

AN ECONOMIC ANALYSIS OF STATE FARM CREDIT IN EGYPT, 1960-1970

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INTRODUCTION

Capital is very important factor indetermining the kind, amount and quality of a society's total production. In modern agriculture farm operators are using more and more non-farm inputs. These inputs include machinery, feeds, fertilizers, insecticides, herbicides, gasoline, hybrid seeds, feed additives, etc. Hence capital has been used to increase the productivity of labour in farming.

Increasing use of capital in farming has been facilitated by the adoption of yield increasing technology. The new technology is thus concerned with an intensive use of capital on farms. Although the adoption of technology generally lowers per unit costs of production, it increases total capital costs per farm.

Capital in agriculture comes from three main sources, from landlords, from farm operators and from farm credit. In other words capital flow to agriculture stems from savings or credit. The credit source gives rise to capital directly through borrowing.

In many underdeveloped countries the savings level tends to be low. In these situations capital formation is difficult since the major portion of income is consumed for current necessities.

The principal sources of farm credit in Egypt, especially in the last decade, are government agencies and the co-operative

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agricultural credit system. These sources make loans available to farm operators in one or more form.

Objectives of the Study

The general purpose of the study is to shed light on public finance of agriculture in Egypt during the sixties. The specific objectives are to :

- 1 — Determine the trends of both costs of agricultural production and farm credit and indicate the relationship between farm credit and the costs of agricultural production.
- 2 — Examine the distribution of farm credit according to the length of time.
- 3 — Examine the distribution of farm credit among in kind credit and cash credit.
- 4 — Investigate the pattern of the distribution of farm credit among the farming areas (governorates).
- 5 — Examine the pattern of the distribution of farm credit among agricultural products.

Sources of Data

Data used in the analysis were obtained from :

- 1 — The Agency of Agricultural Economics and Statistics, Ministry of Agriculture.
- 2 — The Central Agency for Public Mobilization and Statistics.
- 3 — General Organization for Agricultural Co-operative Credit.

The Relationship between farm Credit and farm Production.

Simple correlation between the total value of farm credit and the total value of farm production during the study period was examined. The correlation coefficient was 0.92 and was highly significant. The coefficient of determination was 0.85. This means that 85 percent of variation in the value of farm production may be explained by the variation in the value of farm credit.

Trends of the Costs of Production and Credit in Agriculture :

The following two equations indicate the general trends of the costs of production in agriculture and farm credit respectively during the period 1960-1970.

$$1 - Y = 143.07 + 18.8 x^*$$

(3.1)

$$R = 0.9 \quad R^2 = 0.81 \quad R'^2 = 0.80$$

Where Y indicates the costs of agricultural production in L.E. millions and x indicates years.

$$2 - Y = 39.7 + 4.7 x^*$$

(0.96)

$$R = 0.86 \quad R^2 = 0.75 \quad R'^2 = 0.72$$

Where Y represents the value of farm credit in L.E. millions and x represents years.

The above two equations indicate that while the annual increase in the costs of agricultural production was L.E. 18.8 millions and represented 7.6% of the average costs of agricultural production for the study period which was L.E. 246.7 millions, the annual increase in the farm credit was L.E. 4.7 millions and represented 7.2% of the average of farm credit value during the study period which was L.E. 65.5 millions.

Table (1) shows the ratio of farm credit value to the value of costs of agricultural production during the period 1960-1970. The table shows that the ratio of farm credit to the costs of production in agriculture or the public finance ranged from 23.7% in 1960/61 to 29.9% in 1963/64. However the average ratio of the public finance to agriculture to the costs of agricultural production was 26.6% during the study period. This means that farmers provided 73.4% of the costs of production in agriculture on the average for the study period.

* The statistics were significant at 0.01 level.

Table (1)
Ratio of Farm Credit to the Costs of Agricultural
Production, Egypt, 1960-1970

Years	Farm credit
	Cost of Agricultural Production
	%
1960/61	23.7
1961/62	24.0
1962/63	29.0
1963/64	29.9
1964/65	28.6
1965/66	27.4
1966/67	27.6
1967/68	24.0
1968/69	24.0
1969/70	27.0
Average for the period	26.6

Table (2)
Percentage of short, Medium and long term Credit
to total Farm credit, Egypt, 1960-1970

