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**A NOTE ON THE EXTENT OF IMPROVEMENTS IN THE ECONOMIC
CLASSIFICATIONS DURING LAST TWO DECADES**

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The views expressed in the papers are those of the authors and are not necessarily those of their institutions/departments

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Introduction

The subject under study in a sample survey or a census must be first well defined before the collection of the data relating to the given subject. It may not be possible to carry on a meaningful discussion of any subject unless that subject has sufficiently been well defined so that all concerned may understand fully what is being discussed and studied.

1.2. Many different terms are now being used and have been used in the past to discuss the "Economic Classifications". The diversity of these terms stems from the fact that the nomenclature and the concept are not yet standardised and thus different terms have been applied to the same data, which leads to the difficulty of comparing the data on a given subject obtained from different sources at different points of time. Accordingly, it is attempted here to define precisely some of the most important characteristics which would constitute the "Economic Classifications". Hence the "Economic Classifications" are nothing but a group of classifications which measure the different aspects of gainful and non-gainful activities. There are various approaches to assess the pattern of economy as well as the national income of a country. The economic classification is one of the methods of indicating such pattern of economy. It involves standardisation of the concepts and definitions of different terminologies to be used in collecting data from the field in order to facilitate to indicate the change of economic activity by comparing the data obtained at different points of time. It should be a realistic one so as to be applicable in all sorts of socio-economic surveys. It should consist of such characteristics which would help in estimating the national income of a country and its real economy. The main purpose of this paper is to discuss the extent of improvements achieved during the last two decades and develop a manual laying down standard definitions and concepts of the important characteristics constituting the "Economic Classifications" so that the future surveys or censuses, whether at national level or the state level may be conducted on a uniform line of approach. But the economic classification has got some limitations in assessing the national income of a country

and its true economic condition, because the economic classifications adopted in the surveys of socio-economic nature are subjective one and they would cover the human resources only, neglecting the natural resources which form equally an important part of the national income.

1.3. It is the wants and needs of the people that create the demand for goods and services. Hence the people of a country are the ultimate source and end of all economic activities in that state. But it is invariably found in an under-developed country that the production and consumption of goods and services are carried on mainly on a family or a household basis instead of depending on individuals. Thus it is evident that a household is the most suitable entity to throw better light on the economic activity pattern of a country. Therefore an attempt is made here to assess the economic activity of India with special reference to her household sector.

1.4. It is very difficult to have a clear cut idea of the economic activity of a household and its true economic conditions. But it is possible to have an approximate idea of the economic activity as well as the economic conditions of a household provided the informations regarding some important characteristics are obtained. There are some eight important characteristics which are essential to be studied to get an approximate idea of the economic activity pattern of a household. Thus the "Economic Classifications" would consist of eight broad characteristics :-

- (i) The size of a household
- (ii) Economic status of the individual members of a household
- (iii) Employment Status (Industrial Status) of the individual members of a household
- (iv) Means of livelihood (Industry-occupation) of a household and the individual members of the household.
- (v) Educational Status
- (vi) Sources of income of a household
- (vii) Expenditure pattern of a household
- (viii) Housing condition of a household.

1.5. The various concepts and definitions relating to the afore-said eight characteristics of "Economic Classifications" are being discussed in Chapter one and the second Chapter deals with some suggestions which are considered to be helpful to improve the quality of existing "Economic Classifications" in respect of household sector.

Chapter I

2.0. The primary object of this chapter is to discuss the various definitions and concepts relating to the aforesaid eight characteristics of "Economic Classifications" adopted in different sample surveys and censuses at the state level or the national level.

2.1. Household size : The household size is nothing but the number of members constituting a family or a household. The economic activity pattern as well as the economic condition of a household would depend much on the household size. In other words, the household size has got significant role to play in determining the economic activity pattern of a household. As the household size increases, there would be subsequent change in the patterns of expenditure, earnings and industry-occupation of the household as well as the individual members of the household and thus, this change would bring about significant differences in the economic activity of the household. Thus it is evident that the change in household size affects all sorts of gainful and non-gainful activities of a country. Hence the national income estimate of a country and its true economic condition are likely to be affected due to change in household size. Hence it is absolutely necessary to define a household unit or the household size. Different definitions of household size have been used by different agencies at different points of time as detailed below :-

(1) Persons constituting the members of a family and participating in a common kitchen would indicate the household size. The above definition of household size was adopted in 1941 census of India, 1951 census of India, 1937 sample survey and 1954 resurvey conducted by the Gokhale Institute, Bombay and the unemployment survey in West Bengal conducted by the Government of West Bengal in 1953.

(2) In the survey of rural economic conditions in Assam conducted by the Government of Assam in 1950, persons constituting the members of a household and taking principal meals in the household would indicate the household size.

(3) According to the National Sample Survey (1950-54), the persons constituting the members of a household and participating in the common kitchen for a minimum period of 16 days out of 30 days pre-

ceding the date of enquiry, would indicate the household size. But the above definition was changed in the subsequent rounds of National Sample Survey from June, 1954. The normally resident members of a household would indicate the household size. As to whether a particular person could be considered as a normally resident member of the household or not, would be left to the judgement of the household. This definition would of course exclude the guests and the temporary visitors etc.

Thus it is evident that a significant improvement was made in the definition of a household size by the National Sample Survey when compared to the definitions of household size adopted by 1941 and 1951 censuses and other sample surveys, where the guests and temporary visitors etc. would get chance to be included in the definition of household members. The definition of household size adopted in the National Sample Survey would include single member families which were excluded in censuses and other surveys.

2.2 Economic Status : The economic status is one of the most important characteristics to measure the economic condition of a household. The economic status will assess the individual member's earning capacity which has got a direct impact on the economic stability of the household. Thus the economic status will indicate whether the individual member of a household is earner or earning-dependant or non-earning dependant. If the sources of income are taken into consideration, then, the economic status will indicate the proportion of population of a country to be gainfully active and inactive accordingly. The national income of a country and its economic condition are greatly influenced by the proportion of gainfully active population. Hence the economic status will have direct effect on the national income estimation of a country and its true economic condition. Therefore the economic status should be carefully defined so as to distinguish clearly the gainfully active population from inactive population. Different definitions and concepts of the economic status have been used by different agencies at different points of time as discussed below :-

(1) The economic status was broadly classified into two broad categories - (i) earner (ii) non-earner. The non-earners consisted of those who did not undertake any activity which yielded some income.

Persons, having any gainful activity would be treated as earner. This definition of economic status was adopted in 1937 sample survey and 1954 resurvey conducted at Poona by the Gokhale Institute Bombay, the socio-economic survey of Bengal Villages in 1943 conducted by Dr. Karuna Mukherjee, Calcutta University and the report on Poona Schedule of the National Sample Survey conducted by the Gokhale Institute, Bombay in 1950. But pensioners were treated as earners in 1937 sample survey.

(2) In the 1941 census of India, the economic status was classified into three categories (i) earner; (ii) earning-dependent and (iii) dependent. A person would be considered as an earner when his income was sufficient enough to maintain himself. When a person's income was inadequate to maintain himself, he would be considered earning-dependent. Non-earning dependent would have no earnings at all.

(3) In the 1951 census of India, the economic status was classified into three categories - (i) earner; (ii) earning-dependent; (iii) non-earning dependent. The concept of earner from other than gainful activity was realised but no data could be presented under this head. The concepts of earner, earning-dependent and non-earning dependent were the same as adopted in 1941 census. The only change was the introduction of the concept of the fourth category of economic status. Persons, having earning from non-gainful activity, were treated as earners from other than gainful activity. The gainful activity was defined as an activity which result in the production of useful commodities or performance of useful services.

(4) According to the National Sample Survey (1950-54), the economic status was classified into three categories - (i) earner; (ii) earning-dependent and (iii) non-earning dependent. But this classification was changed in the subsequent rounds from June 1954. The modified definition of the economic status consisted of five classifications - (i) earner from gainful activity, (ii) earner from non-gainful activity, (iii) earning dependent from gainful activity, (iv) earning dependent from non-gainful activity and (v) non-earning dependent. The concepts of earner, earning dependent and non-earning dependent were the same as adopted in the 1951 census of India with a change in the number

of classifications only.

Thus it is evident from the above discussion that there was improvement in 1941 census of India classification of economic status when compared to other sample surveys conducted in 1937, 1943, 1950 and 1954. Earning dependents would be very significant in an under-developed country like India, where own account workers engaged in household enterprise are predominant. This classification of earning-dependent was neglected in the aforesaid sample surveys. In the 1951 census of India, there was an improvement in the classification of economic status over 1941 census of India by introducing a new category of earner from non-gainful activity. In the National Sample Survey after June, 1954, the economic status consisted of five classifications by introducing two new categories - (i) earner from non-gainful activity (ii) earning-dependent from non-gainful activity. In an under-developed country like India, where agriculture is the principal means of livelihood and the services are not marketable to such an extent as in case of developed economy, the non-gainful activity would be significant one and hence it can not be neglected. The classification of earning-dependent and earning from non-gainful activity would have direct impact on the economy of a country. These characteristics would be more conspicuous in an under-developed economy than in a developed economy. Hence these two characteristics can serve as indicators of the economic condition of a country and thus finally affect the national income estimation. Therefore it can be said confidently that there was much improvement in the classification of economic status in the National Sample Survey during current rounds.

2.3. Employment Status or Industrial Status : The term "employment status" would indicate a clear picture of the state of activity obtained for a person within the reference period. The industrial status would determine the state of activity of any individual member of a household to be gainfully employed or unemployed or not in the labour force. The unsteady employment attacks the workers' efficiency, undermines his physique, ambitions, self-confidence, the sense of responsibility and thus induces a man to be worthless for any work. Thus, this state of activity will affect the economic condition of a

household to a great extent. Hence this characteristic has got a very important role to play in the field of economic development of a country. The economic condition of a country can better be revealed through its employment potentiality. The employment potentiality serves an important economic barometer of a balanced economy and thus affects the national income estimation. Therefore the employment status should be carefully defined so to cover all possible cases of employment and unemployment. Different definitions and concepts have been used in different surveys at different points of time as indicated below :-

(1) According to the 1937 sample survey conducted at Poona by the Gokhale Institute, Bombay, the "Industrial Status" was classified into four categories - (i) employers, (ii) salaried persons, (iii) casual workers, (iv) self-employed and (v) unemployed. The pensioners were included in the category of salaried persons for convenience. Salaried persons referred to those who were paid a time-rate generally and who had a fixed employer. Employers referred to those who hired people outside the family to work in their own establishment and who were ~~entrepreneurs~~ entrepreneurs in the real sense. Casual workers referred to those who generally had no fixed employer and were paid a time rate or a piece rate when employed. The self-employed referred to those who worked on their own account and did not hire any body from outside the family or who did wage work mainly or who produced certain articles on their own account and sold them or who had shops and business of their own to operate. The unemployed referred to those persons who had been employed before but were not employed at the time of survey and excluded those who were seeking employment for the first time.

(2) In the 1941 census of India, the "Industrial Status" was classified into two categories - (i) employed and (ii) unemployed. The employed referred to those who had any sort of gainful activity during the reference period of one year. The unemployed referred to those persons only who fulfilled the following two conditions - (a) having no gainful occupation and (b) actually seeking employment.

(3) In the survey of rural economic conditions in Assam conducted by the Government of Assam in 1950, the "Industrial Status" was classified into employed and unemployed. The concepts of the

employed and unemployed were the same as adopted in 1941 census.

(4) According to the report on Poona schedule of the National Sample Survey conducted by the Gokhale Institute, Bombay in 1950, the "Industrial Status" was classified into four categories - (i) wage-earners, (ii) own-account workers, (iii) unemployed and (iv) persons not in the labour force - students, disabled persons and domestic workers etc. The persons belonging to the categories - (i) and (ii), were treated as gainfully employed. The persons not in the labour force, were considered as engaged in non-gainful activity. The concepts of the employed and unemployed were the same as adopted in the 1941 census of India.

(5) In the 1951 census of India, the "Industrial Status" was classified into four categories - (i) employer, (ii) employee, (iii) own-account worker, (iv) unemployed. The concepts of unpaid household enterprise worker and persons engaged in non-gainful activity were realised but no data could be presented under these heads. The first three categories referred to gainful employment. The concepts of employer, employee and own-account worker were the same as adopted in 1937 sample survey. Persons, taking part along with the members of the family in carrying on cultivation or a home-industry as a family enterprise, were treated as the unpaid family enterprise workers and the unpaid family enterprise workers would be considered as earning-dependents. Household workers, non-working owners of non-agricultural property, pensioners, remittance holders, persons living on charity, inmates of penal institutions and asylums and other persons with unproductive occupations, were treated as engaged in non-gainful activity. Persons having any gainful activity during the reference period of one year, were treated as employed. Persons having absolutely no gainful activity during the reference period were treated as unemployed.

(6) In the unemployment survey in West Bengal conducted by the Government of West Bengal in 1953, the "Industrial Status" was classified into two categories - (i) employed and (ii) unemployed. Persons having full-time gainful occupation were treated as employed and persons having no full-time gainful activity but seeking such employment were treated as unemployed. Thus the unemployed referred to persons, having part-time gainful occupations and seeking full-time

employment as well as persons, having no gainful occupation but seeking full-time employment.

(7) According to the re-survey in 1954 at Poona conducted by the Gokhale Institute, Bombay, the "Industrial Status" consisted of five classifications as adopted in the 1937 sample survey. The concepts of employers, self-employed, salaried workers and casual workers were the same as adopted in the 1937 sample survey. The concepts of employed and unemployed were different in 1954 re-survey. In this re-survey, the employed referred to those who had any sort of gainful occupation at the time of survey. The unemployed referred to those who had absolutely no gainful employment but looking for such gainful occupation at the time of survey. Thus the non-freshers (previously employed but now seeking work) among the unemployed enumerated in 1954 re-survey could be compared with the unemployed in the 1937 sample survey.

(8) According to National Sample Survey (1950-57), the "Industrial Status" consisted of six classifications, namely - (i) employer, (ii) employee, (iii) own-account worker, (iv) unpaid family enterprise worker, (v) unemployed and (vi) persons not in the labour force. The first four categories constituted gainful employment. But the category of apprentice was also included in gainful activity during the ninth and tenth rounds of the National Sample Survey (1954 - 55). Gainfully employed persons together with the unemployed constituted the labour force. All other persons not coming within the aforesaid category were considered not in the labour force. The concepts of employer, employee, own-account worker were the same as adopted in the 1937 sample survey. The concept of unpaid household worker was the same as adopted in the 1951 census of India with some modification that the unpaid household worker could be both earner and earning-dependent. Household workers, students, rentiers, pensioners, persons living on dividend, permanently disabled persons, beggars, vagrants, children, too old etc. were treated not in the labour force. In the different rounds of National Sample Survey, persons engaged in gainful activity on any day during the reference period were considered as employed. Those who did not work on any day during the reference period

would be either employed or unemployed. A person was considered as employed if he had a job, although temporarily absent during the reference period due to illness, vacation, industrial dispute or being laid off temporarily. Subsidiary, part-time or stop-gap remunerative work undertaken by a person who was actively seeking employment would not be counted as a job for the purpose of being employed. A person would be considered as unemployed if - (i) he was without a job for the whole reference period, (ii) was seeking one, (iii) was in a position to take up a job if offered one. The reference period varied for different rounds of the survey and it was sometimes being 30 days preceding the date of enquiry, one year and a single day.

It is evident from the above discussions that no improvement was made either in the classification or in the definition of the "Industrial Status" during the 1941 census of India when compared to the 1937 sample survey. There was no such improvement in other sample surveys conducted after the 1941 census of India. In the 1951 census of India, there was some improvement in the definition of persons not coming in the labour force as well as in the classification of the "Industrial Status" which included a new category of unpaid household enterprise workers within the gainful activity. The concepts of the employed and unemployed remained the same as before till the National Sample Survey came into operation, when the concepts of the employed and unemployed were improved to a great extent so as to cover all possible cases of employment and unemployment as far as practicable. It may be mentioned here that the classifications of labour force and unpaid household enterprise worker would have direct impact on the economic development of a country. Labour force of a country is its potential energy which plays a vital role in the economic development of a planned economy. In an under-developed country like India, the unpaid household enterprise workers would be ^A significant one. Hence the characteristics of labour force and unpaid house-hold enterprise workers can not be neglected while assessing the employment potentiality of a country. It is observed that the concepts of labour force and unpaid household enterprise worker were improved much in the National Sample Survey.

2.4. Means of livelihood of the household : The means of livelihood of a household is being assessed by the principal means of livelihood pursued by the household. The principal means of livelihood would refer to the particular means of livelihood which normally fetches the largest share of total income of the household. The principal means of livelihood is expressed in terms of industry or occupation or industry-occupation. A study of occupational distributions of a population would reveal the social and economic conditions of the various groups comprising that population. So far the individual worker is concerned, the particular occupation in which he is employed, determines not only the kind of activity in which he is engaged, but also to a large extent, the manner of life he and his family enjoy or endure. Thus the industry and occupation characteristics would reveal the pattern of economy and hence they would help in assessing how far and what type of economic development can be possible to be achieved. They would further help the Government to go through economic development in a planned way. Different classifications have been used by different agencies at different points of time as discussed below :-

(1) In the 1941 census of India, the concepts of industry classification as well as the occupational classification were taken into consideration. The industry classification consisted of 21 categories and the occupational classification consisted of 3 categories only. The unit of classification was the individual member of a household.

(2) In the survey of rural economic conditions in Assam conducted by the Government of Assam in 1950, the occupational classification consisted of two broad groups - (a) agriculture and (b) independent of agriculture. The agricultural groups consisted of four sub-groups and the second one consisted of seven sub-groups. Thus the total classifications amounted to eleven in number. In analysing the occupational aspect of rural economy, the family and not the individual was considered as the operating unit of the economy, because in most of the occupations pursued by the villagers, it was the family which practically supplied the whole of labour force. There was nothing like industry classification adopted in this survey.

(3) According to the report on Poona schedule of the National Sample Survey conducted by the Gokhale Institute, Bombay, in 1950, the industry classification was adopted and the occupational classification was not taken into consideration in this survey. The industry classification consisted of eleven groups on the basis of the principal occupation of a household.

(4) In the unemployment survey of West Bengal conducted by the Government of West Bengal in 1953 the occupation classification consisted of three major groups and each group consisted of a set of occupations. Thus the total classification amounted to twelve in number. The industry classification was not taken into consideration in this survey. The unit of classification was the individual member of the household instead of the family unit in this survey.

(5) In the 1937 sample survey and the 1954 re-survey conducted at Poona by the Gokhale Institute, Bombay, the occupational classification consisted of fourteen major groups and each major group consisted of a group of elementary occupations. Thus there were 146 occupational classifications adopted in this survey on the basis of the principal occupation of the head of household.

(6) The International Standard Industrial Classification (ISIC) prepared and sponsored by the Statistical Commission of United Nations was adopted by the 1951 Census of India after making certain modifications and changes in order to suit Indian conditions. This modified classification was known as the India Census Economic Classification (ICEC). Under the present ICEC scheme, all self-supporting persons were classified with reference to commodity or service produced by them individually. The unit of classification was, in every case, the individual under ICEC scheme, whereas the unit of classification was the organised "establishment" under ISIC scheme. There were 10 divisions and 44 major-groups of economic activities under ISIC scheme, whereas there were 10 divisions and 88 major-groups under ICEC scheme. The economic classification of the 1951 census of India was done on the basis of the 1931 scheme of classifications.

(7) It was being continually experienced that both ISIC and ICEC schemes of classification needed some modifications, firstly,

to make the classifications more suitable for Indian conditions, secondly, to remove certain anomalies which appeared to exist in the matter of detailed groups and thirdly, to remove confusion in regard to two distinct concepts - industry and occupations. Accordingly, in July, 1954, the Indian Statistical Institute (ISI) issued a scheme of industrial classification which evolved out of a draft scheme that was tested in three rounds of the National Sample Survey. Meanwhile, the Central Statistical Organisation (CSO) formed a working party for building up a standard industry and occupation classification for India. The working party recommended in 1955 the adoption of a scheme of standard industrial classification. After due consideration being given to this recommendation, the final form of the classification was prepared by the Indian Statistical Institute (ISI). In the modified classification, prepared by ISI, the concepts of "industry" and "occupation" were distinctively defined. The industry of an earner was that branch of gainful activity in which he was engaged in producing either goods or services. His occupation was the name of the function which he performed by engaging himself in that particular branch of gainful activity which was his industry. Industry and occupation were thus two distinct concepts. The first showed the sector of nation's economic activity in which the earner was engaged, whereas the second indicated the earners' nature of work in that sector. In the modified classification prepared by ISI each gainfully occupied person was classified by the sector of economic activity where the person was engaged, the sector being composed of both organised establishments and individuals as they exist in real life. The sectors of economic activities were classified in this scheme according to the goods and services produced. This mixed unit was considered to be most suitable unit for the country where highly developed industries exist side by side with cottage industries run in some cases even by single individual. There were ten divisions and each division was sub-divided into ten groups in the industry classification. Thus the industry was indicated by three digit code. In the present scheme of classification, occupations were classified purely by types of function. The occupations were divided into seven broad classes named divisions. These divisions were based on the consideration of broad

homogeneity in the character of the functions. Each division was split up into one or more major groups called sub-divisions and each major group was sub-divided into a group of occupations. But this "classification of occupation" was revised during the 11th round of the National Sample Survey. The revision was deemed necessary in view of the recommendations of the International Labour Organisation (ILO) in regard to major groups (divisions of this classification) and minor group (major group of this classification) of the International Standard Classification of Occupations (ISCO), which according to the working party of the Central Statistical Organisation (CSO) was the basis of building up a standard occupation classification suited to Indian conditions. The classification drafted by the working party of the CSO is still under the stage of discussion and study. Hence this classification is being issued by the ISI tentatively for trial, the experience of which would be utilized for preparing the final classification of occupation. In the present scheme of classification, the occupations were divided firstly into ten broad classes named, divisions and each division was again split up into one or more major group, and each major group into one or more groups of occupations. The code number of an occupation group was thus composed of three digits.

It is observed from the above discussion that the industry and occupation classifications were not standardised and properly dealt with in the 1941 census of India and other sample surveys conducted by different agencies. In the 1951 census of India, these two classifications were standardised to suit Indian conditions and the modified classification was known as the Indian Census Economic Classification (ICEC). But the concepts of "Industry" and "occupation" were distinctively defined in the classification prepared by the Indian Statistical Institute and the classifications of industry-occupation were much improved over the 1957 census classifications.

2.5. Educational Status : The educational particulars of a household and the individual members of the household have got a direct impact on the nature and pattern of economic activity as well as the means of livelihood of the household. The manner of life as well as the social and cultural activities of the individual members of a household

are greatly influenced due to high education. Hence educational status is one of the important characteristics of the "Economic Classifications". Different classifications have been used in different surveys at different points of time as discussed below :-

(1) According to the sample survey conducted at Poona in 1937 by the Gokhale Institute, Bombay, the educational status was classified into three broad categories - (i) illiterates; (ii) literates and (iii) educands. The concepts of the illiterates and literates were as usual. Persons knowing how to read and write, were treated as literates and those knowing more than to read and write, were treated as educands. Persons not covered above, were treated as illiterates.

(2) In the 1941 census of India the educational status consisted of sixteen classifications - (i) illiterates; (ii) literates; (iii) literates in English; (iv) Middle School or non-matric; (v) Matric; (vi) I.A. or I.Sc.; (vii) B.A. or B.Sc., (viii) M.A. or M.Sc., (ix) Teaching; (x) Engineering; (xi) Legal; (xii) Medical; (xiii) Commerce; (xiv) other Indian Degrees; (xv) British Degrees and (xvi) other Foreign Degrees. The concepts of illiterates, literates were the same as in the 1937 sample survey. Commerce graduates were considered in the "Commerce" category.

(3) In the 1951 census of India, the educational status consisted of nineteen classifications - (i) illiterates; (ii) literates; (iii) middle school; (iv) matriculate; I.A. & I.Sc.; (vi) B.A. or B.Sc., (vii) M.A. or M.Sc., (viii) teaching; (ix) engineering, (x) agriculture, (xi) veterinary; (xii) commerce; (xiii) legal; (xiv) medical; (xv) others; (xvi) British degrees or diploma; (xvii) American Degrees or diploma; (xviii) continental degrees or diploma and (xix) other foreign degrees or diploma. The concepts of illiterates and literates were the same as adopted in the 1941 census of India. Commerce graduates were considered in the "Commerce" category.

(4) According to the 1954 re-survey conducted at Poona by the Gokhale Institute, Bombay, the educational status would comprise of eight categories - (i) literates; (ii) upto IVth standard; (iii) upto VIIth standard; (iv) upto XIth standard; (v) Matriculates; (vi) graduates, (vii) master degree holders; (viii) technically qualified. The concepts

of literates was the same as adopted in the 1937 sample survey.

(5) According to the National Sample Survey (1950-53), the educational status was broadly classified into two categories - (a) general education and (b) technical and professional education. The general education consisted of eight categories - (i) illiterates; (ii) literates; (iii) primary; (iv) middle; (v) matric; (vi) intermediate; (vii) graduates; (viii) post-graduates. Persons having certificate or diploma or degree in some branch of professional or technical studies would be considered as qualified in that branch of professional or technical studies. Persons, having acquired skill using scientific or mechanical devices in a production process under the guidance of trained technician or through personal effort, would be treated as skilled men, quite different from technically qualified persons. The professional and technical studies referred to ten categories - (i) education and teaching; (ii) commerce or related fields; (iii) law; (iv) medicine (allopathic); (v) medicine (others); (vi) agriculture; (vii) veterinary science; (viii) engineering; (ix) technology and (x) others. A specified group of occupations were considered as skilled jobs in this survey.

