SOCIAL ACCOUNTING MATRIX FOR EGYPT 1976

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PREFACE

A Social Accounting Matrix (SAM) is presented for Egypt
for 1976. It is based on the data available to the authors
up to early 1978. While some parts may be improved as new
data becomes available, the current matrix sheds light on
a number of policy issues in Egypt.

Many people contributed to the success of this work.
These include:

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1. INTRODUCTION

The Social Accounting Matrix (SAM) provides a
convenient approach to organizing economic data for
a country.[1] Typically it is structured around an
input - output table and includes summary statistics
on consumption and production patterns, exports,
imports, investment and savings. Depending on the
particular issues of interest and the data available
it may include more detailed information on income
distribution, tax structure, and monetary variables.
In this instance the matrix shown in Table 1 reflects
the trade-off between issues of interest, data
quality and availability and with manpower constraints
in estimation. While the SAM is for the year 1976,
the data used are of somewhat uneven quality with
some of the components based on data from earlier
years, some estimated by indirect methods but much
of the table is derived from official government
data sources which were not in a form readily
available to the general public.[2]

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[1]The development of the SAM is discussed in a
working paper by Eckaus et al (1979). In this paper
they use the SAM to develop multisector general
equilibrium models for Egypt.

[2]An earlier, more aggregated version was
developed by Taylor (1979) to analyze consumption
subsidies. This provided a useful input.

Table 1. Social Accounting Matrix for Egypt 1976 (Millions ₤E)

(Σ 1 – 12)

DELIVERING SECTORS \ SECTORS RECEIVING	1. STAPLE FOOD	2. NON-STAPLE FOOD	3. COTTON	4. OTHER AGRICULTURE	5. FOOD PROCESSING INDUSTRY	6. TEXTILE INDUSTRY	7. OTHER INDUSTRIES	8. CONSTRUCTION	9. CRUDE OIL & PRODUCTS	10. TRANSPORT & COMMUNICATION	11. HOUSING	12. OTHER SERVICES	13. TOTAL INTERMEDIATE	14. TOTAL FINAL DEMAND	15. U. LOWEST 60%
1 Staple Food	46.6722	–	–	–	179.6283	–	–	–	–	1.3611	–	10.18230	238	217	22.0
2 Non-Staple Food	1.67613	37.25629	0.47093	5.91269	350.7248	1.05422	0.38918	..	–	0.61618	–	17.61671	416	852	179.8
3 Cotton	–	–	0.40303	..	1.53937	73.09589	0.00489	..	–	–	–	–	75	160	1.8
4 Other Agriculture	54.58846	282.05030	9.92237	2.13755	5.95715	34.46799	1.86421	..	–	0.61798	–	0.27845	392	72	14.3
5 Food Processing Ind.	–	39.82283	–	–	141.30150	3.77228	9.60896	–	–	2.17375	0.00846	93.21643	290	1232	324.5
6 Textile Industry	1.83642	0.05167	3.29803	0.02107	1.41447	310.59280	1.30919	1.11537	0.22304	0.26195	0.02569	53.05054	373	512	79.9
7 Other Industries	9.35269	0.16335	2.91491	0.21883	1.54634	13.57468	164.4493	11.28970	9.00784	8.51700	0.16177	70.89040	292	1100	95.8
8 Construction	..	1.17015	0.13579	–	0.57014	1.77580	0.99110	0.57402	2.42426	9.24410	5.66571	14.45822	37	599	–
9 Crude Oil & Products	12.73104	30.59438	3.91501	2.00618	3.41795	12.06315	11.03780	30.66330	132.4586	35.36494	–	80.81433	355	254	21.9
10 Transport & Comm.	0.20957	0.40542	0.21384	0.02967	0.54438	2.08350	0.68208	2.16599	0.21176	2.10867	0.00697	31.34770	40	537	30.0
11 Housing	0.03204	0.01099	0.01148	0.00192	1.00936	0.65231	0.40390	0.79597	0.41906	0.35143	–	6.31325	10	132	16.7
12 Other Services	2.90146	16.47459	7.71460	0.67209	31.34575	33.86751	10.25930	335.3957	12.26550	26.38286	2 13139	488.83130	968	2150	208.3
13 Total Inputs Σ 1–12	130	408	29	11	719	487	201	382	157	87	8	867	3486	7817	994.4
14 VALUE ADDED	317	806	202	438	164	330	569	254	324	454	134	2049	6041		
15 U. Lowest 60%	0.0	0.0	0.0	0.0	40.566	94.863	86.788	36.260	0.928	52.356	34.076	631.429			
16 U. Middle 30%	0.0	0.0	0.0	0.0	45.179	89.870	89.105	35.473	28.425	61.263	40.122	646.964			
17 U. Top 10%	0.0	0.0	0.0	0.0	64.255	92.267	98.106	98.267	45.648	79.381	50.801	683.607			
18 R. Lowest 60%	135.140	289.890	90.312	180.294	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
19 R. Middle 30%	87.207	240.066	58.509	128.291	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
20 R. Top 10%	79.652	225.044	53.179	129.415	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
21 HOUSEHOLD VALUE ADDED	302	755	202	438	150	277	274	170	75	193	125	1962	4923		
22 Gov. & Pub VALUE ADDED	15	51	-	-	14	53	295	84	249	261	9	87	1118		
23 Gov. Conventional															
24 Gov. Trade					25								25		20.2
25 Gov. Trade Imports	12	37	10	8	391							94	552		50.7
26 Other Imports	7	22	4	15	9	47	435		66	51			656		15.5
27 TOTAL IMPORTS	19	59	14	23	425	47	435		66	51		94	1208		
28 Imp. Tariffs	1	5			166	12	100		42				325		
29 IND. TAXES					205	65	35		15			20	340		37.9
30 Subsidies (-)	-12	-10	-10	-8	-182	-86	-3		-8	-15		-12	-346		-63.8
31 Gov. Transfers															78.7
32 Dir. Taxes					25	30	55		13			100	223		6.2
33 Σ 28 -30															
34 Priv. Savings															-96.8
35 Gov. & Pub. Savings															
36 Gov. Conv. Deficit															
37 Gov. Trade Deficit															
38 Foreign Finance															
39 Change in Stocks															
40 TOTAL SAVINGS															
41 GROSS PROD.	455	1268	235	464	1522	885	1392	636	609	577	142	3118	11303		1043
POPULATION (Mill)															12.798
Income Shares															0.3002
Population Shares															
Per Capita Income															81.497
Income per Earner															260.79