Year	Short term credit	Medium term credit	Long term credit
	%	%	%
1960/61	96.82	3.13	0.05
1961/62	97.82	2.15	0.03
1962/63	96.0	3.9	0.1
1963/64	94.7	5.3	0.0
1964/65	96.1	3.9	0.0
1965/66	98.3	1.3	0.0
1966/67	97.4	2.6	0.0
1967/68	97.1	2.9	0.0
1968/69	92.2	2.8	0.0
1969/70	97.7	2.3	0.0

Short, Medium, and long term Credit

Table 2 shows, the percentage distribution of farm credit during the period 1960-70 according to the length of time. The discloses that the short term credit (redeemable over a period not exceeding 14 months and designed mainly to finance sowing and harvesting operations) represented the most important form of farm credit during the sixties. However the medium term credit (redeemable in 10 years to finance mainly the purchase of machinery and cattle) represented only about 3% on the average of the total value of farm credit during the study period. The long term-credit (for the reclamation and developments of lands) was insignificant. The insignificance of the long term credit could be explained by the fact that the government is carrying out all the reclamation and development of lands and not the individuals.

Table, 3 indicates the percentage of the farm credit used to finance the purchase of machinery during the period 1960-70.

Table (3)
Percentage of Farm Credit used to finance Machinery
Purchase, Egypt, 1960-1970

Year	Percentage of farm credit used to finance machinery purchase
1960/61	0.0
1961/62	0.119
1962/63	0.025
1963/64	0.0
1964/65	0.0
1965/66	1.52
1966/67	1.09
1967/68	0.679
1968/69	0.341
1969/70,	0.746

The table also indicates that loans devoted to machinery purchase was very small.

**The Distribution of Farm Credit among
in Kind Credit and Cash Credit**

Table 4, shows the percentage distribution of farm credit value during the period 1965-1970 among in kind credit and cash credit. The table discloses that the average percentage of in kind credit to the total value of farm credit during the period 1965-1970 was about 65% and that about 35% on the average of the total value of farm credit during the same period was given in the form of cash credit.

Table (4)
**The Percentage Distribution of Farm Credit
Value among in kind Credit and Cash
Credit, Egypt, 1965-1970**

Year	In Kind credit %	Cash Credit %
1965/66	60.2	39.8
1966/67	64.0	36.0
1967/68	67.4	32.6
1968/69	67.7	32.3
1969/70	64.9	35.1
Average for the period	64.8	35.2

**The Distribution of Farm Credit among
The Farming Areas (Governorates)**

Table 5 shows the average percentages of farm credit appropriated to the farming areas during the period 1961-1970.

The governorates which obtained relatively high average percentages of the total value of farm credit are El Behera, El Dakahlia, El Minya, El Sharkia, El Gharbia and Kafr El Sheikh. They obtained on the average 12.54%, 11.89%, 9.33%, 8.79%, 8.69% and 7.23% respectively of the total value of farm credit during the period 1961-1970. Meanwhile the governorates which obtained relatively low average percentages of the total value of farm credit are El-Wadi El-Guedid, Port-Said, El-Suez, El-Ismailia and Alexandria. They obtained on the average 0.033%, 0.035%, 0.036%, 0.41% and 0.76% respectively of the total value of farm credit during the period 1961-1970.

Table (5)
The Average Percentages of Farm Credit Appropriated to Governorates, Egypt, 1960-1970.

