

NATIONAL INCOME ACCOUNTING PRACTICES IN SYRIA

by Muhammad Diab¹

THIS paper describes the methods used in the estimation of national income of Syria in some selected years. It does not pretend to evaluate the statistical procedures and methods followed or suggest different procedures for the estimation of income in Syria. The choice of an optimal procedure is not simply a statistical problem but also an economic one. Such a choice is to be made in the light of the financial and technical resources which the country could allocate to the process of income estimation and the benefits accruing from further refinement in such estimation.

Syria has, since its independence in 1945, made several attempts at estimating its national income. The first such attempt was undertaken by the Ministry of Finance in 1946 when applying for membership to the International Monetary Fund and the International Bank for Reconstruction and Development. The method of estimation reported to have been used was the income received method. Admittedly, however, the procedure followed was very crude. Income received was classified into five categories:

- (a) Income from fixed capital.
- (b) Income from labour.
- (c) Income from non-farm activities.
- (d) Income from farm activities.
- (e) Income from Government-owned enterprises.

Income falling in each of these categories was arrived at by multiplying tax returns by the appropriate tax rates after giving 'due' consideration to the possibility of tax evasion.

In 1951, another attempt to estimate national income of Syria was made. The year chosen was 1950 and the approach followed was the value added approach. The Syrian economy was divided into nine sectors, with several subdivisions in each. The estimates were made on the basis of production data available at that time and in the light of national income studies made in

¹ Associate Professor of Economics, American University of Beirut.

British-mandated Palestine. In view of the similarities in the economic structure of the two countries, the sector ratios of value added to total production found for Palestine were assumed to be applicable to Syria also. These ratios were adopted in deriving sector income figures from the production figures for Syria. When this method was not feasible or appropriate, the income received method was resorted to. These estimates are given in Table I.

The Mission of the International Bank for Reconstruction and Development which was sent to Syria in 1954 has reported different estimates of Syrian national income (see Table II). The approach followed in arriving at these estimates was not explicitly discussed in the report submitted to the Syrian Government.¹

A more serious attempt at estimating the national income and expenditure of Syria was undertaken by Mr. Adel el Akel,² while studying at Columbia University. Mr. Akel divided the economy into nine sectors and adopted both the value added and the income received approaches depending upon the nature of the sector and the data available. He came out with the first complete set of national accounts for Syria. The attempt was most commendable, the more so since it was a one man job. Mr. Akel has, after joining the Syrian Directorate of Statistics, revised his estimates in the light of data which have since become available to him.³ His estimates are reproduced in Table III. The latter work of Akel relied heavily on the study of national income which was started by the Directorate of Statistics in 1958. We shall therefore, turn to that study and analyse the methods of estimation followed.

In 1956 the Directorate of Statistics of the Ministry of Planning in Syria began to undertake, with the technical help of the United Nations, what is considered to be the most serious attempt at estimating the national income of Syria. The year chosen for the estimate was 1956. The work took some three years to finish because of the lack of sufficient financial re-

¹ Some very tentative calculations made by the Mission indicated that this estimate (the 1950 estimate) may well be too conservative. These calculations point to a rise in national income from about £\$1,250 million in 1949 and £\$1,380 million in 1950 to perhaps around £\$1,600 million in 1953.

² Adel el Akel, *National Income Accounts of Syria 1955 and 1956*; (Columbia University: 1958, Ph.D. Dissertation, mimeographed).

³ el Akel, *National Economic Accounts, Part I: National Income and Product Accounts* (Damascus: Ministry of Planning, 1961), in Arabic (Mimeographed).

sources.¹ We shall, in what follows, present the procedure followed in that attempt.

NATIONAL INCOME ESTIMATES FOR 1956

The Syrian economy was divided into nine sectors, namely:

- | | | |
|------------------|---------------------------|---------------|
| 1. Agriculture. | 4. Services. | 7. Rental. |
| 2. Industry. | 5. Government. | 8. Financial. |
| 3. Construction. | 6. Transport and storage. | 9. Commerce. |

The above division is more or less in line with the International Standard Industrial Classification of All Economic Activities (I.S.I.C.). The Rest of the World sector was left out because of the feeling that any estimate of income originating in the sector would be totally conjectural. Therefore, the national income estimates presented in this paper refer to what is known as Net Domestic Product at factor costs.

Because of the importance of agriculture in the Syrian economy, efforts were first directed towards estimating income originating in that sector.