It is evident from the above discussions that the classification of educational status was much improved in the 1941 census of India when compared to the 1937 sample survey. There were sixteen classifications adopted in the 1941 census of India. There was no significant improvement in the 1951 census of India, the educational classification was much improved in the National Sample Survey, where the educational status was distinctively classified into two broad categories - (a) general education and (b) technical and professional education. General education consisted of eight classifications and technical and professional education consisted of ten categories and thus there were eighteen classification altogether in this survey. Moreover, a specified group of occupations were considered to be skilled and the concepts of skilled and technically qualified persons were clearly defined in this survey.

2.6. Income of a household : The income of a household would indicate the economic condition as well as the activity pattern of the

household. The income has got direct impact on the social and cultural activities of a household, which in its turn influences the economy as a whole. Hence the income characteristic plays an important part in the "Economic classifications". But it has been found that the income classification in terms of rupees is not being adopted in any survey rigidly. Hence it is difficult to comment on the extent of improvements achieved, if any, in this respect.

2.7. Expenditure of a household : The expenditure of a household is nothing but the disbursement of its income in a particular pattern and hence the income of a household can be assessed to a great extent through the household expenditure. Hence the expenditure characteristic forms a vital part of the "Economic Classification". The expenditure characteristic would reveal the demand of the pattern of consumer of goods, required in a country. Thus the expenditure characteristic would help indirectly the economic development of a country according to the needs of the people of that country and hence the economic growth would take place in a planned way. An attempt is made here to discuss the expenditure patterns adopted by different agencies at different points of time.

(1) In the socio-economic survey of Bengal villages conducted by Dr. Karuna Mukherjee, Calcutta University, in the year 1943, the expenditure pattern consisted of seven different items - (i) food; (ii) clothing; (iii) medical; (iv) education; (v) recreation; (vi) ceremonial function and (vii) miscellaneous.

(2) According to the National Sample Survey, the expenditure pattern referred to twelve different items - (i) food articles; (ii) non-food articles; (iii) clothing; (iv) amusements and sports; (v) education; (vi) medicine; (vii) conveyance; (viii) furniture; (ix) domestic utensils; (x) foot-wear; (xi) other equipments and (xii) residential house.

It is observed that the expenditure pattern classification has not been taken into consideration in censuses and most of the sample surveys under discussion. The expenditure classification in terms of rupees was adopted in the National Sample Survey only. Hence it is difficult to assess the nature and extent of improvement made, if any, in this respect.

2.8. Housing condition : The housing condition plays an important role in case of gainful and non-gainful activities of a country. The housing condition would reveal the economic condition as well as the social and cultural activities of that country. The demand of better housing condition would create employment opportunities and other allied economic activities. Hence the housing condition can form an important part of the "Economic Classifications". Different classifications of housing condition have been used by different agencies at different points of time as discussed below :

(1) According to the 1954 re-survey at Poona conducted by the Gokhale Institute, Bombay, housing condition consisted of six classifications (i) monthly rent; (ii) number of rooms; (iii) total floor space (sq.ft.); (iv) sources of drinking water, (v) bathroom and (vi) latrine.

(2) According to National Sample Survey (1950-56), the housing condition consisted of ten classifications - (i) plinth type, roof type and latrine type; (ii) drinking water; (iii) period built since; (iv) period repaired since (v) number of rooms; (vi) floor space (sq.ft.); (vii) rented or not; (viii) monthly rent, if rented; (ix) cost of repair and maintenance during the reference year, if not rented and (x) approximate valuation, if not rented.

The above classification was further improved in the twelfth round of NSS (1957), where the number of classifications amounted to sixteen. The additional classifications referred to - (i) covered verandah area (sq.ft.); (ii) courtyard area; (iii) kitchen; (iv) distance of the source of drinking water; (v) tenure status and (vi) owner.

It is observed that the housing condition characteristic has not been taken into consideration in censuses and most of sample surveys of socio-economic nature under our discussion. The National Sample Survey has attempted to collect different types of data relating to housing condition. Hence it is difficult to comment on the extent of improvements made in this respect.

Chapter II

The primary object of this chapter is to present some useful suggestions which may be helpful in improving the existing "Economic Classifications" to suit Indian conditions in a better way.

3.1. Employment Status : It is very difficult to define what should constitute the state of employment and what should constitute the state of unemployment. The economic activity in an under-developed country is generally seasonal and erratic by nature. Hence the seasonal variation in employment situation appear to be significant in our country. The industrial status (employment status) would throw better light on the economic activity pattern of a household and its individual members provided some ancillary informations relating to gainful activity are collected as detailed below:-

1. Nature of Employment : The nature of employment would refer to three classifications - (1) regular, (2) seasonal and (3) casual.

2. Type of employment : The type of employment would indicate the type of job and thus it would refer to - (i) manual - (1) skilled (2) non-skilled and (ii) non-manual - (1) technical (2) non-technical.

3. Nature of unemployment : The nature of unemployment would indicate the possible types of unemployment. It would thus refer to three broad classifications - (i) unemployed with job or enterprise at future date, (ii) unemployed not with job or enterprise at a future date but looking for work and (iii) unemployed not seeking but available for work.

4. Measurement of under-employment and disguised unemployment :

The underemployment and disguised unemployment are mainly found in economically under-developed countries. Because the basic characteristic of the employment situation in the less developed countries is that although most of the working population are engaged in productive pursuits, the total amount of work done measured in man-hours, is far below what the population is potentially capable of doing. Hence this phenomena is chronic in an under-developed country. Hence the problem of under-employment and disguised unemployment is more acute in India. It is therefore essential to assess the under-employment and disguised unemployment. A person would be treated as under-employed when the amount of

labour time worked by him is smaller than that of the labour time which he is able to supply. The disguised unemployment would refer to the situation when persons engaged are so numerous relatively to resources with which they work, that if a number of them were withdrawn from a sector, the total output of the sector from which they were withdrawn, would not be diminished, without any change in the organisational set-up. Thus the assessment of underemployment involves separate estimation of the potential aggregate labour time and the aggregate amount of labour time actually worked. The potential amount of labour time available in a country can be accurately measured in terms of hours per week. Thus taking week to be a reference period, if the total amount of labour time worked and the potential aggregate labour time available are estimated, then the underemployment can be assessed to a great extent. While estimating the potential amount of labour time available, due considerations are being given to normal working hours per day, health, local customs, socially accepted habits regarding breaks for meals, recreation, days of rest, festivals and so forth. The assessment of disguised unemployment involves three factors - (i) total output in a particular enterprise, (ii) total number of persons engaged in that enterprise, (iii) number of persons actually required to maintain the specified output in that enterprise, without any change to normal working hours and organisational set-up. Thus, if the number of man-hours (labour hours) required to produce a given output is subtracted from the number of man-hours (labour hours) engaged in a particular enterprise, the difference would indicate the surplus man-hours which represent the disguised unemployment.

3.2. Educational Status : It would be convenient to have a clear picture of the educational status if it is indicated by three digit code. The first digit of the code would refer to general education, (i) illiterate (ii) literate, (iii) primary, (iv) middle, (v) matric, (vi) intermediate, (vii) graduate, (viii) post-graduate. The second digit would refer to technical qualification - (i) skill without certificate or diploma or degree, (ii) holder of certificate, diploma or equivalent, (iii) holder of degree or equivalent. The third digit would refer to the branch of technical and professional qualifications - (i) education and teaching,

(ii) commerce or related fields, (iii) law, (iv) medicine (allopathic), (v) medicine (others), (vi) agriculture, (vii) veterinary science, (viii) engineering, (ix) technology, (x) other professions. A list of skilled jobs may be specified to distinguish between skilled and non-skilled workers.

3.3. Income of household : The income of a household has got the most direct impact on the social and economic activities of the household and its members. It would facilitate the national income estimation. The economic activity pattern of a household can be better assessed provided a standard per capita income classification in terms of rupees is adopted in addition to the sources of income. The per capita income classification can provide us the correct picture of the economic condition of a household, which influences all gainful and non-gainful activities of the household to a great extent.

List of publications referred to

1. 1937 Sample Survey and 1954 resurvey conducted at Poona by the Gokhale Institute, Bombay.
2. Socio-Economic Survey of Bengal villages in 1943 conducted by Dr. Karuna Mukherjee, Calcutta University.
3. 1941 Census of India Part IV
4. Survey of rural economic conditions in Assam conducted by the Directorate of Economics & Statistics, Government of Assam in 1950.
5. Report on Poona schedule of National Sample Survey conducted by the Gokhale Institute, Bombay in 1950.
6. 1951 Census of India, Part IIB
7. Unemployment Survey in West Bengal Govt. conducted by the State Statistical Bureau, Govt. of West Bengal in 1953.
8. Reports of National Sample Survey of different rounds and ad-hoc surveys conducted by the Indian Statistical Institute.

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**APPROACHES TO THE MEASUREMENT OF THE ECONOMICALLY ACTIVE POPULATION:
SOME SUGGESTIONS FOR THE ECONOMIC CLASSIFICATION OF THE POPULATION
IN THE CENSUS OF INDIA 1961**

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APPROACHES TO THE MEASUREMENT OF THE ECONOMICALLY ACTIVE POPULATION;
SOME SUGGESTIONS FOR THE ECONOMIC CLASSIFICATION OF THE
POPULATION IN THE CENSUS OF INDIA 1961

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While the Census age-sex distribution gives, within inherent limitations imposed by the structural set-up, a ceiling quantitative indicator of the potential manpower, the characteristics of the economically active population engaged in the production of economic goods and services are a necessary pre-requisite for planning purposes and also for national income computations by the income method.

1. Economically active population : The economically active population, or the 'labour force', is generally taken to comprise persons who furnish the supply of labour for the production of goods and services — (1) employers; (2) workers on own account; (3) employees; (4) unpaid household enterprise labour; and (5) the unemployed seeking to be 'gainfully employed' by being included in any of the earlier four categories. The border-line of economic activity is, by its very nature, hazy and comparison over time or countries becomes difficult because of the different approaches adopted in categorizing the population into the economic activity status groups.

2. 'Gainful occupation' and 'labour force' approach : In measuring the economically active population two approaches are available, the 'gainful occupation' approach and the 'labour force' approach. Under the gainful occupation approach, every person in a country is supposed to have a stable functional rôle in the country's economy, largely independent of his activity at any point of time. In the labour force approach, all persons who report at work or with a job if not at work and seeking employment if without a job in a specific time band constitute the labour force. The suitability of these two approaches to a particular country has been the subject of a number of national and international conferences.

3. Economic classification in the Census : The economic status data in Census were, until recently, the only source available for estimating the economically active population of India. Valid comparisons over time are, however, not permissible since the concept of economic status changed over the successive Censuses. In the 1951 Census of India, the population was classified by economic status, introduced for the first time in Census 1931, into self-supporting persons, earning dependants and non-earning dependants. A self-supporting person was one who received income in cash or kind, sufficient at least for his own maintenance. The earning dependent was one who received a regular, small income not sufficient for his own maintenance; unpaid family workers were included in the categories of earning dependants by definition. Persons who did not secure any income either in cash or kind were to be treated as non-earning dependants. No specific time reference was adopted in the classification, the answer being based presumably on what the informant considered a particular person's usual status to be; unemployed persons might describe themselves as belonging to any of the three categories depending on what they considered their usual status to be. The 'gainful occupation' approach was implicitly used. There were eight livelihood classes, namely : (i) cultivators of land, wholly or mainly owned; (ii) cultivators of land wholly or mainly un-owned; (iii) cultivating labourers; (iv) non-cultivating owners of land and agricultural rent receivers; those deriving livelihood from (v) production other than cultivation; (vi) commerce; (vii) transport and (viii) other services and miscellaneous sources. Dependants were put in the livelihood class of the self-supporting persons on whom they were dependant and the primary means of livelihood of the self-supporting persons on whom he is dependent was to be recorded as the primary means of livelihood of the earning dependant, while his own means of livelihood, providing the earning, was recorded under his secondary means of livelihood. The self-supporting persons in means of livelihood classes other than agriculture were tabulated by "status" into employers, employees and independent workers and by industry divisions and sub-divisions.

4. Gainfully employed from Census 1951 : While the more direct method of getting the gainfully employed (and not the labour force since the Census could not give estimates of the unemployed) would be to classify the total population by activity status and to take the persons falling in the first four activity status categories mentioned earlier to constitute the gainfully employed, theoretically the same result could be arrived at from Census 1951 data by deducting from the total of the self-supporting and the earning dependants, the number deriving their incomes from ungainful sources, e.g., rents and pensions; some of the figures not available in the Census could be estimated on some simple assumptions. The proportions of the gainfully employed obtained from the Census 1951 by the above method and from the 4th and the 5th rounds of the National Sample Survey (April-September 1952, December 1952 - March 1953), ~~xxx~~ taken from National Sample Survey Draft No.14, ^{are} presented in Table (1) with the Census proportions being shown at the floor of the Table as percentages of the NSS proportions.

Table (1) : Percentage of gainfully employed population in Census 1951 and NSS 4th and 5th rounds ^{1/}

| survey | rural | | | urban | | | all-India | | |
|--|-------|--------|-------|-------|--------|-------|-----------|--------|-------|
| | male | female | total | male | female | total | male | female | total |
| (0) | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| 1. Census 1951 | 54.1 | 25.8 | 40.2 | 52.7 | 10.7 | 33.3 | 53.8 | 23.3 | 39.0 |
| 2. NSS 4th and 5th rounds ^{1/} | 59.3 | 34.9 | 47.2 | 52.7 | 15.8 | 34.8 | 58.2 | 32.4 | 45.2 |
| 3. index : $\frac{\text{row}(1)}{\text{row}(2)} \times 100$ | 91.2 | 73.9 | 85.2 | 100.0 | 67.7 | 95.7 | 92.4 | 71.9 | 86.1 |

Source : National Sample Survey Draft No.14, Table (7.1).

^{1/} Based on 16,871 rural and 7,847 urban sample households (April-September 1952, December 1952 - March 1953).

It is observed that the proportion of the gainfully employed persons were of the same order in the Census and in the NSS only for the urban males; for others the Census proportions were lower, specially for females. The observed differences were attributed to the different approaches adopted for measuring the labour force in the Census and in the NSS and the under-reporting of earning dependants, especially females, in the Census as compared to the NSS. A comparison of the distribution of the population by economic status between the Census

and the NSS rounds made in National Sample Survey Draft No.14 also brought this out. Omission in the Census of a sizeable proportion of females engaged in household enterprise from the gainfully employed category was thus indicated^{1/}. It is of interest to note a similar finding by the Deputy Registrar-General of India, arrived at after sample tabulations of Mysore, rural West Bengal and rural U.P. data : "the obvious inference is that some workers have been enumerated as non-earning dependants in these States" (Mysore, West Bengal, U.P.), Census of India Paper No.3 1955, Economic Classification by Age-group, 1951 Census, Uttar Pradesh.

5. Activity status categories in the National Sample Survey : In the National Sample Survey since its inception in 1950 till the 9th round (May-November 1955), the emphasis had been on the consumption aspect and the labour force characteristics were obtained in these rounds more as a by-product; the 9th and 10th rounds (May-November 1955, December 1955 - May 1956) of the NSS were, however, geared to give the national estimates for the employed and the unemployed. The characteristics of the economically active population have been discussed in National Sample Survey Draft No.14. The NSS has generally used a composite approach in measuring the labour force -- information on both the 'gainful occupation' and 'labour force' types being collected. The criterion for classification of the population in the NSS has been by activity status which has undergone improvements over the successive rounds. The employer in the NSS is currently defined as one who engages one or more persons on wage or salary basis in cash or kind to help in his productive enterprise. An employee is one who works for wage or salary in cash or kind under individual or groups of individuals, public or private institution. Out of all persons working in household enterprises, those who exercise some control over the operation of the enterprise are considered as own account workers and the rest as unpaid household labour. Persons working for pay or profit on any day of the

^{1/} Similar higher labour force proportions were also observed in the United Nations and the Government of India, Mysore Joint Population Survey, 1951, as compared to Mysore Census 1951.

reference period are to be considered as employed. Persons with a job but temporarily absent from work during the reference period due to illness, vacation, industrial disputes or being laid off temporarily are to be considered as employed, as also person waiting to take up new jobs or to start new business. The concept of "unemployment" used in the industrially advanced countries was adopted in the NSS, the unemployed being defined as persons without a job for the whole reference period, seeking a job and in a position to accept one if offered. A person who did not seek work because of temporary illness, or on the belief that no work was available or because he had been expecting to return to a job from which he had been indefinitely laid off, is also treated as unemployed. Persons outside labour force are put into different activity status groups of house workers, students, rentiers, pensioners, beggars, too young, too old, infirm etc.

6. Underemployment : Some local or regional estimates of underemployment have been given for Bombay State (displaced persons in

Addendum to para 5

5.1. Two ad-hoc surveys on employment and unemployment, one in the urban areas of India (towns with population 50 thousand-above, but excluding the four big cities)^{3/} and the other in Calcutta city^{4/}, were conducted in September 1953 and September-December 1953. The gap between the two regular rounds of the NSS, the 6th and the 7th, was taken advantage of for the former survey.

5.2. In the recent rounds, the NSS is following the labour force approach in measuring the economically active population, with emphasis on information on the labour time disposition during the reference period: the time spent and the money earned in different activity status categories or occupations are an integral part of such information.

The dimension of the problem of underemployment is thus seen to be fairly important^{7/}.

7. Suggestions for Census 1961 : The experiences of the National Sample Survey, coupled with the recommendations of national and international bodies^{8/}, can provide a firm objective basis for the economic classification of the population in the coming Census. The advantage of the criterion of activity status vis-a-vis the subjective one of economic status in classifying the population is clearly evident, the economic status being dependent on the cost of maintenance of a person, i.e., on the level of living, standards of which widely differ. Of the two alternative approaches, namely the gainful occupation approach and the labour force approach, the gainful occupation approach would seem to be more suitable in the Indian situation specially for the national Census carried out at a single point of time. This approach does not, it is admitted, make any provision for recording the unemployed; supplementary question on a sample basis may, however, be asked if necessary. The unemployment in the usual sense has already been seen to be insignificant in the rural sector.

8. Activity Status : The gainfully employed population may be classified into four usual activity status categories :

- (1) self-employed - employer;
- (2) self-employed - own account worker;
- (3) employee; and
- (4) unpaid household enterprise labour.

9. The category of persons who are not gainfully employed includes among others, persons living on returns from capital. Their number, though

^{7/} In the USA(1955), 4.6 per cent of the gainfully employed were with a job but not at work and 4.0 per cent worked for 14 hours or less in a week ("Statistical Abstract of the US, 1956", Table 237). In Ceylon(1953), of the gainfully employed (excluding unpaid family workers in peasant cultivation and persons below age 14 or above age 60), 15.2 per cent worked less than 20 hours a week ("Survey of Ceylon Consumer Finances," 1954).

^{8/} The recommendations of the UN Economic and Social Council have been set forth in "1960 World Population Census Programme", E/CN.3/236/Add.1, 14 February 1958.

small, may be useful in making trend comparisons in a developing economy. Outside the orbit of the gainfully employed, there are other important groups of students, houseworkers, infirm and too young or too aged to work; there is also the institutional population.

10. The whole population may then be classified on basis of the status of economic activity. The activity status categories will be :

- (a) persons with gainful activity :
 - (1) employer;
 - (2) own account worker;
 - (3) employees;
 - (4) unpaid household enterprise worker.

- (b) persons without gainful activity:
 - (5) houseworkers;
 - (6) income-recipients:-rentiers, pensioners and interest-holders;
 - (7) students;
 - (8) beggars;
 - (9) infirm;
 - (10) institutional population;
 - (11) others.

The categories outside the gainfully employed may, if necessary, be condensed.

11. One operational difficulty likely to be encountered in this context is the fixation of the required minimum amount of participation in economic activity, measured in terms of time, in order that a person may be treated as an unpaid ^{household enterprise} ~~household enterprise~~ /labour. The fixation of this minimum may be deemed necessary to exclude incidental participation in economic activity. It is, however, extremely difficult to fix this minimum in view of the fact that this participation in economic activity may be a regular feature, may be casual, seasonal or intermittent. The only practical solution seems to be to leave it to the judgement of the informant or the person concerned and to have some information on the intensity or extent of employment.

12. Industry-Occupation : Having classified the population by status of economic activity (and economic status, if desirable), it is necessary to cross-classify them according to means of livelihood. Separate classifications according to industry and occupation have national and international sanctions. The industry of an employed person is the branch of economic activity in which he is engaged and is

determined more or less on the basis of the end-products produced therein. As distinguished from this, the occupation of a person denotes the type of work which he does. The industry and occupation classifications can be used on the lines of the "Standard Industry Classifications" and "Standard Occupation Classification" (CSO). Such long lists of codes may, however, create enormous difficulties at the processing stage, in view of the huge amount of material to be processed. Therefore, a condensed classification may simultaneously be made. The experiences of the National Sample Survey may be of great help in forming this classification as they can throw light on the frequency of occurrence of various occupations.

13. In Census 1951, the means of livelihood class V, "production other than cultivation", include agricultural plantations, forestry and fishing. These groups should more legitimately fall under the industry class 'agriculture'; the National Income Committee and the National Sample Survey had allocated them to the agricultural sector. It may also be pointed out that the Census of India 1951 presented the data on manufacturing, putting village artisans, more specialised handicraft workers and factory workers together. It should be useful to separate them out.

14. Subsidiary industry-occupation : The Census and the National Sample Survey have shown that quite a considerable proportion of the economically active population derives their means of livelihood from one or more subsidiary occupations. It is desirable therefore to distinguish between principal and subsidiary industry-occupations, judged on the basis of income accruing from the respective occupation or the time spent. The same classifications can of course be used for both principal and subsidiary industry-occupations.

15. Measure of underemployment : The analysis of the question on the intensity and nature of underemployment in the NSS^{6/} leads us to suggest that in the Census too, an item on the intensity of employment may be canvassed on the national basis to give some idea of the

underemployment as could be obtained from the Census, by the intensity categories of nil, quarter, half, full etc. It is of course clearly understood that such a question which entails deep probing may better form a part of the sample survey oriented for the purpose of employment data.

16. Integration with agricultural Census : The possibility of integrating the Census of agriculture with the Census of population as suggested by P.C. Mahalanobis^{9/} deserves serious consideration in this country where about 83 per cent of the total population live in rural areas and 70 per cent depend on agricultural occupations for livelihood. Such an integrated Census would have the advantage of tying up the production end with the economically active population and should prove useful in characterising and pin-pointing the employment situation in this country providing thus a more objective basis of the measurement of the economically active population in general and the underemployed in particular.

^{9/} P.C. Mahalanobis : "Some observations of the World Census of Agriculture", International Population Conference, Stockholm, 1957. The integration of the population Census with other Censuses has also been recommended in the UN Economic and Social Council document, "1960 world population Census Programme", E/CN3/236/Add.1, 14 February 1958.

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ISSUES IN THE ESTIMATION OF STATE INCOME

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ISSUES IN THE ESTIMATION OF STATE INCOME

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The State Income is defined as the sum total of all incomes received by the members of the group of residents of a State in a given period of time, say a year, provided that institutions, governments, companies and other associations of persons are included as members and that no item of income is either omitted or counted more than once. It is, therefore, evident that State income is the income received and not income originating in the State although for the purpose of estimation of State Income, it may, in the absence of adequate statistical data, be necessary to estimate income originating in certain sectors but in such cases either income received is equal to income originating or is presumed to be so.

2. The State Income at present is estimated on the basis of net domestic product at factor cost and in certain States allowance is made for balance of payment while in others no attempt is made to take the latter into account on the ground that adequate and satisfactory material is not available. There is no doubt that the calculation of balance of payment is a very important aspect of estimation of State Income but the question is how to resolve this issue. The Rail and River Borne Trade of India does give some account of the movement of goods between different States but this alone is not enough. There is still left out of account the trade on the border and the movement of goods by road although some data can be collected from the octroi barriers of such municipal boards or town-areas which happen to be on the border. Further, data is also not available in respect of the amount of remittances made from a State by the residents of other states or countries living and working there nor on money received from the residents working outside the State. Arbitrary assumptions on this aspect of the problem will not take us far. Under such circumstances it may be desirable to refine the technique for estimation of net

domestic product at factor cost with the objective of being able to estimate income received by the residents of the State more accurately.

3. For the estimation of State (as well as National) Income it is essential to find out the working force and the number of incomes. The decennial Census Report is the only document which gives in detail the number of workers. The Census Report of 1951 gives the number of self-supporting persons and working dependents - the sum of these gives the total working force. But the distribution of working force into different occupations is beset with the difficulty that an earning dependent is recorded with the occupation of the head of the family and not under the occupation from which he derives his earnings. The distribution of working dependents* into different occupations on the assumption that their relative distribution today is the same as in 1931 (for which data is available) may seem to be the only alternative but it makes a big assumption which may not actually hold good. Since 1931 the economy of a State (as well as of the country) has undergone a number of structural changes in the face of which such an assumption may seem to be of doubtful validity. Furthermore, the simple method of interpolation, the only device by which the working force for any year other than a census year can be calculated, may not give correct results in the context of planned economic development of the country. In this avowed era of planning with the improvement in the standard of living and introduction of compulsory education and greater facilities for general and technical education there is a likelihood of reduction in the number of working dependents. Under these conditions the decennial census may not prove to be very helpful in the precise estimation of working force with its break-up into different occupations. It would be better if a limited

* The National Income Committee in its Final Report has made the assumption that the distribution of working dependents within each livelihood class is similar to that of the self-supporting persons in the same class as available in Economic

census of population is conducted in the mid-year of two decennial censuses for the purpose of determining general trends.

