
4.1	Maximum Pre-tax Return on Sales Turnover (Exclusive of Sales Duty) Allowed to Drug Firms (in appendix)	237
4.2	Profitability of All Industries, Chemical Industry vis-a-vis Drug Industry : 1960-61 - 1977-78 (in appendix)	238
4.3	Profit Rates on Turnover of Bulk Drugs and Formulations	213
4.4	Wholesale Price Index of Drugs and Medicines vis-a-vis All Commodities (1960-61 = 100) : 1961-62 - 1978-79	223
4.5	Breakdown of Production Expenditure of 52 Pharmaceutical Firms : 1975-76 - 1977-78	226
4.6	Prices of Bulk Drugs Declared by Manufacturers and Approved by BICP	229
4.7	CIF Prices and Pooled Prices of Bulk Drugs Fixed by STC in 1974-75	231
4.8	Prices of Bulk Drugs Reduced by STC in 1976	233
5.1	Sources of Finance for 125 Foreign Subsidiaries in the U.K. 1966-67	249

<u>Table No.</u>		<u>Page No.</u>
5.2	Sources of Funds for Drug Transnational Corporations in India : 1970-71 - 1977-78 (in appendix)	322
5.3	Capital Structure of Drug TNCs	256
5.4	Profit Appropriation by Drug TNCs : 1970-71 - 1977-78 (in appendix)	330
5.5	Arithmetic Mean, Absolute and Relative Dispersions of Dividends Rates : 1970-71 - 1977-78	278
5.6	Percentage Share of Internal Funds (IF) and External Funds (EF) in the Total Finances of Drug TNCs : 1970-71 - 1977-78	285
5.7	Percentage Share of Share Capital (SC), Reserve Funds (RF) and Provisions (PR) in the Total Internal Finances of Drug TNCs : 1970-71 to 1977-78	290
5.8	Percentage Share of Paid-up Capital (PU), Long Term Loans (LT), Short Term Loans (ST) and Sundry Creditors (SC) in the Total External Finances of Drug TNCs : 1970-71 to 1977-78	296
5.9	Percentage Share of Long Term Banking (BA) and Non-banking (NB) Sources in the Total Sources of Finances of Drug TNCs : 1970-71 - 1977-78	299
5.10	Non-banking Sources of Long Term Borrowings of Drug TNCs : 1975-76 - 1977-78	302
5.11	Non-banking Sources of Short Term Borrowings of Drug TNCs : 1975-76 to 1977-78	306
5.12	Ratio of Share Capital Plus Long Term Borrowings to Net Fixed Assets : 1970-71 - 1977-78	308

(xiii)

<u>Table No.</u>		<u>Page No.</u>
5.13	Uses of Funds by Drug TNCs : 1970-71 - 1977-78	332
6.1	Resittances on Account of Service Payments by all TNCs vis-a-vis Drug TNCs in India : 1956-57 to 1979-80 (in appendix)	356
6.2	An Inflow/Outflow Chart of Foreign Exchange Earnings and Resittances of transnational Drug Companies in India : 1956-57 - 1979-80 (in appendix)	358
6.3	Breakdown of Imports of Transnational Drug Companies	345
6.4	Estimates of Overpricing on Five Drugs	353

LIST OF FIGURES

<u>Figure No.</u>		<u>Page No.</u>
3.1	Relationship between real income & drug consumption over a long period of time	131
3.2	Percent Capacity utilisation of seven essential categories of drugs : 1970-77	151
3.3	Total imports of drugs & pharmaceuticals and the share of drug TNCs therein (1961/62=100) : 1947/48 - 1979/1980	174
3.4	Total exports of drugs & pharmaceuticals of the share of drug TNCs therein (1961/62=100) : 1947/48 - 1979/1980	179
4.1	Wholesale price index of drugs & medicines vis-a-vis all commodities (1960-61=100): 1961/1962 - 1978/79	224
4.2	Percentage breakdown of production expenditure of 52 pharmaceutical firms : 1977-1978	227
5.1	Percentage distribution of profits before tax of drug TNCs. Average : 1970/71 - 77/78	270
5.2	Dividend rates of pharmaceutical TNCs: All groups, 1970-71 - 1977-78	275
5.3	Percentage breakdown of sources of finance for drug TNCs : 1977/1978	309
5.4	Percentage breakdown of uses of funds & net capital formation by drug TNCs (Averages : 1970/71 - 77/78)	314
6.1	Foreign exchange inflow and outflow by Drug TNCs : 1956/57 - 1979/80	347