The Agricultural Sector

The method followed in estimating income in this sector was the value added method, with the exception, however, of Government services. Production of the sector comprises:

1. Agricultural vegetable produce:

(a) Field crops.	(d) Government agricultural services.
(b) Fruits.	(e) Land and maintenance of buildings.
(c) Forestry.	(f) Growing of flowers.
2. Agricultural livestock produce:

(a) Dairy products.	(f) Honey.
(b) Meat and skins.	(g) Silk.
(c) Wool and hair.	(h) Fishing.
(d) Poultry.	(i) Government services.
(e) Eggs.	(j) Wild hunting.

Field crops are the most important group of agricultural commodities in Syria. Yet up to 1958 no serious attempt was made

¹ The results of the study were released by the Ministry of Planning during the years 1958-9, whenever the estimates of each of the sectors into which the Syrian economy was divided were finalized.

to survey the cultivated areas in each of the administrative localities, or assess the yields of the crops grown. The Ministry of Agriculture sends annually some of its officials to the various areas and these estimate present production on the basis of last year's production, taking into consideration changes in climate, rainfall and the opinion of mayors and farmers. Such estimates were, therefore, considered rough. In an attempt to ascertain the degree of error in the above method, the Directorate of Statistics undertook during 1957 a survey of actual cultivated area in a sample of thirty villages in the Hasakah Mohafazat, which is an important agricultural region. The yield of the area surveyed was not actually ascertained because of the lack of sufficient manpower; mayors' evaluations of yields were adopted. The production estimates resulting from this elementary survey of the cultivated area seemed to confirm the estimates arrived at by the method of the Ministry of Agriculture. In view of this fact, the Directorate of Statistics adopted the production statistics for all crops and fruits arrived at by the Ministry of Agriculture as adequate.

Prices of field crops adopted in estimating the value of production were ex-field prices and were arrived at on the basis of an average of the highest and lowest price levels of the crops during the year as quoted in the main cities. An allowance was made for transportation costs between the fields and the cities. Prices of fruits were taken from the records of wholesalers in the main cities of Syria with an adjustment made for transportation costs.

Produce of forestry whether used as fuel or charcoal or in sawmills was estimated on the basis of tax returns with 'due' allowance for evasion and farm use.

Actual expenditure on Government services to agriculture were taken from the budget of the Ministry of Agriculture for 1956. Such services include protection of agricultural products from disease and pests, forestation and agricultural extension services.

Expenditures on the maintenance of irrigated land, such as clearing canals, were estimated on the basis of the number of holdings of irrigated land in the country and their average expenditure. The number of such holdings comes to about 60,000.

Flower growing is practically restricted to Damascus and

Aleppo. The value of production in these two cities was estimated with the help of some big cultivators who were interviewed for this purpose. The value added in flower growing in other localities was estimated in a very rough way.

Production costs of seeds, cuttings, fertilizers, fuel, fodder for draught animals, depreciation and other current materials were estimated by interviewing mayors in the case of seeds, wholesalers in the case of fertilizers and oil companies in the case of fuel. For agricultural equipment, a ratio of 10 per cent of the value of equipment sold to farmers by 1956 was taken to represent depreciation, and 20 per cent maintenance.

Income originating in the sub-sector of livestock production was arrived at by estimating income originating in each of the components. The figures of livestock were taken from the animal census, conducted annually by the Ministry of Finance for tax purposes, with 'due' regard to evasion, and also from the estimates of the Ministry of Agriculture. The production of milk and products made thereof was estimated on the basis of assumed yields of cows, goats and sheep; 50, 20 and 5 per cent of such production were estimated to have been allocated to the production of samen (butter Ghee), cheese and butter respectively. The rest was directly consumed. On the basis of such allocations of milk, actual production of samen, cheese and butter was estimated by assuming certain 'transformation coefficients'.

Estimates of production of meat and skins were taken from the accounts of public abattoirs. The number of livestock slaughtered there was raised by 10 per cent to account for animals slaughtered outside the abattoirs. The value of meat ex-farm or ex-pasture was estimated by subtracting transportation expenses from the above values.

Production of wool and hair was estimated on the basis of the number of sheep and goats already arrived at, and on the basis of estimates of yield of wool and hair per head.

As to poultry, eggs, honey, silk, fisheries and game hunting, levels of production were more or less roughly estimated.