4. For a satisfactory estimate of State (as well as National) Income, it is desirable to break the working force in different occupations into urban and rural areas. It is not always possible to classify a worker into a rural or urban one. There are a large number of cases which are on the border line but for the purpose of estimation of aggregate net income it is neither very difficult nor unscientific to classify a person into the urban or rural category. The real difficulty arises when the results so arrived at are used to indicate comparative trends in the rural vis-a-vis urban income.

5. The estimates of State or National Income in this country have so far been used for the purpose of gauging the quantitative performance of an economic system. It is true that in under-developed economics this aspect is very important. But in a country with the economic objective of the socialist pattern of society it is equally essential to measure qualitative performance. Hence the estimates of State as well as National Income should be so made as to bring out not only the pattern of production but also the pattern of distribution. This implies that progressive reliance be placed on the income method rather than the product method.

6. Coming to sectoral estimates, the income from agriculture is estimated by multiplying the gross output by prices and then making deductions for seed requirements, wastage, field ridges, interest on agricultural debt, operational cost and depreciation of agricultural implements. Although harvest prices should in reality be used for estimating the value of agricultural output but the available data on harvest prices given in Season and Crop Reports relates only to wholesale prices at the time of harvest. In the absence of a better alternative such a price has to be used. Any arbitrary deduction from this to arrive at the harvest price

is not at all scientific. But it should be borne in mind that the income so estimated will not be the income generated in agriculture purely. It will include some of the activities of marketing as undertaken by the cultivators. It may be added in this connection that the wholesale price at harvest time has certain limitations. The produce coming to market need not be representative of the quality of the actual produce. In some cases, specially in the case of poor cultivators and cultivators having small holdings, produce of good quality is immediately brought to the market while produce of bad quality is utilised for consumption needs; but in the case of rich cultivators and cultivators with large holdings produce of poor quality in large cases is brought to the market at the time of harvest and produce of good quality is kept over to be sold when the prices are high. With the growth of cooperative marketing there is every possibility of increasing the divergence between the wholesale price at harvest time and the price actually received by the cultivator for his produce. In the absence of any data on the subject it is difficult to say what margin of error enters into the present estimates of income from agriculture. The power of agriculturist (except agricultural labour) to hold their produce has increased with a rise in the price of agricultural produce and they have started consuming more and better quality of cereals. It is, therefore, advisable that we should examine if there is any change in the hitherto accepted trend, as indicated by the Marketing Report, of marketable surplus of agricultural produce which is taken into account for estimating the income of certain section of traders with the product method and trade margin.

7. As regards seed requirements it is worthwhile to remember that the quantity of seed depends upon the area sown and hence we should arrive at the value of seed by multiplying the area under the crop by seed rate and the retail price at the time of sowing. It is true that a number of cultivators

use their own seed and do not purchase it from the market but in such cases also it is desirable to evaluate seed at the retail prices during the period of sowing. The difference between the harvest price and the retail price at the time of sowing is the income accruing to the cultivators in the capacity of traders.

8. As regards wastage in agriculture, the National Income Committee in its Final Report has made no deductions for it on the ground that wastage in the storage of marketed output may be considered under trading sector and in the case of retained output it is considered to be a part of wastage attending on consumption. But every one knows that some wastage is always involved in the movement of crops from the field to the place of thrashing and from there to the house of the cultivator and finally to the market at the time of harvest. Further some loss in weight always takes place if the produce is marketed by the cultivators at an interval after the harvest time. The arguments of the National Income Committee are valid in the case of product approach under the assumption that the surplus agricultural produce is marketed by persons who have been returned as traders in the Census Report, but in the absence of data regarding actual quantities of various types of produce marketed, it is difficult to make use of the product approach successfully. However, if the income approach is applied under the circumstances, it has to take into account the wastage involved.

9. While coming to income from small scale and cottage industries it is realised on all hands that adequate data is available only in the case of handloom industry while in the case of other industries the data relates to the number of workers in a census year including workers in large scale industries and output in any one particular year. Recently a number of surveys* have been undertaken in certain States* but here the data has been collected in one round. This method of

* Survey of Handloom Industry in Madras and Rajasthan, Report of the Textile Enquiry Committee, 1954, Vol: II and III-Annexures, Survey of Tanning, Tanning, Leather Work and Black-smithy in Bombay; Survey of Small Scale and Cottage Industries in Nagpur City; Small Scale Industries in Selected Pivkas in Madras; Report of Survey of Labour Conditions in Industries in Delhi State; Economic Survey of Small Industries in Various Districts of West Bengal.

collection of data has the advantage that more field can be covered in a short time. Although from the standpoint of general trend this data is very useful but for the purpose of estimation of State or National Income it has its limitations. As no records are maintained by most of the owners of small scale and cottage industries the information collected from them on specific items cannot be more than an approximation. Further, every industry has a peak period and a dull period of activities during the course of each year and in certain industries there is also a period of unemployment. No effort either based on product or on income method can give reliable results unless it takes into account these factors. It is doubtful if all these points can be brought to surface in an enquiry involving contact with the owner of an establishment once for a few days at any time during a year. It would be better if data is collected in three or four rounds in each locality during the year for better and reliable estimates of State or National Income.

10. There are difficulties in estimating income from enterprises which are spread to other states (leaving the enterprises of the Government of India) including organised banking and insurance. The income from such enterprises consists of wages and salaries of employees and directors and surplus profits. As regards wages and salaries there is no difficulty as the wages and salaries of the employees of the enterprise living in the State will surely be included in the State Income. But the question is as to what part of surplus profits, if any, should be treated under State Income. It is a difficult task to determine it by verifying the assets and shares of the inhabitants of the State in the undertaking. The only way out seems to be to allocate a share of surplus profits for inclusion in the State Income on the basis of general considerations such as the place of residence of the members of Board of Directors, Managing Agents, Distributors etc.

**FIRST INDIAN CONFERENCE
ON
RESEARCH IN NATIONAL INCOME**

PRICES USED FOR EVALUATION OF OUTPUT:
AGRICULTURE SECTOR

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PRICES USED FOR EVALUATION OF OUTPUT: AGRICULTURE SECTOR

M.L. Sudan.

The scope of this paper is restricted to the prices used for the evaluation of agricultural commodities. After bringing out in brief as to what has been done in the Punjab in this respect*, we get on to discuss the relative suitability of harvest and primary wholesale prices in this context.

2. In the Punjab practically all the markets stand regulated and the coverage of commodities is fairly large. Weekly prices of each commodity prevailing in the primary markets and collected from the market committees, ^{for} the peak period during which bulk of the produce is sold in the markets (adjusted harvest period) were used for the present evaluation. In Kangra and Simla where there are no market committees, the prices were collected through Tehsildars in the former case and personally from the local market in the latter. Simla is just a city district with an area of only eight square miles.

3. The primary markets are those situated in surplus areas. All the districts in the preintegrated Punjab except Kangra, Simla and parts of Hoshiarpur and Gurdaspur are surplus areas in respect of foodgrains. But both for foodgrains and other agricultural commodities, during the adjusted harvest periods, there is practically no import of commodities even in the markets of the deficit areas except Simla and as such the prices prevailing in local markets relate to local produce. In Simla there is very little local production and hardly any part of this is marketed. The prices for Simla, therefore, relate to imported produce. We have, used these for evaluation in view of very little production in the district.

* For estimating the State Income of the pre-integrated Punjab for the three years ending 1954-55. This is the first study of its type in the State and has recently been completed by the Economic & Statistical Organisation, Punjab.

4. Regarding selection of centres, two to four markets well distributed in the area were selected for each district (except Simla) at the same time keeping in view the quantum of transactions in various markets in the district. As already pointed out Simla is a very small district and the prices were taken from the local market.
5. The prices so collected were the modal prices of the average quality of the different varieties of the commodities which are most commonly transacted in different markets. Beyond this general rule we have not made any specifications except in the case of cotton where the prices were collected separately for American & Desi- cotton and use was made of separate production figures for these.
6. The last point requiring consideration is that of averaging. According to the National Income Committee "the ideal average should take account of the regional disparity of the prices, the quality differences and the temporal disparity of prices. Moreover it should be based on a sufficiently large number of quotations so as to minimize the sampling type of error; also the type of average used for estimation should be as efficient as possible".* As further pointed ^{out} by the Committee, weighted mean of prices of the period in which the harvest yield is disposed off at the markets of bulk transactions of these commodities, would be a fair approximation to this ideal. We have, however, used the simple average of price quotations as collected from various market committees in a district for evaluation of production at the district level.
7. The broad pros and cons regarding the use of primary wholesale prices for the evaluation of agricultural output

* Final report of the National Income Committee, page 29.

as against harvest prices are discussed below:

- i) Harvest prices are generally collected through revenue agency and this collection forms only one of the many minor routine duties of the concerned officials. Consequently these officials do not evince much interest in the work; and the importance of such statistics is neither realized nor proper care is taken in their collection in most of the cases.
- ii) The coverage of harvest prices both in respect of commodities and centres is limited.
- iii) In the case of harvest prices, we can have only a weighted average price for the State as a whole; weights being the quantum of production in each district. There is no possibility of having a weighted average price at the district level. As against this it is possible to have the figures of the quantum of transactions in the regulated markets (Primary in the present context) and we can work out the weighted average even at the district level.
- iv) If we use primary wholesale prices we will be over-estimating the amount received by the farmer to the extent that the entire production is not marketed. The use of primary wholesale price will thus require the deduction of the impute cost of transport from village to the primary market for the part of the produce which is not marketed, from the gross value of output of agriculture. On the other hand, if we chose to use harvest price, for the total product then we are confronted with the problem of estimating the farmer's cost for the transport of the marketable, surplus to the primary market. The difficulty of estimating the extent of deduction in the former case and addition in the latter primarily arises from the very nature of our economy where the functional distribution of the economic activity is not specialised to a high degree. While using primary wholesale prices for evaluation of agricultural output in the Punjab we have, however,

not made the required adjustment following the National Income Committee practice.

8. Again, primary wholesale price is inclusive of certain market charges (payable by the seller) which has to be deducted from the gross value of output in agriculture if it is evaluated at these wholesale prices. In the Punjab, these charges are fixed by market committees and are known for each market. There is thus no difficulty in making this adjustment.

9. Taking into consideration all the above facts, we thought it best to use, the primary wholesale prices for the evaluation of agricultural output and thus extend the scope of agricultural sector to include the transport activity of the producers up to the primary markets.

10. In the end, coming to the question of the proper agency for price reporting from primary markets, the staff of the regulated markets has been considered best suited for the purpose. Not only can we get accurate price for a large number of commodities from this agency but also the quantum of transactions which is necessary for calculating the weighted average price.

FIRST INDIAN CONFERENCE
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A CONCEPTUAL FRAMEWORK FOR THE ANALYSIS OF VILLAGE OUTPUT

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A conceptual framework for the analysis of
village output.

P. K. Gurberjee

The construction of national accounts is now widely recognised as a valuable analytical tool because the composition of these accounts and the inter-relations existing among the components reveal more significantly the working of the economy than a purely aggregative approach. It is still not possible to construct elaborate accounts for the national economy of India because (a) a large part of the economy is not market-orientated and (b) statistical gaps are many regarding the detailed data for the economy as a whole. Whatever be the difficulties in the case of the national economy may also be present at the village level. But attempts have been made in the past to present village accounts in as much details as possible in order to throw light on the functioning of the village economy.*

*Please refer to Ch.17 of Vol. I, Part I (The survey Report) of the Report of the Committee of Direction, All India Rural Credit Survey, 1956. In this chapter, an interesting discussion has been made on "shifts in income and flow of funds". The problem of balance of payments or flow of funds as between groups or strata of families between the rural area and the rest of the country has been considered. Various limitations with regard to the availability of suitable data have been mentioned. In the last few pages of this chapter, some sort of cash and kind balances have been calculated for the cultivating class as a whole. The final conclusion arrived at the end of this chapter reads as follows"..... It is not possible to present any social account tables on the basis of our data. The data are useful in many directions, especially for the limited purposes for which these were collected, but they cannot be put to this additional use. Such data would have to be supplemented in certain directions and additional precautions taken in their interpretation before it is possible to present social accounts with any confidence. (pp. 106-67). In fact, it appears to the present writer that the difficulties faced above were not merely due to the statistical gaps which are important no doubt but they were mainly due to the definitional problems of what are the real contents of balance of payments accounts of the rural area with the rest of the world. Therefore, in this chapter, what we have attempted, mainly, is to present a clear picture of a working mechanism in these contexts rather than any conclusive evidence of any trend either this or that way.

2. In this paper an attempt has been made to indicate several types of village accounts in order to study the nature and composition of the gross output of the village and its distribution according to occupational and functional categories. We shall also make an attempt to present a broad outline of a two sector model depicting the flow of goods and services between the villages and the 'rest of the world'. Data about economic flows between different productive units within the village as well as between the villages and the other sectors of the economy will show the degree of the extension of division of labour and specialisation of economic activity in the village economy with its necessary and consequential repercussions on the structure and magnitudes of economic flows, between different units of the same industry, between different sectors of the village economy, as well as between the village economy and the outside world. The ultimate objective in such a study would be to derive certain indicators with a view to characterising progressive and regressive economies particularly from the point of view of their growth.

3. The agency, form and location of economic flows are the three crucial levers of economic change. The agencies which are responsible for the flows reflect the structural part of the economic change and show the relative evolution of the primary, secondary, or the tertiary production in the course of economic change. The pattern of change in the form of flows indicates the growth or otherwise of monetisation in the economy. The location of the flows indicates the degree of integration of a smaller community with a bigger community and their impacts on each other.

4. The following accounts are required to be constructed for the above objectives in view:-

(a) Distribution of the G.N.P.* of the village by occupational groups such as, cultivation, arts and crafts, trade, labour, transport and profession and service,

(b) Values of per capita, per worker and per household gross output by occupational groups and also for the village as a whole.

(c) Functional distribution of the G.N.P. i.e. into rent, wages and income of the self employed**.

5. It is, perhaps, necessary to clarify the hypothesis of relating the diversification of economic activity to the rate of economic change. An objection may be raised that this presumption that the progress of any economy is impeded by the fact of diversification of economic activity, may be broadly true on the national level, but certainly does not hold on the village level. There is force in this objection. It is quite well known that, inside the village, there is very little opportunity of expansion of non-agricultural activities. Thus up to a point agriculture may help the development of other ancillary activities such as those of artisans, performance of labour and trade and transport services. In fact, this type of change provides the first link in the chain of successive changes, finally bringing a village unit into closer contact with the rest of the national economy. Therefore when we make the presumption that if there is more diversification of economic activities it will lead to faster growth, what is implied is the completion of the full process starting from the initial stage of development of

*The use of G.N.P. in the present context is in accordance with the normal usage of the phrase i.e. the G.N.P. of the village consists of aggregation of output of goods and services produced by the residents of the village, irrespective of whether they are produced in the village or outside.

**In a household subsistence type of economy, it is difficult, if not impossible, to get the breakdowns of the income of the self-employed into profit and interest.

agriculture and other ancillary activities and leading to more and more of marketed surplus and exports ultimately resulting in maximum integration with the rest of the economy.

6. One may point out that the same result may come about in the other way round, i.e. first syphoning away the surplus working force from village occupations to non-village occupations, which brings about rapid development of agriculture and ancillary industries inside the village. In fact what happens in the course of economic development is the simultaneity of both the above processes.

7. Data for ten villages belonging to the Saharanpur district of U.P. and the Gurgaon district of Punjab were analysed and accounts mentioned earlier were prepared*. It has been found that the share of the agricultural output to the total G.N.P. of the villages is approximately 83 per cent. It has also been noted that the extent of employment of hired labour is more in comparatively prosperous villages than in the backward ones. Finally, it has been noticed that the size of the profession and service sector is an important indicator of the extent of integration of the village economy with the outside world.

8. Since in the Indian villages, it is a common feature that most of the households follow more than one occupation, it may be argued that the per capita gross output is a better indicator of development than either (a) the occupational diversification or (b) the pattern of economic activity as revealed by the distribution of the G.N.P. into various occupational groups, since the former is a reflection of both (a) and (b). But, specially in the context of a backward

*Since the year 1955-56, village surveys are being conducted by the Agricultural Economics Research Section, Delhi School of Economics, University of Delhi from year to year in the Punjab and eighteen districts of Western U.P. Every year nearly 15 to 20 villages are being surveyed. The surveys in the same villages will be repeated after an interval of five years.

agricultural economy, in which a process of planned economic development is initiated, any comparison on purely per capita basis would be invalid and even misleading simply because there is a greater degree of heterogeneity both with regard to (a) the pressure of population and (b) the different degrees of combination of different occupations in a single household.

9. By looking into the account (c), it has been found, again in the context of ten villages mentioned earlier, that the share of contractual income (i.e. rental and wage income) is higher in those villages which have been characterised as potentially prosperous villages, whereas exactly the opposite is the case with the comparatively backward villages. It is approximately 23 per cent in the former case and 8 per cent in the latter. The average share of the contractual income, taking all the ten villages in the account, is approximately 16 per cent. Incidentally, the fact that a very large portion of the G.N.P. consists of the income of the self employed households in the village has wider implications in the context of stresses and strains that occur in a developing economy. It means that with every unit rise of income the consumption function of the community will be much larger than otherwise.

10. Apart from these three broad and generalised accounts i.e. with regard to the distribution of the G.N.P. into various occupational groups, the per capita, per worker and per household gross output and the functional distribution of the G.N.P. into rent, wages, and income of the self employed, a few more accounts depicting, the flow aspects of the G.N.P. i.e. the nature of the disposal as between self consumption and sale either inside or outside the village, may have to be drawn. This will help us in studying the extent of monetisation and the opening up of the village economy. In the first place we

shall calculate the proportion of the marketed surplus of primary products both on the aggregate level and by the size of holdings. Secondly, the real significance of the opening up of a village economy can be brought out only when we look into the 'export' content of the marketed surplus.

11. The characterisation of villages into progressive or retrogressive ones which may be arrived at with the help of the earlier analysis gets corroborated from the tables of marketed surplus and exports. For instance, the percentage of marketed surplus to total production in cultivation varies from 27.7 to 53.5 in the villages of Saharanpur and from 17.5 to 24.5 in the villages of Gurgaon. The average percentage of exports in the villages of Saharanpur comes to 43.3 whereas it is 19.6 in Gurgaon. It should be noted that the analysis of marketed surplus and exports will remain incomplete if we do not relate them to the type of crops generally produced and marketed in the individual villages.

A working model of inflows and outflows of goods and services to and from the village.

12. The earlier analysis provides the setting for a study of the nature and extent of economic flows between different productive units within the village. This would bring out the degree of extension of division of labour and specialisation of economic activities in the village economy as well as the development of trade with the outside world.

13. In order to make the picture of economic relations in a small community with a bigger community complete, we have ventured in the following few pages to present a very tentative outline of a two-sector model of the inflows and outflows of goods and services to and from a village or a group of villages within a district. These inflows and outflows may be noted activity wise (i.e., cultivation and crafts etc.) as well as item-wise under the head of each separate activity.

In the model, the inflows and outflows may be aggregated activity wise and finally for the economy as a whole. Such a model, in order to be called the 'Balance of Payments' model for the village economy or the regional economy, must contain items relating to (a) the current production (b) the current consumption and (c) the capital transactions. Appropriate data for the current productive activity and for the capital transactions are being collected by us in the course of the village surveys being undertaken from year to year. Data for aggregate consumption items for the whole year are difficult to collect unless the investigator stays continuously throughout the year in the same village. However, a part of the inflows and outflows of consumption items such as food grains, cloth, merchandise etc. may be traced through the transactions of the traders who supply the major consumption requirements of the village as well as through the sale transactions of producers.

14. Once the decision is made with regard to the selection of items which should figure in such a model, one would like to know the specific utility of such accounts. From the analytical point of view this utility may be specified as follows:-

(a) These accounts will further corroborate the conclusions arrived at earlier with regard to (i) the diversification of economic activity within the village and (ii) the nature and volume of the marketed surplus and exports.

(b) The number, nature and volume of items occurring in the accounts of the inflows and outflows will indicate (i) the level at which the village economy operates (ii) the nature of the starting point of economic growth in the individual situation and (iii) the potentiality of change.

(c) By making an analysis of such accounts for successive periods one may observe the change in the functioning of the constituent parts of the economy. For instance, one may study whether the economy as a whole is 'trading' more with the 'rest of the world', whether one functional group is having more transactions with other groups etc. etc. By basing these observations on some hypothesis about the nature of the change, i.e. whether it is progressive or retrogressive we can get an idea of the dynamics of the economy.

15. There is one more advantage following from a proper analysis of village accounts. One of the items in these accounts pertain to the unilateral transfers in the form of rent, land revenue and taxes. It is generally maintained in a backward agricultural economy that these transfers from the producers to the rentiers and the State act as a deterrent to economic development. Whether this is generally true or not may be examined in the light of observed facts.

16. We have made an attempt to construct village accounts for all the villages separately and also collectively in the case of selected villages of the two districts of Gurgaon and Saharanpur. Obviously unless a sufficient number of such accounts are constructed for a large number of villages of different types, it would not be wise to draw from them any general inferences. Moreover, in the process of preparing these accounts we had to encounter certain gaps in data which were mainly due to the lack of conceptual clarity about a few items in the accounts. For instance, the detailed breakdowns of the capital transactions effected, money borrowed and lent both inside and outside the village and the direct consumption purchases by the resident households of the villages were either not collected or, even when they were collected, were not always comprehensive and accurate. What we can present is a partial account for one village only

for the sake of illustrating concretely what we ultimately propose to do. This account is for the village Sohapur Gara in Saharanpur district which has been found, in the earlier section of this chapter, to be fairly prosperous and has greater potentiality for change than the other villages. The items which are given in this account are self-explanatory.

17. We would, however, like to present certain tentative conclusions, for whatever they are worth, which follow from eleven* such two-sector accounts a sample of which has been given in Appendix. They are as follows:-

(a) It has been found generally that the cultivators in the comparatively prosperous villages purchase seed, fertilisers, cattle feed in larger amounts from outside the villages and also they import the services of labourers who are resident in the neighbouring villages.

(b) It is well known that the trading sector plays a significant role in the diversification and opening up of village economics. It has been found that in comparatively backward villages, there is very little of sales to outside people and there is quite a significant amount of imports of commodities which are consumed within the village itself. Similarly, the picture of little diversification of occupation gets corroborated from the fact that very little of wages or income is received from outside the village. On the other hand, in these backward villages, almost all occupational categories depend on some amount of wage income which they get by combining agricultural or non-agricultural labour with their main activities whether as an artisan, a trader or even as a small cultivator.

(c) It is also found from the accounts that mixed farming is widely practised in the villages of these two districts. The

* Of these, 9 are accounted for individual villages and 2 are collective accounts for the selected villages of Gurgaon and Saharanpur districts.

from
income/livestock production plays a significant role both with regard to the economic condition of the households and in the context of establishing closer contacts with the outside community.

(d) It is interesting to note, subject to further verification, that the total volume of inflows and outflows both on the aggregate level and on the basis of separate occupational categories is comparatively much lower in a so-called backward village than in the case of a fairly prosperous village.

(e) Finally, it has been found that the share of unilateral transfers to the total agricultural production (excluding livestock production) comes to roughly 9.00 per cent. Therefore, it is pertinent to observe that the share of 'transfers' do not provide any large disincentives to economic development. Of course, one has to take into account the type of land tenure system prevalent in any particular context as also the general features of the agricultural economy of the tract concerned. For instance, these two districts are situated in a region which is dominated by the institution of peasant-proprietorship with all its favourable implications. Added to this, in this North-Western region of India, agriculture has been made prosperous due mainly to the availability of water from various types of irrigation sources. Hence the relatively minor share of unilateral transfers in these villages

Account of village Sanjaur Gana with the rest of the world.

| functional group | | | services | | | unilateral transfers | | | total | |
|---------------------------------|-------|-------|-------------------------------|-------|------|----------------------|------|------|-------|-------|
| goods | | | | | | | | | | |
| items | exp. | imp. | items | exp. | imp. | items | exp. | imp. | exp. | imp. |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
| <u>CULTIVATION</u> | | | | | | | | | | |
| i) agri. produce | 20634 | - | i) wages paid to hired labour | - | 1112 | i) rent received | 190 | - | | |
| ii) livestock products | 6054 | - | ii) wages paid to artisans | - | 925 | ii) rent paid | - | 569 | | |
| iii) seeds (exp) | - | 1230 | iii) tools repairs | - | 272 | iii) land revenue | - | 2552 | | |
| iv) cattle feed | - | 6728 | | | | | | | | |
| v) F.Y.M. | - | - | | | | | | | | |
| sub-total: | 26638 | 7976 | | | 2309 | | 190 | 3121 | 26858 | 13406 |
| <u>ARTS & CRAFTS</u> | | | | | | | | | | |
| i) sales of products | 1150 | - | i) wages | 952 | - | | | | | |
| ii) raw materials | - | 533 | | | | | | | | |
| iii) livestock products | 420 | - | | | | | | | | |
| sub-total | 1570 | 533 | | 952 | - | | | | 2522 | 533 |
| <u>TRADE</u> | | | | | | | | | | |
| i) sales | 14820 | - | | | | | | | | |
| ii) livestock products | 1152 | - | | | | | | | | |
| iii) purchases | - | 9165 | | | | | | | | |
| sub-total | 15432 | 9165 | | | | | | | 15432 | 9165 |
| <u>LABOUR</u> | | | | | | | | | | |
| i) livestock products | 2410 | - | i) wages | 8187 | - | | | | 10597 | - |
| <u>PROFESSION & SERVICE</u> | | | | | | | | | | |
| i) livestock products | 638 | - | i) income | 8789 | - | | | | 9427 | - |
| grand-total: | 46718 | 17694 | | 17928 | 2309 | | 190 | 3121 | 64836 | 23124 |

**FIRST INDIAN CONFERENCE
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**A NOTE ON THE PRICES USED FOR EVALUATION
OF OUTPUT**

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Government of India)**

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A NOTE ON THE PRICES USED FOR EVALUATION
OF OUTPUT

D.N.Lal and P.k.Sharma

Income is a monetary concept; and, therefore, the problem of evaluation of the goods and services which constitute the National Income is of a paramount importance. Naturally evaluation means evaluation at a certain price. But the problem arises which price to use. The prices which are used for evaluation must be the real prices. By real prices one means the prices which actually prevail in the market during the period in which the goods and services entering into the national income are produced or exchanged. But again the problem arises which market to consider - wholesale or retail.