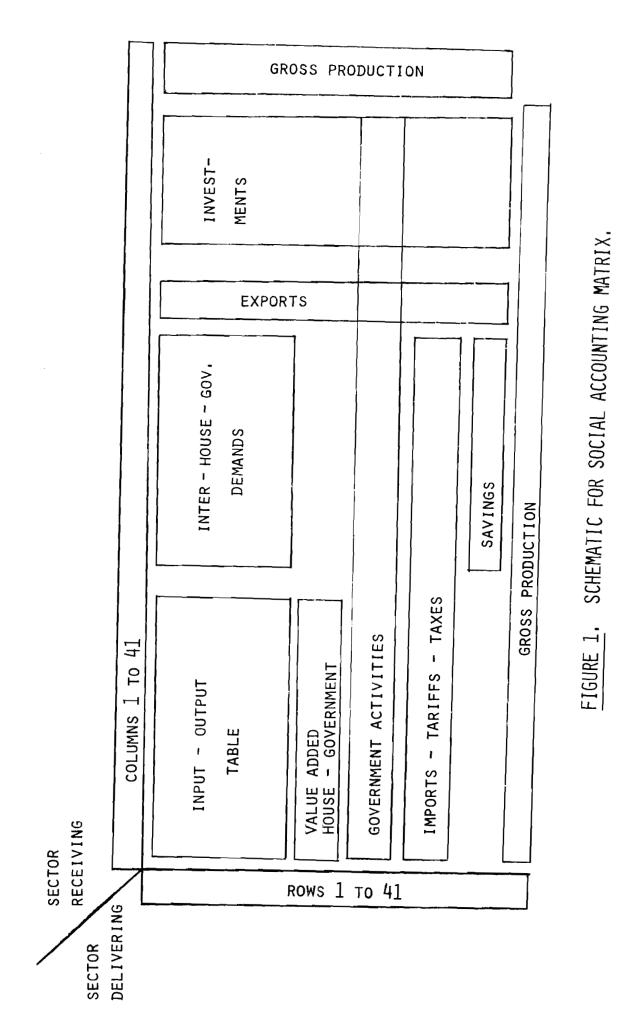|						G1	G2	G3																		
16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.
U MIDDLE 30%	U. TOP 10%	R LOWEST 60%	R. MIDDLE 30%	R. TOP 10%	TOTAL HOUSEHOLD	GOV. & PUB. SECTOR PURCHASES	GOV. CONVENTIONAL	GOV. TRADE	(GOV. PROC. FOR EXPORT)	PRICE DIFF.	TOTAL EXPORTS	IMPORT TARR.	IND. TAXES	SUBSID.	GOV. TRANS.	DIR. TAXES	Σ	PRIV. INVS.	GOV.'S PUB. INVS.	GOV. CON. INVS.	GOV. TRADE INVS.	FOREIGN INVS.	ΔS	TOTAL INVS.	ΣΣ GROSS PRODUCTION
13.5	5.3	22.6	7.1	4.5	75		14	95	17	−17	34												16	16	455
186.6	110.7	114.0	66.8	53.3	710		60	30	2	−4	55									1				1	1268
0.3	0.4	1.6	0.6	0.5	5			56	100	−56	155														236
16.4	11.8	7.2	4.3	2.0	56						18														464
275.1	140.4	234.6	100.6	70.8	1146		50				26												10	10	1522
97.2	55.1	38.2	30.9	25.7	327		27				109									3			46	49	885
99.1	60.3	45.1	23.3	19.6	343		268				89									360			40	400	1392
−	−	−	−	−	−															599				599	636
18.4	9.4	11.8	4.7	2.8	69		35	100	49	−100	149												1	1	669
45.4	170.8	7.8	6.3	4.7	265		100				172														577
39.4	55.3	4.4	3.9	8.3	128		4																		142
223.2	152.7	78.1	63.4	76.3	802		1013	42			171									122				122	3119
1014.6	772.2	565.4	310.9	268.5	3926		1571	322	168	−176	976									1085			113	1198	11362
																									6647
											66.1														1043
											89.9														1126
											93.0														1306
											26.42														721
											20.46														536
											16.12														503
											310														5233
																			296						1414
												477	469		378										1324
15.2	7.6	19.9	11.4	4.7	79			711		176			21												1012
45.2	31.9	44.1	29.4	14.7	216																				768
30.4	89.3	11.6	19.5	18.7	125																391			391	1172
					341																			391	1940
					60																				477
39.2	31.1	19.3	15.0	7.5	150															91				91	480
−48.4	−23.6	−12.9	−9.8	−9.5	−168		146	368																	0
94.3	123.0	−	−	−	296																				296
33.7	70.7	3.7	15.1	25.6	155																				378
−98.2	202.8	69.9	143.5	172.8	394																				394
						1414																			1414
							−393																		−393
								−389																	−389
											654														654
					394	1414	−393	−389			654														1680
1126	1305	721	536	503	5233	1414	1324	1012	168	0	1940	477	490		296	378				1567			113	1680	
6.399	2.133	10.139	5.069	1.690																					
0.3241	0.3757	0.4099	0.3042	0.2859																					
0.558				0.442																					
175.965	611.814	71.112	105.544	297.633																					
563.10	1957.80	227.56	337.74	952.43																					

