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**AGRICULTURAL DEVELOPMENT SYSTEMS
EGYPT PROJECT**

UNIVERSITY OF CALIFORNIA, DAVIS

DETERMINANTS OF AGRICULTURAL PRICE POLICY IN EGYPT

by

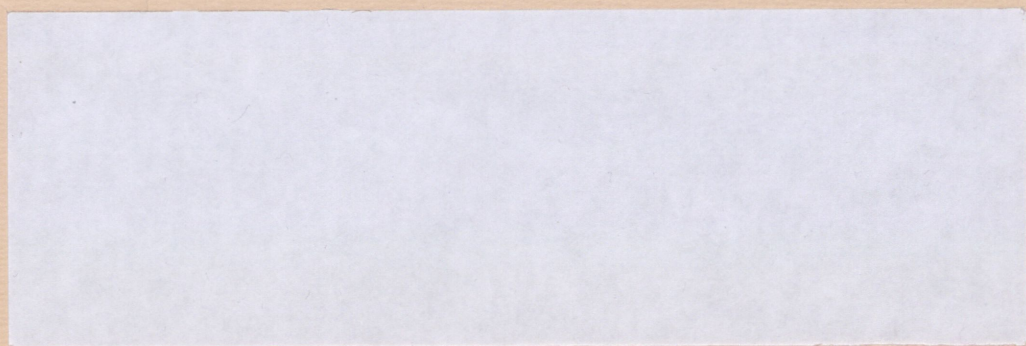
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**M. Ragaa El-Amir, University of Assuit
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Egypt Project
University of California
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DETERMINANTS OF AGRICULTURAL PRICE POLICY IN EGYPT

by

Saad Nassar, M. Ragaa El Amir, and Abd-el Azeem Moustafa

In the middle of the last century, Egypt adopted the principle of laissez faire as a mechanism for determining agricultural prices. This situation continued until the outbreak of World War II when the government started to interfere to a limited extent in determining agricultural prices. After the War, this system basically continued but with increasing interference from the government. With the advent of the 1952 revolution, and especially after 1960, the new government system imposed a high degree of control on agricultural prices. Since 1974, an open-door economy has been adopted, and agricultural price policy has been partially reformulated to correspond to this new situation. This does not mean, of course, letting agricultural prices be determined by free-market mechanism. Such prices are subject to violent fluctuations which have adverse effects on agricultural production, farmers' incomes, consumers, and the branches of industry utilizing agricultural raw materials. Regulating and controlling food prices by the state is of great importance in a developing country, such as Egypt, in order to avoid the sharp rise in these prices, as a result of large shift coefficients for demand relative to shift coefficients for supply, and to avoid the inflationary pressure with its well-known unfavorable effects on the economy.

1. The Making of Agricultural Price Policy

Agricultural price policy in Egypt is a piecemeal policy. In other words, it is a product-by-product policy where the price of each commodity tends to

be set individually without taking into consideration prices of other agricultural commodities, the intersectoral terms of trade, and the general price level. Therefore, such a system could more adequately be called a pricing system rather than a comprehensive price policy.

Agricultural price policy in Egypt also tends to be catastrophe or crisis oriented; that is, set prices are not significantly altered except in times of great shortages in domestic urban supply or of substantial export deficits. In other words, it is a reactive policy rather than an active policy. In addition, such policy contains a large ad hoc element in decision making.

Different aspects of agricultural price policy are the responsibility of different ministries among which the most important are the Ministry of Agriculture; the Ministry of Supply and Internal Trade; the Ministry of Industry; and the Ministry of Economics, Foreign Trade, and Economic Cooperation.¹ Not only do these ministries have little communication among each other but they also have markedly different objectives and control different policy instruments. Thus, the objective of the Ministry of Agriculture is to insure the farmers "reasonable" prices for their products; the Ministry of Supply and Internal Trade is to keep retail food prices stable and manage the program of food subsidies; the Ministry of Industry is to keep prices of agricultural raw materials needed for domestic industries stable; and the Ministry of Economy, Foreign Trade, and Economic Cooperation is to increase the participation of the agricultural sector in financing other sectors of the economy, especially the industrial sector through large margins between export prices and farm

¹The Price Planning Agency was created in 1971 to suggest price policies for different sectors of the economy and follow up its implementation. This Agency has, however, recently been cancelled.

gate prices of agricultural export products. Policy coordination is assumed to be achieved through the functioning of interministerial committees. In practice, this coordinating function is only superficially performed.

2. Evolution of the Terms of Trade

Tables 1 to 4 give time series data from 1960 to 1980 on the evolution of farm gate prices, equivalent retail prices, equivalent import or export prices, and average total costs of production per feddan for wheat, rice, maize, and cotton. Three concepts of relative prices are graphed in Figures 1 to 4: the terms of trade for agriculture represented by the ratio of farm gate prices to average total production cost, the wedge between farm and retail prices indicated by the ratio of these two prices, and the gap between farm and world prices represented by the ratio of farm gate to export or import prices. Production costs include hired labor and imputed costs of family labor but exclude land rents.

The data indicate a rapid increase in all prices after 1973. These data are also a turning point in the terms of trade for wheat and maize: the terms of trade deteriorate rapidly against these two commodities after 1973.

The wedge between farm and retail prices remains relatively constant for wheat and maize but not for rice; for the latter, farm gate prices become increasingly favorable relative to retail prices and, starting in 1975, exceed retail prices.

In the case of rice, however, farm prices are only a fraction of export prices, indicating a high tax on producers to the benefit of the Egyptian government acting as an export monopoly. This is also the case for cotton. For wheat and maize, however, farm gate prices remain—in spite of large fluctuations—generally in line with the trend evolution of import prices.