2. If the wholesale markets are considered then again the problem arises which wholesale market - the genuine wholesale market meaning thereby the market in which sellers and buyers are quite independent of each other or the wholesale market in which buyers and sellers are of practically identical interests and therefore the exchange has to be effected at quite concessional prices. The sale and purchase of a firm to or from one of its subsidiary firms may be cited as an example. There is a further distinction between the types of the wholesale markets. Wholesale market may mean the market where the traders engage in wholesale transactions with the producers only. It may also mean a market where the traders engage in wholesale transactions with the traders themselves. It may also mean a market where wholesale transactions are effected between producers and producers or between producers and retail traders or even consumers themselves or between wholesale and retail traders or even consumers themselves. In practice, it is very difficult to find such clean-cut markets operating at any point of time. But it may not be impossible to make such distinctions between the markets of one type or another for theoretical purposes. Even if we make such theoretical distinctions, there is a further problem - the problem of location of market whose prices we are going to use.

It is a well known fact that the prices differ from rural to urban areas and even from rural to rural and urban to urban areas. Sometimes we may find price differences between the various shops located at the same town or village.

3. If we decide to use the retail prices for evaluation of the goods and services entering into our national income, similar problem arises. Which retail market to take into consideration? The market where retail transactions take place between wholesale traders or producers and retail traders or between wholesale traders or producers and consumers or between retail traders themselves or between retail traders and consumers. Then again the problem is of the location of the market whose prices are to be considered. Furthermore, the prices differ from shop to shop even at the same place, apart from rural-urban and place to place differences.

4. Sometimes the problem arises that some of the goods and services entering into the national income do not enter into market transactions at all. What to do in this case? It would not be wise to exclude these goods and services from the national income. If we do this the national income would be grossly under-estimated. Take the example of the domestic service. If one keeps a cook or maid for doing the service and pays him or her a salary or wage, then his or her service would constitute a part of the national income, but if the same job is done by an unpaid person like one's wife or daughter or son, her or his service would not constitute a part of the national income.

This means that if one's wife does a job for another man her services are productive but if the same job is done for her husband or for her family, her work is unproductive. The term productive has been used here in the sense of production of national income. This is ridiculous. Even apart from the services like domestic service, sometimes we find similar difficulty in respect of goods and services produced and domestically consumed. For those goods and services which are generally marketed, there is no difficulty, as the market prices

not marketed at all. One solution lies in using the cost of production of these goods and services for evaluating them. But here again the problem of choice of the location of the place or the producing units whose cost of production is to be considered raises some difficulties.

5. Thus we find that there are broadly three sets of prices at which the goods and services entering into the national income can be evaluated - wholesale price, retail price, cost of production. Even within these single types there are a number of different prices. We have to decide which of these to use. At the very outset it may be mentioned that the evaluation cannot and should not be done by recourse to any single category of prices mentioned above. A combination of the three broad categories of prices will have to be used depending upon the particulars of the goods and services to be evaluated and the availability of prices for these.

6. The choice of prices will also depend upon the particular method of estimation of national income adopted. Generally speaking if we use the census of output method, the wholesale prices or the cost of production will have to be used. On the other hand if we adopt the census of expenditure method, the retail prices will have to be used. If we adopt the census of income method, either the wholesale or the retail prices or the cost of production will have to be used depending upon the nature of the goods and services involved and recipients of the income. In practice, in the estimation of the national income use has to be made of all the three methods, particularly in the case of economies like ours where either statistical data are lacking for some of the sectors of the economy or even if they exist they are of doubtful reliability. Therefore, evaluation will have to be done in some cases at wholesale or retail prices and in other cases at the cost of production, actual or imputed.

7. Now we have to decide which particular wholesale or retail market out of a number of markets pointed out above should be considered. Generally speaking, we should use the prices

prevailing in genuinely wholesale markets. As already mentioned, by a genuine wholesale market is meant the markets where wholesale transactions take place between independent and un-connected producers and wholesale traders. All those goods and services for which output data exist and for which there is a wholesale market, should be evaluated at these wholesale prices. Of course, the ideal solution would be to evaluate only those goods and services at these wholesale prices which have actually entered into the market. The goods and services not as yet available to the market and still lying with the producing unit should be evaluated at cost of production. But in some cases it may be difficult if not impossible to get the necessary statistical data which would enable such a clearcut allocation to be made. Moreover, generally speaking, except for the initial period of a depression cycle, there is no large stock of finished goods and services to be found with the producing units for any considerable period of time. Therefore, it is not at all necessary or advantageous to adopt this ideal solution. Only those goods and services for which no markets exist are to be evaluated at the cost of production. For those goods and services for which no output data exist and estimate of the output has to be made by recourse to expenditure method, retail prices are to be used. The retail prices should be prices at which the consumers make their purchases from the traders. Of course, while making a sum total of these values for the derivation of the overall national income, the gap arising out of the two different basis of estimation (one wholesale prices not taking into consideration the profit accruing to the traders and the other retail prices which takes into consideration the profit accruing to the traders) will have to be filled in by adding the profits accruing to the wholesale traders on account of their transactions. In order to take into account the shop to shop and place to place differences, it is essential to use the average of the prices prevailing at a number of shops at the same place and at

various different places. The ideal solution would be to evaluate the output of goods and services originating or disposable in the different regions at the prices prevailing in those regions. But in practice data are not available to enable one to make such regional breakdowns. Generally speaking, the wholesale prices used should be the wholesale prices prevailing at either the large centres of production of the goods and services concerned or wholesale prices prevailing at the large wholesale marketing centres. The retail prices used should be the prices prevailing in the markets in which the expenditures taken into consideration are incurred.

8. A word may be added here regarding the treatment of agricultural output. The agricultural outputs are generally evaluated at the harvest prices prevailing in the regions concerned. But really speaking the prices used are not the genuine harvest prices. They are in fact the wholesale prices prevailing at certain important marketing centres of the regions concerned during the harvest period. To this extent the agricultural income is over-estimated. Because these so-called harvest prices are in truth, the prices secured by the agricultural producers (true harvest prices) plus the cost of transportation to the marketing centres concerned plus the profit margin of the wholesale trader at these centres. The agricultural output should be evaluated at the prices really paid to the farmers in the rural areas. Therefore, it may be desirable to make a suitable deflation on the so-called harvest prices reported from the marketing centres so as to eliminate the cost of transportation and the profit margin accruing to the wholesale traders.

9. Regarding the cost of production method, for the industrial sector it would not be difficult to get an idea of actual costs of production involved but for the non-industrial sectors, particularly in respect of services, it is difficult to get any idea of the real cost of production.

Taking the case of domestic service, the cost of production will have to be measured in terms of the cost of maintenance i.e. the actual consumption cost incurred by the person involved. Any other meaning of cost of production would be confusing and practically useless in such cases.

10. Coming to the problem of the intertemporal difference in prices, national income figures have significance for policy purposes only if they are given in real terms. This in effect means figures of national income at the price of a certain base year. We need not go into the question of criteria for selection of a base year. It may, however, be pointed out that the base year must be neither one which is too much antedated nor one which is abnormal viewed in the light of the circumstances normally prevailing over a decade or so.

FIRST INDIAN CONFERENCE
ON
RESEARCH IN NATIONAL INCOME

PRICES USED FOR THE VALUATION OF OUTPUT IN THE
ESTIMATION OF STATE INCOME

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PRICES USED FOR THE VALUATION OF OUTPUT
IN THE ESTIMATION OF STATE INCOME

J.K. Pande

For estimating the National or State Income by the product approach, the method of evaluating the output plays a very important part. The exact method is often determined by the availability of data. To the extent the output approach has been adopted in working out the estimates of State Income of U.P., the following gives the details of the methods used for evaluation.

Crop out-turn

2. The gross crop out-turns in the rural and urban areas have been evaluated at different rates. In the rural sector producer's prices prevailing in the rural areas at the harvest time have been used, whereas in the urban sector wholesale prices at urban mandies during the harvest period have been used. In most cases these prices have been obtained from amongst the data reported by the Economic Intelligence Inspectors of the Department; in other cases alternative sources have been tapped. For commodities for which producer's prices could not be obtained, urban wholesale prices prevailing in the harvest period have been utilised. For each commodity a weighted average price has been used, the average being based on a number of centres, important for the commodity from the point of view of production, weights being the quantity of production in the year 1948-49 in the region represented by the centre. The price for a particular centre is the simple average of prices relating to that centre during the harvest period. It may, however, be stated that for a few years during the rationing period, for the totally rationed commodities open market wholesale prices were not available; in such cases the godown issue rates were utilised. For the period rationing was at its apex, they amounted to roughly 10% of the total prices utilised.

Livestock products

3. The important constituents of the total output of live-stock are (i) milk including milk used for ghee-making and curd-making (ii) meat (iii) fish and eggs (iv) hides and skins (v) wool and (vi) bones.

(i) Milk

4. The total quantity of milk is divided into three components, namely; (i) the quantity used for curd making, (ii) the quantity used for ghee making and (iii) the quantity used as milk. The total value is obtained by evaluating the three components separately. The curd and milk are evaluated at the urban retail prices, whereas ghee is evaluated at rural wholesale prices, the prices being supplied by the field staff of the Department of Economics and Statistics. For each of these commodities, the price used is based on a number of centres, important for the commodity from the point of view of production. Except in case of milk, where a weighted average price is used, weights being the quantity of production in the region represented by the centre, the prices used are simple average prices, based on the average prices prevailing during the year in those centres.

(ii) Meat

5. The total output of meat is categorised under the following broad heads :-

- (a) goat meat,
- (b) sheep meat,
- (c) buffalo meat,
- (d) cattle meat,
- (e) poultry meat, and
- (f) pig meat.

6. For evaluating sheep and goat meat, retail prices of goat meat obtained from 16 centres are used after working out a weighted average price, weights being the number of goats at each centre. For buffalo meat retail prices from

one centre (the only centre from which prices of buffalo meat are available in the Department of Economics and Statistics) are taken. Cattle meat prices are estimated as the simple average of goat meat and buffalo meat prices. For estimating the value of meat in the rural and urban areas, prices for rural and urban areas respectively are taken. Rural prices have so far been estimated from urban prices on the basis of the relation between rural and urban prices in 1953-54 in Lucknow District. Attempts are, however, being now made for regular collection of rural prices from the rural centres, from where prices are regularly collected by the field staff of the Department of Economics and Statistics. Prices of pig and poultry meat have been deduced from goat meat prices with a suitable adjustment factor for each, the adjustment factor being determined on the basis of the ratio which existed between the prices in question and the goat meat prices in the year 1944-45 as recorded in the Animal Husbandry Department file on the relevant marketing report.

(iii) Fish and eggs

7. For evaluating output of fish, a rate of increase in the quantum of production has been worked out with the help of estimated marketable surplus of fresh water fish for the year 1948 and 1951 and the value of fish in 1948 has been increased every year at that rate. This has had to be done because figures of output of fish every year are not available.

8. For estimating the value of egg production, the number of eggs have been multiplied by weighted average retail price from 12 urban centres, weights being the number of hens as given in the Livestock Census. For each centre, price has been taken as the average over the financial year.

(iv) Hides and skins

9. An average weighted price for the financial year obtained from 6 centres in case of skins and 3 centres in

case of buffa is used for evaluation, weights being the number of animals slaughtered (cattle in case of kips and buffaloes in case of buffa) at the particular centre, as given in the Livestock Census Report of U.P. For obtaining the value of skins, distinction has been made between prices of goat-skins and sheep-skins. Goat-skins have been evaluated at a weighted average wholesale price from eleven urban centres while sheep-skins at a wholesale price obtained from only one centre. Weights employed are the number of animals slaughtered at the particular centre.

(v) Wool

10. A simple average of prices obtained from two centres, Kanpur and Almora, over the financial year has been utilised for evaluating wool. The selection of centres accounts for differences in the quality of wool. In the absence of any suitable data for determining weights, only simple average has been utilised.

(vi) Bones

11. No evaluation is at present made for bones, but it is proposed to take into account the quantity of bones exported from the State and steps are being taken to ascertain prices at which it may be evaluated.

Forest products

12. The Annual Administration Report of the Forest Department, U.P., which is the source for the required information, provides both the quantities and the value of the forest products. The value figures as given in the Report are utilised. The Report, however, does not evaluate the forest produce removed by purchasers, which is therefore evaluated separately but at the same price as worked out in the case of those enjoying rights, privileges and free grants.

Industrial output

13. The products which are covered by the output approach are evaluated at their ex-factory value.

14. For the sectors in which income approach has been adopted, the method does not envisage utilisation of price data and for working out the estimates of income at constant prices the estimates of income at current prices are adjusted, on the basis of Consumer Retail Price Index Number for mill workers at Kanpur for that year. These indices are prepared and published by the Labour Commissioner, U.P.

**FIRST INDIAN CONFERENCE
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**A NOTE ON THE RELATIVE RATE OF CAPITAL FORMATION
IN WEST BENGAL IN THE HOUSING SECTOR**

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**CALCUTTA
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The views expressed in the papers are those of the authors and are not necessarily those of their institutions/departments

A NOTE ON THE RELATIVE RATE OF CAPITAL FORMATION
IN WEST BENGAL IN THE HOUSING SECTOR

S.N.Das Gupta

Estimation of capital formation in India has not been undertaken on a systematic basis. There are undoubtedly many difficulties and the task of an accurate assessment will remain problematical for a long time to come. Satisfactory estimates cannot be made until the statistical picture on the different aspects of our economy is available in a more complete form.

2. It may, however, be useful to study what light the statistics that are readily available throw on some aspects of capital formation. An attempt has been made in this paper to have a dimensional idea of the relative rate of addition to the housing wealth in West Bengal during the recent years based on the statistics that are available.

3. The estimates may be made separately for the three regions (a) Calcutta Corporation area, (b) Municipal areas of the different districts and (c) rural areas. (In the non-municipal urban areas the housing characteristics may be assumed to be the same as in rural areas.)

4. For the Corporation areas, the figures of annual realisation by the Corporation on account of "Consolidated rates" are available. The rate is dependent on the annual valuation of the houses.

5. The annual valuation once fixed remains in force for a long time until a re-assessment takes place in which case, the property remaining the same, the value may theoretically go up or down. It should be apparent that the changes that are observed from year to year in these figures of annual realisation may arise due to one of three factors: (1) due to an increase or decrease in the number of houses that are brought under assessment, (2) due to a change in the rates of taxation or due to a change in the methods of valuation during the period or (3) due to a change in the administrative efficiency of the tax-collecting organisation.

6. It is also highly probable that all these factors influence the figures not instantaneously but with a lag of at least one year. It may not be unreasonable to assume that any scheme of general economic improvement like the Five Year Plans would take about 3 to 4 years' time for their effects being reflected in the realised values of consolidated rates (or taxes on houses in the case of municipalities). Thus a study of the period 1948-49 to 1954-55 would be expected to reflect the situation as it obtained when the Five Year Plans were introduced.

7. The Calcutta Municipal Act 1951 came into force on May 1, 1952 and the rates of taxation were not changed after that date. The published records do not indicate any change in the rates of taxation immediately prior to this date. The process of revaluation of house-property is a continuous process and the valuation of a particular house may go up or down as a result of revaluation. But the work is slow, perhaps too slow to show a remarkable effect in the course of change in figure of realisation from year to year. If for any particular reason, the annual collection is low in one year, it should normally be compensated during the next year and we should get a high figure. The basic trend of figures over a number of years, say 6 or 7 years, should not be affected by this sudden drop or rise of particular years.

8. Under these circumstances, it may be assumed that apart from a gradual toning up of administration, the changes in the annual realisation figures are due mainly to additional houses built up during the successive years, other effects having largely balanced out each other. Under this limiting condition, it would appear that these figures provide a tool of measurement of the relative rate of addition to the house-property in the Corporation area. This may be taken as the relative rate of capital formation in the housing sector.

9. Let the total valuation of all house property in Calcutta be denoted by y . If we express y as a function of time, i.e., $y = f(t)$ and if we have a number of observations Y_1, Y_2, \dots, Y_n against time periods t_1, t_2, \dots, t_n , then $\frac{\Delta y}{\Delta t} =$ capital formation in the housing sector per unit of time, and $\frac{1}{y} \frac{\Delta y}{\Delta t} =$ rate of capital formation at the value y . It may reasonably be assumed that this rate remained constant over the short period of 6 to 7 years, which we have taken up for study.

$$\text{Thus, } \frac{1}{y} \frac{dy}{dt} = b$$
$$\text{or } \log y = a + bt$$

where "b" is the relative rate of capital formation.

10. Annual valuation v , of house, may be looked upon as a fraction of the total value of the house i.e. $v = k_1 Y$ and the "consolidated rate" may be considered as a fraction of annual valuation (In the case of Calcutta Corporation this fraction changes according to the magnitude of the annual valuation. But since a drastic change in composition of valuation of houses according to magnitude is not likely to take place within a short period of 6 to 7 years, this fraction may also be taken as a constant = k_2 , say)

11. Thus the figure of realisation on account of consolidated rate = $u = k_2 v = k_1 k_2 y = ky$, say

$$\text{Then } \frac{du}{dt} = k \frac{dy}{dt}$$
$$\text{and } \frac{1}{u} \frac{du}{dt} = \frac{1}{y} \frac{dy}{dt} = b$$
$$\log u = a + bt$$

Thus the relative rate of capital formation is measured by the coefficient b in the set up

$$\log u = a + bt$$

where u represents the annual realisation on consolidated rates.

12. For the Calcutta Corporation this co-efficient has been calculated by the least square method and is shown in table (1) below:-

Table (1): relative rate of addition to house property in the Calcutta Municipal area.

| year | receipts from consolidated rate in Calcutta. (Rs. lakhs) | budget estimates for consolidated rates in Calcutta (Rs. lakhs) |
|--|---|--|
| (1) | (2) | (3) |
| 1948-49 | 256 | .. |
| 1949-50 | 267 | 305 |
| 1950-51 | 294 | 314 |
| 1951-52 | 337 | 303 |
| 1952-53 | 331 | 375 |
| 1953-54 | 360 | 366 |
| 1954-55 | 401 | 412 |
| relative rate of addition for the period upto 1954-55 | 0.0320 | 0.025 |
| relative rate of addition for the period upto 1952-53 (after which period the figures of Tollygunj are reported to have been included) | 0.0324 | 0.023 |

Two separate rates have been calculated, one for the figures of actual receipts and the other for the figures of budget estimates. The relative rate from budget estimates is slightly lower than that from actual receipts. Again, since the figures of Tollygunj are reported to be included in the figures from 1953-54 onwards, rates have been calculated separately for (1) the entire period and (2) for the period upto 1952-53. The rates, however, remain practically the same.

13. It is interesting to observe that the relative rate of capital formation is of the order of 3.2 per cent in the Calcutta Corporation area. This means that the value of property that is added per year in the housing sector during this period is only 3.2 per cent of the total value of house property. By all

consideration, this is a poor state of affairs. Considering the acute housing shortage in urban areas in general, and in metropolitan cities, in particular, and keeping in view the fact that investment in house-property is one of the safest investments ensuring quick returns in cash it appears the relative rate of capital formation ought to be higher in this sector than in others. If the relative rate be 3.2 per cent in this sector, it is likely to be less in other sectors. It should, however, be noted that this rate does not imply that 3.2 per cent of the income from house-property is capitalised. The capitalised value represents flow into this sector from all sectors in the economy.

14. The problem of estimation for the municipal areas is similar. The amounts of realisation on account of "taxes on houses and lands" are available in the municipal returns. The rates of taxes to the total annual valuation for different municipalities and for different years are also known. The estimates of total annual valuation may, therefore, be made for each year, for each municipality. Since some of these municipalities are quite small, and as the relative rates are not likely to differ much within the same district, the figures have been pooled up for each district. The amount of land being now constant, on the same arguments as in the case of the Calcutta Corporation, the changes in the estimates of annual valuation may be considered as due mainly to the change in the number of houses.

15. If we now, therefore, fit an equation

$$\log u = a + bt$$

for these figures of annual valuation, then the b coefficient will measure the relative rate of capital formation in the different districts. The fitting has been done by the least square method and the figures are shown in table 2. Some of the municipalities came into existence some time during this interval. Also, figures for some of the municipalities are not available for all these years. In order to make these figures of total

for different years comparable, only those municipalities, figures for which were available throughout the period, were taken. For this same reason, estimates could not be made for all the districts. It is interesting to observe that the relative rate was of the order of 4.0 per cent, ranging from 2.5 per cent in Burdwan district to 5.3 per cent in Darjeeling district.

Table (2) relative rate of capital formation in the house property sector in Municipal areas of West Bengal.

| districts | annual valuation of houses (Rs. lakhs) in Municipal areas* | | | | | | | rela rate addi = 1 |
|---------------------|--|---------|---------|---------|---------|---------|---------|-----------------------------|
| | 1948-49 | 1949-50 | 1950-51 | 1951-52 | 1952-53 | 1953-54 | 1954-55 | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| 1. Burdwan | 37.79 | 36.70 | 43.10 | 46.84 | 45.26 | 53.78 | 48.52 | .0241 |
| 2. Bankura | 8.91 | 10.00 | 11.88 | 10.02 | 11.54 | 15.13 | 13.81 | .0328 |
| 3. Midnapore | 12.99 | 10.50 | 10.93 | 12.36 | 15.38 | 17.46 | 17.27 | .0342 |
| 4. Howrah | 142.51 | 142.98 | 157.70 | 164.11 | 185.61 | 183.58 | 255.17 | .0376 |
| 5. Hoogly | 50.37 | 51.87 | 63.24 | 74.49 | 89.42 | 84.45 | 87.22 | .0466 |
| 6. 24-Pargan- as | 145.59 | 149.00 | 170.72 | 184.15 | 215.18 | 228.31 | 246.37 | .0413 |
| 7. Nadia | 22.61 | 24.64 | 30.08 | 30.27 | 35.84 | 35.48 | 36.01 | .0351 |
| 8. Murshida- bad | 16.69 | 17.99 | 17.26 | 18.05 | 19.08 | 21.93 | 25.78 | .0286 |
| 9. Maldah | 3.96 | 6.89 | 5.68 | 6.82 | 7.10 | 7.26 | 8.35 | .0398 |
| 10. Jalpaiguri | 8.29 | 7.60 | 11.12 | 10.01 | 11.83 | 12.58 | 12.38 | .0353 |
| 11. Darjeeling | 26.69 | 26.48 | 30.24 | 36.30 | 49.10 | 47.00 | 48.61 | .0532 |
| Total | 476.40 | 484.65 | 551.95 | 593.42 | 685.34 | 707.01 | 799.49 | .0391 |

* Excluding municipalities, the figures of which are not comparable over the successive years.

16. It would be useful to compare this relative rate of capital formation in the urban areas with that in the rural areas. For rural areas no taxation data are available which can be directly associated with the number of houses. For comparative purposes, even a rough estimate would be helpful and therefore it was examined how far the census figures were useful in this respect.

The figures of census are known to be unreliable on account of various factors e.g. unhelpful attitudes of people and the political atmosphere not congenial for an economic assessment of the people. But, so far as the numbering of houses by census enumerators, is concerned, there is no reason to believe that the process of numbering of houses was also equally vitiated and that the number of houses as given in the census gives only a distorted picture of the country-side. The other difficulty about the census is regarding change in definition. There are obvious difficulties of comparison in the urban areas. But it seems that for the country side, this fine distinction in definition is not very material and the number of houses should be reflected by the number of "occupied houses" as given in the census.

17. For the rural areas, however, we shall have to contend with the period 1941-51. Also since we have no satisfactory estimates regarding ~~valuation of houses~~, we shall have to be satisfied with the ~~number of houses~~. Obviously if the standard of houses or the quality of the structures has undergone changes, the conclusion about capital formation drawn from the changes in ~~number of houses~~ will be erroneous to the same extent.

18. Now, assuming a similar growth equation for rural houses as in the case of valuation of houses in municipal areas that is,

$$\log y = a + bt \text{ (where } y \text{ is the number of houses and } t \text{ is the time).}$$

we have

$$b = \frac{\log y_{1951} - \log y_{1941}}{10} = \text{relative rate of capital formation during 1941-51}$$

This has been done in table 3. It will be seen that for most of the districts this rate is less than 1 per cent. Only in case of Nadia and West Dinajpur it is slightly over 1% and in Maldah it is very near 1%, possibly due to large influx of refugees in rural areas of these districts. Thus it may be generally said that the rate in rural areas is about one-third of that in urban areas.

19. Just for the sake of comparison the change during the period 1931-41 may also be studied. Since figures of 1931 for the districts which were partitioned, are not available for the part that is in the Indian Union, such districts may be left out. These rates for different districts are also shown in the same table. Though in some districts, there are wide differences, for some districts, the rates for the two periods are quite consistent.

