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LEBANESE AGRICULTURE WITHIN AN
ARAB COMMON MARKET: AN EXERCISE IN
MONITORING AGRICULTURAL TRADE ADVANTAGE

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By

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INTRODUCTION

This report has its origin in the authors' efforts to come to grips with a research problem defined in 1971 in collaboration with the Ministry of Agriculture of Lebanon. Opinion varied in Lebanon as to whether the country should be looking to Europe or to the Arab world in its effort to seek shelter in a world of growing economic integration. Nearly half of the Lebanese GNP arises in a services sector dominated by trade. The research problem was to ascertain how the agricultural sector in Lebanon would fare under one possible outcome of efforts toward the establishment of an Arab common market; i.e., a union of Lebanon with the existing Arab Common Market (ACM) of Syria, Iraq, Jordan and Egypt.

The constraints in formulating an operative methodology for determining the impact of ACM entry on the agricultural sector were the usual; limited funds and limited availability of data. Since regional data were limited, and resources did not exist for collection of primary data, techniques dependent on comprehensive sets of production functions, such as spatial equilibrium models and recursive programming were not used. Preliminary results obtained by using Regional¹ secondary data in constructing production functions for certain products discouraged further pursuit of these techniques (Dada, 1973, pp. 274-283).

Lacking a basis for approaching the problem through direct consideration of the behavior of agricultural production and consumption,

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(2) Associate Professor of agricultural economics, and former graduate student in agricultural economics, respectively.

(1) The term Regional (capitalized) refers to Lebanon, Iraq, Jordan, Syria and Egypt; otherwise regional refers to nations in close proximity.

the authors turned to regional trade statistics. Various approaches were taken in the use of data on imports and exports to depict regional trade. The two principle approaches are presented here. Foreign trade statistics were used to determine the intra-regional trade advantage for Lebanon vis-à-vis the ACM countries, whereby the following techniques were utilized: (1) computing the past trends of the Lebanese percentage share of the total imports by ACM countries, and (2) computing the relative share indexes.

Evaluation of trade advantage, via Regional trade analysis in the Middle East, was estimated by taking into consideration that the presence of trade policies (both restrictive and positive) did not influence trade movement per se. The trade bias was exerted whenever these policies were present in relatively different proportions in different countries among which the trade was taking place. Therefore, this study assumes that these trade policies have been used in relatively the same manner among the Arab countries and that the situation will persist in the future with no abrupt changes in these policies.

This assumption was made due to the following observations:

1. The absence of tariffs on agricultural products between the Arab League countries since 1953 (Musrey, 1969).
2. The tendency for Arab countries to retaliate against other's trade restrictions (qualitative and administrative restrictions) in such a way that the net national gains in intra-Regional trade are small. This tendency is a manifestation of the historical obligation of Arab governments to protect their agricultural sectors, which contain the largest portion of their labor forces.
3. The quantitative restrictions which tend to be imposed during price depressions at different periods among different countries as a consequence of seasonal variation in production. These restrictions exert an equally adverse influence on the trade volumes of all Regional countries. Since trade advantage should be measured in relative terms, those trade restrictions would not substantially alter the long term trend toward Regional specialization (Musrey, 1969).

As the influence of Regional trade policies on intra-Regional trade is similar among Regional countries, trade advantage in agricultural products might reflect the comparative cost advantage in these products. However, the cost of these products reflects not only the economic cost of production but also those governmental policies that influence the allocation of resources. This study assumes that there will not be abrupt changes in these policies and that the competitive imperfections that exist will continue in the future.

Computation of the Annual Rate of Change in Agricultural Trade

The intra-Regional trade advantage was determined by constructing three sets of past trends for each of the selected agricultural products.

The products that were selected constitute a large proportion of the total value of agricultural exports in Lebanon. Individual or sub-groups of products were selected to represent more general groups of products that have the same resource requirements and that appear in the same category. The products selected were apples, bananas, citrus, onion plus garlic, potatoes, tomatoes, eggs, and poultry.

The following are the three sets of trends that were constructed:

1. The Lebanese percentage share of total commodity imports by ACM member countries.
2. The Lebanese percentage share of Regional commodity imports by ACM member countries.
3. The Lebanese percentage share of the Arab countries' commodity imports made by ACM member countries.

Various mathematical functions were employed in estimating the change in the Lebanese share of imports (Y) over time (t). The degree of closeness of fit of these regression equations was measured by the corresponding coefficient of determination (R^2) and standard error of estimates (O)*. The equation with the best fit was used as expressing the best approximation of the historical trend in the Y observations. Curvilinear functions did not give results superior to those from linear estimates.