2. STRUCTURE OF SOCIAL ACCOUNTING MATRIX

The structure of the SAM is shown schematically in Figure 1. It is composed of 41 rows by 41 columns. Loosely speaking, one may consider the rows as deliveries and the columns as claims. One notes that the corresponding row and column totals (41) are equal. These totals are called, again rather loosely, gross production. Some of the principal blocks are labeled in the schematic. These are now discussed in general before proceeding to a more detailed description.

Block 1 is the interindustry matrix. It has twelve sectors. Block 2 has value added to households, government and public sector production. The household value added is disaggregated to six income classes. To permit the study of the distributional impact of various policies for urban, rural and low to high income socio-economic groups, three urban and three rural[3] income classes were distinguished, corresponding to the lowest 60%, the next 30%, and the upper

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[3] In fact the division was between agriculture and non-agriculture rather than a rural-urban split.

FIGURE 1. SCHEMATIC FOR SOCIAL ACCOUNTING MATRIX.

10% of income recipients. These groups may be viewed as the low, middle and upper income classes in each sector.

Considerable effort was expended to devise some meaningful way to treat government activity. The Egyptian government plays a role which may be characterised as midway between typically socialist and capitalist economic systems. For our purposes, the government sector was disaggregated into three parts: G1 - public sector production; G2 - traditional activities such as health, education, defense; G3 - trading. In the schematic the first part, G1, is in Block 2 while the other two are in Block 3. Various taxes, subsidies and transfers are given in Block 4. Private, public and foreign savings are given in Block 5. These sum up to total investment which is shown as Block 7. Intermediate and final demands for household and government are in Block 6 together with exports. Gross production is in Blocks 8 and 9.