TABLE 1

Wheat: Farm Gate Price, Retail Price, Import or Export Price
and Average Total Cost of Production per Feddan
Eqypt, 1960-1980

Year	ATC	Yield ardabs	ATC*	Farm price	Terms of trade	Retail price	$\frac{P_f}{P_r}$	Import price	$\frac{P_f}{P_m}$
	L. E.		L. E.			L. E.		L. E.	
1960	15.12	6.86	2.20						
1961	15.00	6.92	2.17						
1962	15.17	7.30	2.08						
1963	15.79	7.40	2.13	4.31	2.02				
1964	16.91	7.72	2.19	4.40	1.83	5.25	.84		
1965	23.10	7.41	3.12	4.53	1.45	5.40	.84		
1966	24.58	7.57	3.25	4.97	1.53	6.45	.77	4.55	1.09
1967	25.06	6.91	3.63	5.60	1.54	8.85	.63	4.71	1.19
1968	25.23	7.16	3.52	4.83	1.37	6.00	.81	4.50	1.07
1969	24.35	6.79	3.59	4.91	1.37	5.85	.84	3.90	1.26
1970	24.67	7.75	3.18	5.80	1.82	6.60	.88	3.74	1.55
1971	26.84	8.55	3.14	5.31	1.69	6.75	.79	4.37	1.22
1972	25.50	8.69	2.93	5.26	1.80	6.75	.78	4.65	1.13
1973	26.67	9.82	2.72	5.72	2.10	7.20	.79	5.55	1.03
1974	31.04	9.17	3.38	7.04	2.08	8.70	.81	15.51	.45
1975	42.26	9.72	4.35	7.70	1.77	9.30	.83	11.93	.65
1976	46.86	9.36	5.01	7.07	1.41	9.00	.79	9.78	.72
1977	54.25	9.37	5.79	8.12	1.40	9.90	.82	7.98	1.02
1978	65.71	9.33	7.04	9.25	1.31	12.30	.75	8.49	1.09
1979	74.23	8.90	8.34	9.60	1.15	11.70	.82	11.61	.83
1980				13.20		17.25	.76		

TABLE 2

Rice: Farm Gate Price, Retail Price, Import or Export Price
and Average Total Cost of Production per Feddan
Egypt, 1960-1980

Year	ATC	Yield	ATC*	Farm price	Terms of trade	Equivalent retail price	$\frac{P_f}{P_r}$	Equivalent export price	$\frac{P_f}{P_m}$
	L. E.	ardabs	L. E.	L. E.		L. E.		L. E.	
1960	19.63	17.73	1.11						
1961	21.02	17.98	1.17						
1962	21.24	20.50	1.04						
1963	22.03	19.38	1.14	2.16	1.89				
1964	25.36	17.72	1.43						
1965	32.20	17.64	1.83	2.55	1.39				
1966	35.57	16.61	2.14	3.22	1.50			4.96	.65
1967	35.96	17.70	2.03	3.61	1.78			6.58	.55
1968	37.69	17.94	2.10	3.79	1.80	6.02	.63	8.65	.44
1969	37.10	17.93	2.07	3.72	1.80	4.82	.77	8.47	.44
1970	36.80	19.03	1.93	3.41	1.77	4.74	.72	4.44	.77
1971	36.95	18.59	1.99	3.31	1.69	4.82	.69	4.16	.80
1972	36.55	18.26	2.00	3.22	1.61	4.66	.69	4.05	.80
1973	38.87	19.03	2.04	3.37	1.65	4.17	.81	7.17	.47
1974	45.05	17.77	2.54	4.33	1.70	4.74	.91	23.42	.18
1975	55.31	19.24	2.87	4.83	1.68	4.66	1.04	19.32	.25
1976	68.72	17.81	3.86	6.06	1.57	5.54	1.09	11.91	.51
1977	73.48	18.23	4.03	6.71	1.67	5.86	1.15	8.49	.79
1978	81.73	19.07	4.29	7.89	1.84	6.98	1.13	9.67	.82
1979	101.73	20.15	5.50			10.12		18.67	
1980						11.24			

TABLE 3

Maize: Farm Gate Price, Retail Price, Import or Export Price
and Average Total Cost of Production per Feddan
Egypt, 1960-1980

Year	ATC	Yield ardabs	ATC*	Farm price L. E.	Terms of trade	Retail price	$\frac{P_f}{P_r}$	Import price	$\frac{P_f}{P_m}$
	L. E.		L. E.			L. E.		L. E.	
1960		9.85							
1961		9.94							
1962	15.79	11.88	1.33						
1963	16.89	12.38	1.36	3.86	2.84				
1964	19.23	11.81	1.63	3.91	2.40	4.90	.80		
1965	22.30	12.27	1.82	3.78	2.08	4.20	.90		
1966	25.12	12.32	2.04	4.50	2.21	5.18	.87	4.12	1.09
1967	27.26	11.44	2.38	5.16	2.17	7.14	.72	3.98	1.30
1968	27.97	11.51	2.43	4.05	1.67	5.04	.80	3.81	1.06
1969	28.19	12.35	2.82	4.58	1.62	4.90	.93	4.26	1.08
1970	29.04	12.33	2.36	4.69	1.99	5.60	.84	3.70	1.27
1971	29.12	12.07	2.41	4.68	1.94	5.60	.84	3.89	1.20
1972	31.60	12.33	2.56	5.15	2.01	5.88	.88	3.88	1.33
1973	32.46	11.75	2.76	6.31	2.29	7.00	.90	5.22	1.21
1974	37.76	11.40	3.31	7.11	2.15	8.12	.88	9.63	.74
1975	44.55	11.56	3.85	7.12	1.85	8.26	.86	9.10	.78
1976	52.06	12.24	4.25	7.04	1.66	8.54	.82	9.38	.75
1977	65.29	11.85	5.51	10.66	1.93	9.94	1.07	7.11	1.50
1978	81.34	12.75	6.38	10.00	1.57	14.00	.71	7.28	1.37
1979	87.66	12.00	7.31	10.37	1.42	11.90	.87	10.29	1.01
1980						18.90			

TABLE 4

Raw Cotton (Unginned): Farm Gate Price, Retail Price, Import or Export Price
and Average Total Cost of Production per Feddan
Egypt, 1960-1980