In the three sets of trends, the Lebanese percentage share was taken for imports rather than for total domestic production because it was assumed that governments of these countries were pursuing the interest of their own farmers and were initiating policies protecting their existing agricultural production. Therefore, the issue of which country possesses the trade advantage in a product is determined by which is able to achieve a positive rate of change in its percentage access to the import markets of the member countries.

The purpose of computing the second and third sets of trends was to determine an intra-Regional trade advantage rather than a trade advantage vis-à-vis all countries. There are two arguments in support of the intra-Regional trade advantages:

1. A substantial volume of ACM imports from third countries were determined by concessionary sales, by bilateral agreements and by dumping by third countries. Therefore, a situation of trade disadvantage in a product indicated by the first set of trends may show an intra-Regional trade advantage by the second or third sets.
2. The projected ACM will establish a protective common external tariff for its agriculture. This argument reorients the interest internally towards an intra-Regional trade advantage.

Furthermore, the third set of trends was constructed, for an enlarged ACM that consists of all the Arab countries.

* Where O is used it stands for sigma.

The regression results are summarized in Table 1. These are fully discussed by Dada, 1973. They are summarized here, bringing out the principle implication of the results and the limitations of the method.

The agricultural products selected for inclusions were those which have entered significantly into Lebanon's agricultural exports. Market share growth rates were not computed for Egypt as, for most years, Egypt imported none of the products selected for study (Table 1).

The market share analysis was based on import statistics of ACM member countries. Import figures are generally carefully recorded in the region due to the importance of custom duties revenues for these countries. Also, the relative strength of a country's exports to a particular trading partner is best measured by the historical trend of the percentage share that this country's products occupy in the total imports of the region. The use of import data in this analysis also tends to produce contradictions with the relative share index analysis presented in the following pages of the report, if there are major inconsistencies in the national trade statistics.

In table 1, each market share for which a growth rate is computed is designated by a double-subscripted Y. The growth rates were computed with respect to a country (or country's) imports in total (T), from the Region (R), i.e. the ACM countries plus Lebanon, and from Arab countries (A). These are designated in the first subscript. The second subscript specifies the importing countries; Jordan (J), Syria (S), Iraq (I), and all the Arab Common Market countries including Egypt (ACM). The Lebanese market share growth rates are presented for apples, bananas, citrus, onion plus garlic, potatoes, tomatoes, eggs (shelled), and live poultry.

The linear functions were fitted using percentage shares computed from annual trade data from 1953 to 1970. The intercept given in Table 1 is the estimated value for 1953 and the «b» value shows the percent by which the market share increased annually. The amount of variation which could be explained by time associated growth factors differs widely for the various importers of each product. The computed «t» and A^2 show many of the growth rates to be non-significant statistically. This is due in most cases to the high variation in imports, with the variation being confined in some cases to a few years in which markets were disrupted. In a few cases, the annual percentage share is almost constant, causing low «t» values.

Interpretation of these results requires scrutiny of the annual percentage shares by persons knowledgeable with regard to the non-economic forces causing fluctuations in marketings. With such interpretation the results are more useful than the statistical tests would suggest. Nevertheless, the generally high instability in the markets limits the value of the approach. An additional limitation of trade growth rates is that they portray the regional market strictly from the view of one seller and do not show the relative position of various sellers.

TABLE 1. Linear Estimates of Growth in the Lebanese Share of Selected Agricultural Imports by Arab Common Market Countries*

Market share	Intercept	b value	O	t	R ²
A P P L E S					
YT, ACM	81.9	1.20	14.20	1.71	0.16
YT, J	94.0	0.47	2.40	3.64	0.48
YT, S	93.1	0.55	4.50	2.48	0.29
YT, I	94.1	0.005	6.97	0.01	0.00001
YR, ACM	96.42	0.24	1.49	3.02	0.39
YR, J	9.62	0.42	2.30	3.27	0.43
YR, S	99.9	-0.0042	0.11	0.98	0.06
YR, I	95.9	0.25	3.5	1.33	0.11
YR, ACM	96.42	0.24	1.49	3.02	0.39
YA, J	94.62	0.42	2.30	3.27	0.43
YA, S	99.9	-0.004	0.11	0.98	0.06
YA, I	95.9	0.25	3.5	1.32	0.11
B A N A N A S					
YT, ACM	78.15	-0.56	12.34	0.93	0.05
YT, J	99.65	0.03	0.37	0.73	0.07
YT, I	61.98	-0.10	20.07	0.11	0.0007
YT, S	82.52	-0.58	14.32	0.83	0.04

* ACM shares are computed under the assumption of Lebanon's inclusion in the Arab Common Market.