Table (3) relative rate of change in number of houses in rural areas

| districts | Census occupied houses in rural areas in thousand(y) | | | relative rate of change | |
|-------------------|--|-------|-------|---|---|
| | 1931 | 1941 | 1951 | $\frac{1}{10} (\log \frac{Y_{t+10} - 1}{Y_t - 1})$ 1931-41 | $\frac{1}{10} (\log \frac{Y_{t+10} - 1}{Y_t - 1})$ 1941- |
| (1) | (2) | (3) | (4) | (5) | (6) |
| 1. Burdwan | 352.2 | 339.8 | 415.6 | .0016 | .0087 |
| 2. Birbhum | 208.4 | 210.6 | 224.8 | .0005 | .0028 |
| 3. Bankura | 222.0 | 239.8 | 266.7 | .0034 | .0046 |
| 4. Midnapore | 563.3 | 587.3 | 668.1 | .0018 | .0056 |
| 5. Howrah | 173.2 | 208.8 | 235.9 | .0081 | .0053 |
| 6. Hooghly | 211.3 | 229.0 | 276.0 | .0035 | .0081 |
| 7. 24-Parganas | 410.5 | 598.4 | 640.3 | .0164 | .0029 |
| 8. Calcutta | .. | .. | .. | .. | .. |
| 9. Nadia | .. | 141.3 | 198.0 | .. | .0147 |
| 10. Murshidabad | 267.5 | 303.0 | 326.9 | .0054 | .0033 |
| 11. West Dinajpur | .. | 107.5 | 142.3 | .. | .0122 |
| 12. Maldah | .. | 141.0 | 176.8 | .. | .0098 |
| 13. Jalpaiguri | 205.2 | 188.0 | 188.2 | -.0038 | .0000 |
| 14. Darjeeling | 60.0 | 65.8 | 74.3 | .0040 | .0053 |
| 15. Coochbehar | .. | 120.2 | 135.7 | .. | .0053 |

20. The rates for the rural areas may be considered as slight under-estimates. The reason is that some of the rural areas turn into urban areas and vice-versa during the inter-censal period. The net effect is, of course, towards gradual urbanisation of areas. The result is that the comparison of figures for the

successive years for the rural areas, is not strictly a comparison for the identical area. An adjustment for this factor has not been possible as relevant data are not available.

21. Before concluding this note, it may be examined whether these rates of capital formation are at constant prices or at current prices. For the rural areas obviously the rate is at constant prices. For the urban areas however, there is some amount of obscurity. The additional houses that spring up are obviously assessed at current prices. Also there is a process of revaluation of old houses which is an attempt to pull up the assessments as at market rates. But the addition is relatively insignificant and the reassessment is an extremely slow process. From the public materials it seems that it takes about 12 years to complete one round of reassessment in the Corporation areas. On this basis, about 8% of houses are assessed at current rates each year. In the other municipal areas this percentage is likely to be much lower if the system of reassessment is in operation at all. Thus it would not be unreasonable to assume that the component of the valuation of houses in Corporation or Municipal areas at current prices is an insignificant part of the total valuation of houses perhaps not exceeding 10% at any place.

22. That the adjustment for current prices for that small part of the valuation of houses (which may be considered as calculated at current prices) would not affect the rates, would be clear from a reference to Table 4. The Calcutta Building Price Index with 1939 as base (published in the Calcutta Prices Current & Money Market Report) stood at 324.6 in 1948 and gradually rose to 362.1 in 1954, an increase of about 12% in the course of 6 years.

Table (4): Calcutta building price index.

| Year | Index |
|------|-------|
| (1) | (2) |
| 1948 | 325 |
| 1949 | 331 |
| 1950 | 340 |
| 1951 | 343 |
| 1952 | 343 |
| 1953 | 348 |
| 1954 | 362 |

23. It is obvious that even if an assessment could be made the small part of the valuation calculated at current prices, a small annual increase of about 2% in the market rates would materially alter the conclusion drawn in this note.

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RESEARCH IN NATIONAL INCOME

ESTIMATES OF GOVERNMENT CAPITAL FORMATION
IN INDIA DURING 1955-56

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In this paper an attempt has been made to prepare the estimates of capital formation from capital expenditure incurred by Central, States and Local Governments during 1955-56. The capital expenditure has been classified into new works, renewals and replacements, net purchase of assets and increase in stocks. The distribution of capital expenditure by departments and by character has also been given. The former includes Railways, Communications, Irrigation Works, Multipurpose river schemes, Electricity schemes, Civil Works and others. In the latter distribution, a distinction has been made between expenditure on buildings, roads and bridges, other construction and works, transport equipment, and machinery and other equipment.

2. The public authorities generally prepare financial accounts which show details of their income and expenditure and form a useful material for the purpose of estimating capital formation. A distinction is usually made between the items of "expenditure met from revenue" and the "capital accounts not met from revenue". In order to prepare an estimate of government capital formation, it is necessary to examine carefully all the items of expenditure both "met from revenue" and "not met from revenue".

3. The disbursements of the Central Government are classified under different groups or "Heads of Account". The cost of constructing or acquiring a concrete asset of a lasting nature, which yields revenue or which avoids a recurring commitment, is classified generally as capital expenditure. Among the various Heads of Expenditure are

also included the following:

- 83. Payments of Commuted Value of pensions.
- 83 A. Capital Outlay on Sterling Pensions.
- 85. Payments to Retrenched Personnel.
- 85.D. Capital outlay on payments to Displaced Persons.
- 86. Defence Capital Outlay.
- 87. Capital outlay on Schemes of Government trading.
- 88. Grants to States for Development.

4. An examination of the expenditure classified under the above "Heads of Expenditure" shows that it is difficult to include whole of the expenditure under these items in the capital formation of the Central Government although they are classified as capital expenditure. The expenditure incurred for payments of commuted value of pensions or payments to retrenched personnel do not result in the creation of a tangible fixed asset of the Central Government. Similar is the case for expenditure on "Capital Outlay on Sterling Pensions". The payments to displaced persons may be in the form of property or in cash as a compensation. They are transfer payments and so cannot be included in the capital formation of the Central Government.

5. The expenditure on "Defence Capital Outlay" presents conceptual difficulties. The problem is whether whole of the expenditure should be excluded from the capital formation of the Central Government. The publication "Defence Services Estimates" does not give details of the expenditure on buildings and other works constructed by the Defence Department which could be included in the capital formation and so the only alternative is to classify all expenditure under "Defence Capital Outlay" as expenditure on consumption.

6. The expenditure under the Major Head 87 "Capital Outlay on Schemes of Government Trading" covers the material

and equipment under the T.C.A. Programme, purchase of cotton under the American Aid Programme, material and equipment under the Colombo Plan, scheme for the purchase of fertilisers, land reclamation scheme, import of sugar, material and equipment

and under the United Nations Assistance Programme, etc.

The recoveries and receipts from the above schemes are also included in this Major Head. The procedure* adopted in the

Final Report of the National Income Committee was to relegate the pure purchasing and selling activity under this Major Head to the borrowing account. There is no difficulty in the classification of expenditure incurred on the land reclamation scheme but the problem is whether the pure purchasing and selling activity should be relegated to the borrowing account or the net expenditure under the schemes should be classified as "change in stock".

7. Expenditure under the Major Head 88 "Grants to States for Development" is excluded from the capital formation of the Central Government as the capital formation takes place only in those States which receive the grants and later on spend the amount on their various development schemes.

8. Examination of the Heads of Expenditure in the revenue account shows that Major Head 19 "Construction of Irrigation Works financed from ordinary Revenues" and Major Head 53 "Capital Outlay on Electricity Schemes" consist of the items of capital expenditure and the amounts involved in these Major Heads can be included in the estimates of capital formation.

9. For expenditure incurred on Civil Works, there are two major Heads, Major Head 50 "Civil Works" and Major Head 81 "Capital Outlay on Civil Works". The former is in the revenue account and the latter is in the capital account. From the

*Final Report of the National Income Committee, February, 1954. The Department of Economic Affairs, Ministry of Finance, Government of India, p.96.

year 1956-57 onwards, the works which cost Rs.20,000* or more are included in the capital account. The works costing less than Rs.20,000 are included in the capital account only if they form part of a connected scheme, the total cost of which exceeds Rs. 1 lakh. The expenditure on works which do not satisfy the above criteria is charged to the revenue accounts. However, for the year 1955-56, the financial limit was Rs. one lakh instead of Rs.20,000. The problem which arises for estimating capital formation in the government sector is whether this particular financial limit should be taken into consideration for the purpose of making a distinction between the current and capital expenditures. For the purpose of this paper all new expenditure on Civil Works has been treated as capital expenditure irrespective of the amount involved. The second alternative is to accept the changing financial limit and also the revenue and capital classification of the government budgets.

10. The second problem in the Major Head 50 "Civil Works" arises because it includes expenditure on "Repairs" in addition to expenditure on "Original Works". The expenditure under "Repairs" covers all operations other than new works, which are necessary in order to maintain in proper condition works which are in ordinary use**. Under "Original Works" is included expenditure on all new construction whether of entirely new works or of alterations and additions to existing Works, as well as repairs to newly purchased or previously abandoned buildings which may be necessary before they can be brought into use. It also includes all substitution of one variety of work for another, such as that of a tiled for a thatched roof to a building, where the new work represents a genuine increase in the permanent

* Explanatory Memorandum on the Budget of the Central Government for 1956-57, p.80.

** Combined Finance and Revenue Accounts, 1946-47, p.233.

value of the property as an asset.* The expenditure on "Original Works" may be included in capital formation but how far can it be justifiable to include the expenditure on repairs in the estimates of capital formation. In the First Report of the National Income Committee,** it was stated that expenditure on minor repairs and annual contingent replacements was not included in the capital account. From this it can be concluded that expenditure on major repairs may be included in the capital expenditure. From the details available about the expenditure included under Major Head 50 "Civil Works" it is not possible to segregate the expenditure on major repairs from minor repairs. The solution of the problem is to classify whole of the expenditure under repairs as current expenditure as has been done in this paper. The other alternative is to include whole of the expenditure in capital formation.

11. The third problem under Major Head 50 "Civil Works" arises because it does not contain any estimate of depreciation the provision for which should normally be made in the current account. For estimating net capital formation, the provision for depreciation has to be estimated. This problem of estimating depreciation does not arise in the case of Railways or Post and Telegraph which maintain a Depreciation Reserve Fund. The receipts to this fund are made from the current account and the expenditure from this fund is made to cover the cost of renewals and replacements. It is possible that some expenditure on "Repairs" in the Major Head 50 may be of the nature of renewals and replacements of the Civil Works. In that case it becomes difficult to segregate the two items of provision for depreciation and expenditure on renewals and replacements from the proceeds.

Government Finance and Revenue Accounts, 1946-47, p.233.

** First Report of the National Income Committee, April 1951, The Department of Economic Affairs, Ministry of Finance, Government of India, p.96.

12. The estimates of government capital expenditure in India during 1955-56 are given in the table below. Notes to some of the items in this table are given in the end of this paper.

Table : estimates of government capital expenditure in India during 1955-56.

(Rs. crores)

| | new works | renewals and replacements | net purchase of assets | increase in stock | total |
|----------------------------------|-----------|---------------------------|------------------------|-------------------|-------|
| (1) | (2) | (3) | (4) | (5) | (6) |
| (a) BY JURISDICTION | | | | | |
| 1. Centre | 126 | 54 | 17 | 1 | 198 |
| 2. State | 287 | 2 | 2 | -2 | 289 |
| 3. Local | 26 | 1 | 1 | - | 28 |
| 4. Total | 439 | 57 | 20 | -1 | 515 |
| (b) BY DEPARTMENTS | | | | | |
| 1. Railways | 76 | 52 | 1 | 3 | 132 |
| 2. Communications | 11 | 2 | - | - | 13 |
| 3. Irrigation works | 71 | 1 | 1 | - | 73 |
| 4. Multipurpose river schemes | 53 | - | - | -1 | 52 |
| 5. Electricity schemes | 43 | - | - | -1 | 44 |
| 6. Civil works | 113 | - | - | -4 | 109 |
| 7. Others | 72 | 2 | 18 | - | 92 |
| 8. Total | 439 | 57 | 20 | -1 | 515 |
| (c) BY CHARACTER | | | | | |
| 1. Buildings | 62 | 2 | - | - | 64 |
| 2. Roads and bridges | 73 | - | - | - | 73 |
| 3. Other construction and works | 234 | 20 | - | - | 254 |
| 4. Transport equipment | 47 | 29 | - | - | 76 |
| 5. Machinery and other equipment | 23 | 6 | - | - | 29 |
| 6. Net purchase of assets | - | - | 20 | - | 20 |
| 7. Increase in stock | - | - | - | -1 | -1 |
| 8. Total | 439 | 57 | 20 | -1 | 515 |

13. The distribution of government capital expenditure "by character" has one important limitation that it over-estimates the expenditure under item 3, "Other Construction and Works" and thus underestimates the capital expenditure under other items. This limitation has arisen because of the lack of sufficient details in the government accounts for the purpose of preparing this particular classification.

14. An examination of the above table shows that the government gross fixed capital formation during 1955-56 amounted to Rs.496 crores (new works = 439 + renewals and replacements=57). The provision for depreciation is estimated to be Rs.88 crores which includes Rs.57 crores on account of expenditure on renewals and replacements and Rs.31 crores on account of provision for depreciation of other works for which no provision has been made in the budgets. Taking the national income in India for 1955-56 to be Rs.9,990 crores, the net government fixed capital formation of Rs.408 crores forms 4.1 per cent of the national income.

N O T E S

(a) By jurisdiction

1. Centre: Includes the accounts of Central Government, Railways, Communications and the States of Kutch, Manipur, Tripura, Pondicherry, Andaman and Nicobar Islands whose accounts are included in the budget of the Central Government.

2. States: Includes the accounts of the former States of Andhra, Assam, Bihar, Bombay, Madhya Pradesh, Madras, Orissa, Punjab, Uttar Pradesh, West Bengal, Hyderabad, Jammu and Kashmir, Madhya Bharat, Mysore, PEPSU, Rajasthan, Saurashtra, Travancore-Cochin, Ajmer, Bhopal, Coorg, Delhi, Himachal Pradesh and Vindhya Pradesh.

3. Local: Includes the accounts of Port Trusts of Bombay, Calcutta, Madras and Tuticorin, Municipal Corporations, Municipalities, District and Local Boards, Improvement Trusts and Village Panchayats.

(b) By departments

1. Railways, 2. Communications : Includes the capital expenditure incurred by Central Government only.

7. Others : Includes the capital expenditure incurred on Forests, Public Health, Agriculture, Industrial Development, etc. etc.,

(c) By character:

1. Buildings: Includes capital expenditure on residential buildings and non-residential buildings wherever shown separately from other expenditure on works in the government accounts.

2. Roads and bridges: Includes expenditure on National Highways, Provincial Highways, District and Village Roads, Road Bridges and Railway Bridges.

3. Other Construction and Works: Includes expenditure on irrigation works, multipurpose river schemes, electricity schemes, etc. and other works not included in ^{the} above item Nos. 1 and 2.

4. Transport equipment: Includes expenditure on ships, railway locomotives and carriages, and buses, etc.

5. Machinery and other equipment: Includes the expenditure on tools and plant, printing press machinery, etc.

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**ESTIMATION OF EQUIVALENT ADULT SCALES FROM
HOUSEHOLD BUDGETS**

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(Andhra University, Waltair)**

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- ii) A different scale is distinguished for each commodity.
- iii) The income scale which reflects the total effect of household composition is a weighted average of the specific scales.
- iv) The net effect on consumption of the addition of a person of a particular type to the household can be predicted only if both the specific and income scales are known.

The scales are estimated on the basis of the expenditure equation:

$$x / \sum \beta_i n_i = f(M / \sum n_i) + e$$

where x is the consumption of the household, n_i are the numbers of the i -th type person, M is the income of the household. Two alternative assumptions were made about the form of the function 'f'. They are:

$$f(m) = a + b \log m$$

$$(\text{with } m = M / \sum n_i)$$

$$\text{and } f(m) = am^\eta,$$

a , b , A and η are constants.

Rewriting the basic equation as

$$x / (a + b \log m) = b \sum \beta_i n_i$$

$$\text{and } xm^{-\eta} = A \sum \beta_i n_i,$$

Prais computed the correlation coefficient between the composite variables on the left side of the equation and the determining variable n_i on the right hand side. The correlation coefficient is to be calculated for different values of the constants, and those values chosen, which maximise the correlation coefficient. The β 's corresponding to this maximised value of the constants are then calculated.

Criticism

- (i) Though Prais started with the basic equation

$$x / \sum \beta_i n_i = f(M / \sum n_i)$$

in actual computation, he effects a simplification as

$$x / \sum \beta_i n_i = f(M / \sum n_i)$$

assuming the standard of living is to be measured by the per

capita income i.e. that all the coefficients of the income scale are known to be equal to unity. However the validity of this regression of consumption per adult unit upon the income per capita is doubtful.

(ii) Estimation of the scales in this method requires determination of the form of the Engel curve in the basic equation.

(iii) The actual computation is a very laborious process and necessitates programming for electronic computer.

The effect of household composition

4. Consider a household, with the composition vector (n_1, n_2, \dots, n_k) where n_i is the number of the i -th type of persons in the household.

5. In principle, two aspects of the problem may be distinguished. First there is the question of how an increase merely in the number of persons in the household affect consumption, all persons being of the same type. Secondly, there is the comparison of the affects resulting from the addition of the persons of different age-sex groups. In the practical analysis of empirical material such as family budgets, it is difficult to separate the two questions since if attention is confined to households containing the same type of persons, as required by the first question, the number of available observations is effectively reduced so that no significant answer is obtained. The answer given to the first question, though generally implicit, will plainly affect the estimates obtained as answers to the second aspect of the problem.

6. The total consumption in a household is an aggregate of individual consumption. Further an increase in n_1 leads to an increase in the consumption of the commodity (the assumption implied here is that the households under study belong to one particular class of society). Hence a basic equation may be set in the form of a regression scheme:

$$y = \sum_{i=1}^k \alpha_i n_i \dots \dots (1)$$

where y is the total consumption in a household and α_i are the

coefficients. The assumption of linear relation is both simple and realistic. And the only restriction we have, in this set-up is that the α_i should be positive for all 'i'.

Rewriting (1) with an additive error term, thus,

$$y = \sum \alpha_i x_i + \epsilon \quad (2)$$

it should be possible to estimate the coefficients α_i 's from family budget data, using regression methods so as to minimise the sums of square of residuals.

7. The estimate α_i is the share in the total consumption 'y' which accrues to the i-th type of person. Thus it reflects the consumption potential of the i-th type of person. Consider a change in the scale such that $\alpha_1 = 1$. Rewriting all other α_i 's on this scale we may obtain the relative consumption potentials for all i's (relative to the 1st type of person viz. the adult male). These relative consumption potentials $\frac{\alpha_i}{\alpha_1}$ may be taken as the adult equivalent units specific to the commodity, under study.

8. The next step is to derive general scales, otherwise known as all-item scales. One method is to obtain weighted aggregates (the weights being proportional to the amounts of expenditure committed on these various commodities). An alternative and one which is uniform with the method adopted for specific scales is to work out the regression between the total expenditure and the household composition.

9. This in brief is the general outline of the method. However, the restriction in the set-up viz. the non-negative character of the α_i 's raises certain difficulties. To overcome these, the regressions have to be modified stage by stage. We shall discuss them in the following section.

Difficulties in estimation

10. Difficulties in estimation may stem from two sources:

- i) Presence of irrelevant variables in the set-up, and

ii) Presence of multi-collinearity among the variables.

The presence of these sources of difficulties may result in either negative value to one or more of the estimates α or meaningless estimates, or both.

i) The problem of irrelevant variables:- The problem of irrelevant variables is basic in the field of regression studies. (It is more popularly known as the problem of 'non-sense correlation').

11. Consider the consumption of the expenditure group 'food'. In the study of 'food' it is usual to consider all the types of persons viz. adult male, adult female, adolescent, child and infant will have their shares in the consumption of food.¹ However, in the last type, the infant's pattern of food consumption is vastly different from that of the rest. Further, its share in 'food' is negligible, since the only item of consumption of an infant in the group 'food' seems to be milk and the amount spent on 'milk' in a worker's household is small. Thus the inclusion of infant in the set of explanatory variables for 'food' may lead to meaningless estimation of regression coefficients. In fact, it is found on actual computation, that the share of an infant's expenditure in the total of the household is about 4 p.c. (refer relevant subsequent section). Thus in the five main expenditure groups, which we have studied here viz.: i) food ii) clothing, iii) fuel and lighting, iv) furniture and household requirements, v) housing, and vi) miscellaneous, the variable 'infant' seems to be relevant in group iii and v.

¹ 1) Usually persons in a household are so classified such that the types differ sharply as regards their consumption abilities. Thus Prais enumerates eight different types viz. 1) adult male, 2) adult female, 3) male of age 14-17, 4) female 14-17, 5) 10-13, 6) 5-9, 7) 1-4, 8) ≤ 1 . However paucity of data, made us to work with only five type viz. 1) adult male, 2) adult female, 3) adolescent of either sex (13-17), 4) child of either sex (3-13) and 5) infant of either sex (≤ 3). It should be noted that there may not be significant differences in the consumption potentialities between persons of different sexes in the age group (13-17) and also between those in the age group (3-13) so as to merit further subdivision of the groups. Further the division of the age group (3-13) into two groups, may have to be done arbitrarily and it is doubtful whether such arbitrary division can lead to better estimation.

ii) The presence of multi-collinearity

12. In the regression set-up, though the variates may be relevant to the case under study, it is possible to obtain meaningless estimation due to the existence of multi-collinearity among the variables.

13. A complete study of this is made in a separate paper, and only a brief outline of the problem will be given here. In the present work it is revealed that a linear relationship seem to exist between the variables 'adolascnt' and 'infant'. (To be more precise, the conditional means of the 'adolascnt' variable, regress linearly on the 'infant' variable). This clearly shows, that the effect of the factor adolascnt may be explained by a linear function of the factor infant. To that extent the effect of the adolascnt is underestimated and as a consequence that of the infant overestimated.

14. In such cases, it may be fruitful to study the regression patterns by classifying the sample of households as those that do not contain adolascnts and those that do not contain infants. The estimates in such a division may give us some measure of the degree of overestimation and underestimation of the factors concerned. With this help, the original estimates for the correlated variables may be corrected.

General scales.

15. In estimating the general (or all-item) scales, a similar procedure i.e. a regression set-up between the total expenditure and the household composition, is adopted.

16. However, it is felt that the inclusion of the variable 'infant in the setup', may not have much relevance, since the amount of expenditure committed on account of the infants form a small part of the total expenditure. Hence the work is carried excluding the infant variable in R.H.S. of the basic equation(1) and also taking total expenditure as total expenditure minus the cost of the infants.

17. The cost of the infant is an aggregate of the infants' consumption of various items in the budget. This aggregate can not be had at, directly, from the budget. It has to be estimated. The technique adopted for estimation of the cost of the infant is given in the next section.

18. We give here the conversion scales both specific (to the groups under study) and general, obtained from the study of 75 working-class household budgets.

Table (1): conversion scales for the main groups of expenditure.

| (1) | specific | | | | | | | general |
|----------------------|----------|---------------|------------------------------|--|--------------|----------------|--------|---------|
| | food | cloth- ing | fuel and light- ing | burni- ng* and house- hold require- ments. | hou- sing | edu- cation | misc- | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | |
| 1. adult male | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| 2. adult female | 0.4293 | 1.2617 | 0.5900 | 1.1015 | 0.0282 | 0.1634 | 0.3662 | |
| 3. adolescent(12-17) | 1.0072 | 0.6736 | 1.0155 | 1.1692 | 1.1194 | 0.9309 | 1.0091 | |
| 4. child(3-13) | 1.4049 | 1.9223 | 0.2996 | 0.0607 | 0.3295 | 0.2252 | 0.9279 | |
| 5. infant. | -- | -- | 2.6437 | -- | 1.8878 | -- | 0.1302 | |

*Information relating to this group is extremely scanty. As such not much reliance may be given to the estimates.

The cost of an infant

19. Generally expenditure on infants is a minor item in the budget of a worker's household. In fact, during the survey of urbanization of Visakhapatnam, most of the householders answered in the negative to the question whether they were led to any extra expenditure due to infants in the household. This answer, though startling may yet be true. It may be viewed that though there is no explicit expenditure due to infants, their presence may encroach implicitly into the expenditure of the household. Thus it is quite usual in the Indian household for a mother to sacrifice her share in the family purse, in order to accommodate

her baby. Hence though the total consumption may not change due to the addition of an infant to the household, the consumption pattern among the persons in the household may change ---- a sacrifice in the case of a mother or the elder brother and a consequent provision for the infant.

20. Thus, at least in principle, a certain amount of expenditure should be apportioned to the infant. Among the various items of consumption in household budget, the only items of expenditure in which infant has a part are i) milk, ii) fuel and lighting and iii) housing.

21. To estimate the cost of the infant, the following analysis is made:

Let the expenditure of the household be Y

and let the expenditure of milk in that household be Y_m

Let the size of the household be S_m (in the case of milk)*

Hence the share of infant in the expenditure on milk

$$= \frac{Y_m}{S_m} \times C_{mi}$$

where C_{mi} is the conversion scale of infant in the case of milk.

Similarly, the share of the infant in the case of other items can be obtained. Hence we have the following

$$\frac{Y_m}{S_m} \times C_{mi} + \frac{Y_f}{S_f} \times C_{fi} + \frac{Y_h}{S_h} \times C_{hi}$$

as the aggregate estimate of the cost of the infant in the household. Averaged over all households we obtain an unbiased estimate of the cost of infant. Actual computation, based on this method revealed that the average expenditure per infant is about 4 p.c. in the total.

Conclusions

22. The following conclusions may be drawn from this study:

- (i) Women's share except in the case of clothing is very low.

* These sizes are obtained by using the specific scales obtained in the previous section.