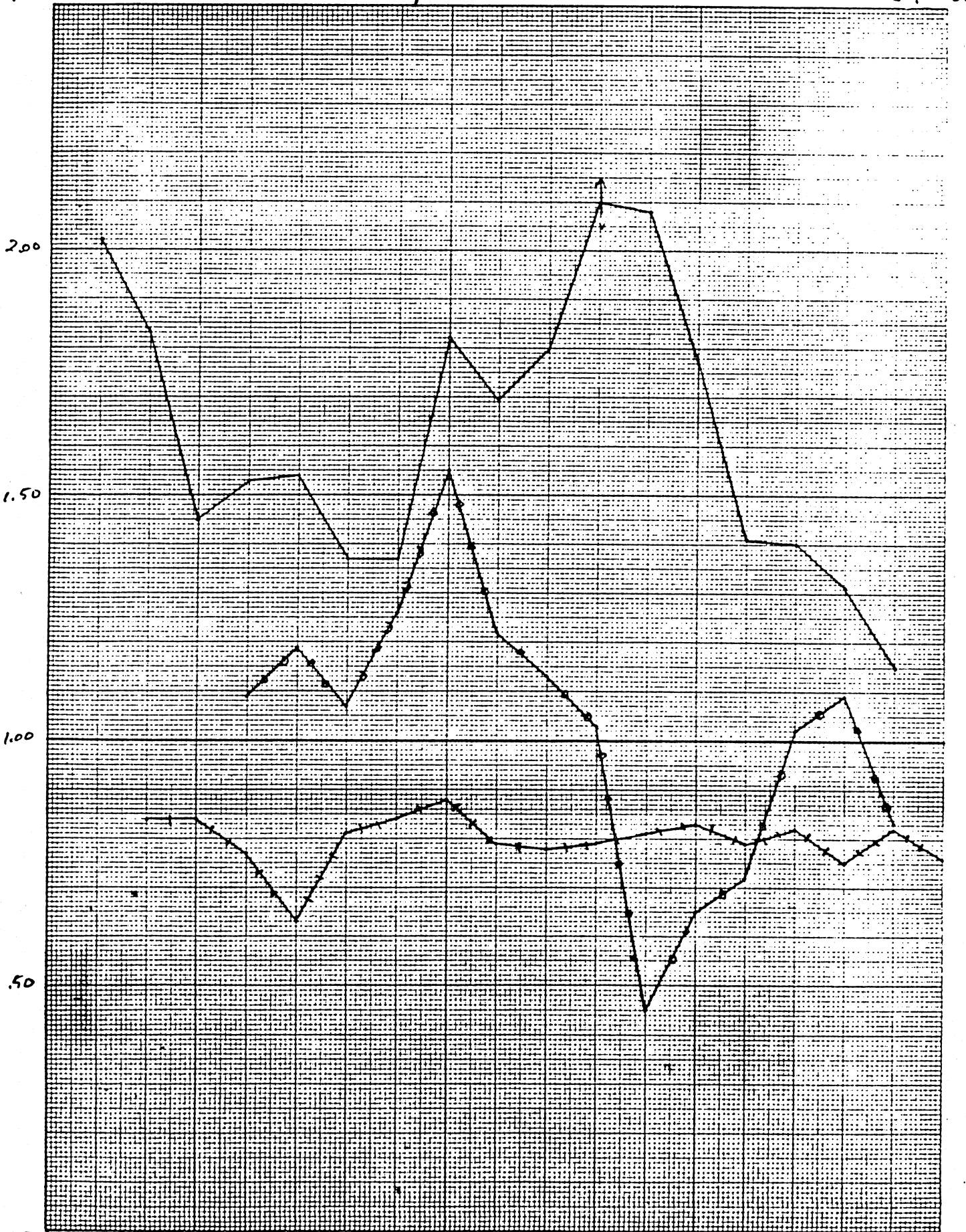
Year	ATC	Yield	ATC*	Farm price	Terms of trade	Equivalent retail price	$\frac{P_f}{P_r}$	Equivalent export price	$\frac{P_f}{P_m}$
	L. E.	metric quantars	L. E.			L. E.		L. E.	
1960	24.47	4.68	5.23						
1961	28.35	3.21	8.83	14.68	1.66				
1962	29.98	5.12	5.86	15.67	2.67				
1963	32.31	5.12	6.31						
1964	35.16	5.66	6.21	16.87	2.72				
1965	41.43	5.02	8.25	16.17	1.96			22.03	0.73
1966	48.14	4.40	10.94	16.05	1.47			20.50	0.78
1967	46.58	4.72	9.87	17.06	1.73			20.38	0.83
1968	47.04	5.25	8.96	17.46	1.95			22.60	0.77
1969	49.70	5.79	8.58	18.04	2.10			25.70	0.70
1970	51.54	5.48	9.41	18.19	1.93			25.76	0.71
1971	55.41	5.90	9.39	18.24	1.94			26.08	0.70
1972	47.41	5.82	8.15	19.86	2.44			27.28	0.73
1973	51.23	5.43	9.43	19.51	2.07			33.57	0.58
1974	60.88	5.26	11.57	23.62	2.04			59.80	0.39
1975	74.66	4.98	14.99	25.36	1.69			53.96	0.47
1976	90.80	5.52	16.45	32.00	1.95			46.55	0.69
1977	101.76	4.90	20.77	34.39	1.66			62.93	0.55
1978	117.41	6.35	18.49	34.87	1.89			49.15	0.71
1979	141.75	6.84	20.72	40.80	1.97			90.57	0.45

P_f / ATC — P_f / P_m ○○
 P_f / P_r ++

terms of trade

wheat
Egypt[†] 8.