Governorates	Years										Average %
	1961/62 %	1962/63 %	1963/64 %	1964/65 %	1965/66 %	1966/67 %	1967/68 %	1968/69 %	1969/70 %		
Cairo	2.67	2.41	1.77	1.43	1.30	1.17	1.65	0.45	0.39	1.47	
Alexandria	0.87	1.06	1.28	0.66	0.39	0.47	0.57	0.77	0.84	0.76	
Port Said	—	0.03	0.04	—	—	—	—	—	—	0.035	
El Suez	0.02	0.04	0.06	0.06	0.05	0.03	0.02	0.01	—	0.36	
Damietta	1.16	1.19	1.70	1.52	1.40	1.70	1.35	1.11	1.20	1.37	
El Dakahlia	10.71	10.81	11.42	10.69	11.40	12.43	12.61	12.24	14.75	11.89	
El Sharkia	8.21	7.80	8.31	7.28	8.00	9.27	9.26	9.99	11.01	8.79	
El Kalubia	3.8	2.52	2.64	2.63	2.90	2.96	3.01	2.63	2.33	2.74	
Kafir El Sheikh	6.60	6.08	6.56	9.94	6.81	6.58	7.26	7.04	8.20	7.23	
El Gharbia	10.02	8.79	9.84	8.22	8.71	8.71	9.10	7.99	8.35	8.69	
El Monofa	5.86	4.76	4.86	4.79	4.48	5.40	5.57	5.77	5.46	5.21	
El Behera	11.34	13.33	12.96	12.72	12.88	13.56	12.41	11.73	12.01	12.54	
El Ismailia	0.43	0.49	0.53	0.42	0.35	0.44	0.40	0.36	0.31	0.41	
El GszSa	1.54	1.73	2.24	1.73	1.82	1.47	1.16	0.95	0.84	1.49	
Beni Suef	3.84	3.71	5.03	5.87	4.88	3.68	3.88	4.30	4.36	4.39	
El Fayum	3.16	3.55	2.87	3.34	4.63	4.46	4.02	4.23	4.93	3.90	
El Minya	10.96	10.65	9.34	8.77	9.31	8.66	8.38	8.50	9.40	9.33	
Assiut	7.12	6.31	4.98	5.60	6.63	5.43	5.04	8.60	6.53	6.24	
Sohga	4.32	5.11	3.86	4.94	6.72	5.78	5.82	5.60	5.91	5.33	
Quin	6.63	6.52	6.35	6.14	5.97	5.2	5.56	7.40	7.50	6.36	
Aswan	1.45	3.13	3.43	3.22	2.72	2.60	2.09	3.20	3.02	2.84	
El Wadi El Gedid	—	—	0.02	0.02	—	0.02	0.04	0.06	0.04	0.035	

Table 6 indicates the percentages of the cultivated land, the contribution to the total value of farm production and the appropriated farm credit by governorate during the year 1966 (pre-war year).

The table shows that while El Behera represented about 12% of the total cultivated land in Egypt and contributed about 11% to the total value of farm production, obtained about 13% of the total value of farm credit.

However El Dakahlia, El Minya, El Sharkia, El-Gharbia and Kafr El Sheikh represented about, 11%, 7%, 11%, 7% and 7% of the total cultivated land in Egypt and contributed about 9%, 8%, 10%, 7% and 6% to the total value of farm production and obtained about 11%, 9%, 8%, 7% and 7% of the total value of farm credit respectively.

While lower Egypt governorates represented about 60% of the total cultivated land and contributed about 61% to the total value of agricultural production, obtained about 57% of the total value of farm credit. Like-wise the middle Egypt governorates represented nearly 21% of the total cultivated land and contributed about 21% to the total value of agricultural production, and obtained about 21% of the total value of farm credit. However the upper Egypt governorates represented about 19% of the total cultivated land and contributed 18% to the total value of agricultural production and obtained almost 22% of the total value of farm credit.

The Distribution of Farm Credit among Agricultural Products

While cotton contributed about 14% to the total value of agricultural production in 1966 cotton producers obtained about 49% of the total value of farm credit. However zea maize, wheat, rice and sugar cane contributed to the total value of agricultural production in 1966 about 8%, 7%, 5% and 2% and the crop producers obtained about 13%, 10%, 9%, and 6% respectively of the total value of farm credit, table 7.

Table (6)
The Percentages of Cultivated Land, the Contribution to the total Value of Agricultural Production and Appropriated Farm Credit by Governorate, Egypt, 1966

Governorate	Cultivated land %	Contribution to the total value of Agricultural production %	Appropriated Farm credit %
Alexandria	0.5	0.7	0.39
El Behera	12.4	11.1	12.88
E Gharbia	7.1	7.4	7.36
Kafr El Sheikh	7.4	6.1	6.81
El Dakahlia	10.5	9.2	11.40
Damietta	1.8	1.5	1.40
El Sharkia	10.8	10.4	8.00
El Ismailia	1.0	1.2	0.35
El Suez	0.1	0.2	0.05
El Monofia	5.3	8.1	4.48
El Kaliubia	3.2	4.9	2.90
Cairo	0.2	0.4	1.30
Lower Egypt	60.3	61.1	57.32
El Giza	3.0	5.0	1.82
Beni Suef	4.4	4.0	4.88
El Fayum	5.7	4.7	4.63
El Minya	7.4	7.6	9.31
Middle Egypt	20.5	21.3	20.64
Assiut	5.3	5.6	6.63
Sohag	5.4	5.4	6.72
Qina	5.9	5.4	5.97
Aswan	2.6	1.4	2.72
Upper Egypt	19.2	17.6	22.04

This means that the largest part of farm credit value was devoted to a limited number of traditional agricultural products : cotton, maize, wheat, rice and sugar cane while the portion of farm credit value devoted to vegetables, fruits and livestock products was very small.