TABLE 1. (continued)

Market share	Intercept	b value	O	t	R ²
YR, ACM	78.61	-0.65	13.2	1.01	0.06
YR, J	99.65	0.03	0.37	0.73	0.07
YR, S	86.82	-0.92	12.54	1.49	0.12
YR, I	61.82	-0.04	20.25	-0.05	0.001
YA, ACM	78.60	-0.65	13.20	-1.01	0.06
YA, J	99.65	0.03	0.37	0.73	0.07
YA, S	86.82	-0.92	12.54	-1.49	0.12
YA, I	61.82	-0.04	20.25	-0.05	0.0001
C I T R U S					
YT, ACM	95.6	-0.04	6.06	-0.15	0.001
YT, J	87.9	0.06	24.4	0.05	0.0001
YT, S	100.7	-0.34	2.39	-3.30	0.42
YT, I	39.4	5.2	6.4	2.59	0.69
YR, ACM	100.6	-0.37	3.56	-2.15	0.23
YR, J	88.2	0.04	24.4	0.04	0.0001
YR, S	100.47	-0.26	2.22	-2.36	0.27
YR, I	65.1	6.49	4.08	5.02	0.84
YA, ACM	95.6	-0.03	5.97	-0.13	0.001
YA, J	88.2	0.04	24.4	0.04	0.24
YA, S	100.25	-0.25	2.36	-2.19	0.24
YA, I	31.27	12.07	6.9	5.52	0.91

TABLE 1. (continued)

Market share	Intercept	b value	O	t	R ²
O N I O N, G A R L I C					
YT, ACM	52.3	-2.74	10.7	-5.17	0.64
YT,	54.058	-2.41	16.35	-2.47	0.32
YT, S	65.47	-4.40	18.17	-4.89	0.61
YT, I	19.269	-0.60	22.287	-0.36	0.01
YR, ACM	40.102	0.165	20.65	0.15	0.001
YR, J	30.39	2.57	28.789	1.65	0.162
YR, S	70.18	-4.74	19.298	-4.96	0.62
YR, I	28.469	0.88	39.17	0.30	0.008
YA, ACM	40.102	0.165	20.65	0.15	0.001
YA, J	30.39	2.57	28.789	1.65	0.162
YA, S	70.18	-4.74	19.298	-4.96	0.62
YA, I	28.469	0.88	39.17	0.30	0.008
P O T A T O E S					
YT, ACM	52.80	-1.33	11.80	-2.28	0.25
YT, J	78.76	0.26	7.49	0.70	0.032
YT, S	57.23	-1.40	19.38	-1.21	0.101
YT, I	32.57	-1.17	12.18	1.95	0.202
YR, ACM	66.92	0.54	13.81	0.79	0.04
YR, J	85.53	0.60	6.13	1.98	0.207
YR, S	69.00	2.02	19.88	-1.71	0.18
YR, I	62.59	1.19	20.39	1.29	0.094

TABLE 1. (continued)

Market share	Intercept	b value	O	t	R ²
YA, ACM	66.92	0.54	13.81	0.79	0.04
YA, J	88.53	0.60	6.13	1.98	0.207
YA, S	68.00	-2.01	19.88	-1.69	0.18
YA, I	77.59	0.14	20.47	0.15	0.001
T O M A T O E S					
YT, ACM	19.48	-0.609	12.23	-1.0	0.06
YT, J	10.84	5.34	27.23	2.95	0.42
YT, S	14.97	0.46	12.04	0.78	0.03
YT, I	15.61	-0.64	21.09	-0.56	0.02
YR, ACM	21.137	-0.57	13.3	-0.87	0.04
YR, J	10.76	5.35	27.18	2.97	0.42
YR, S	15.87	+0.407	11.96	0.68	0.03
YR, I	17.04	-0.707	20.916	-0.68	0.03
YA, ACM	21.137	-0.57	13.3	-0.87	0.04
YA, J	10.76	5.35	27.18	2.97	0.42
YA, S	15.87	0.407	11.96	0.68	0.03
YA, I	17.04	-0.707	20.916	-0.68	0.03

E G G S (Shelled)