Figure 1



P_f / ATC —

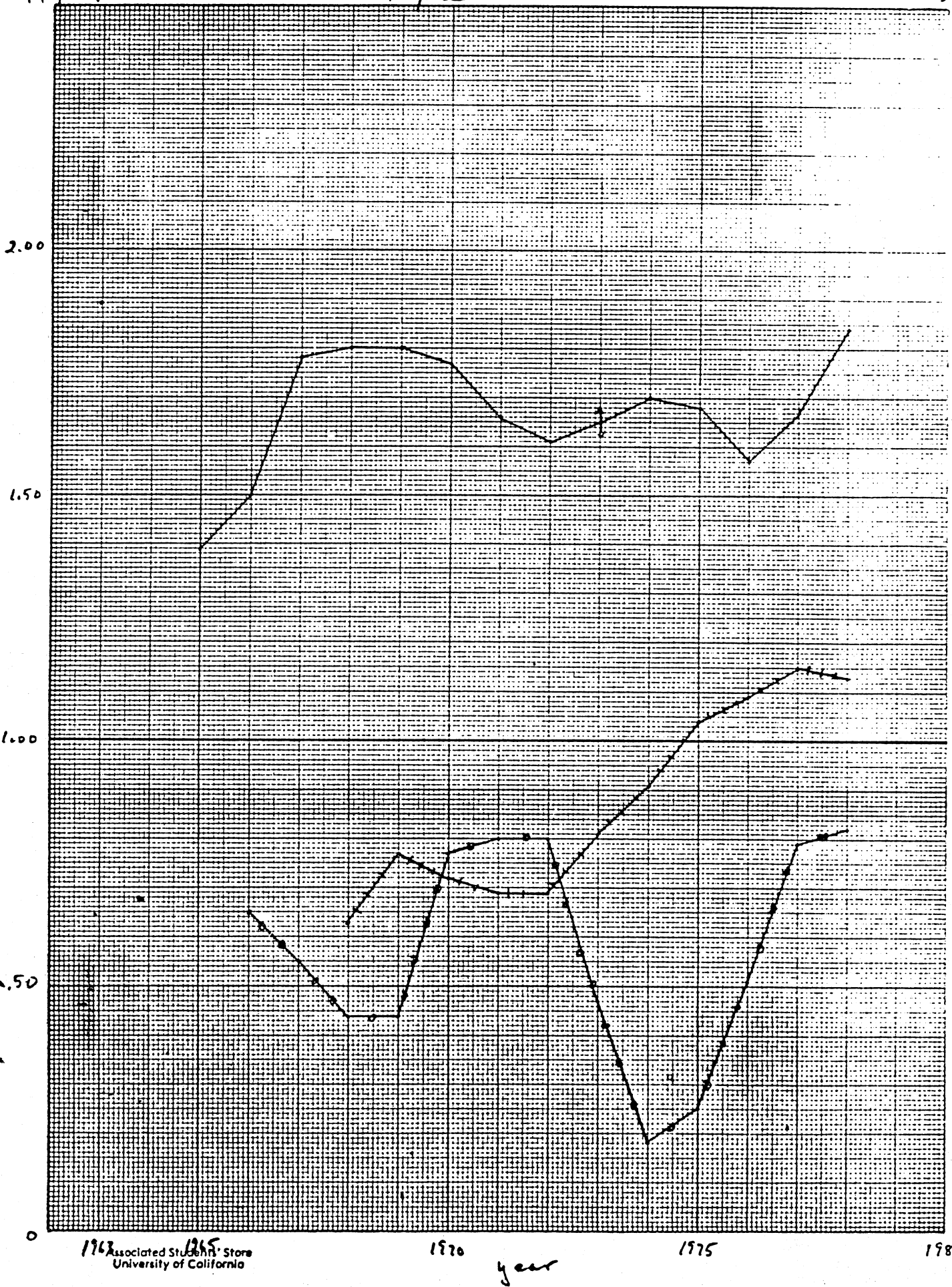
W / P_x —••

terms of trade

P_f / P_r +++

Figure 2

Essay 9.



P_F/ATC —

P_F/P_m —●—

term of trade

marge
Egypt 10.

P_F/P_r +++

Figure 3

3.00

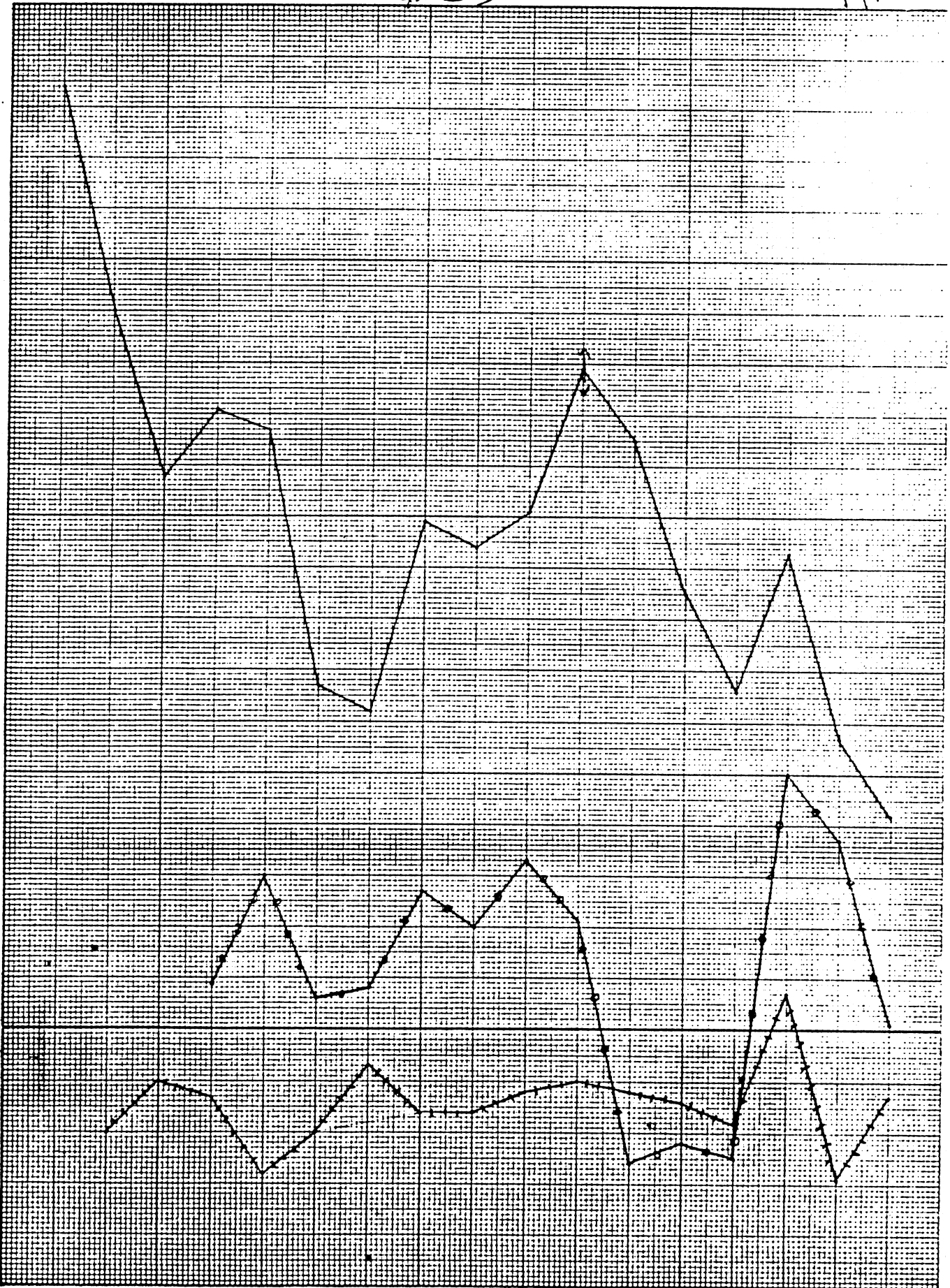
2.50

2.00

1.50

1.00

.50



1962

Associated Students Store
University of California

1970

year

1975

1980

P_f/ATC^D —
 $10(P_f/P_x)$ +++

raw cotton - Egypt
11.