Table (7)
The Percentages of contribution to the total Value
of Agricultural Production and appropriated credit
by Agricultural Products, Egypt, 1966

Agricultural Product	Contribution to the	Appropriated
	total Value of Agric- ultural production %	credit %
Cotton	13.8	48.7
Zea maize	8.3	12.6
Wheat	7.4	10.1
Rice	4.7	9.4
Sugar-cane	1.5	6.1
Beans	2.4	1.2
Onion	0.9	0.5
Ground nuts	0.4	0.2
Other agricultural products	60.6	11.2

Table 8 indicates the loans per feddan and the ratio of loans to costs of production for the main field crops during the period 1960-1970. Cotton producers obtained L.E. 16 in terms of loans per feddan on the average during the study period. This represented about 25% of the costs of producing cotton.

Likewise wheat, Zea maize, rice, and onion producers obtained L.E. 6.3, 5.2, 6.7 and 7.6 respectively in terms of loans per feddan on the average during the study period. These loans represented about 18%, 18%, 14%, and 12% of the costs of producing wheat, zea maize, rice and onion respectively.

Table (8) Loans per Feddan and the Ratio of loans to Costs of Production for the main Field Crops, Egypt 1960 - 1970

Field Crops	1960/61	1961/62	1962/63	1963/64	1964/65	1965/66	1966/67	1967/68	1968/69	1969/70	Average
Loans per feddan L.E.	6.1	6.0	11.6	14.6	16.0	18.3	22.1	22.1	20.2	24.1	16.1
Costs of production %	13.4	12.0	22.3	26.5	27.7	28.2	30.9	31.6	28.6	32.7	25.4
Loans per feddan L.E.	2.9	3.0	8.6	5.7	8.7	7.0	9.6	7.2	6.6	7.5	6.7
Rice											
Loans : Costs of production %	8.2	7.7	21.6	14.3	19.4	13.5	17.1	12.6	11.1	12.5	13.8
Loans per feddan L.E.	0.33	1.3	1.3	1.5	1.4	2.7	2.6	3.3	2.8	1.9	1.9
Beans											
Loans : Costs of production %	1.4	6.0	5.4	6.3	5.4	9.2	8.4	12.3	8.8	6.0	6.9
Loans per feddan L.E.	1.1	1.3	1.5	1.2	0.8	1.02	2.3	2.0	2.3	1.9	1.6
Ground nuts											
Loans : Costs of production %	4.7	4.4	5.2	3.9	2.6	2.5	8.5	5.01	5.8	4.6	4.7
Loans per feddan L.E.	1.6	2.1	3.3	2.1	5.4	10.8	7.9	2.9	26.2	13.9	7.9
Onion											
Loans : Costs of production %	3.7	4.9	7.7	4.2	11.5	20.0	13.0	14.1	32.3	17.4	11.9
Loans per feddan L.E.	4.3	4.8	4.2	3.2	4.2	6.1	6.6	6.8	5.6	5.9	5.2
Zea Maize											
Loans : Costs of production %	18.8	20.0	17.1	13.2	15.8	20.8	21.5	21.3	13.8	14.5	17.7
Loans per feddan L.E.	4.1	7.1	4.6	5.8	5.8	9.3	6.7	6.8	5.0	7.3	6.3
Wheat											
Loans : Costs of production %	14.4	24.7	16.0	19.5	18.8	24.9	17.1	17.1	12.5	18.6	18.4
Loans per feddan L.E.	0.33	1.3	1.3	1.5	1.4	2.7	2.6	3.3	2.8	1.9	1.9
Sugar cane											
Loans : Costs of production %	1.4	6.0	4.5	6.3	5.4	9.2	8.4	12.3	8.8	6.0	6.9

However farm operators obtained about L.E. 1.9, 1.9, 1.6 in terms of loans per feddan on the average during the study period for beans, sugar cane and ground nuts respectively. Loans represented 6.9%, 6.9% and 4.7% of the costs of production of beans, sugar cane and ground nuts respectively.