3. THE INPUT-OUTPUT TABLE FOR 1976

The 12 x 12 input-output table for 1976 was based on the 1970/71 27 x 27 input-output table.[4] It represents an aggregation of the latter and then was transformed to fit 1976 final demand vector. This required three operations:

(1) The restructuring of the 1970/71 input-output table to transform it into a 12 x 12 table.

The twelve sectors are:

1 - Staple food

2 - Non-staple food

3 - Cotton

4 - Other agriculture

5 - Food processing industries

6 - Textile industries

7 - Other industries

8 - Construction

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[4] The 1970/71 table was constructed with the assistance of a team of experts from the German Democratic Republic. At the moment efforts are underway to produce a current table. When this becomes available it should represent a significant improvement on the modified one used in the SAM.

    9 - Crude oil & products

   10 - Transport & communication

   11 - Housing services

   12 - Other services.

Certain sectors were aggregated and others dis-aggregated to fit the new sectoral classification. It was also necessary to take into account types of production activities which had been created after 1970/71, such as the new steel complex, the aluminium complex and the reopening of the Suez Canal.

Agricultural activities are of particular interest for policy and, accordingly, were represented by four sectors. This detailed disaggregation required the use of data on commodity balances and flows to estimate a row for each of the four sectors. Further information concerning inputs of goods and services to these sectors, available at the Agricultural Department in the Ministry of Planning, was used in the formation of the columns of these sectors.

(2) The transformation of values of the flows in 1970/71 table to 1976 prices by using index numbers of production.

Price and quantity indices were used to transform the interindustry flows measured in 1970/71 prices. The rows were multiplied by index number of prices and the columns by index number of quantities and the consistency of the results were checked. The indices used are given in Table 2 and were computed as follows.

$$
\text{Price index, } P_i = \frac{\sum_j \left(\frac{P_{ji}(76)}{P_{ji}(70/71)} \right) P_{ji}(70/71) \cdot q_{ji}(70/71)}{\sum_j P_{ji}(70/71) \cdot q_{ji}(70/71)} \, 100 \qquad (1)
$$

$$
\text{Quantity index, } q_i = \frac{\sum_j q_{ji}(76)}{\sum_j q_{ji}(70/71)} \, 100 \qquad (2)
$$

TABLE 2. PRICE AND QUALITY INDICES FOR THE PERIOD 1970/71 TO 1976

		P_I INDEX	Q_I INDEX
1.	STAPLE FOOD	155	106
2.	NON-STAPLE FOOD	223	132
3.	COTTON	166	73
4.	OTHER AGRICULTURE	193	127
5.	FOOD PROCESSING	135	135
6.	TEXTILES	129	140
7.	OTHER INDUSTRIES	144	135
8.	CONSTRUCTION	163	160
9.	CRUDE OIL & PRODUCTS	332	130
10.	TRANSPORT & COMMUNICATION	197	116
11.	HOUSING	107	107
12.	OTHER SERVICES	148	130

The summation in each instance is over the commodities composing the sector.

(3) Adjustment of the new 12 x 12 table at 1976 prices to be consistent with 1976 final demand vector as obtained from actual national income accounts.

Relatively reliable data were available for final demand in 1976 for each of the twelve sectors. A modified RAS method was then used to adjust the technical coefficients.

4. GOVERNMENT

The three government sectors, G1, conventional production in the public sector, G2, conventional governmental activities and G3, the government trading activity are reflected in SAM in three rows, 22, 23, and 24, and columns 22, 23 and 24. The columns refer to purchases or expenditures, while the rows refer to revenue or sales.

(1) Government Sector, G1

Although this sector refers to public sector production activities, i.e., those carried on by government firms, it includes only the surplus created in the public sector which is used to finance capital formation in

both government proper and the public sector. The
intermediate inputs and outputs and deliveries to
final uses of government owned firms are included in
the proper production sector.

The surplus created in the public sector is part
of national savings. This was estimated by subtracting
wages paid in the public sector, by sector, from value
added in the same sector. Part of the surplus
generated in the public sector is transferred to
general government funds to be used for financing
government investment.

Since row 22 embodies government savings, the
net surplus of the social security and pensions funds
has to be included. This is shown in column 31 of
row 22. It is the net surplus after government
payment of its commitments. The 296 million Egyptian
pounds (M.L.E.) can also be considered a transfer from
the household sector to the government sector. That is
why it is located in column 31 which includes govern-
ment transfers.

(2) Government Sector, G2

The second government sector, termed conventional government, covers the traditional activities of government, such as health, education, defense and security. Traditional government expenditures, column 23, include current expenditure on goods and services together with net subsidy payments. The sources of traditional revenue, row 23, columns 28, 29 and 32 are import tariffs, indirect and direct taxes.