Figure 4



3. Concepts Use in the Fixation of Farm Gate Prices

In Egypt, in determining farm gate prices, the government uses cost of production (including rent) which is estimated by the Ministry of Agriculture as the basic guideline. The price is set in a way to cover the cost of production including rent and allow for a profit margin which is equal, on an ad hoc basis, to the level of rent. In other words, price is determined as follows:

$$P = \frac{C + 2R - V}{Y}$$

where

P = farm gate price for primary products

C = cost of production per feddan excluding rent

R = rent per feddan for the duration of the crop

V = value of secondary or by-products, in case there are any

and

Y = yield per feddan of primary products.

Cost of production, which is estimated by the Ministry of Agriculture, is divided into the following items: (a) preparation of land for cultivation, (b) seeds and cultivation, (c) irrigation, (d) fertilization, (e) tillage, (f) pest control, (g) harvest and transportation, and (h) rent.

Each one of the previous items includes the cost of labor used in doing it. Cost of production is also divided in the following items: (a) hired labor, (b) animal power, (c) seeds, (d) fertilizers, (e) mechanical power, (f) pesticides, (g) rent, and (h) miscellaneous.

Rents are fixed by the land reform legislation to seven times the level of land tax. These taxes tend to remain constant at the same nominal level over long periods of time (about 10 years).

Table 5 shows the estimated farm gate prices on the basis of this formula where the value of secondary products is discounted from cost. The actual prices received by farmers and the ratios of estimated to actual prices are also given. As can be seen, the estimated price systematically falls short of the actual price ranging from 60 percent of the actual price for beans to 88 percent for onions.

In Table 6 the estimated price is calculated without deducting the value of secondary products. Except for wheat, the estimated price again falls short of the actual price ranging from 75 percent for sugarcane to 93 percent for maize. In the case of wheat, straw--as a secondary product--was recently highly valued relative to grain both because grain is underpriced (relative to the world market) and because straw is an important winter forage whose price is increased by high meat prices.

The conclusion we derive from Tables 5 and 6 is that cost-of-production calculations based on the above formula have not had very strong relation within the actual level of prices received by farmers.

While it is true that prices should cover cost of production and allow for a profit margin, it is equally true that prices should not be exclusively determined only on the basis of cost of production for the following reasons: cost-plus pricing is mainly concerned with accomplishing income objectives rather than influencing the direction of development of agricultural production. It takes into consideration only the supply side while neglecting the demand side. It is, consequently, not conducive to efficiency in resource allocation and production.

TABLE 5
 Estimated Farm Gate Prices on the Basis of Cost of Production
 and the Actual Prices for Main Field Crops, Egypt, 1976-1978

Crop and Year	Cost of production per feddan			Secondary product			Primary product		P P	
	Exclud- ing rent	Plus 2 rents	Rent	Yield	Price	Value	Yield	Esti- mated price ^{a/}		Actual price
	load	ardab	L. E.							
Wheat										
1976	46.86	83.6	18.37	8.55	2.90	24.77	9.36	6.29	7.07	.89
1977	54.25	97.35	21.55	8.29	6.04	50.06	9.37	5.00	8.12	.62
1978	65.70	111.18	22.74	8.22	9.30	76.45	9.33	3.70	9.25	.40
Average										.64
Beans										
1976	39.13	76.05	18.46	5.13	1.88	9.64	6.32	10.51	16.27	.65
1977	44.72	84.44	19.86	5.51	3.41	18.79	5.96	10.12	16.33	.62
1978	52.92	93.70	20.39	4.76	5.45	25.94	6.24	10.90	20.95	.52
Average										.60
Onions^{b/}										
1976	157.44	194.92	18.74				7.82	24.96	29.16	.86
1977	166.93	207.03	20.10				7.12	29.09	31.42	.93
1978	174.10	216.80	21.35				7.66	28.30	32.90	.86
Average										.89
Cotton^{b/}										
1976	90.80	154.80	32.00	5.50	1.24	6.82	5.52	26.81	32.00	.84
1977	101.76	165.60	31.92	5.57	1.81	10.08	4.90	31.74	34.39	.92
1978	117.41	183.37	32.98	6.00	1.82	10.92	6.35	27.20	34.87	.78
Average										.85
Rice^{b/}										
1976	68.72	103.62	17.45	5.87	0.78	4.56	2.137	46.35	50.19	.92
1977	73.48	109.28	17.90	6.07	1.46	8.86	2.188	45.90	56.13	.82
1978	81.73	121.93	20.10	6.40	1.44	9.22	2.288	49.30	66.10	.75
Average										.83
Maize										
1976	52.06	89.88	18.91	6.94	1.01	7.00	12.24	6.70	7.43	.90
1977	66.29	105.71	19.71	7.38	1.75	12.92	11.85	7.83	10.66	.73
1978	81.34	124.60	21.63	7.40	1.91	14.13	12.75	8.70	10.00	.87
Average										.83
Sugarcane^{b/}										
1976	132.06	201.18	34.56				34.83	5.78	8.42	.69
1977	151.66	222.10	35.22				33.61	6.61	8.21	.81
1978	163.15	235.73	36.29				33.51	7.00	9.34	.75
Average										.75

a/ Subtracting the value of secondary products from the cost of production.

b/ For onions, rice, and sugarcane, 1976-1978, primary product yields are given in tons; for cotton, yields are given in M. Q.

Source: Agricultural Economics Research Institute, Department of Statistics.