When table 9, which discloses the average percentage distribution of loans according to farm practices for the main field crops for the period 1965-1970, was examined it was found that insecticides and pest control loans represented about 40% of the total value of loans given to cotton producers. Also about 28% of total value of loans given to cotton producers was to finance harvesting practices. However fertilizers loans represented 27% of total value of loans given to cotton producers.

For rice fertilizers loans represented more than 50% of the total value of loans given to producers. Likewise harvesting and seeds loans represented about 23% and 21% respectively of the total value of loans given to rice producers.

Table (9)
The Average Percentage Distribution of Loans according
to Farm Practices for the main Field Crops, Egypt,
1965 - 1970

Farm Practice	Cotton %	Rice %	Zea maize %	Wheat %	Onion %	Beans %
Seeds	4.6	21.4	4.1	23.3	19	67.7
Fertilizers	27.0	54.6	93.6	75.7	64.3	31.4
Insecticides	20.1	0.1	0.7	0.1	11.3	0.6
Harvesting	28.1	22.6	1.4	0.8	2.2	0.2
Pest Control	20.2	1.3	0.2	0.2	3.2	0.1

For zea maize fertilizers loans represented about 94% of the total value of loans given to crop producers.

For wheat fertilizers and seeds loans represented about 76% and 23% respectively of the total value of loans obtained by the producers.

For onion, producers obtained about 64% and 19% of the total value of loans in terms of fertilizers and seeds respectively.

Seeds and fertilizers loans for beans producers represented about 68% and 31% respectively of the total value of loans given to them.

Summary and Conclusions

It is known that credit is one of the more important tools that farm operators use to balance, expand and intensify the factors of production. Furthermore, non-farm inputs means more farmer's needs to credit. Also, when farmers have low incomes, they have less of savings to finance the farm business. The study was carried on to examine the expansion of one of the main sources of farm credit in Egypt, i.e., the state farm credit.

The study revealed that there is a high correlation between total farm production and the available state farm loans.

While costs of production in agriculture increased annually by 7.6% of the average during the period 1960-1970, state farm loans increased annually by 7.2% of the average during the same period. Likewise, the ratio between state farm loans and the costs of agricultural production was 2.6% on the average during the study period. This means that farm operators have to provide on the average 73.4% of the costs of production in agriculture. It seems that this will be a burden to farmers when they are faced with low levels of incomes and they have to meet the necessities of their life.

The study showed that the short term credit represented the most important form of farm credit during the sixties. The medium term credit represented only about 3% on the average of the total value of farm credit during the study period. The long term credit was insignificant. The loans devoted to machinery purchase was very small.

The study revealed that the average percentage of in kind credit to the total value of farm credit during the period 1965-70 was about 65% and that about 35% on the average of the total value of farm credit during the same period was given in the form of cash-credit.

State farm credit distribution among the different farming areas (governorates) during the year 1966 (pre-war year) was examined. While lower Egypt governorates represented about 60% of the total cultivated land and contributed about 61% to the total value of agricultural production, obtained 57% of the total value of farm credit. Yet middle Egypt governorates represented nearly 21% of the total cultivated land and contributed about 21% to the total value of agricultural production and obtained about 21% of the total value of farm credit. However upper Egypt governorates represented about 19% of the total cultivated land and contributed 18% to the total value of agricultural production and obtained almost 22% of the total value of state farm loans.

Also state farm loans distribution among agricultural products was examined. However in 1966 while cotton contributed about 14% to the total value of agricultural production, cotton producers obtained about 49% of the total value of farm credit.

Zea maize, wheat, rice and sugar cane contributed to the total value of agricultural production in 1966 about 8%, 7%, 5% and 2% and the crop producers obtained about 13%, 10%, 9% and 6% respectively of the total value of farm credit.

This means that the largest part of farm credit is devoted to a limited number of traditional agricultural products : cotton, maize, wheat rice and sugar cane while the portion of farm credit devoted to vegetables, fruits, and livestock products is very small.

Farm operators obtained in terms of loans per feddan on the average during the period 1960-1970 L.E. 16.1 for cotton, L.E. 6.3 for wheat, L.E. 5.2 for zea maize, L.E. 6.7 for rice, L.E. 7.6 for onion and L.E. 1.9 for beans. However, state farm loans represented about 25%, 18%, 17%, 14%, 12% and 7% of the costs of producing cotton, wheat, zea maize, rice, onion and beans respectively.

State farm loans were used mainly to finance insecticides and pest control for cotton, to finance fertilizers for wheat, zea maize, rice and onion and to finance seeds for beans.