(3) Government Sector, G3

The government trading sector appears in the SAM in row and column 24. Certain items were procured by the government for export. These are included in total exports but for convenience are listed separately in Column 25 at delivered prices. In its wide-ranging trading activities the government buys and sells a variety of goods in a number of alternative arrangements. The government may buy from one sector and resell to other sectors as intermediate inputs, or directly to the household sector, or in some instances abroad as exports. Its purchases also include certain imports. For example, wheat flour is imported directly by the government and sold to

bakeries in the food processing industries. Frozen meat and poultry are imported directly by the government and sold directly to households. Goods purchased directly from the local producing sectors, like sesame, may be sold to sector 5, food processing. Beans are bought from sector 1, staple food, and also sold directly to the household sector. Since the government sets many of the prices, this trading activity is an important vehicle for redistribution.

Government trading activities in 1976 show total purchases of 1401 (M.L.E.) and sales of 1012 (M.L.E.). The deficit of 389 (M.L.E.) represents net subsidies paid by the government in carrying out these activities.

5. TAXES AND SUBSIDIES

Import tariffs in 1976, shown in row 28, amounted to 477 (M.L.E.). These were primarily on tobacco (157), passenger cars (53) and capital goods (91). Total

indirect taxes in 1976 in row 29 were estimated at
490 (M.L.E.) of which 340 (M.L.E.) was paid by the
12 producing sectors and 150 by the household sector.

Subsidies, identified in row 30, amounted to
514 (M.L.E.) which include 324 (M.L.E.) on food items.
Wheat accounts for more than half the food subsidy
while other sizable items were cotton sold for
spinning and weaving at 50 (M.L.E.) and agriculture
price supports at 40 (M.L.E.).

Direct taxes, row 32, include corporate tax,
defense and national security taxes income, property
and land taxes. The total direct tax of 378 (M.L.E.)
is distributed between producing sector and households.
Among producers this tax is mostly paid by large
corporations which tend to be concentrated in a
few sectors while upper income households account
for most of the household constributions.

6. EXPORTS AND IMPORTS

Exports are treated as a final demand column.

Imports appear in rows 25 to 27. Imports are
entered in separate rows and treated as "non-competitive",
i.e., unlike any of the output of the 12 Egyptian

production sectors. This is not true for certain imports and hence policy deductions should take note of this. Government imports include items such as fertilizers and cement used as intermediate goods and also consumer goods. This again affords the government a redistributive vehicle.

Exports also include worker remittances and foreign capital inflows. Workers' remittances are considered to be factor incomes earned abroad, i.e., as exports from the household sector. The government also acts as a monopsonist in the export of a number of items. These include cotton, rice, onions and sugar cane. The difference between compulsory delivery and export prices allows the government to realize a profit. This is shown as a price differential (col. 26).

7. DISTRIBUTION OF INCOME AND EXPENDITURE

The distribution of income among the three rural and three urban classes was based primarily on a two-stage approach:

(1)   Estimation of factor shares in value added of the public and private sector.

(2) The allocation of factor shares between
income classes.

Gross household income was defined as value
added in the private sector plus wages generated
in both the government and public sector.
This was estimated for each of the twelve sectors in
SAM which summed to 4923 (M.L.E.) and then added to
remittances to give a total household income of
5,233 M.L.E. The income share to each type of pro-
ductive factor estimated for the twelve sectors is
shown in Table 3. For the first four agricultural
sectors, labor, capital, and land returns were
identified, while only labor and capital shares were
computed for the other eight. These functional
shares were then in turn distributed among the six
income classes. These are listed in Tables 4 and 5
for agriculture and non-agriculture sectors
respectively. The distribution of the returns to
labor in the agricultural sector was based on the
distribution of the permanent labor force; the
land shares were distributed according to ownership
and imputed rentals, while the distribution of the
capital share reflected ownership of land and
holdings and cropping pattern in different farm sizes.

TABLE 3. FACTOR SHARES IN THE EGYPTIAN
ECONOMY. 1970.