TABLE 6
Estimated Farm Gate Prices on the Base of Cost of Production and the
Actual Prices for Main Field Crops, Egypt, 1976-1978

Crop and year	Cost of production per leddan			Primary product			$\frac{\hat{P}}{P}$
	Excluding rent	Plus 2 rent L. E.	Rent	Yield ardab	Estimated	Actual	
					price	price	
					L. E.		
<u>Wheat</u>							
1976	46.85	83.60	18.37	9.36	8.9	7.07	1.26
1977	54.25	97.35	21.55	9.37	10.4	8.12	1.28
1978	65.70	111.18	22.74	9.33	11.9	9.25	1.29
Average							1.28
<u>Beans</u>							
1976	39.13	76.05	18.46	6.32	12.0	16.27	.74
1977	44.72	84.44	19.86	5.96	14.0	16.33	.85
1978	52.92	93.70	20.39	6.24	15.0	20.85	.72
Average							.77
<u>Onions^{a/}</u>							
1976	157.44	194.92	18.74	7.82	24.9	29.16	.85
1977	166.93	207.03	20.10	7.12	29.1	31.42	.93
1978	174.10	216.80	21.35	7.66	28.0	32.90	.85
Average							.88
<u>Cotton^{a/}</u>							
1976	90.80	154.80	32.00	5.52	28.0	32.00	.88
1977	101.76	165.60	31.92	4.90	33.8	34.39	.98
1978	117.41	183.37	32.98	6.35	28.9	34.87	.83
Average							.90
<u>Rice^{a/}</u>							
1976	68.72	103.62	17.45	2.137	48.5	50.19	.97
1977	73.48	109.28	17.90	2.188	49.9	56.13	.89
1978	81.73	121.93	20.10	2.288	53.4	66.10	.81
Average							.89
<u>Maize</u>							
1976	52.06	89.88	18.91	12.24	7.3	7.43	.98
1977	66.29	105.71	19.71	11.85	8.9	10.66	.83
1978	81.34	124.60	21.63	12.75	9.8	10.00	.98
Average							.93
<u>Sugarcane^{a/}</u>							
1976	132.06	201.18	34.56	34.83	5.8	8.42	.69
1977	151.66	222.10	35.22	33.61	6.6	8.21	.80
1978	163.15	235.73	36.29	33.51	7.0	9.34	.75
Average							.75

a/ For onions, rice, and sugarcane, 1976-1978, primary product yields are given in tons; for cotton, yields are given in M. Q.

Source: Agricultural Economics Research Institute, Department of Statistics.

In addition to that, the application of cost-plus pricing formula in Egypt has several shortcomings. In particular, to allow for a profit margin which is equal to the level of rent for the duration of the crop means that the net revenue per feddan of a given crop will be stable for a long period of time (about 10 years) in spite of the increase of its cost of production per feddan (excluding rent) from one year to another and the changes in social and economic circumstances. This is because the level of land taxes and, hence, of rent is only modified every 10 years or so. This also means that net revenues per feddan of different crops will differ only according to their duration in spite of differences in their costs of production per feddan, their social and economic importance, and the demand for them.

Therefore, when using cost of production as a base for setting agricultural prices, it seems better to allow for a profit margin which is equal to a certain percentage of production cost including rent (say, 30-40 percent) rather than to set it equal to the level of rent. In this way, the net revenue from a given crop will change according to changes in its cost of production, and net revenues from different crops will correspond to differences in their costs of production.

It is, consequently, advisable to test other formulas for setting farm gate prices than the one currently used such as parity price formulas, parity income formulas, and production-redistribution formulas. A production-redistribution formula takes into consideration in establishing agricultural prices the following interconnected magnitudes: production, prices, investments, costs of production, consumption, taxes, subsidies, and stocks. Also, it takes into consideration the whole set of prices and not only the prices of

some particular products. The following example shows how agricultural prices could be determined according to this formula:

- a. Suppose that the national plan aims at increasing agricultural production A by ΔA to reach the level A_1 .
- b. To fulfill this, total investments equal to I should be carried out.
- c. From these total investments, the state will carry out the amount I_1 and the farmers themselves have to carry out the rest,
 $I - I_1 = I_2$.
- d. Cost of production of A_1 is equal to T.
- e. The plan aims at increasing the consumption C of the agricultural population by ΔC to reach at C_1 .
- f. Taxes on agriculture amount to S.
- g. Subsidies to agriculture amount to d.
- h. It is desired to increase the stock of agricultural production K by ΔK . To achieve this, the general agricultural price level, P_1 , must be such that

$$A_1 \times P_1 = I_2 + T + C_1 + S - d + \Delta K.$$

Dividing the two sides of the equation by $A_1 P_0$, where P_0 is the general agricultural price level in a base period, we obtain the needed current general agricultural price level relative to the general agricultural price level in the base period. Given the general agricultural price level, price relations between different agricultural products could be shaped. The application of this formula may, of course, face serious difficulties such as the lack of accurate and continuous data needed and the lack of planning capacity by the state. The fact remains, however, that some general ideas of

the concept on which this formula is based could be of some use in setting agricultural prices in Egypt.¹

Even if the cost-plus pricing method is acceptable for setting prices for commodities produced for domestic consumption, it may not be acceptable for setting prices for those commodities produced for export. In setting domestic prices for exportable agricultural products, the international prices of these products needs to be taken into consideration. Neglecting such prices will create barriers in adjusting the production pattern to the comparative advantages of Egyptian agriculture.² But this does not mean letting domestic prices for agricultural export products follow world prices automatically. Agricultural products from the developing countries have shown wide price fluctuations on the international market. Letting domestic prices follow automatically, the fluctuating world prices would lead to excessive instability in farm incomes and make it difficult to adjust production to demand structure since violent fluctuations make economic accounting and planning difficult for farmers. Therefore, domestic prices for exportable agricultural products should be determined in a way that keeps them in relation to world-market trends and, at the same time, that smooths out the fluctuations in these prices. The desired degree of smoothing out depends upon the elasticity of supply of the export commodity in question. To fulfill these two tasks, Bauer and Paish have advocated a moving average formula for setting the

-1S. Nassar, "Regulation and Control of the Agricultural Prices in the Developing Countries with Special Reference to Egypt," L'Egypte Contemporaine, Cairo (October, 1971); and S. Nassar, "Agricultural Demand, Supply and Prices with Special Reference to Arab Countries," L'Egypte Contemporaine, Cairo (October, 1976).

2J. Tinbergen, "Economic Policy: Principles and Design," Amsterdam, 1966.

producer prices of export crops.¹ The general ideas of the concept on which this formula is based can be used in Egypt. A simplified and modified form of setting producer prices of export crops according to this formula is as follows:²

- a. Compute a weighted f.o.b. export price for the current year based on the actual export quantities and price for the current year and the actual export quantities and prices for a number of previous years³ after converting f.o.b. export prices from foreign currency to domestic currency using the official exchange rate. If the computed price is lower than the actual export price for the current year, the difference will be kept to cover the deficit when the computed price is higher than the actual export price.
- b. Deduct from the computed price the cost of loading at the port of export, port charges, export taxes (or add up export subsidies), and the marketing margins from the farm to the port of export.
- c. After taking into account the conversion factor and the value of secondary or by-products, we reach the price which would be paid to the producer.