ACM	53.30	-1.03	19.60	-0.28	0.01
J	8.30	7.56	17.80	2.25	0.50
YT	100.21	-10.8	21.10	-2.72	0.59
I	108.60	-14.36	14.90	5.07	0.83

TABLE 1. (continued)

Market share	Intercept	b value	O	t	R ²
YR, ACM	62.05	6.38	15.27	2.21	0.49
YR, J	33.52	9.09	21.44	2.24	0.50
YR, S	103.07	1.53	8.12	-0.99	0.16
YR, I	99.42	0.07	0.81	0.47	0.04
YA, ACM	62.05	6.38	15.27	2.21	0.49
YA, I	33.52	9.09	21.44	2.24	0.50
YA, S	103.07	1.53	8.12	0.99	0.16
YA, I	99.42	0.07	0.81	0.47	0.04
P O U L T R Y (Live)					
YT, ACM	30.30	6.50	24.05	2.46	0.43
YT, J	37.20	7.90	9.90	6.17	0.84
YT, S	36.50	8.80	19.30	3.54	0.64
YT, I	73.10	-8.81	7.05	2.86	0.62
YR, ACM	99.79	-0.25	1.88	-1.21	0.15
YR, J	99.40	-0.17	2.15	-0.63	0.05
YR, S	100.2	-0.08	0.56	-1.43	0.20
YR, I	97.55	-0.25	5.80	-0.41	0.03
YA, ACM	99.78	-0.25	1.87	-1.21	0.15
YA, J	99.40	-0.17	2.15	-0.63	0.05
YA, S	100.17	-0.08	0.56	-1.42	0.20
YA, I	99.55	-0.45	5.80	-0.41	0.03



While it is conceivable that demand and supply functions can be estimated for regional markets, and programming models may be applied in a regional commodity market analysis, the previously mentioned informational limitations inhibit this approach. Also, spatial equilibrium and recursive programming models do not provide the broader «perspective» of the agricultural sector which is required for planning within a regional context. One alternative which does reveal simultaneously inter-commodity and inter-regional relationship, is the computation of relative share indexes. This method does not reveal comparative economic advantage, as the reliance on international trade data injects into the results any and all factors which influence trade flows.

The Relative Share Index

This technique determines the trade advantage of all countries under consideration and indicates which countries are competitive or complementary in each of the traded products under consideration. The data used in this technique were the annual value of exports for each product in each country and the corresponding annual value of agricultural exports for the same countries. The export composition was calculated for each country and for the Region, i.e. for all ACM countries and Lebanon. The export composition is represented by:

$$\frac{X_{ji} \times 100}{X_j}$$

Where X_{ji} stands for the value of country (j) total exports of product (i) and X_j is the total value of agriculture export of country j or group of countries.

The second step comprises dividing the percentage share of each product in each country by the corresponding share pertaining to the Region.

$$\frac{X_{ji}/X_j \times 100}{X_{ri}/X_r}$$

where X_{ji}/X_j and X_{ri}/X_r are the ratios calculated for each individual country and the Region, respectively.

The quotient is called the relative share index. To reduce the effect of variation in natural and political hazards on the production of agricultural commodities and consequently on amount of agricultural exports and the resultant calculated relative share index, the indexes were calculated using averages of several years.

These indexes determine the trade advantage for each country. For example, if country (j) has a share index of 155 for product (i), then this

country's share in the Regional export of commodity (i) is 55 percent larger than its share in exports of all commodities. If two or more countries have a share index larger than 100 in the same product then they are competitive as far as this product is concerned. Moreover, these countries would be complementary with countries whose relative share is small in this product.

This approach has two principle limitations: (1) It fails to account for the effect of recently adopted technology on the growth of agricultural exports of a country, particularly if the export composition and the relative share index was calculated as an average of many years. Then the effect of enlarged exports, due to recent structural change, is diluted by small values of exports in that country in previous years. Three relative share index tables were calculated, for the periods 1960-1964, 1965-1967, and 1968-1969, (2) This approach neglects the impact of Regional relative abundance of factor endowments on the future orientation of trade, particularly if these endowments are not exploited due to lack of know-how. In the absence of information on forthcoming technological developments, this research assumed that the future situation can be approximated by projecting¹ the historical trends.

We have employed the relative share index to reveal regional advantage within subsectors of the agricultural economy, and then for the agricultural sector as a whole. Here the subsector analysis is presented for animal products (Tables 2-4) and for the agricultural sector, excluding animal products (Tables 5-7). The share indexes for the total agricultural sector are presented in Tables 8-10.