The Industrial Sector

Income originating in the industrial sector is generally more easily estimated than that of the agricultural sector. The industrial sector covered all economic activities listed in Divisions

1, 2, 3 and 5 of the I.S.I.C., namely, mining and quarrying, manufacturing, electricity, gas, water and sanitary services, plus cotton ginning which is generally classified in agriculture. Enterprises falling in this sector were divided, in accordance with the industrial classification referred to above, into private and Government-owned. Income originating in Government enterprises was estimated from the annual Government budget using the income received approach. This approach was adopted because of the difficulties in determining the private market value of production of such enterprises. These enterprises consisted of tobacco manufacturing, electricity, water and sanitary services.

Income originating in the private sector was estimated through the value added approach. Since there was no census of industrial establishments at the time, information about the number of establishments had to be collected from several sources, namely, the Register of Industry for 1954 of the Ministry of National Economy, the Register of the Income Tax Department of the Ministry of Finance and the Register of Industrial Establishments of the Directorate of Statistics. The information collected from these sources was checked against each other and corrected. Admittedly however, such information was known to be incomplete, yet it was made use of for lack of a better feasible alternative. A sample survey was designed in order to collect adequate data about the value of production and income originating in this sector.

Industrial establishments were divided into two frames. The first included thirty-two fairly mechanized industries consisting of 2,532 establishments. Such industries and establishments were located in the big cities which were mostly the centres of the various Syrian governorates. The most important of these industries were: mechanized spinning and weaving, knitting, cement, sugar, soap and vegetable oil. All known establishments of these industries were surveyed.

The other frame, comprising 15,000 establishments scattered all over the country, included what had been classified as handicraft industries. Some such industries were batteries, carpentry, manufacturers of apparel, sweets, tiles, mosaic, etc. These establishments were divided into four categories according to whether they were located in the 'centres' of governorates, districts, counties, or in villages.

Each of the centres of governorates was considered a sub-frame of its own and all establishments located there were industrially classified; from each such class, a simple random sample was chosen for surveying. The results of the survey were applied to each of the sub-frames, and these in turn were added up to give data for the first category of establishments.

Centres of districts were divided into two strata according to whether the majority of residents were engaged in agricultural or non-agricultural activities. A two-stage random sample was resorted to in this case. First, a random sample of the centres in each of the two strata (the rural and the urban) was taken with probabilities proportional to the number of population of the centres. Establishments falling in the selected urban centres were surveyed in the same manner as in the case of centres of governorates. Because of the small size of the rural centres all the establishments falling in the selected rural centres were surveyed.

Establishments located in the other two categories of centres, namely, centres of counties and villages were surveyed in a manner not far different from the one previously described.

The results of the survey enabled the Directorate of Statistics to estimate income originating in the industrial sector classified according to industry groups.

The Construction Sector

The construction sector includes all activities included in Group 4 of I.S.I.C. Construction undertaken by the Ministry of Defence was excluded from this sector. The procedure followed in estimating income originating in the sector was as follows. Construction activities undertaken by the private and public sectors were identified separately. The value added method was followed in the first and the income received method in the second. In each of these two sectors, construction was classified according to whether it was new construction or maintenance and repair.

Because of the financial inability of the Directorate of Statistics to carry out a survey of actual construction undertaken in Syria, such construction was estimated on the basis of the total area shown in construction permits issued in 1956. Admittedly, such a procedure was not without its pitfalls, but under the financial circumstances that was the most feasible way out.

To arrive at the value of construction undertaken, construction permits were classified according to their location, namely, centres of governorates, districts, counties or villages. Construction was further classified in each class according to whether it was for housing, industrial or business purposes. An assumed distribution of housing construction as very good, good, average and simple was adopted. For each such type of housing construction and in each type of locality, a figure of construction cost per square meter was assigned. These figures were determined after consulting the engineers in the field. Similar figures were assigned to industrial and business construction. The percentages of value added in construction in each type of locality were also estimated in consultation with the engineers in the various parts of the country.

The Services Sector

The services sector included all the activities listed in Division 9 of the I.S.I.C., plus some other activities of minor importance, such as peddlers, darning of clothes, etc. Several activities were, however, excluded from Division 9. These consisted of Government services (as per Group 810 of I.S.I.C.) which were included in the Government sector; accounting and related services (Group 832) which were included in the sectors where such services were rendered and laundry services (Group 854) which were included in the industrial sector. Two approaches were followed in estimating income originating in this sector. The income received approach was followed in the case of Government-administered activities such as Government educational services. The value added approach was followed in the case of privately administered activities.

Income originating in the Government and semi-government administered activities was taken from the accounts of actual expenditures. For the remainder, a random sample for each type of activity was taken from the list of establishments in each governorate. The questionnaire drawn up for the purpose was sent to each of the selected establishments and was filled in either by the entrepreneur himself or by the officials of the Directorate of Statistics.