- (ii) Children between the ages 3-12 are responsible for a major part of the expenditure.
 - (iii) The head of the household claims that no additional expenditure is incurred on account of addition of infants to the household. Hence it may be inferred from (1) and (2) that the infant is being provided at the sacrifice of others, possibly the adolescents and the adult women.
 - (iv) The head of the household seen mainly to readjust or reallocate expenditure on members of the household soon after the addition to it by an infant, without increasing the total expenditure.
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NATIONAL ACCOUNTS AND SECONDARY INFLATION

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NATIONAL ACCOUNTS AND SECONDARY INFLATION

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Introduction

At present our national income estimates include generally all commodities and services that may have an actual or imputed money-value. The differentiation between the various sectors as shown in the current statements of national income is more or less of a descriptive nature. Whatever may be the appropriateness of this method to the concept of static welfare in neo-classical economics, it is too inclusive to serve the need for specifically growth-oriented aggregates. This paper attempts, therefore, to examine the need for some appropriate additions to the present scheme of maintaining national accounts in India in order to get hold of methods that might bring out the constraints on economic growth in an under-developed economy of our type.

2. We take as the point of departure for our inquiry the contention that national income should be defined so as to exclude the tertiary sector. Some East European economists justify such an exclusion on the ground that the national income should be so defined that it is co-extensive with the most all-inclusive aggregate which, it is the generally accepted object of policy to maximise. The Bulgarian economists, Kiranov, for example, writes: 'For Bulgaria, a poor country, it is important to establish the volume [of income] which can serve as a basing-point for the development of the economy.' The clear implication of this is that it is unnecessary, and may even be positively misleading, to have the same definition of national income in countries at different stages of development. That, however useful it may be to include all services in developed or hyper-developed economics, in Bulgaria (or Nigeria) one can afford to neglect a whole lot of services, whether they are performed in the family circle or for money consideration, because they are a function of property and lack of opportunity to do anything else,

and also, ^{one} might add, because, being almost one hundred percent labour-intensive, they do not make any demands on the resources allocated or available for investment. More than this, it is indeed implied that the movement in any index of income which includes all tertiary production will actually give a misleading picture of the progress of a developing but still under-developed economy. "(Income and Wealth, Series IV, "Social Accounting in Eastern Europe" by E.P.Jackson, p. 249-50).

3. Let us not enter here into the niceties of several criteria for including or excluding a certain sector on the grounds of flexible definitions of economic activity, monetisation locus or the so-called overhead costs of running an economy. It would be entirely possible to adopt the policy-oriented definition of national income and the approach to the various sectors suggested in the foregoing quotation but for the implications of the needs to adapt such a definition and approach to the exigencies of planning in a country marked by 'a different stage of development' within the framework by a 'mixed economy'. The crucial question is to select the most important differentia specifica that marks out the 'different stage of development' and the implications thereof for the assumption of a 'mixed economy'. In India today any such discerning has to take in view the context of plan-targets that seek to combine maximisation of investment, employment and income resulting in a tenuous amalgam of open - end expenditure, overhead creations and emphasis on productive capital formation. Under such circumstances, the whole question of sectoral connections and balances resolves itself into a problem of the relative paces of the money-income and real ^{income} \angle multipliers and their interactions corresponding to different modes of self-expansion of capital. Arising out of this inter-relation, the course of the money-income multiplier over the secondary and tertiary sectors becomes an economic issue of decisive importance in as much as

in a cumulative process. Thus the exclusion of the tertiary sector from national income estimates would, while giving perhaps a more definite indication of the levels of economic growth, deprive the estimates of the ability to underline the vulnerable points of disproportions in the economy. At the same time, the mere inclusion of the tertiary sector in national income estimates will not lay bare the interactions we have in mind. It appears that more elaborate and meaningful sectorisation of national income accounts have to be supplemented by attempts to build up corresponding national balance sheets showing the nature, composition, and levels of the assets-base generating national income. Before we elucidate our suggestions further it would be desirable to appraise the implications of the different modes of self-expansion of capital prevailing in India and their bearings on the volume and composition of national income and assets.

Some data on Assets and Income

4. The essential 'differentia specifica' that marks out the stage of development in our country consists in the co-existence of different modes of self-expansion of capital. The co-existence of such different modes (in Economic History) usually marks the transitional stage of an economy passing from an agriculture-oriented backward mode of production whose surplus accrues mainly in the form of rent, usurious interest and mercantile profits on alienation from the petty producers to an industrial mode of production whose surplus accrues in the form of profits from manufacture appropriated through direct employment of wage-labour. The decisive emergence of industrial capitalism is conditioned by the final relegation of mercantile capital to a position of subservience. So long as this does not come about, co-existence of the different modes of producing and appropriating surplus values tends to set a pattern on the direction of real and monetary resources that hinders the final shift in assets - preferences' towards industrial capital formation. This backward drag on the utilisation of resources is at the roots of a

chronically proximal disparity between the relative pace of the money-income and the real-income multipliers (expressed either in an inflation or a deflation). It also has the effect of perpetuating the redundancy of the unproductive sectors of the economy. Moreover, the ability of the public sector to act as the pace-setter of economic development is also liable to be afflicted by the intermeshing of assets-preferences prevailing in the whole economy. It has been pointed out that "Any effort to understand India's economic organisation must start with the fact that Indian industrialists are usually members of old trading families, which still dominate the business activity of the country. The family exercises control through the instrument of the managing agency firm, a legacy from the British. The managing agency carries on extensive trading operations about which no quantitative information is available, and in addition, runs industrial plants. "1/** Again," managing agencies have been closely held while the companies which they manage have become increasingly public corporations with shares listed on the exchanges. Historically, the managing agency provided a bridge between earlier and later forms of business organisation, as well as between commercial and industrial capital." 2/

5. In pursuance of the 'conglomerate' nature of business-enterprise in India diagnosed by Helen Lamb, the following data on the pattern of shareholdings in the leading industrial centre of India, viz. Bombay, may serve as some evidence of the intermeshing of assets-preferences in our economy. These data are based on the results of Survey of Ownership of Shares and Securities - Bombay City (Pilot Enquiry) Reserve Bank of India Bulletin, February, 1955, P.116 - 124. These data relate to Income Tax Year, 1952 - 53.

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- 1/ The Role of Business Communities in the Evolution of an Indian Industrial Class by Helen B.Lamb / Economic Development Programme, India Project, M I 2/
- 2/ The Development of Modern Business Communities in India by Helen B.Lamb.

Table 1A: concentration and distribution of assessed shareholders and the value of shareholdings by types of business at the top income levels.

| income-level (Rs) | percentage of share- holders | p.c. of manufac- turing | ownership: financial and others* | average market value of share- holdings (in Rs.000) |
|----------------------|------------------------------------|-------------------------------|--|--|
| (1) | (2) | (3) | (4) | (5) |
| 30,001 & above | 9.8 | 16.9 | 36.6 | 135.8 |
| 15,001 - 30,000 | 13.2 | 49.2 | 21.6 | 146.9 |

Table 1B: ratio of "financial and others" holdings to "manufacturing" and of investment income to total income at top income levels.

| income level | 'financial & others' investment to manufacturing (p.c.) | income to total income (p.c.) |
|------------------|--|----------------------------------|
| (1) | (2) | (3) |
| 30,001 and above | 140.0 | 49.7 |
| 15,001-30,000 | 23.0 | 36.9 |

6. These two tables, taken together, show that, (a) the two top groups together accounting for 23 percent of shareholders assessed to income-tax, own 66 percent of manufacturing shares and 58 percent of 'financial and others', and therefore indicate a marked degree of concentration of share holdings in these two top groups; (b) the lower of the two top groups accounting for nearly 50 percent of manufacturing shares is left on a lower income-rung, though the market-value of their average holdings is higher (Rs.146.9 thousand) than that of the topmost income group (Rs.135.8 thousand); (c) in regard to the distribution of shareholdings as between "manufacturing" and "financial and others", the composition of the portfolio of the topmost group appears to be predominantly non-industrial ('financial and others' being 140 per cent of 'manufacturing') whereas in the lower income-group it is predominantly industrial ('financial and others' being only 23 per cent of 'manufacturing'); (d) while the proportion of total income accruing to the topmost group through dividends on shareholdings is half of that for

the lower group, in both cases this proportion is below 40 per cent, i.e. in case of the topmost group less than 20 per cent of total income accrues through dividends on shareholdings.

7. These findings suggest the non-industrial orientation of assets-preference as evidenced by the preponderance of 'financial and other', holdings in the topmost income-group. The reason is not far to seek. The topmost group with a lower average market-value of shareholdings is able to get on to a higher income-rung. Hence the rate of returns on assets is likely to be higher in case of non-manufacturing holdings. It may be argued, however, that this higher income is due to the contribution of non-dividend income whose ratio to total income is quite high in the topmost group (30.3 per cent). But in that case since the universe of manufacturing industries is more or less fully covered by Joint-Stock Companies, the income originating in the sector outside the Joint-Stock Companies must accrue mainly from non-industrial modes of operations. So the conclusion remains impelling that the non-industrial group gets on to the higher income-group by dint of its larger share in non-industrial modes of operations. That salary-income does not account for any substantial part of non-dividend income is indicated by the fact that only 2.8 per cent of the assesseees in the top group were salaried persons. The proportion of salaried assesseees in the lower group was 14.9 per cent.

8. Thus, it will be apparent that the topmost group with a lower average value of shareholdings and lower proportion of dividend - income to total income can at all get on to an income-rung higher than the industrial group only if: (1) the returns on its non-manufacturing shares are such as to outweigh lower per capita value of share-holdings, or (2) the sources (mainly trade, commerce and managing agency, etc.) other than Joint-Stock Companies from which the topmost group draws the overwhelming portion (80.3%) of its income, yield returns high

enough to offset the advantages of a higher per capita value of share-holdings and a higher proportion of dividend-income to total income enjoyed by the lower group. In either case, or in case of a combination of both, it is plausible to presume that non-industrial assets have a tendency to yield comparatively higher returns. We may take this feature as an explanation of the fact that in the highest income-group assets-preference works overwhelmingly in favour of non-industrial assets. This should also explain why even in case of the industrial core of the share holders (i.e. the lower income-group) the proportion of non-dividend income to total income is fairly high (63.1%).

9. Apart from the question of differential returns on industrial and non-industrial assets, these facts illustrate that the groups ruling the roost in our economy partake of the tendencies inherent in commercial-cum-industrial conglomerates. There are reasons to believe that these groups, with their prototypes lower down the economy, jeopardise the balance of the price structure at the very first symptoms of a spurt in money supply and/or of apprehensions about real scarcity. Herein lies a major clue to the inflationary and deflationary oscillations that have become chronic in our economy.

The weight of the non-industrial sector

10. The question of the relative weights of the two modes, namely, industrial and non-industrial, in our economy arises naturally as a sequel to the evidence cited above regarding the conglomerate nature of investment preferences.

Income-tax statistics

11. The following table is based on Income-Tax Revenue Statistics for four consecutive years, published in Reserve Bank of India Bulletin, June 1957. In these tables "Industrial" means the total of assessed income originating in Factory,

Mining and Quarrying, Other Primary processing Industries, all manufacturing industries and construction and utilities; "non-industrial" includes assessed income accruing from Commerce, Transport and Communications and Finance.

Table 2A: distribution of assessed income by industrial, non-industrial and services (Rs. crores)

| category of industry | 1952-53 | | 1953 - 54 | | 1954 - 55 | | 1955 - 56 | | total of 4 yr | |
|----------------------|-----------------|-------|-----------------|-------|-----------------|-------|-----------------|-------|-----------------|-------|
| | assessed income | p.c. | assessed income | p.c. | assessed income | p.c. | assessed income | p.c. | assessed income | p.c. |
| (0) | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| Industrial | 150.45 | 36.84 | 175.90 | 38.64 | 149.30 | 34.80 | 168.48 | 37.27 | 644.13 | 36.92 |
| Non-Industrial | 232.12 | 56.84 | 249.61 | 54.83 | 251.73 | 58.68 | 252.74 | 55.90 | 986.20 | 56.52 |
| Services | 25.82 | 6.32 | 29.75 | 6.53 | 27.98 | 6.52 | 30.89 | 6.83 | 114.44 | 6.56 |
| total | 408.39 | 100 | 455.26 | 100 | 429.01 | 100 | 452.11 | 100 | 1744.77 | 100 |

The very high proportion of assessed income originating in the non-industrial category is self-evident in the abovetable. Taking the total of four years, the non-industrial sector as defined above accounted for 56.52% of the total assessed income. The share of Trade and Finance in the non-industrial category was never below 92% in any of the years. The percentage share of trade and finance in the total of assessed income originating in the non-industrial category over the four years works out to be 93.86%. In the category of Trade and Finance we have included income from retail and whole sale trade in commodities as per statement (Page 555 op. cit.)

Banking Statistics

12. Some probings into banking statistics in India also reveal the relatively larger extent of non-industrial operations carried through out organised financial sector. An examination of the distribution of ownership of business demand-deposits with scheduled banks in the country shows that during the period

December 1952 to December 1956, the proportion of total demand-deposits accounted for by the manufacturing sector has been in the neighbourhood of 10 to 12 per cent, while that by the trading sector has been 23 to 26 per cent. In other words, the command over bank-deposits wielded by the commercial sector was more than double of that owned by the manufacturing sector.

13. Further, a table in the Reserve Bank of India Bulletin, October, 1955, showing the percentage distribution of number of accounts and volume of all demand - deposits by size of accounts, during the period December, 1949 to June 1955, reveals that the size-class of accounts - Rs. 1 lakh and above, constituting 0.6 or 0.5% of the total number of accounts owned between 42 and 46% of the total amount of deposits. Evidently, there exists a marked degree of concentration in ownership of bank-deposits.

14. As for bank advances - although in recent years there has been a slight rise in the relative share of the industrial sector, - "the bulk of the advances of scheduled banks still continued to be extended to commerce reflecting the predominance of commercial activity in the economy." (R.B.I. Bulletin, October, 1957, P. 984). Thus the features of our banking system regarding ownership of deposits, distribution of deposits and advances by business types suggest that there is predominance of commercial activities in the economy coupled with substantial concentration in the ownership of financial resources.

Commerce, secondary inflation and national accounts

15. The preponderance of non-industrial income in the universe of income-tax assesseees, of trading deposits among all banking business deposits, and the concentration of ownership of liquid money taken together may serve as pointers to the scope for profit opportunities in mercantile operations obtaining in our economy. In economic analysis, "secondary" inflation thriving on speculation is usually taken as a sequel to conditions of primary inflation, the latter being symptomatic

of a basic imbalance between the demand and the supply situation in an economy. But a relatively higher weight and command of mercantile business in the economy may bring about speculative distortions in the price-structure unrelated to the conditions of production and real supply. This higher weight and command of mercantile business, in its turn, is supported by and thrives in, historically, the pre-industrial-revolution stage when petty production prevails at the base of the economy. And that is indisputably the situation obtaining in India even now.

16. It is customary to diagnose the economic fluctuations in a country like ours to be mainly of prices and incomes rather than output and employment (vide Dr. B.Datta's "Economics of Industrialisation"). This would really resolve itself into the persistent inelasticity of real investment ("investment" defined to exclude inventories) in the face of changing incentives of the price-income situations. Thus, on the one hand, given a certain degree of effective command over liquid resources, fluctuations in market expectations may give rise to wide scope for profits through the price-mechanism and generate the forces of secondary inflation, thereby altering the distribution of income; while, on the other hand, the inelasticity of real "investment" (defined to exclude inventories) tends to perpetuate the structural hold-up of the elasticity of supply of output at the zero-level, the basic condition of primary inflation.

17. This background of a vicious circle of "primary" and "secondary" inflation in the Indian economy had its bearings as well on the up-swings and the recession observable in the price-trends over the recent years. While the real context of primary inflation in a growth-oriented economy obtains in the eventuality of a reallocation of labour force between industry and agriculture none of these price-swings have such a context in India. The employment targets of the Second Five-Year Plan do ^{not} envisage full absorption of the current addition to labour force, not to speak of the possibility of any draft on the rural man-power. The

upswing in 1950-51 was in the main attributed to stock-piling. Coming to the next upswing in recent period, it may be pointed out that while the average rate of expansion in bank-credit during the busy seasons of 1950-51 to 1954-55 was (Rs. 118 crores) in the busy seasons of 1955-56 it was unusually high (Rs. 172 crores). The data regarding agricultural and industrial production and foreign trade in 1954-55 and 1955-56 do not provide any explanation for this unusually high rate of expansion. Moreover, the value of exports during the 1955-56 busy season was less than what it was during 1950-51 busy season when the Reserve Bank did attribute the price-rise, among other things, to speculative holding of commodities. It may also be pointed out that during the 1955-56 busy season the ratio of advances to deposits rose to an all-time high of 73.02%^{1/}

18. Apart from the question of general rise in advances, the trends in advances against food-grains have also shown some noteworthy features since 1954-55. In 1955-56, the output of foodgrains was 2% less than in the previous year, but, in 1956-57, the level of output increased by 6%. The consequent rise in the marketable surplus, however, seems to account for only a part of the rise in bank-credit. There was apparently some withholding of stocks by trading interests.

19. The following table shows the expansion in credit against food grains during the marketing seasons between 1954-55 and 1956-57. It reveals a generally rising trend of expansion of bank-credit against food-grains during the marketing season.

Table 3: expansion in Scheduled Bank Credit against food-grains during the marketing season.

| crop season | paddy and rice | | other foodgrains | |
|-------------|--|--|---|--|
| | last Friday of October to last Friday of March | | last Friday of March to last Friday of June | |
| (1) | (2) | | (3) | |
| 1954-55 | 6.3 | | 7.5 | |
| 1955-56 | 20.9 | | 12.7 | |
| 1956-57 | 18.5 | | 13.9 | |

(Source: R.B.I. Bulletin, Oct. 1957)

^{1/} Price movements in India, AICC Economic Review, VOL. IX, No. 1 May 1, 1957.

20. In the face of these trends, the R.B.I. had to impose restrictions on Scheduled Banks' Advances against food grains in May and September 1956. But these were withdrawn in the subsequent busy season (Nov. 1956) and was followed by a steep rise in advances from Rs. 4.3 crores in October 1956 to Rs. 16 crores in January, 1957. Commenting on the situation, the Reserve Bank of India Bulletin, Oct. 1957 writes: "Despite high production, prices of rice continued to rise; the small decline in December, 1956 was more than offset in subsequent months. It was also noteworthy that prices of rice in the major surplus states of Andhra and Madhya Pradesh, after showing moderate declines upto mid-January, 1957, recorded a contra-seasonal rising tendency again in the midst of the marketing season". (page 991). It may be noted, incidentally, that price trends in the current marketing season this year exhibit a similar rigidity, reinforced no doubt by crop-failure.

21. It is in the context of such a behaviour-pattern of the price-situation that the investment-preferences of the groups that set the pace and content of economic fluctuations has to be adjudged. The so-called inelasticity of real investment obtains by virtue of the conglomerate nature of business in India on the one hand and the scope for exploitation of mercantile profit opportunities, on the other. The latter, in turn tends to sustain the structural constraints that ordain the prevalence of the conditions of primary inflation. At the same time the syphoning of incomes generated in course of price fluctuations into the channels of mercantile enterprise, distort the already skewed distribution in income in such a manner that shrinkage of the market for industrial consumer goods and inflationary tendencies, go hand-in-hand. Price-trends in India thus characteristically exhibit sometimes a sequential and often a simultaneous operation of inflationary and deflationary pressures, while the basic condition of primary inflation persists throughout in the form of rigidity of the supply of output.

22. Under such circumstances any attempt to push up the level of real investment tends to create a strong pressure on available food supplies while the resulting spurt in prices fails to make for a sustained utilisation

of and addition to production capacities. As Prof. Kalecki observes:
"This will not be the case if the peasants profit from the increases in food prices because then they buy more industrial consumption goods out of higher incomes. However, if the benefits of higher food prices accrue to landlords, merchants or money-lenders, then the reduction in real wages due to the increase in food-prices will not have as a counterpart the increased demand for mass-consumption goods; for, increased profits will not be spent at all or will be spent on luxuries. In this case the high demand generated by a rapid development involving large scale investment will not create a market for industrial consumption goods. As is clearly seen from the above, two factors will be involved here: (a) the inelastic supply of food leading to a fall in real wages, (b) the benefit of food price increases accruing not to small proprietors but to capitalists" and "that the 'danger of inflation' is by no means incompatible with the market problem; the latter is apt to reappear if the supply of food is rigid and if the conditions of distribution of income in agriculture are such as described above". 1/

23. That the economic situation in India is not free from the constraints cited by Prof. Kalecki is borne out by the evidence of concentration in land, the key asset in agricultural enterprise in India, as revealed by NSS 8th round Survey, (1953-54) of Landholdings and Annexure II, the 2nd F.Y.P. p. 213 to 220. Further, the pattern of control over and use of cash resources vis-a-vis our rural economy is clear from the following observations in the 2nd vol. of the Rural Credit Survey Report, Chapter 22 : "In India to-day there is an aggregate of private financial power, which in point of location is largely urban and, what is more important, in point of bias, that is to say, of the prejudices, attitudes, preferences and interests of the individuals and institutions to share the power is almost entirely urban minded " And, "Not only enough, the cultivator's position is that of having to bargain

1/ Indian Economic Review, February, 1955 pages 7-8.

if he can, with some one who commands the money, commands the credit, commands the market and comes with the transport" (Op. C.F. Chap.22)

24. With such a pattern of distribution of the key asset, namely land, and of liquid and ancillary resources, it is normal to expect that the distribution of income would be correspondingly skewed. Apropos the benefits of price fluctuations would not accrue to the bulk of the producers and their capacity as well as incentive to undertake investment to augment output would be negated. Over the period, 1928-29 to 1952-53, therefore, it is found that the correlation coefficients between price and output of rice, wheat and sugarcane, are firstly, not significant, and are negative for the first two. [Dr. G.I. Agarwal : "Prices and production Trends in Agriculture". Indian Journal of Agricultural Economics, Vol. IX page 417]

25. The foregoing resume has shown in outlines how wide prevalence of commercial opportunities tends to disrupt the potentialities of rapid economic development. Some recent estimates have shown that currently in India only 30% of the investable surplus generated in the private sector of manufactures and mines are utilised for real capital formation.^{1/2} This gives us a rough measure of the serious extent to which industrial resources are being diverted to uses other than real capital formation, not to speak of the scale of operations carried on by purely non-industrial forms of capital, which gives them such a weight in the universe of income-tax assesseses. Such being the structural constraints on economic growth, we shall be only overstressing the obvious to speak of the need for supplementing and modifying our national accounts in a way that will focus more significantly on the interrelations between generation of income in the different sectors and the modes of self-expansion of capital corresponding to the respective sectors.

1/2 Food Bureau - Political Economy of Growth.

^{1/2}, a paper by Sri S.S. Sen (ISI), pending publication. Figures relate to the period 1950-51 to 1955-56.

26. Turning to the official National Income Estimates to form an approximate idea of the overall trade-margin on the total real output likely to enter into commercial circulation, the conclusion obtained is as follows:-

The gross agricultural output in 1950-51 was Rs.48.66 abjas (vide Final Report of the National Income Committee, p. 45). The Rural Credit Survey Report (Vol. I, Part I, Page 1054-57) yields the information that the proportion of marketed produce to total gross produce is 34.6% for the whole of India. Applying this proportion to the gross value of agricultural output, we arrive at a marketed surplus of Rs.16.84 abjas. Assuming that the entire net output of Forestry, Fishery and Animal Husbandry enters the market, the total value of agricultural commodities coming into commercial circulation would be Rs.24.58 abjas. Adding to this output the value of net output of mining, manufacturing and small enterprise, we get a total of Rs. 39.88 abjas (Rs.40 abjas approximately), being the value of all commodities entering into trade for the year 1950-51. (All figures being taken from the Estimates of National Income published by C.S.O.). Abstracting from the problem of stocks carried over from the previous year, it appears that the income from "other commerce and transport" (Rs.14.00 abjas) was 35% of the value of real national output in circulation. Or, in other words, for every three rupees of produce entering the market, there corresponds one rupee of income out of circulation of the same. While this, by itself, may not compare very unfavourably with other countries at their critical periods of growth, the real significance of this sector consists in such an interrelationship of assets and return as cannot be meaningfully revealed by any scheme of national income calculations, per se, the so-called bi-modal character of the proportion of national income appropriated by the tertiary sector for a growing economy is not something that can be set up as a very meaningful indicator. Moreover, it may not be entirely beside the point to note, in this connection, two aspects of the methods of calculating national income from "Other commerce and transport" in our national income estimates,

which tend to obviate the meaningfulness of any such trend-study. Firstly, "Figures of average annual earnings have been collected from a variety of sources, both published and unpublished Estimated earnings in 1949-50 and 1950-51 of both employers and employees have been derived by adjusting the 1948-49 figures with reference to the rate of increase of earnings of factory labour". (Final Report of the National Income Committee, page 83-84). The effect of this procedure would be to tether earnings of circulation to wages of factory labour. This would make a fall in the proportion of National income accounted for by the "Other commerce and transport" sector almost a foregone conclusion. Also, the role of the price-mechanism as a determinant of the level of income from circulation is likely to be largely assumed away and the sectorisation of income by industrial origin admits, then, of little use in bringing out the focal points of structural imbalances in the economy. Secondly, the product-method of estimating income from "other commerce and transport", after deriving "the value of crop-output -- by use of wholesale prices in a large number of small (primary assembling) market-centres", has arrived at the relative trade margin "taking (not) wholesale and retail margins"^{1/} at $2\frac{1}{2}\%$ and 8% respectively. This method may be the only feasible one in the absence of more regular diagnostic surveys aimed at finding out shifting price-spreads and trade margins and their relations to firm prices and production. But it implies a type of static correspondence between the scale of crop output and trade income that assumes away the possibilities of fluctuations in the terms of trade between the primary producer and the trader.