SECTOR	PRIVATE SECTOR			PUBLIC SECTOR	
	LABOR	CAPITAL	RENT	LABOR	CAPITAL
1 STAPLE FOOD	0.443	0.306	0.251	0.464	0.536
2 NON-STAPLE FOOD	0.372	0.402	0.226	0.312	0.688
3 COTTON	0.456	0.312	0.232	-	-
4 OTHER AGRICULTURE	0.451	0.182	0.367	-	-
5 FOOD PROCESSING	0.299	0.701	0.0	0.539	0.461
6 TEXTILE INDUSTRY	0.314	0.686	0.0	0.687	0.313
7 OTHER INDUSTRIES	0.383	0.617	0.0	0.358	0.642
8 CONSTRUCTION	0.496	0.504	0.0	0.529	0.471
9 CRUDE OIL & PRODUCTS	0.070	0.930	0.0	0.604	0.936
10 TRANSPORTATION AND COMMUNICATION	0.388	0.612	0.0	0.387	0.613
11 HOUSING	0.400	0.600	0.0	0.110	0.880
12 OTHER SERVICES	0.400	0.600	0.0	0.909	0.091

TABLE 4. DISTRIBUTION OF FACTOR SHARE BY INCOME CLASS FOR AGRICULTURE SECTORS.

SECTOR	INCOME CLASS	SSPL	SSPK	SSPR
1 STAPLE FOOD	0 - 60%	0.763	0.285	0.070
	60 - 90%	0.175	0.413	0.330
	90 - 100%	0.062	0.302	0.600
2 NON-STAPLE FOOD	0 - 60%	0.753	0.217	0.050
	60 - 90%	0.175	0.413	0.350
	90 - 100%	0.072	0.352	0.600
3 COTTON	0 - 60%	0.821	0.181	0.070
	60 - 90%	0.154	0.417	0.385
	90 - 100%	0.025	0.402	0.545
4 OTHER AGRICULTURE	0 - 60%	0.771	0.210	0.070
	60 - 90%	0.182	0.382	0.385
	90 - 100%	0.047	0.408	0.545

TABLE 5. DISTRIBUTION OF FACTOR SHARE BY INCOME CLASS FOR NON-AGRICULTURE·SECTORS.

SECTOR	INCOME CLASS	SSPL	SSPK	SSGL
5 FOOD PROCESSING	0 - 60%	0.494	0.150	0.414
	60 - 90%	0.193	0.350	0.286
	90 - 100%	0.313	0.500	0.300
6 TEXTILE INDUSTRY	0 - 60%	0.598	0.150	0.414
	60 - 90%	0.265	0.350	0.326
	90 - 100%	0.137	0.500	0.260
7 OTHER INDUSTRIES	0 - 60%	0.451	0.150	0.351
	60 - 90%	0.239	0.350	0.337
	90 - 100%	0.310	0.500	0.312
8 CONSTRUCTION	0 - 60%	0.394	0.150	0.167
	60 - 90%	0.381	0.350	0.083
	90 - 100%	0.225	0.500	0.750
9 CRUDE OIL & PRODUCTS	0 - 60%	0.044	0.00	0.044
	60 - 90%	0.581	0.300	0.581
	90 - 100%	0.375	0.700	0.375
10 TRANSPORT & CONSTRUCTION	0 - 60%	0.226	0.150	0.286
	60 - 90%	0.137	0.350	0.326
	90 - 100%	0.637	0.500	0.387
11 HOUSING	0 - 60%	0.379	0.200	0.385
	60 - 90%	0.352	0.300	0.341
	90 - 100%	0.269	0.500	0.274
12 SERVICES	0 - 60%	0.379	0.200	0.385
	60 - 90%	0.352	0.300	0.341
	90 - 100%	0.269	0.500	0.274

For the remaining eight production and urban
sectors the labor share distribution was based on the
employment at the various wage levels in each sector.
Emigrant remittances were distributed according to their
remittances were distributed according to their
occupation and average wage before migrating. The
returns to capital were estimated by using the
distribution of industrial establishments by
activity together with their contribution to total
value added. The income received by each of the six
classes is then given by

$$
\begin{aligned}
YH_k = \sum_{i=1}^{12} \Big(HM_i \big(SPL_i \times SSPL_{ik} \\
+ SPK_i \times SSPK_{ik} \\
+ SPT_i \times SSPT_{ik} \\
+ GM_i (SGL_i \times SSGL_{ik}) \big) \\
+ RM (SRM_k) \qquad k = 1, 2, \ldots, 6
\end{aligned}
\tag{3}
$$

where

YH_k gross income of class k

HM_i private value added of sector i

GM_i government value added of sector i

RM remittances from workers abroad

SPL_i, SPK_i, SPT_i share of private value added accruing to labor, capital, land

SGL_i share of government value added accruing to labor

$SSPL_{ik}$ share of labor factor income in sector i accruing to class k

$SSPK_{ik}$ share of capital factor income in sector i accruing to class k

$SSPT_{ik}$ share of land factor income in sector i accruing to class k

$SSGL_{ik}$ share of labor factor income in government and public sector i accruing to class k