¹p. J. Bauer and F. W. Paish, "The Reduction of Fluctuations in the Incomes of Primary Producers," Economic Journal, Vol. LXII, No. 248 (December, 1952), pp. 750-780; and "The Reduction of Fluctuations in the Incomes of Primary Producers Further Considered," Economic Journal, Vol. LXIV, No. 256 (December, 1954), pp. 704-729.

²Nassar, "Agricultural Price Policies for Main Field Export Crops in Egypt," Conference on Export Promotion, Agricultural Economics Research Institute, Cairo (March, 1981).

³The weight to be given to the previous years in relation to the current year depends upon the elasticity of supply of the product. The higher the elasticity of supply, the lower the weight to be given to the previous years, i.e., the smaller the number of the previous years to be used and vice versa.

- d. This price may be revised in the light of cost of production, price relations between different products, and the general agricultural price level.

4. Intersectoral Transfers Through the Terms of Trade

Agricultural price policy in Egypt is a discriminatory policy oriented at benefiting consumers and other sectors of the national economy at the expense of the agricultural sector. This is acceptable at the beginning of industrialization. Yet, the burden on the agricultural sector should not be so high that it becomes a barrier to agricultural development since this will affect not only the agricultural sector but also the overall economy and will make it difficult to achieve balanced economic growth. Also, agricultural subsidies to industry should be for a given period of time after which industry should be able to not only meet its capital requirements but also to subsidize the agricultural sector. At that stage, industry has to provide agriculture with machines, fertilizers, pesticides, and other modern inputs; and agriculture has to have the investment capacity to acquire these inputs.

A recent study estimated the payments of the agricultural sector to other sectors of the national economy and the payments of other sectors of the national economy to agriculture during the period 1965-66 to 1975 in order to determine whether the Egyptian agricultural sector is taxed or subsidized and to what extent.¹ The payments of agricultural sector to the other sectors of the economy included (a) land, national defense, and national security taxes; (b) differences between farm gate prices and equivalent export prices

¹S. Nassar and A. Moustafa, "Role of Agriculture in Capital Formation in Egypt During the 1980s," Fifth Annual Egyptian Economists Conference, The Egyptian Society for Political Economy, Legislation, and Statistics, Cairo, (March, 1980).

for the quantities actually exported of exportable crops; (c) revenues to the state as a result of land reform implementation; (d) revenues to the state from the diverted exports of export crops; and (e) revenues to the state from El Wakf lands. Items (a), (b), and (d) are the most important ones.

Payments of other sectors of the national economy to agriculture included (a) public agricultural investments, (b) public expenditures in agriculture and irrigation, (c) agricultural input subsidies, (d) consumption subsidies to agricultural population, and (e) export subsidies (in some years). Item (a) is the most important one.

As Table 7 shows, it was found that there has been a net capital outflow from agriculture to other sectors of the national economy. This net capital outflow ranged from L. E. 227.3 million in 1974 (maximum) to L. E. 14.9 million in 1965-66 (minimum) with a yearly average of L. E. 75 million. Payments from agriculture to other sectors of the economy in 1975 represented about 22.5 percent of agricultural income in that year. Net capital outflow from agriculture to other sectors of the economy in 1975 represented about 4.6 percent of agricultural income in that year.

In recent years, however, the Egyptian government has tended—as a result of increasing problems with food security and of larger revenues from oil, the Suez Canal, tourism, and remittances from Egyptians working in other Arab countries—to cut down taxes on agriculture and to increase the relative share of state agricultural investments in total state investments. Thus, the relative share of public agricultural investment to total public investment was to amount to 9 percent in the 1978-1982 plan while it amounts to 12 percent in the new 1980-1984 plan.

TABLE 7

Contribution of Agriculture to Capital Formation,
Egypt, 1950-61, 1965-66, and 1967-1975

Year	Capital outflow from agri- culture	Capital inflow to agri- culture	Net capital outflow from agri- culture
	million L. E.		
1960-61	60.6	45.6	15.0
1965-66	109.2	94.3	14.9
1967-68	124.1	84.8	39.3
1968-69	134.4	105.9	28.5
1969-70	151.0	107.6	43.4
1970-71	156.5	104.3	52.2
1971-72	179.3	119.9	59.4
1973	227.1	141.8	85.3
1974	443.8	216.5	227.3
1975	398.1	330.1	68.0

Source: Nassar and Moustafa.

5. Marketing Agricultural Products

Regarding the marketing of agricultural products in Egypt, one should mention that since 1952 agricultural cooperatives,¹ which cover all the villages of Egypt, and state trading organizations have come to play an active role in purchasing agricultural products and eliminating the middlemen in the marketing of farm produce who were grabbing a large part of the value of sales and exploiting both producers and consumers. The most commonly used forms of agricultural cooperatives and state trading organizations in purchasing agricultural products have been:

- a. Obligatory or quota deliveries (at prices fixed by the state and lower than nonobligatory or nonquota deliveries). This system applies to the whole production of cotton and soybeans and to part of the production of beans, rice, sesame, groundnuts, lentils, and onions. Wheat was subject to this system up to the year 1976 when forced deliveries were eliminated.
- b. Nonobligatory or nonquota deliveries at prices also determined by the state but close to free-market prices. Even though these prices are lower than free-market prices, some farmers prefer to sell part of their produce through this channel.

¹Since the establishment of village banks in 1976, the role of marketing agricultural products has been shifted to these banks in addition to their role of providing farmers with credits. The role of agricultural cooperatives has been confined to regulating crop rotation, agricultural extension, pest control, and farm mechanization.

- c. Contract purchasing, as in the case of sugarcane and some vegetable and fruit crops, where food industries contract farmers to provide them certain needed quantities of these crops. Contracts include, besides price incentives, some nonprice incentives such as providing farmers with credits and taking care of harvesting the crop and transporting it.

Tables 8 to 13 show the development of obligatory quantities to be delivered; actual quantities delivered; total production; the relations between these three variables; prices of obligatory deliveries; and prices of non-obligatory deliveries and the relation between these two variables for beans, rice, sesame, groundnuts, lentils, and onions, respectively, in Egypt during the 1970s. The ratio between obligatory quantities to be delivered and total production and the ratio between prices of obligatory deliveries and prices of nonobligatory deliveries vary from one commodity to another and for the same commodity from time to time. It appears that the ratio between actual quantities delivered and obligatory levels of delivery is related to the ratio between prices of obligatory deliveries and prices of nonobligatory deliveries: the higher this price ratio, the closer are actual to obligatory deliveries.