27. While attempts at improving the sectoral estimates are welcome, we shall try to outline a supplementary scheme for construction of National Balance - Sheets and Sectoral Balance Sheets which appear to be the system of accounting (in addition to National Income Estimates) relevant for the purpose of assessing the structure of

^{1/} All quotations are from page 84 of the Final Report of the National Income Committee.

assets and the interrelationships of assets and returns.

The Case for the National Balance Sheet

28. The National Balance Sheet is a combination of the balance sheets of all economic units domiciled within the national boundaries and is, therefore, a combination of the technique of double-entry accounting with the market values of transactions, assets and liabilities adjusted to conform to the requirements of economic theory, to derive a system of national accounts that would provide a running historical record of the community's economic operations; measure the efficiency with which the community's economy operates; provide a periodic inventory i.e. an indication of the economic position of the community".^{1/}

29. The case for a National Balance Sheet (and Sectoral Balance Sheets) arises out of the needs of having to adapt national accounts to the exigencies of planned growth in a mixed economy at a certain stage of development, marked by a specific level and composition of assets and corresponding returns. For, "if a stock of goods is indispensable in producing current goods of a certain amount and character, and if it exists in one situation and not in another, we can explain differences between current output in the two situations. Likewise, if for a household firm, or nation, a complex of claims and obligations makes for a certain pattern of economic behaviour in pricing, spending and saving etc., while another complex, ceteris paribus makes for different patterns, our measures of this complex have important analytical uses".^{2/} The requirements of growth, arising out of the initial condition of certain types of physical assets being in short supply with corresponding limits on output levels, obtain in such a complex of claims and obligations covering the universe of all assets whose competitive efficiencies, expressed in terms of the universal equivalence of the monetary measure of respective returns, determine the direction of allocation and use of such assets.

The problem of augmentation of the supply of physical assets in short
1/ "Deriving national accounts on a system of national double-entry"

2/ Comment by Prof. Simon Kuznets, page 175 op.cit.

supply as the determinant of growth, thus involves visualisation of the entire plexus of assets, claims and obligations in which are embedded those physical assets which are the mainspring of economic development. The problem of motivation of investment - decisions focussed through the catch-all category of the aggregative marginal efficiency of investment has thus to be treated in terms of two approaches, because: "the emphasis on motivation is as relevant to the approach via physical assets as, according to Mr. Hart^{3/} it is to the study of the structure of claims. In the former approach the motivation of economic behaviour lies in the relations between the stock and the flow of real goods; in the latter it lies in the relations between pecuniary claims - obligations and economic behaviour. Though the two sets of relations may be correlated in some degree, there is no one - to - one agreement the physical assets and the claims - obligations approaches to national wealth measurement serve two distinct purposes". (Op. Cit. Ref. Kuznets).

30. All this because of the fact that the behaviour of the physical measure of the capital - output ratio supposed to exhibit the requirements of growth resides in an immanent complex of assets which yield a physical flow of returns as well as those which do not yield a tangible physical flow but a monetary flow of claims and gains.

31. In order, therefore, that the so-called capital-output ratio or the incremental capital-output ratio may be made to move along a targeted path in the desired manner, within the framework of a mixed economy, the entire complex of relative returns to assets has to be affected by policy - measures so as to impart a new motivation to overall investment-decisions. Thus, there is no gainsaying the need to appraise and break through the pattern of assets - preference and business motives obtaining as antecedent restraints on growth. For, otherwise, the obstacles to development in the initial conditions will persist, through the medium of primary and secondary inflation, or through generalised inflationary forms of accumulation, to upset the

^{3/} Op. Cit. "Uses and abuses of estimates of wealth and claims". by P. S. Hart.

targetted changes in relative net worth and structure of assets. The rationale for the National Balance Sheet inheres in the above requirements that some system of social accounts ought to fulfill; because, it can be argued for the National Balance Sheet that "the 'motivating' aspect comes from the intelligent allocation and direction of economic resources in the light of the accounts. This is done by the going concern; it is a legitimate use of social accounts to persuade enterprisers to agree on goals or to permit direct social management of resources".^{1/} This is clearly demonstrated by what Mr. Lucas has to say about the American experience: "To come back to the National Balance Sheet - I believe that some of the very bad forecasting of national demand and employment at the close of the war was due to the failure to take account of the changed assets position of individuals and enterprises".^{2/} It may not be out of place to mention in this connection also that classical economists, who were concerned with the problem of accumulation - the "Magnificent Dynamics" as Mr. Baumol calls it - went here by wealth considerations^{3/} as to focus attention on the relative positions of social groups which were "productive" or "unproductive" from the point of view of the needs of accumulation.

32. The efficacy of the national balance sheet for the purposes indicated above depends largely on the sectorisation of the economy into components that have meaningful bearings on the different modes of self-expansion of capital. It depends also on the choice of the capitalisation factor which may not and need not be the usual rate of interest in view of the underdeveloped character of the banking system and capital market.

33. Just as in the case of choice of the capitalisation factor, our problems of sectoring of economic units for a National Balance Sheet, too, have to reckon with features not so pertinent to an advanced economy that has moved far ahead of the threshold of industrial revolution. (Starting with the basic division of economic

^{1/} See also the report of the Commission on the National Balance Sheet, p. 160.

^{2/} See report by Gardiner C. Means Cp. Stat. page 143

^{3/} The use of the National Balance Sheet for this purpose has been suggested by Prof. H.J. Lucas, op. cit. page 160

units between ultimates and intermediary and the groupings there under made by Mr. Raymond Goldsmith (Income & Wealth Series IV) we have to break up these categories into further ramifications according to the criterion of functional differences, rather than that of a purely juridical or natural bias. This signifies that in defining functional categories we should take into account the various modes of self-expansion of capital prevalent in the economy viz. industrial, commercial and financial together with the characteristic combinations of the three modes as typified by the Managing Agencies. To bear out fully, then, the analytical implications of a National Balance Sheet in the Indian set-up, sectors like unincorporated business enterprises and non-financial corporations (as in Mr. Goldsmith's groupings) should admit of further classifications by industrial commercial or conglomerate nature of an enterprise or corporation. For a meaningful appraisal of any interdependence between assets-structure and investment decisions, it will be essential to have scope for studying the balance-sheet data of the various groups in the light of the specific nature of corresponding entrepreneurial transactions. Again, in our rural economy the notion of "farm-households" would be much too catch-all unless further distinctions are made in view of the varying volume and composition of assets and liabilities, claims and obligations at different levels of ownership and possession. In this field, the classification of cultivating units into big, large, middle and small made by the All India Rural credit Survey appears to have laid down the first principles of suitable subgroupings under farm-households for the purposes of a National Balance Sheet. Apart from these, it will be necessary to separate out such groups of asset-holders in the rural economy as perform in a manner analogous to the conglomerate groups in the world of organised business.

34. We are aware that actual grouping will, of necessity, often be based on a compromise between the analyst's wishes and the availability of data. Nor are we in a position at this stage to

build up all the necessary details of sectorisation for a National Balance Sheet. But the basic principle of functional classification of business enterprise as noted above is well-nigh indispensable to any delineation of a National Balance Sheet for India.

35. In this paper we have probed neither into the problems of availability of suitable data for a National Balance Sheet, nor into those relating to estimation and valuation of assets, net worth and liabilities. We have limited ourselves to an elaboration of the needs for a National Balance Sheet. It is not too much to expect that once we take full recognition of the necessity, the other problems, though difficult, will not be insurmountable. Besides, we are in a position to benefit from lessons in the field gained by pioneers in the USA. Regarding availability of data, the large unorganised sector of our economy will put up the biggest difficulty. Following the beginnings made by the All India Rural Credit Survey, it will be desirable to conduct periodic enquiries into the volume and composition of assets and liabilities at all strata of the rural economy, inclusive of both cultivating and non-cultivating units. There, however, being too many difficulties in the construction of an over all National Balance Sheet in near future, appropriate research units may start with efforts to build up a combined balance sheet for the domain of income-tax assesses with functional sectors as outlined in the foregoing paragraph. The problem of obtaining suitable data should be much less difficult within this limited scope. We believe that with some modifications devised to yield details on different types of assets (e.g. tangible and intangible, reproducible and non-reproducible) held by assesses, the type of return-statement recommended for use by Prof. Kaldor in his famous work on our tax-system, will do away with most of the inadequacies of information in this field. At any rate ".... the construction of a respectable National Balance Sheet does seem to me.... to be a more possible task than has often been supposed.... and it is well worth having, if we can get it".

**FIRST INDIAN CONFERENCE
ON
RESEARCH IN NATIONAL INCOME**

**SCOPE AND AVAILABILITY OF DATA FOR THE ESTIMATION
OF NET INCOME FROM AGRICULTURE IN ANDHRA PRADESH**

Bureau of Economics & Statistics,
Andhra Pradesh, Hyderabad.

**CALCUTTA
2-5 July, 1958**

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This paper is divided into three parts. The first part deals with certain conceptual problems; the second examines the available data of production, prices and costs of cultivation of agriculture excluding animal husbandry and the last part gives estimates of this sector.

2. So far we have been exclusively concerned with regional income generated in a State, without paying any attention to the income received by the residents of the State. This approach was, perhaps, primarily due to the difficulties in obtaining any reliable data in respect of inter-regional transfers of income, though seldom it is explicitly stated. What has been missing in these discussions, is the purpose for which these alternate estimates or any other estimates will be useful. If the objective is to study the changes in the aggregate output of commodities and services of that region over a period and also in relation to other regions, then estimates of income generated in a State which is equivalent to the domestic output will be useful. The same aggregate used in relation to the working force will measure the productivity per man which is a significant ratio for purposes of comparison.

3. On the other hand estimates of income received by the residents in a State will be a useful guide to compare the real income (welfare or prosperity) of that State in relation to others and also its own, over a period of time. Particularly when comparison of real income of two States is involved, though unlike two countries, no question of exchange ratio of currencies will crop up, still adjustments for regional differences in prices of different commodities and services may become necessary to make the estimates comparable, besides estimating such aggregates at constant prices.

4. In recent times, the need for estimating State Incomes was provoked firstly to have an idea of the relative backwardness of States, so that proper emphasis could be laid on the balanced regional development of the country. The second source was perhaps to increase the tax effort of, or tax-burden in, different states in the context of finding sufficient financial resources to implement their State Plans. It is likely that the position of a State based on value of product originating in it will be better but aggregate income accruing to its residents may present a different picture. Quite an opposite situation may prevail in another State. In such circumstances, both sets of estimates are necessary to formulate any policy directed towards balanced development and equitable regional distribution of incomes. Where tax burden or tax effort is under consideration, income accruing to the resident alone seems to be the relevant aggregate. A spatial index for different States with All-India average per capita as basis, will reflect the variations of different state per capita incomes from the average which may be a useful guide for sanctioning grants, etc. while the total state tax receipts as a percentage of its income (accrued) together with per capita income of the State will reveal scope for additional tax effort.

5. More or less similar conceptual issues have to be faced while estimating incomes of different sectors of a State's economy for various purposes including inter-sectoral comparison of value of output and incomes. An additional problem in this context will be the absence of clear demarcation of sectors and particularly employment in sectors.

6. Since little information regarding factor incomes is available, the "product approach" has to be followed to estimate income of the agriculture sector in the State. Even in this respect, reasonably accurate output and price data for most of the agricultural crops are available, while the value of certain cost items required to arrive at net value of agricultural output is not available. And this affects the accuracy of these estimates to some extent.

OUTTURN

7. Data of outturn for most of the agricultural commodities claiming above 96% of the total cropped area of the State are available for each district separately. The area figures, for fruits, vegetables, condiments, spices and other miscellaneous food and non food crops covering the remaining 4% of the cultivated area have to be used to estimate their outturn on the basis of available information of their yield per acre. The quality of outturn data is not the same in respect of all crops. For paddy, jawar, bajra, ragi (for Andhra only), Maize (for Telangana only) tobacco (for Andhra only) and sugarcane which cover 53.5% of the total cropped area, outturn estimated on the basis of results of Crop Cutting Experiments conducted on Random Sample basks are used. Steps are being taken to extend this method of estimation to other non-food crops also. For the remaining crops which include all pulses, oil-seeds, cotton, chillies, other cereals, onions, turmeric, garlic, bananas, tapioca, sweet potatoes and other miscellaneous crops which cover 43% of the total cropped area, the outturn is calculated on the basis of annawari estimates of Patwaris whose degree of accuracy is not known. Estimates of outturn of different varieties of a crop are available only in respect of cotton and tobacco.

PRICES

8. Data of farm prices are available for about 18 commodities in the Andhra region while wholesale price quotations are collected for 20 commodities. Regarding coverage, out of 11 districts in this region, quotations are available for more than six districts for as many as 12 commodities in the case of wholesale prices as against only 5 commodities in the case of farm prices.

9. The output has to be valued at a price which the producer gets at the farm-gate and this should normally be lower than the price of the same commodity in the market. It is found that the position is quite the opposite in the case of many agricultural

commodities in the Andhra region. In these circumstances, average of wholesale prices prevailing during harvest period are used and estimation made at the district level in the case of most of the principal crops, as this is considered to give a value based on prices which are nearer to those at the farm-gate. This approach has also become necessary as the wholesale prices are quoted for more commodities and centres than in the case of retail prices. This procedure may enhance the value of agricultural output to a limited extent by including the receipts from transport etc. which arise when the produce is brought to the wholesale market. A 3% deduction has been made from the value of agricultural produce to allow for market charges like agents' commission, weighing charges etc.

10. In the Telangana region farm harvest prices are collected for nine crops. For about 30 commodities, primary wholesale prices and also value of transactions commodity-wise for different months of the year are collected from regulated markets spread all over the Telangana region. In this area also the wholesale price of some commodities are lower than the farm harvest prices. For reasons similar to those explained earlier, the wholesale prices are used for the purpose on hand. An additional advantage in this case is that from the value of transactions reported, an average price of a commodity can be obtained for the region which will be weighted according to the volume of transactions of different varieties of a commodity. One limitation in this regard is that only between 15-25% of the total produce of foodgrains and a higher percentage of other crops are sold in these regulated market centres.

11. Where neither wholesale nor farm harvest prices are available attempts are made to use the retail prices with deductions of the order of 20% or so. This was done in the case of bananas, betel leaves and ginger. For minor crops like other millets, other pulses and other millets, where no price quotation of whatever variety was found, the price quotation of

the lowest variety of the group was used after deflating it arbitrarily by about 10% following the procedure adopted by the National Income Committee. This percentage, however, was as high as 50% of the price of potatoes in the case of sweet potatoes.

12. Theoretically, it is possible to work out average percentage margins between farm harvest prices and primary wholesale prices, and secondary wholesale prices and retail prices for those commodities for which two or three sets of price quotations are available. This could be used to work out farm harvest or wholesale prices for certain commodities for which only one set of price quotations is available. This procedure was pursued without any satisfactory results, because farm harvest prices, wholesale prices and retail prices for certain commodities wherever available were not for the same variety. If they are collected for the same variety, perhaps the coefficients will be useful for estimating the required set of prices for other commodities on the assumption that trade margin will be the same in most of the cases.

13. In the case of fruits and vegetables only area figures are available for most of the crops. Some kind of outturn estimates are available for banana, potatoe, sweet potatoe, topioca and ginger which account for 20% of the total area under fruits and vegetables. The average value per acre of these crops has been used to estimate the value of all other fruits and vegetables. A similar procedure has been adopted for evaluating the value of other condiments and spices but the magnitude of error is likely to be less in this case since outturn estimates are available for about 75% of the area under condiments and spices. Outturn of coconuts has been estimated from data for earlier years while that of betel leaves calculated on the basis of standard yield per acre. Outturn of stalks and straw has been taken at twice the output of cereals and pulses on the basis of estimates given in the Final Report of National Income

Committee. Value of miscellaneous food and non food crops and fodder crops are estimated at values per acre given in the First Report of the National Income Committee.

14. As regards processing activity in agriculture this arises mainly in connection with paddy. The total value of rice and by-products of paddy is found to be more than that of paddy as the following estimates show:-

Table (1): Increase in value of paddy on account of processing

| (1) | (2) |
|---|--------|
| 1. value of paddy (at wholesale prices during harvest period) | 123.88 |
| 2. value of clean rice (do) | 128.97 |
| 3. value of rice bran | 5.02 |
| 4. value of rice husk | 1.24 |
| 5. total value of rice and by-products (2 to 4) | 135.18 |
| 6. increase in value on account of processing (5 - 1) | 11.30 |

To the extent that the processing is undertaken before crossing the boundary of agriculture instead of by middle-men, this return includes wages received probably by agricultural labour for hand-pounding of rice. Therefore, treating processing of paddy as an agricultural activity, rice and its by-products are valued for inclusion in the gross value of agricultural produce and the value added by rice mills has been deducted as a cost item.

MARKETED PRODUCE

15. There are as yet no precise estimates of the marketable surplus of agricultural produce. Calculated on the basis of certain findings of the Chief Marketing Officer of Ex-Hyderabad State, the value of marketable surplus of agricultural produce of Andhra Pradesh forms only about half of the total value.

Table (2): percentage of marketed agricultural produce to total

| crop | value of total produce | marketed (Rs. crores) | unmarketed | (3) as % of (2) |
|---|------------------------|-----------------------|------------|-----------------|
| (1) | (2) | (3) | (4) | (5) |
| 1. cereals | 175.77 | 58.53 | 117.24 | 33.3 |
| 2. pulses | 8.14 | 4.99 | 3.15 | 61.2 |
| 3. oilseeds | 40.96 | 33.91 | 7.05 | 82.8 |
| 4. cotton | 3.72 | 3.35 | 0.37 | 90.0 |
| 5. tobacco | 21.38 | 17.10 | 4.28 | 80.0 |
| 6. sugarcane | 18.41 | 11.51 | 6.90 | 62.5 |
| 7. fruits, vegetables other spices, coconuts, betel leaves etc. | 46.73 | 37.38 | 9.35 | 80.0 |
| 8. chillies | 20.14 | 13.49 | 6.65 | 67.0 |
| 9. miscellaneous | 13.42 | 6.71 | 6.71 | 50.0 |
| 10. roughages | 69.59 | 13.92 | 55.67 | 20.0 |
| 11. total | 418.26 | 200.89 | 217.37 | 48.0 |

The presence of such a large non-monetized sector in the agricultural economy raises complex problems in connection with the measurement ^{of} real income in agriculture. It requires that, part of produce which is sold at the village site, at the marketing centre and the un-marketed part should be valued at the farm harvest, wholesale and retail prices, respectively. For this purpose, break-up of marketable surplus showing how much is marketed at different stages and the different price series (including retail prices in rural areas) are necessary. There are, however, absolutely no annual estimates of even total marketable surplus and ratios derived in one year do not hold good for other years. In the circumstances, what is possible to estimate is only the value of net output of agriculture and variations therein over time and not comparable estimates of agricultural income in relation to other sectors.

COST OF PRODUCTION

16. The cost estimates represent the weakest link in the estimation of income from agriculture. Excepting the cost estimate relating to seed, the other estimates are subject to an unknown degree of error.

(a) Cost of seed: The cost of seed has been calculated separately for Andhra and Telangana regions on the basis of average seed-rates per acre in respect of most of the crops. In the case of fruits and vegetable seed requirement is negligible but seed and postage together taken at 10% of the value on the basis of the procedure followed in the First Report of the National Income Committee. Similarly for other condiments and spices, a deduction of 5% and for other miscellaneous food and non-food crops a deduction of 2% have been made. The total cost of seed for the State come to Rs. 17.20 crores. The cost of seed formed 3.8% of the total value of agricultural produce of Andhra region but 5.4% of that of Telangana region. This is the advantage of arriving at the cost of seed on the basis of seed-rates instead of taking it as a certain percentage of the value (e.g. Uttar Pradesh, which made a summary deduction) since cost of seed is related to the area sown and not to the yield per acre which may vary from region to region. This would also point out to the need for building up data regarding seed rates, district-wise.

(b) Operational costs on materials required for cultivation: The costs include miscellaneous materials necessary for cultivation including all equipment with a life of less than two years and cost of maintenance of bunds, irrigation works, fencing etc. In the absence of any other data, 2.1% of the value of crop output as adopted by National Income Committee has been used and at this rate the cost under this item works out to Rs. 8.78 crores.

(c) Cost of repairs and depreciation of implements bullock carts etc: The value of implements and machinery as in 1951-52 has been estimated for the State on the basis of data relating to five districts of this State published in the Technical Report

of the Rural Credit Survey. This value has been adjusted for 1955-56 on the basis of increase in the implements between 1951 and 1956 disclosed by the Livestock Census. 20% of the value of implements thus arrived at, is taken to represent the cost of repairs and depreciation which worked out to Rs. 8.31 crores. Livestock Census data could not be directly used since neither price nor value particulars are collected in the Census.

(d) Cost of manure and fertilisers: The value of Chemical fertilisers distributed during 1955-56 has been estimated from data relating to Andhra and Hyderabad States given in the "Fertiliser Statistics" issued by the Fertiliser Association of India, Hyderabad. As regards other manure, the National Income Committee assumed that 45% of dung is used for manurial purposes. It estimated the output of dung on the basis of evacuation rates at 20 lbs., 30 lbs. and 10 lbs., per day per adult cattle, adult buffalo and young-stock, respectively. However, alternative evacuation rates of 40 lbs, 50 lbs. and 20 lbs. given in the "Indian Livestock Statistics, 1952-53" have been adopted for estimation of output of dung in Andhra Pradesh. In the absence of any price quotation, the price of annas 3 per maund in 1948-49 estimated by National Income Committee is used. The total value of manure including chemical fertilisers, dung and green manure crops (Rs. 2.83 crores, 19.30 crores and 0.22 crores respectively) works out to Rs. 22.35 crores. An alternative estimate of the value of manure on the basis of data published in the Technical Report of the Rural Credit Survey gives a figure of Rs. 51.98 crores at 1951-52 prices. But this has been rejected since the advantage in following the procedure adopted by the National Income Committee is that many of the estimational errors get cancelled out on consolidation. For instance, what is added under gross value as value of manure crops, stalks and leaves etc. will be deducted again as a cost item. Again a large part of what is added as value of dung under livestock sector gets deducted as cost of manure under agriculture, and to that

extent estimational errors get minimised on consolidation of agriculture and animal husbandry. In the Uttar Pradesh estimates no deduction is made even for chemical fertilisers though its exclusion is necessary to account for purchases from non-agricultural sector. As a consequence, such estimates of agricultural income will be correspondingly over-estimates.

(e) Cost of upkeep of livestock required on farm: 90% of straw 75% of rice bran, 50% of rice husk and entire value of fodder crops, 2.5% of the value of cereals and pulses and 7.5% of the value of oilseeds has been taken to represent cattle feed, following the procedure adopted by the National Income Committee. Expenditure on medicine, ghee, salt etc. taken at Re.1 per cattle equivalent. Making use of equivalence scale given in the First Report of the National Income Committee the total cost of livestock feed thus arrived at which amounted to Rs.72.47 crores has been allocated to agriculture and animal husbandry on the basis of the number of plough cattle and working buffaloes. The working cattle represented 34.1% of the total cattle equivalents and accordingly, the cost of maintenance of livestock on the farm worked out to Rs.24.71 crores. An alternative estimate on the basis of data collected during livestock census gave a highly inflated figure. In the method adopted by National Income Committee and followed in these estimates, estimational errors concerning roughages get cancelled out on consolidation of agriculture and animal husbandry sectors. But regarding other items of livestock feed such as foodgrains, oilseeds and oil-cakes and expenditure on medicine, salt etc. more authentic data is necessary as errors in these cannot be otherwise eliminated.

17. In conclusion it has to be stressed that hitherto estimation of agricultural income consisted primarily of arriving at some value of gross agricultural output certain cost items mostly based on scattered data are deducted more or less as a

matter of course. However, variations in net income may occur even when gross value is constant, due to variations in costs. It is, therefore, essential not only to initiate surveys etc., to collect the basic data relating to costs but also to construct suitable indices to adjust them for variations in value from time to time.

18. The estimates of net output of agriculture in Andhra Pradesh for the year 1955-56 are presented in the following table.

Table (3): net value of output of agriculture, 1955-56

| (1) | (Rs. Lakhs) |
|--|-------------|
| 1. gross value of agricultural produce | 442,23.85 |
| <u>deductions</u> | |
| 2. market charge (at 3% of 1) | 12,84.87 |
| 3. value added by rice mills* | 1,11.55 |
| 4. operational costs (at 2.1% of 1) | 8,70.34 |
| 5. cost of seed | 17,19.61 |
| 6. cost of manure and fertilisers | 22,55.61 |
| 7. cost of repairs and depreciation | 8,20.52 |
| 8. cost of livestock feed | 24,71.12 |
| 9. land revenue | 8,00.36 |
| 10. total deduction | 103,10.98 |
| 11. net value of output | 315,14.68 |

* Figure for 1954 adjusted for 1955-56 on the basis of output of rice.

FIRST INDIAN CONFERENCE
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CAPITAL FORMATION IN FARM BUSINESS

Directorate of Economics and Statistics
Ministry of Food and Agriculture

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CAPITAL FORMATION IN FARM BUSINESS

The traditional method of measurement of Capital formation is not suitable for present needs.

The extent of capital formation and its measurement have been receiving the attention of economists continuously. The concepts developed and the methods used for its measurement have been such as to meet the needs of the economies of industrially developed countries. Capital output ratio is of recent origin and it has been found useful in theories of economic growth. However, the concepts of capital and its measurement are to be so modified as to suit the needs of measurement of capital in relation to output. Such a re-orientation is all the more necessary in an under-developed country like ours with programmes of planned development of the economy. For the assessment of the increase in the capital necessary to generate a certain development in aggregate output as well as also to set up priorities as between different uses of capital within various sectors, measurement of capital specifically in relation to output becomes essential.