SRM_k share of emigrants remittance to class k

Note:

$$SPL_i + SPK_i + SPT_i = 1 \quad , \quad i = 1, 2, \ldots, 12 \tag{4}$$

$$\sum_{k=1}^{6} SSPL_{ik} = \sum_{k=1}^{6} SSPK_{ik} = \sum_{k=1}^{6} SSPT_{ik} = \sum_{k=1}^{6} SSGL_{ik} = \sum_{k=1}^{6} SRM_k = 1 \; . \tag{5}$$

The estimates of the distribution of household expenditures were based mainly on the 1974/75 family budget survey. This contained information on expenditure classes on 38 items. The per capita expenditures were adjusted to 1976 population and expenditure levels.

8.   SAVINGS - INVESTMENT

Savings and investment were first estimated independently and then some minor adjustments made to yield overall balance. Savings were estimated under three headings, private, foreign and government. Private savings were a residual in SAM for each income class. They were what remained of income after household expenditures and allowances for all taxes and transfers. At 394 M.L.E. they substantially agree with the 1976 Follow-up Report, Ministry of Planning. Foreign savings at 654 M.L.E. are the balancing item for export-import estimates.

The government public sector, G1, is estimated to have a surplus, after wage payments, of 1414 M.L.E. of which 296 M.L.E. comes from its social security and pension fund operations. The deficit of conventional government, G2, is estimated at 393 M.L.E. while government trading operations produce a deficit of 389 M.L.E.

TABLE 6. INCOME SHARES, SUBSIDIES, NET SUBSIDIES,
TAXES AND TRANSFERS BY INCOME CLASS[*]

	URBAN			RURAL		
	LOWEST 60%	MIDDLE 30%	UPPER 10%	LOWEST 60%	MIDDLE 30%	UPPER 10%
1 DISTRIBUTION OF TOTAL HOUSEHOLD INCOME (%)	19.93	21.52	24.94	13.78	10.22	9.61
2 DISTRIBUTION OF SECTORAL HOUSEHOLD INCOME (%)	30.02	32.41	37.57	40.98	30.42	28.60
3 SUBSIDIES PER CAPITA (E)	+4.99	+7.56	+11.06	+1.27	+1.93	+5.62
4 SUBSIDIES PER E OF INCOME	0.06	0.04	0.02	0.02	0.02	0.02
5 TAXES AND TRANSFERS PER CAPITA	-9.60	-26.13	-105.39	-2.27	-5.93	-19.58
6 TAXES PER E OF INCOME	-0.12	-0.15	-0.17	-0.03	-0.06	-0.07
7 NET SUBSIDIES, TAXES AND TRANS-FERS PER CAPITA	-4.61	-18.57	-94.33	-1.00	-4.00	-13.96
8 NET SUBSIDIES, TAXES AND TRANS-FERS PER E OF INCOME	-0.06	-0.11	-0.15	-0.01	-0.04	-0.05

[*]PLUS SIGNS INDICATE NET SUBSIDY; MINUS SIGNS INDICATE NET TAXES.

Investment estimates proved quite difficult to disaggregate and represent some approximative calculations. Capital goods imports including tariffs were estimated at 482 M.L.E. while stock changes were estimated at 113 M.L.E. The remaining estimate is 1085 M.L.E. for both private and publicly produced investment goods. It was not feasible to disaggregate this figure between the two at the time the SAM was constructed.

9. USES OF THE SAM

The sam described above was estimated as the central accounting framework and to provide parameters for a general equilibrium model of the Egyptian economy. Even as it stands, however, it provides a number of important insights. For example, from the input-output table we can calculate that total intermediate demands are only 30 percent of gross production, a relatively low proportion. This reflects, to a considerable extent the traditional technologies of the agricultural sectors and their comparatively small use of intermediate inputs.

One of the most interesting features of the SAM
table is the information which it contains on the
distribution of income in 1976. The urban sectors,
with 56 percent of the population, received 66 percent
of the total household income. Row (1) of Table 6
provides detail on the distribution of income among
the various income classes in urban and rural income,
indicating the relatively small shares of all the
rural classes. Row (2) shows the distribution of
income within each sector and, thus, throws a little
light on the controversy as to the effects of land
reform in Egypt. It can be seen that, in real sense
the distribution of income in rural areas is less
unequal than in urban areas.