The Government Sector

The Government sector included all activities as listed in

Group 810 of the I.S.I.C., plus sanitary services (Group 522 of I.S.I.C.). Income originating in the Government sector was estimated on the basis of income received. Relevant data were taken from the accounts of actual Government expenditures. Rentals of Government-owned buildings occupied by the Government were imputed and added up.

The Transport and Communication Sector

The transport sector included all activities listed in Division 7 of I.S.I.C. with the exception of storage (Group 720) which was included in the commercial sector, and tramways which were included under electricity in the industrial sector. The value added method was followed in estimating income originating in transportation by car and draught animals and air transport. The income received approach was used for estimating income originating in other activities, which included railway transport, Latakia Port, pipe-line transport and post, telegraph and telephone. It may be noted that transit royalties on oil pipe-lines were not included as income payments in this sector. No mention has been made of their allocation.

Each of the abovementioned activities constituted a frame of its own. Income originating in vehicle transportation was estimated by classifying cars according to some pertinent attributes and interviewing drivers and transportation companies selected at random. A similar procedure was followed in the case of other activities whose income was estimated by the income received method. Income originating in other activities of the sector was estimated from the accounts of actual expenditures.

The Housing Rental Sector

The rental sector included rentals of housing only; rentals of other buildings were included in the sectors wherein the buildings rendered the services. The procedure followed in estimating income originating in this sector was as follows: houses in the country were classified into four categories, according to whether they were located in the centres of governorates, districts, counties or villages. The number of houses in each of the four categories were estimated and classified into new, average or old houses. The average annual rentals of houses thus classified were

estimated in consultation with the officials of municipalities and mayors.

The Financial Sector

The financial sector includes banks and other financial institutions, insurance and real estate, as listed in Division 6 of the I.S.I.C. Income originating in this sector was estimated by the use of the income received method. The procedure followed in the case of banks was that proposed by Kuznets and adopted by the U.S. and other countries. Banks, Government-administered financial institutions and insurance companies were all comprehensively surveyed. Random samples from the lists of exchange dealers and dealers in real estate were taken for the purpose of determining income originating in these two activities.

The Commercial Sector

The commercial sector consisted of wholesale and retail trade activities as referred to in Major Group 61 in the I.S.I.C. Such trade was divided into six categories according to the 'nature' of the commodities traded:

- | | |
|-----------------------------|--------------------------------|
| (a) Agricultural products. | (d) Imports. |
| (b) Industrial products. | (e) Products in transit. |
| (c) Exports and re-exports. | (f) Customs clearing services. |

The procedure in estimating income originating in this sector was as follows: the value of a commodity was calculated as it entered the trade sector and as it left it; current costs, depreciation and indirect taxes were subtracted to get net value added. Inventory changes were assumed to be zero. For agricultural products the value added in trade was estimated on the basis of an investigation of the quantities sold in the market and the prices paid by the wholesale trade (price ex-farm), retail trade and the consumers. From these figures, percentages of the value added in both wholesale and retail trade were derived, and these were generalized to cover all agricultural commodities according to whether they passed through wholesale trade, retail trade or both, before they reached the final users.

In the case of manufactured products, the primary interest was in estimating the value of such products ex-works in order to apply a similar procedure to the one mentioned above. The data about the value of manufactured products was not com-

plete. Some entrepreneurs provided it, others did not. In the case of enterprises which had not reported the value of their manufactured products, the ratios of the value of production ex-works to the value added obtained from the reports of similar enterprises was applied to get the ex-works value of their products. The next step was to determine the value added in the trading sector, for which a number of wholesalers and retailers dealing in manufactured goods were interviewed. These interviews provided information on the mark-ups in wholesale and retail trade in manufactured goods.

Similar procedures were followed in estimating the value added in export and import trade. Commissions of transit agents and those engaged in clearing imported and exported goods from customs were estimated on the basis of the number of 'clearings' multiplied by an average fee for each.

In consultation with the business houses, it was estimated that the current costs in wholesale and retail trade constituted 8.8 and 6.8 per cent of the gross value added in these sub-sectors. Such costs plus depreciation (3 per cent) and indirect taxes were deducted to arrive at the estimates of income originating in the sector.

Estimates for Subsequent Years

The Directorate of Statistics has continued to estimate national income of Syria for the years subsequent to 1956. These estimates are shown in Table IV.