The extent of capital formation among other things can be measured in the following ways:-

- i) Making estimates of annual income and savings within that income which are devoted to investment or addition to capital assets, apart from those devoted to repairs and maintenance of existing assets, adjustment being made for changes in prices.
- ii) Making estimates of the values of capital assets at the beginning and at the end of the year and obtaining difference between the two estimates after making allowance for depreciation, absence and changes in prices.
- iii) Taking the physical inventory of capital assets at the beginning and end of a period, taking the difference and estimating its value at base period prices.

(i) As regards the first method, i.e., the estimation of savings which are devoted to investment or addition to capital assets, it may be added that even in advanced countries where the scope of available data is wide and people generally keep records of receipts and expenditure, when savings are estimated from the difference between receipts and total expenditure, the results are not very reliable. But in the country where the cultivators are illiterate and are not in the habit of keeping accounts, it is very difficult to find out the savings as accruing from total income minus total expenditure. Further difficulties are experienced in this method to find out how far these savings are used for the acquisition of capital assets. This approach is therefore not quite suitable for measuring capital formation in this country.

(ii) The second method, i.e. evaluation of capital assets at two points of period is beset with many difficulties of evaluation and estimation. Firstly, all the valuable types of assets are to be listed, then these assets are to be evaluated and necessary allowances for depreciation and changes in prices, etc. are to be made. In this connection it needs to be pointed out that most of the assets of the cultivators such as land, buildings, etc. have a very limited market in the rural areas and these do not change hands frequently. In most of the cases, these are being handed over by generations from father to son. As such, evaluation of these in most of these cases will be of subjective nature. The difference in the values of assets at two points of period may thus be mainly due to individual judgement of evaluation and may not thus be real.

(iii) Of the three methods, the third is better than the other two. However, it is not possible to get the prices of each of the items at even the base period, especially where there is no possibility of transactions. Also the price paid to a particular asset when the other complementary parts are already in existence is much more than its proportionate share in the values of the entity as a whole. The method of obtaining aggregate value by separately valuing each item of capital asset by its market price though at the base period does not correctly measure the value of the capital asset. Also the quality of capital asset might have changed between two periods of time in its capacity to generate output without there being a change in either

money expenditure on it or a change in its money value, as for example, when a resource like part of family labour whose opportunity cost is zero is expanded in improving land. Also the growth of one capital resource only while it can increase the aggregate value need not necessarily increase the output generating value of the capital asset as a whole. Therefore the method of finding value of each component at base year prices and adding them up to determine the value of the capital asset does not serve a useful purpose in trying to measure its capacity to generate output.

In the planning and evaluating developmental programming of an under-developed economy, a more direct method of measurement of capital in relation to the output it can generate is very much needed, especially since the traditional methods do not satisfy the requirement. In order to devise such a measure it is necessary to review the factors determining the output of individual firm and industry as a whole.

2. Factors determining the output of a firm

The output of the individual firm depends on the following factors:-

1. Demand for product of the individual firm
2. Its size
3. Its organisation and management
4. The technique of production used
5. Efficiency of factors of production
6. Price and supply conditions of factors of production, fixed as well as variable.
7. External economies specific to the firm
8. Factors influencing the demand for the product of the industry as a whole.
9. Factors influencing the supply and other organisational factors of the industry as a whole.

These can be briefly illustrated by examples of changes in the factors leading to changes in the output generating capacity of an individual farm.

1. A change in the demand for the product of an individual farm can come about by changes in the structure and organisation of other farms, changes in their cropping pattern, other factors leading to changes in the supply conditions of products of other farms and changes in demand for the products in general.

2. There may be a change in the extent of operational holding and the corresponding complementary resources can contribute to changes in output of the farm.

3. There may be an improvement in methods of planning, organisation and management leading to a better utilisation of the resources than at present. In that case also, the output generating capacity of the farm consisting of land and other complementary resources will increase.

4. If there is a new well dug or a well already in use is exploited by an alternative use of power, or by a replacement of bullock power by tractor, a change in the technique of production takes place leading to a change in output.

5. By the use of excess family labour or bullock labour or by a scheme of collaboration with other cultivators, it is possible to carry out certain improvements in the quality of each capital asset without there being any expenditure of money specific for the purpose. These changes can contribute to a substantial increase in the output generating capacity of the farm.

6. By the developmental programmes initiated by the Government like supply of credit on easy terms, supply of better seeds and fertilizers, organisation of better methods of marketing will bring

about external economies thus leading to a larger output generating capacity of the farm.

7. If prices of factors of production change, a new optimum allocation of fixed resources between alternative enterprises may be brought about.

8. If the industry in the country develops, the internal demand for agricultural products increases. Similarly if there is a change in the demand from outside, the output generating capacity of the capital comprising the individual farm increases.

9. If various farms combine to form a co-operative farm or a co-operative marketing society, or they initiate programmes of community development by voluntary labour, the supply conditions of the individual farm are altered thus leading to change in its output generating capacity.

Measurement of capital value of a farm to reflect output generating capacity:

It is seen from above that in order that development of the economy may be properly planned, capital formation has to be measured with particular reference to output generating capacity and the various factors enumerated above have to be taken into consideration. This measurement can be done in terms of the output of the representative firm in the industry of the type Marshall has discussed. It is not necessary to merely describe a representative firm in qualitative terms but any one such can be chosen as a yard-stick for measurement and the output of other firms in the industry compared in relation to output of the representative firm. The changes taking place in the output of the various firms at different times can be compared by comparing the values of the output at base year periods. This enables measurement of the capital value of the industry in terms of the capital value of the representative firm at base year prices of output. Even if different people adopt different firms as yard-sticks, they can be deduced to a common scale. Again the capital values of representative firms in two different industries at base year output prices, can be compared in terms of the values of their outputs at base year prices. This method of measurement provides the basis for measurement of capital formation in an industry in its capacity to generate output and also it provides a basis for comparison of the capital values between two industries. This does not, of course, at once provide any criterion for shifting of capital from one industry to another industry. The priorities to be set up in terms of capital output ratio have to be viewed in terms of the input output structure necessary for the working of the economy as a whole. Subject to this boundary condition, priorities in the assessment of the accumulation of capital between two periods of time and between various sectors at the same time can be set up. This effectively provides a way of assessment of the directions in which a non-monetary capital formation has taken place. Criteria for diversion of active resources from other uses to collaborate with idle resources for capital formation between the various sectors can be set up thus leading to a fuller exploitation of idle resources and quicker pace of planned development of the economy.

Some Results from Farm Management Data:

Unfortunately, data are not at present available so as to be able to assess the capital formation in farm business in the light of the considerations given above.

In order to have an estimate of the capital formation through actual expenses as well as with the help of family labour and other equipment and resources owned by the cultivators, the relevant data were collected through the trained and experienced investigators from 40 cultivators (spread over 4 villages) studied under farm management investigations from 1954-55 to 1956-57 in each of the States, West Bengal, Punjab, and U.P.

1. WEST BENGAL:

(a) Operated area and purchases of land and livestock:

The extent of operational area of the farms is the chief factor determining the changes in the level of investment at the farms. It will, therefore, be relevant to study the changes in the operated area from year to year.

TABLE I

Particulars of operated area per holding
(Average of 40 holdings in West Bengal)

| Sl. No. | Items | (Acres) | | | | | |
|---------|--------------------------------|---------|-------------|---------|-------------|---------|-------------|
| | | 1954-55 | | 1955-56 | | 1956-57 | |
| | | Total | Per holding | Total | Per holding | Total | Per holding |
| 1. | Area owned and self cultivated | 55.19 | 1.39 | 55.11 | 1.38 | 55.36 | 1.39 |
| 2. | Area leased out | 18.67 | 0.47 | 20.15 | 0.50 | 20.15 | 0.50 |
| 3. | Area leased in | 32.43 | 0.81 | 30.29 | 0.76 | 30.04 | 0.75 |
| 4. | Total operated area | 27.92 | 2.20 | 85.40 | 2.14 | 85.40 | 2.14 |

It may be seen that the average size of farms almost remained the same in all the years. There has been only a slight increase in the owned area during 1955-56 and 1956-57. On the other hand, the area leased in has shown some decrease in the same period.

There has been some sales and purchases of the draught cattle at these holdings. But as the operated area remained almost the same, these transactions may be taken as mostly of a replacement nature.

Both the purchases of land and draught cattle, are not considered as the items of capital formation from the point of view of the community for which they are only transactions from one individual to another. They are, however, considered as the items of capital formation when it is measured from the individual point of view.

(b) Gross capital formation:

The expenditure of a capital type on other items of capital formation in Farm Business are given in table II.

TABLE II
Gross Capital Formation per Farm
(Average of 40 holdings in West Bengal)

| I T E M S | (Rs) | | | | | |
|--|--------------|--------------|--------------|--------------|--------------|--------------|
| | 1954-55 | | 1955-56 | | 1956-57 | |
| | value | Per cent | value | per cent | Value | Percent |
| 1. Reclamation of land | - | - | - | - | - | - |
| 2. Bunding and other land improvements | - | - | - | - | 1.13 | 7.1 |
| 3. Digging and repairs of wells and developments of other irrigation sources | 13.21 | 40.6 | 12.90 | 49.9 | 6.70 | 42.0 |
| 4. Laying of orchards | - | - | - | - | - | - |
| 5. Purchase, construction and repairs of farm houses, cattle shed, etc. | 18.12 | 55.6 | 12.20 | 47.2 | 7.54 | 47.3 |
| 6. Purchase of implements, machinery, and transport equipment | 1.23 | 3.8 | 0.77 | 2.9 | 0.60 | 3.6 |
| 7. Others | - | - | - | - | - | - |
| TOTAL | 32.56 | 100.0 | 25.87 | 100.0 | 15.97 | 100.0 |

It may be seen that the major portions of the expenditure have been on items 3 and 5 which form as much as about 96 per cent of the total capital outlay. The remaining expenditure is on purchase of implements machinery and transport equipment. The expenditure on items 2 to 5, which

may be considered as having direct bearing on production is only about 45 per cent of the total.

The rate of capital formation appears to have decreased from Rs.32.5 per holding in 1954-55 to Rs.16 per holding in 1956-57.

(c) Break-up of the capital expenditure:

To have an idea how far the capital formation has occurred on account of the actual expenditure on through owned equipment and family labour employed on the activities which may be considered as leading to capital formation, the percentage distribution of the total expenditure of capital type by different categories is given in the table III.

TABLE III
Percentage distribution of capital expenditure leading to gross capital formation by different categories of expenditure.

| Items | GROSS CAPITAL | | |
|---------------------------------|---------------|---------|---------|
| | 1954-55 | 1955-56 | 1956-57 |
| 1. Cash | 74.5 | 83.1 | 76.3 |
| 2. Kind | 0.8 | 1.5 | - |
| 3. Value of owned material used | 10.2 | 11.5 | 10.8 |
| 4. Value of Family labour spent | 14.5 | 13.9 | 12.9 |
| TOTAL | 100.0 | 100.0 | 100.0 |

It may be seen that a considerable portion of capital formation has occurred through the family labour and owned materials. As such, if this portion is not taken into account, the capital formation in agriculture will be under-estimated to the extent of about 24 per cent.

(d) Net Capital formation:

The foregoing figures relate to the gross capital formation in agriculture. To arrive at the net capital formation a further allowance for depreciation, obsolescence, damage, etc. is to be made. If an allowance of 20% is made per annum, the net capital formation per farm comes to Rs.26, 21 and 13 during 1954-55, 1955-56 and 1956-57 respectively.

2. UTTAR PRADESH:

(a) Created area and purchase of land and livestock:

The average size of the farm did not experience much change during the period under review. The area owned has increased to some extent in 1955-56 and 1956-57.

TABLE IV
Particulars of operated area per holding

(Average of 27 holdings in 3 villages in Uttar Pradesh;

| Sl. No. | Items | (Acres) | | | | | |
|---------|------------------------------|---------|-------------|---------|-------------|---------|-------------|
| | | 1954-55 | | 1955-56 | | 1956-57 | |
| | | Total | Per holding | Total | Per holding | Total | Per holding |
| 1. | Area owned & Self-cultivated | 367.89 | 13.63 | 372.97 | 13.81 | 373.22 | 13.82 |
| 2. | Area leased out | - | - | - | - | - | - |
| 3. | Area leased in | - | - | - | - | - | - |
| 4. | Total operated area | 367.89 | 13.63 | 372.97 | 13.81 | 373.22 | 13.82 |

* - The investigators were thoroughly trained to indicate the expenditure on repairs and maintenance and replacement and the expenditure on the additions to capital assets caused by the expansion of the Farm Business or changes in technology etc.

(b) Gross Capital Formation:

The rate of capital formation per holding seems to be quite high in 1954-55 i.e. Rs.668. It decreased to Rs.126 in 1955-56. But it agains experienced some rise in 1955-56.

TABLE V
Gross Capital Formation per Farm

(Average of 27 holdings in three villages in Uttar Pradesh)

| Sl. No. | I T E M S | (Rs) | | | | | |
|---------|--|---------|----------|---------|---------|---------|----------|
| | | 1954-55 | | 1955-56 | | 1956-57 | |
| | | Value | Per cent | Value | Percent | Value | Per cent |
| 1. | Reclamation of land | 15.4 | 2.3 | 8.0 | 6.3 | 5.5 | 1.9 |
| 2. | Bunding & Other land improvements | 0.5 | 0.1 | - | - | 4.7 | 1.7 |
| 3. | Digging & repairs of wells and development of other irrigation sources | 9.7 | 1.5 | 1.3 | 1.0 | 5.6 | 2.0 |
| 4. | Laying of orchards | 7.2 | 1.1 | 2.6 | 2.1 | 21.5 | 7.5 |
| 5. | Purchase, construction and repairs of farm houses, cattle sheds, etc. | 451.6 | 67.5 | 92.4 | 73.5 | 191.3 | 67.3 |
| 6. | Purchase of implements machinery & Transport equipment | 184.4 | 27.5 | 21.5 | 17.1 | 55.7 | 19.6 |
| 7. | Others | - | - | - | - | - | - |
| 8. | TOTAL | 668.8 | 100.0 | 125.8 | 100.0 | 284.3 | 100.0 |

It may be seen from the percentage distribution of the capital outlay that the purchase, construction and repairs of farm houses, cattle sheds, etc. alone accounts for as much as 67.5% in 1954-55, 73.5% in 1955-56 and 67.3% in 1956-57. Next to this, purchase of implements, machinery and transport equipment comprises 27.5, 17.1 and 19.6% in 1954-55, 1955-56 and 1956-57 respectively. The purchase of bullock carts is the major item which accounts for as much as about 50% of the total expenditure on this item. The expenditure on reclamation of land also was considerable during 1954-55 and 1955-56.

(c) Break-Up of Capital Formation:

The break up of capital outlay into different categories as given in Table VI shows that a major portion of the capital expenditure is comprised by cash expenses. The percentage of non-monetary expenditure varies between 4.9 in 1954-55 to 15.9 in 1955-56

TABLE VI
Percentage distribution of capital expenditure leading to gross capital formation - by different categories of expenditure.

| Sl. No. | Items | (UTTAR PRADESH) | | |
|---------|--------------------------|-----------------|---------|---------|
| | | 1954-55 | 1955-56 | 1956-57 |
| 1. | Cash | 95.1 | 84.1 | 91.5 |
| 2. | Kind | 1.3 | 4.1 | 2.0 |
| 3. | Value of owned materials | 1.0 | 3.4 | 2.1 |
| 4. | Value of family labour | 2.6 | 8.4 | 4.4 |
| | TOTAL | 100.0 | 100.0 | 100.0 |

(d) Net capital formation:

Making an allowance of 20% for depreciation, accident, etc. the net capital formation per holding comes to Rs. 535, 101 and 227 in 1954-55, 1955-56 and 1956-57 respectively.

3. PUNJAB

(a) Operated area and purchases of land and livestock

The average operated area of the farms almost remained unchanged during the period under reference. The area owned has experienced some increase during 1955-56 and 1956-57. The leased in area showed an increase of about 11 acres in 1955-56, but there was a considerable decrease in it in 1956-57.

TABLE VII
Particulars of operated area per holding
(Average of 40 holdings in Punjab)

| Sl. No. | Items | (Acres) | | | | | |
|---------|--------------------------------|---------|-------------|---------|-------------|---------|-------------|
| | | 1954-55 | | 1955-56 | | 1956-57 | |
| | | Total | Per holding | Total | Per Holding | Total | Per holding |
| 1. | Area owned and self cultivated | 482.59 | 12.06 | 483.34 | 12.08 | 485.09 | 12.13 |
| 2. | Area leased out | 8.44 | 0.21 | 8.44 | 0.21 | 8.44 | 0.21 |
| 3. | Area leased in | 215.04 | 5.38 | 226.99 | 5.67 | 205.25 | 5.13 |
| 4. | Total operated area | 697.63 | 17.44 | 710.33 | 17.75 | 690.34 | 17.26 |

(b) Gross Capital Formation:

The rate of capital formation has shown substantial increase during the period under review. It increased from Rs. 11.3 per holding in 1954-55 to Rs. 112.8 in 1956-57. The percentage distribution of the capital expenditure among different items as given in Table VIII for each year varies considerably.

TABLE VIII
Gross Capital Formation per Farm
(Average of 40 holdings in Punjab)

| Sl. No. | Items | (Rs) | | | | | |
|---------|--|---------|---------|---------|---------|---------|---------|
| | | 1954-55 | | 1955-56 | | 1956-57 | |
| | | Value | Percent | Value | Percent | Value | Percent |
| 1. | Reclamation of land | 3.0 | 26.7 | 3.0 | 6.0 | 16.7 | 14.9 |
| 2. | Bunding and other land improvements | - | - | - | - | - | - |
| 3. | Digging and repairs of wells and development of other irrigation sources | 0.3 | 2.5 | 3.5 | 7.0 | 54.2 | 48.0 |
| 4. | Laying of orchards | - | - | - | - | - | - |
| 5. | Purchase, construction and repairs of farm houses, cattle sheds, etc. | 4.5 | 40.1 | 23.8 | 47.7 | 39.1 | 34.6 |
| 6. | Purchase of implements, machinery and transport equipment | 3.5 | 30.7 | 19.6 | 39.3 | 2.8 | 2.5 |
| 7. | Others | - | - | - | - | - | - |
| | TOTAL | 11.3 | 100.0 | 49.9 | 100.0 | 112.8 | 100.0 |

Proportionately, the expenditure is more on reclamation of land in 1954-55, purchase of implements, machinery and transport equipment in 1955-56 and on digging and repairs of wells and development of irrigational resources in 1956-57. The percentage expenditure on purchase construction and repairs of farm houses, cattlesheds, etc. varies between

34.6 in 1956-57 to 47.7 in 1955-56.

(c) Break-up of capital expenditure:

The break-up of capital expenditure into different categories of expenditure such as cash, kind, etc. is given in Table IX.

TABLE IX

Percentage distribution of Capital expenditure leading to gross capital formation by different categories of expenditure.

| (Punjab) | | | | |
|----------|--------------------------------------|---------|---------|---------|
| Sl. No. | Items | 1954-55 | 1955-56 | 1956-57 |
| 1. | Cash | 64.4 | 85.2 | 84.1 |
| 2. | Kind | - | - | - |
| 3. | Value of owned materials | - | - | 1.4 |
| 4. | Value of family labour spent in work | 35.6 | 14.8 | 14.5 |
| TOTAL | | 100.0 | 100.0 | 100.0 |

It has been found that non-monetary expenditure account for about 15% of the total expenditure on the capital outlay during 1955-56 and 1956-57 and about 36% in 1954-55.

(d) Net capital formation:

Making an allowance of 20 per cent for depreciation, accident, etc. the net capital formation per holding is reduced to Rs.9.1, 50.0 and 20.3 in 1954-55, 1955-56 and 1956-57 respectively.

Of late some views have been expressed about decisions in respect of 'means of livelihood', 'economic status' and 'employment status' so far as the 1961 population census is concerned. At the last (1951) census, there were eight livelihood classes, four categories for employment status and three for 'economic status'. The livelihood classes were maintained more or less for enabling comparability with data collected at the past censuses. Employment status was introduced for the first time in keeping with ~~international~~ international standards. The title 'self-supporter' was used in place of 'earner' in order to include unearned income receivers.

The livelihood classification was really a classification for industrial status, with the difference that the industry 'agriculture' had been divided into four sub-groups to throw light on non-operative owners of land, owner-operators, nonowner operators of land and agricultural labourers. An agriculturist was to be classified (say) under 'cultivator of land wholly or mainly unowned' if cultivation of such land was his principal means of livelihood and not even if such cultivation led to a minor part of his income. ~~In this regard~~ it has been found later that even an agricultural labourer with a small piece of land has been classified as cultivator of land wholly or mainly unowned. If so, the blame should perhaps be placed on the shoulders of the enumerators.

Because zamindari and other intermediary interests were being abolished, it is found that many owner non-operators returned themselves as owner operators and were classified under 'cultivators of land wholly or mainly owned'. It was unfortunate that this could not be foreseen and enumerators alerted. ~~xxxxxxx~~

Does that mean that the means of livelihood classification be given up now? Comparability ^{and comp.} still demands that it be maintained. At a time when it is a question of moving manpower from agriculture it is necessary that we must know how the agriculturists are distributed. The classification does not in any way affect the detailed classification industry-wise.

No doubt ~~that~~ there is reason to ask for a subclassification of cropsharers under 'cultivators of land wholly or mainly unowned'.

Similarly, it would be sensible to ask that 'agricultural plantations, forestry and fishing' should be shifted from livelihood class V (production other than cultivation). Either these be given a separate subclass under livelihood category V or allowed to be distributed in the first four livelihood classes. ~~But~~ we would prefer a separate class.

The last census used the categories 'employer', 'employees', 'independent worker' and 'others' but only for the further classification of persons returned as self-supporters. ~~The~~ Besides the self-supporters, there were the earning dependents and dependents. Earning dependents naturally included both those who worked for others and those who helped in the family enterprise. The head of the household was to declare who was the earning dependent and who a self-supporter. The employment status thus seems to link up with the dependency classification, giving us six activity status classes of).

In criticism it may be said that these six leave out

In some of the surveys a classification was adopted was --

1. earner from gainful economic activity
2. earner from non-gainful activity
3. earning dependent from gainful activity
4. earning dependent from non-gainful activity
5. unemployed

We feel that the distinction by gainful activity in the case of earning dependent is not ~~xxxx~~ important and hence, not necessary. ~~If we are going to adopt the detailed activity status classification, the question of earner and earning dependent does not arise~~

It must be added that the activity status classification in our mind is the following:-

1. Self-employer
2. Employer
3. Employee
4. Unpaid household worker
5. ~~xxxxxx~~ Income recipients
6. ~~xxxxxx~~ Seeker of job for the first time
7. Seeker of job not for the first time
8. Houseworker
9. Student
10. Infirm
11. Beggars
12. Institutional population
13. Others

Yet it must be recorded that the idea of recording ~~xxxx~~ separately is not very justified. Educational statistics already are available on an annual basis. Besides, with the opening of the camp colleges, it create a problem whether a person working in a cond during the day and studying in a camp-college at night should be recorded ~~xxxxxx~~ as 'employee' or 'student', ~~xxxxxx~~ clear and can be given: he is an ~~xxxxxx~~ employee.

There will no doubt be persons who are both income-receipients and employer (or employee), or employees and unpaid household workers. A person may have a good bank balance (or house property) and yet may have a daytime job. There may be a government servant who attends office during the day and manages a shop morning and evening, leaving a son to manage things during the day when business is slack. The decision has best to be left to respondent to declare whether he is an employee or ~~xxxxxx~~ income-receipient or ~~xxxxxx~~ self-employer.

In opinion, that on each slip there be recorded the means of livelihood of the person on whom the member is dependent, we have, by implication, asked for the continuation of the practice of recording the means of livelihood. Instead of eight means of livelihood there may be ten means of livelihood, one class may be created to accommodate 'agricultural plantations, forestry and fishing' and another for 'village artisans, handicraft workers'. ~~we could have also say that one who is main a crop sharer may be so indicated separately in the case of "cultivators of land- wholly or mainly engaged"~~

UNDEREMPLOYMENT

It is very clear to many by now that unemployment is not as important as underemployment in this country and it would be useful if some idea of underemployment could be had on a nationwide basis. It has been suggested that three or four intensity-categories may be used to classify the workers.

In our opinion, underemployment to be found more in the rural areas where the determination of intensity into categories (say) full, half, quarter and nil will be very difficult. Instead we would suggest that the question be put to persons falling in the first five activity categories whether they are seeking jobs. On the other hand categories may be more feasible in the case of non-agricultural economic activities, but we are afraid in the present atmosphere correct classification shall not materialise. An industrial worker with slow tactics would not reveal the fact that he work which he accomplishes every day could be improved upon. Similarly, a person employed in the Accountant General's Office may not say clearly that the work in the office is only for two or three hours every day. It must be added that the mention of A.C.'s Office should not be taken to be a reflection of the state of affairs there. But it is an open secret that office employees are able to perform a greater proportion of the office hours without desk-work.

In summary, our suggestions are as follows:-

1. Retain the means of livelihood classification and improve upon it by adding two more classes, one for 'agricultural plantation, forestry and mining' and another for 'handicrafts and cottage industries' as a substitute for the existing one.
2. Adopt a 10-class activity classification but it must be noted against each ~~class~~ ^{category} the means of livelihood of the person whom he is dependent upon.

3. ~~xxx~~ Record those falling in the first five activity categories whether they are seeking any job on account of work being inferior or less.