The role of subsidies in the Egyptian economy
is also illuminated by the SAM table. Production
subsidies are only 3.1 percent of total intermediate
flows. Most of those are concentrated in the food
processing and textile sectors where they account for
12 percent and 10 percent of the value of gross production,
those are concentrated in the food processing and
textile sectors where they account for 12 percent
and 10 percent of the value of gross production,
respectively. This suggests that even substantial
changes in the magnitude of these subsidies will not
have a major effect on the total price level and only

a modest effect on the prices of the sectors' outputs.

There are also subsidies which go directly to households as explained above. The distribution of these subsidies per capita in each income class is shown in row (3) of Table 6. The concentration of the subsidies in urban areas is striking and it is also striking that the benefits to each household of the subsidy program increase with household income in both rural and urban areas. The subsidies per pound of income decrease with household income size in urban areas but are the same across income classes in rural areas, as indicated in row (4).

In rows (5) and (6) of Table 6, taxes and transfers to government are shown to increase on a per capita basis and with income across income classes in both urban and rural areas, but the levels are much lower in the latter than in the former sector.

Net subsidies, taxes and transfers paid to government are shown on a per capita basis and as a proportion of income in rows (7) and (8). Again both increase with income and there are profound urban-rural differences. This indicates a modest degree of progression in the tax, transfer and subsidy system which in urban areas is due mainly to the subsidies which are paid directly to households.

The contrast between urban and rural areas shown by the calculations above, emphasizes the limited degree of participation of households in rural areas in the benefits and burdens of the government tax and transfer system. It suggests, as well, their limited participation in the political system.

CONCLUSION

The SAM estimated for Egypt for 1976 presents a consistent picture for that year. It also highlights areas which could benefit from improved data sources. These include an updated input-output table with more detail on agriculture and service sectors, better breakdown of investment by source and destination. This latter would be particularly useful to those engaged in medium to longer term planning activities.

The SAM in itself is a source of insights as to the structure and functioning of the Egyptian economy and policy. It indicates, for example, the importance of direct household subsidies in creating a degree of progression in the subsidy, tax and transfer payment system. It also shows the limited participation of the agricultural sectors in this system as compared to the urban sectors.

APPENDIX

DATA SOURCES

Many sources were used for most components of SAM. These range from official publications to single pages of information. The principal ones for particular headings were:

Input-Output Table

The source of data for physical production in the input-output table are the commodity balances after they were aggregated to the number and definition of the sectors in the table. The elements of the balances, uses and resources, are obtained from technical branches in the Ministry of Planning which represent all economic activities, i.e., production, consumption, exports and imports, etc. The technical branches, departments at the Ministry get their information from the production units, ministries, and organizations supervising certain economic activities. This information was obtained regularly, either directly or through responses to statistical inquiries. From the same sources the information for service activities was obtained. The above sources were supplemented by historical data

which is periodically published by the following
agencies:

1. Central agency for Public Mobilization and
   Statistics (CAPMAS).

2. Annual and Quarterly Bulletin published by
   the Department of Economics, Ministry of
   Agriculture.

3. Price Reviews published by the Ministry of
   Supply and the Ministry of Industry. The
   importance of these reviews is to check the
   evolution of different mark-ups.

4. State Budget and Final Accounts - Ministry
   of Finance. For the estimation of public
   consumption, taxes and subsidies.

5. Monetary Budget for the estimation of
   exports and imports from the Central Bank of
   Egypt.

6. Nutritional Budget published by the Ministry of
   Agriculture. Used to estimate private
   consumption for some food items.

7. Studies and publications of various ministries
   and public departments concerning other activ-
   ities and commodities.

Government

    National Income Accounts Department of the Ministry

    of Planning and the Department of Industry;

    Follow-up Report of the year 1976;

    State Budget for 1976, Ministry of Finance, Vol. II;

    Purchases and Sales from General Supply Authority,

    1976.

Taxes and Subsidies

    State Budget for 1976, Custom books (for tariffs),

    Budget Department, Ministry of Planning;

    Follow-up Report of 1976.

Exports and Imports

    General Supply Authority, National Income

    Accounts Department.

Value Added, Factor Shares, Expenditure Pattern

    Department of National Accounts, Ministry of

    Planning;

    Census of Industrial Production,

    Ministry of Agriculture, Department of Economics

    and Statistics;

Labor Force Sample Survey;

Employment, Wages and Hours of Work, CAPMAS
(annual report);

Population Movements Across the Borders,
CAPMAS, 1973;

Family Budget Survey 1974/75, CAPMAS.

Savings and Investment

Follow-up Report of 1976;

National Income Accounts Department and

Industry Department, Ministry of Planning.

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