It is needless to say at the end of this paper that the procedures followed so far in estimating the national income of Syria fall short of what is desired. None the less it is a commendable start. The statistical apparatus of the Government is still in its infancy and cannot support an attempt on a more gigantic scale. The economic structure of the country does not lend itself very easily to the sort of surveys required for a thorough study of national income. The Industrial Census undertaken in 1959, which was the first of its kind in the country, and the agricultural sample survey recently undertaken, would be very helpful in future studies of the national income of the country.¹

¹ For a discussion of the possible utilization of the Industrial Census in estimating national income and other economic indicators, see the writer's article 'Input-Output Analysis and Economic Programming with Special Reference to Syria', *Middle East Economic Papers*, 1961. (Beirut; Economic Research Institute.)

TABLE I

National Income of Syria, 1950
(£S million)

Sector	Sub-group	Sector total	%
(a) <i>Agriculture</i>			
1. Agricultural crops	608.0		
2. Livestock production	179.0		
3. Less: Cost and taxes	- 234.0		
Net income from agriculture		553	44.3
(b) <i>Trade</i>			
1. Trading agriculture production	70.0		
2. Trading industrial production	35.0		
3. Income from imported trade	60.0		
Total income from trade		165	13.3
(c) <i>Industry</i>			
1. Textiles	58.0		
2. Food industries	35.5		
3. Shoe making	6.0		
4. Carpentry and blacksmithing	6.0		
5. Other industries	19.5		
Total income from industries		125	10.0
(d) Communications and transportation		113	9.0
(e) Government sector		90	7.2
(f) Real estate		64	5.1
(g) Construction		40	3.2
(h) Cafes, restaurants and hotels		25	2.0
(i) Other sources		75	6.0
Total national income		1,250	100.0

Source: Ministry of Finance, Damascus, Syria.

TABLE II

National Income of Syria
(£S million)

Year	Value
1949	1,250
1950	1,380
1953	1,953

Source: I.B.R.D., *The Economic Development of Syria* (Washington: Johns Hopkins University Press, 1955), pp. 20-21.

TABLE III
Gross National Income and Product Account, 1956
 (£S million)

Payments to households		2,238	Personal consumption expenditure		1,726
Wages, salaries and supplements		1,308	Food	707.5	
Agriculture	566		Housing	172.5	
Industry	178		Light and fuel	86.2	
Construction	67		Furniture and linen	69.3	
Transportation	30		Kitchen utensils	121.5	
Finance	13		Apparel	190.0	
Commerce	128		Transportation	26.0	
Government	235		Education	9.0	
Services	61		Medical care	87.0	
Rest of the world	30		Personal expenditures	68.5	
Profits and interest paid		125	Other expenditures	188.5	
Entrepreneurial income		805	Government consumption expenditures		392
Farmers	321		Goods	147.0	
Real estate	129		Services	245.0	
Services and professions	95		Gross domestic investment		416
Non-agricultural enterprises	260		Private		318
Payments to Government		170	Construction	119.0	
Business income tax		8	Land reclamation	104.0	
Indirect tax		162	Agricultural machinery	35.0	
Agriculture	31		Industrial machinery	29.0	
Sugar	8		Transportation vehicles	31.0	
Cement	5		Government		98
Fuel	21		Construction	11.0	
Customs	62		Land reclamation	15.0	
Others	35		Machinery	20.0	
Non-payments		179	Roads	9.0	
Depreciation		79	Municipalities	22.0	
Undistributed profits		100	Transportation vehicles	21.0	
Statistical discrepancy		7	Rest of the world		46
			Goods (net)	104.0	
			Services (net)	150.0	
Charges against gross national product		2,580	Gross national product		2,580

TABLE IV

National Income Estimates in Syrian Region (in 1956 Prices)
(£S million)

Sectors	1953	1954	1955	1956	1957	1958	1959	1960
Agriculture	824	927	636	936	1,067	702	721	636
Industry	227	246	264	267	288	304	315	341
Building and construction	60	80	95	98	75	90	79	117
Residential dwellings	116	122	130	137	144	155	163	170
Finance	22	37	41	44	48	46	45	45
General government	114	117	140	150	157	168	178	182
Transportation and communication	129	142	139	137	124	130	136	140
Wholesale and retail trade	270	349	319	375	386	335	320	308
Services	130	146	156	159	162	172	175	184
Grand total	1,892	2,176	1,920	2,303	2,451	2,102	2,133	2,123

Source: Ministry of Planning, *Statistical Abstract, 1960* (Damascus, 1961), p. 402.