Experience shows that the most important obstacles facing agricultural cooperatives (or village banks) and state-trading organizations in marketing farm produce are (a) the lack of knowledge of the market and the lack of flexibility in determining prices and quantities, (b) a tendency to give preference to vested interests that sometimes appear in commercial policy, (c) the lack of members' participation in directing and managing agricultural cooperatives, and (d) a tendency toward bureaucratization.

TABLE 8

Beans: Obligatory and Actual Deliveries, Total Production
Prices of Obligatory Deliveries, and Nonquota Prices, Egypt, 1975-1980

Year	Quantity to be delivered	Quantity delivered	Total production	$\frac{\bar{QD}}{Q}$	$\frac{QD}{Q}$	$\frac{QD}{\bar{QD}}$	Price of obligatory deliveries	Nonquota price	$\frac{\bar{P}}{P}$
	\bar{QD}	ardab QD	Q				\bar{P} L. E. per ardab	P	
1975	460,660	233,970	1,507,970	30.5	15.5	50.8	13	16.140	80.5
1976	525,040	337,193	1,641,820	32.0	20.5	64.2	13	16.270	79.9
1977	589,624	338,710	1,740,000	33.9	19.5	57.4	15	16.330	91.9
1978	498,386	219,992	1,491,800	33.4	14.7	44.1	15	20.850	71.9
1979	516,188	465,806	1,521,300	33.9	30.6	90.2	20	21.300	93.9
1980	471,088	383,116				81.3	25	30.860	81.0

TABLE 9

Rice: Obligatory and Actual Deliveries, Total Production
Prices of Obligatory Deliveries, and Nonquota Prices, Egypt, 1975-1980

Year	Quantity to be delivered	Quantity delivered	Total production	$\frac{QD}{Q}$	$\frac{QD}{Q}$	$\frac{QD}{QD}$	Price of obligatory deliveries	Nonquota price	$\frac{P}{P}$
	QD	QD	Q				P	P	P
	tons						L. E. per ton		
1975	1,278,999	1,217,139	2,418,346	52.9	50.3	95.2	40	40.240	99.4
1976	1,351,583	1,125,292	2,295,181	58.9	49.0	83.3	50	50.000	100.0
1977	1,616,887	1,085,986	2,269,808	71.2	47.8	67.2	50	56.000	89.3
1978	1,139,079	1,137,666	2,345,476	48.6	48.5	99.9	65	66.100	98.3
1979	1,257,098	1,344,139	2,507,179	50.1	53.6	106.9	65	65.108	99.8
1980	1,172,198	1,181,615				100.8	75	81.290	92.3

TABLE 10

Sesame: Obligatory and Actual Deliveries, Total Production
Prices of Obligatory Deliveries, and Nonquota Prices, Egypt, 1974-1979

Year	Quantity to be delivered	Quantity delivered	Total production	$\frac{QD}{Q}$	$\frac{QD}{Q}$	$\frac{QD}{QD}$	Price of obligatory deliveries	Nonquota price	$\frac{P}{P}$
	QD	QD ardab	Q				P L. E. per ardab	P	P
1974	54,000	64,947	115,917	46.6	56.0	120.3	19	19.040	99.8
1975	66,000	76,880	144,381	45.7	53.2	116.5	22	22.200	99.1
1976	60,860	66,918	108,410	56.1	61.7	110.0	25	24.770	100.9
1977			147,441					26.900	
1978			76,772					42.020	
1979	46,230	39,935	105,376	43.9	37.9	86.4	50	57.570	95.1
1980	88,305	92,397				104.0	65	72.480	89.7

TABLE 11

Groundnuts: Obligatory and Actual Deliveries, Total Production
Prices of Obligatory Deliveries, and Nonquota Prices, Egypt, 1976-1980

Year	Quantity to be delivered	Quantity delivered	Total production	$\frac{QD}{Q}$	$\frac{QD}{Q}$	$\frac{QD}{QD}$	Price of obligatory deliveries	Nonquota price	$\frac{P}{P}$
	$\frac{QD}{Q}$	ardab	Q				P L. E. per ardab	P	
1976	181,668	195,238	378,760	48.0	51.5	107.5	11	13.550	81.2
1977	198,033	169,918	400,500	49.4	42.4	85.8	11	16.840	65.3
1978	169,979	159,531	340,200	50.0	46.9	93.9	14	18.700	74.9
1979	239,742	210,603	359,000	66.8	61.2	91.6	18	20.740	86.8
1980	103,566	126,773				122.4	20	23.720	84.3

TABLE 12

Lentils: Obligatory and Actual Deliveries, Total Production
Prices of Obligatory Deliveries, and Nonquota Prices, Egypt, 1975-1980

Year	Quantity to be delivered	Quantity delivered	Total production	$\frac{QD}{Q}$	$\frac{QD}{Q}$	$\frac{QD}{QD}$	Price of obligatory deliveries	Nonquota price	$\frac{P}{P}$
	\overline{QD}	\overline{QD} ardab	Q				\overline{P} L. E. per ardab	P	
1975	118,316	26,161	245,099	48.2	10.7	22.1	17	24.860	68.4
1976	115,151	76,486	237,487	48.5	32.2	66.4	22	24.370	90.3
1977	77,328	80,533	150,420	51.4	53.5	104.1	25	26.710	93.6
1978	36,522	29,131	98,269	37.2	29.6	79.8	25	33.450	74.7
1979	37,932	42,355	56,955	66.6	74.4	111.7	35	41.100	85.2
1980	27,656	21,236				76.8	40	47.030	85.1

TABLE 13

Onions: Obligatory and Actual Deliveries, Total Production
Prices of Obligatory Deliveries, and Nonquota Prices, Egypt, 1975-1979

Year	Quantity to be delivered	Quantity delivered	Total production	$\frac{QD}{Q}$	$\frac{QD}{Q}$	$\frac{QD}{QD}$	Price of obligatory deliveries	Nonquota price	$\frac{P}{P}$
	QD	QD	Q				P	P	P
	tons						tons		
1975	136,824	120,405	572,300	23.9	21.0	88.0	23	24.580	93.6
1976	133,717	136,792	651,970	20.1	21.0	102.3	27	29.160	92.6
1977	132,869	118,253	723,070	18.4	16.4	89.0	27	31.420	85.9
1978	114,352	76,616	599,330	19.1	12.8	67.0	32	32.900	97.3
1979	84,807	116,186	560,000	15.1	20.7	137.0	34	44.560	76.3