Trade Advantage In Animal Products

In this phase the trade advantage in animal products was determined by taking the total value of exports for animal products as the base. The interpretation of this narrow base is that no matter how small were the total value of exports of animal products in a country, a relative share index larger than 100 would appear for at least one of these animal products.

Even though Jordan and Egypt possessed small animal export sectors, the associated relative share indexes (Tables 2-4) revealed that Jordan's comparative advantage was high in poultry and that Egypt's comparative advantage fluctuated between poultry (1965-67) and cattle (1968-70). Therefore, in order to avoid the error that a narrow subsector analysis might induce on the final results, comparative advantage was also determined for the total value of exports of animal products, as one commodity category of total agricultural exports (Tables 8-10). Countries that appear to possess a strong advantageous position in

(1) A projection is an extrapolation of historical phenomena into the future. It is not a statistical estimate.

total animal products would be able, because of their large developed animal exports, to meet the Regional demand for those particular products in which the narrower analysis has shown them to possess an advantage. Countries whose relative share indexes for total animal products were smaller than 100 are considered to have a disadvantage in this commodity category even though in the narrower context they may show an advantage in particular animal products.

TABLE 2. Relative share index of selected animal product exports, 1960-1964.

Product	Indexes				
	Lebanon	Syria	Jordan	Egypt	Iraq
Eggs	377.65	30.37	77.00	87.30	0.0
Poultry	444.30	10.40	1097.50	2.50	13.70
Goat & Sheep	0.27	181.00	0.0	14.94	14.29
Cattle	12.87	177.36	29.15	15.60	7.54
Others ¹	122.80	47.60	131.00	174.30	187.50

1. Includes animal products not listed in this table. Commodity classification is SITC.

Source: Computed from official trade statistics.

TABLE 3. Relative share index of selected animal product exports, 1965-1967.

Product	Indexes				
	Lebanon	Syria	Jordan	Egypt	Iraq
Eggs	395.11	7.23	8.85	9.16	0.0
Poultry	4372.90	13.30	11533.30	129.60	8.50
Goat & Sheep	0.63	200.60	0.0	14.20	0.74
Cattle	5.00	199.40	8.20	7.00	0.01
Others ¹	82.80	28.90	153.20	213.50	238.70

1. See footnote to table 2.

Source: Computed from official trade statistics.

TABLE 4. Relative share index of selected animal product exports, 1968-1970.

Product	Indexes				
	Lebanon	Syria	Jordan	Egypt	Iraq
Eggs	352.70	4.20	20.00	1.82	0.0
Poultry	309.70	4.20	383.40	84.50	7.80
Goat & Sheep	0.35	156.90	0.0	48.60	6.30
Cattle	2.00	149.40	2.80	135.00	0.17
Others ¹	149.30	36.20	434.10	147.00	493.50

1. See footnote to table 2.

Source: Computed from official trade statistics.

The Egg and Poultry industries have grown rapidly in Lebanon in the last decade. At the same time total value of animal exports rose from LL 7.6 million to LL 38.2 million. Most of the eggs and, to a lesser degree poultry, exported in the Region were Lebanese. However, due to the large Syrian and small Jordanian total animal exports sectors, the relative share index for Jordanian poultry was larger than 100 (Tables 2, 3, and 4), illustrating the influence of size of sectors on the computation of the trade advantage. This situation will be discussed further in the related share index tables of the agricultural sector in general.

The relative position of poultry exports in Lebanon fluctuated greatly, while that of eggs witnessed only a slight decline over the three periods. However, the export situation of eggs in other Regional countries was deteriorating, thereby reducing the threat to the Lebanese position in the poultry industry.

Syria's advantage was stronger in goats, sheep and cattle. Egypt emerged as the competitor for Syria in the period 1968-70 (Table 4) but the situation here resembles that of poultry in Jordan (as a competitor for Lebanon) since the large base of total animal exports in Syria had resulted in a small Regional commodity composition of these products for other Regional countries. This made it possible for Egypt, with moderate bovine exports, to score a relative share index larger than 100. The Syrian position in both cattle, and sheep and goats fluctuated and slightly declined though it continued to be unique in its position of advantage for these products.

Trade Advantage in Oil¹, Agro-Industrial², and Plant Products

This phase of the analysis comprises animal and vegetable oils, agro-industrial products, and selected plant products. Consequently, the base for commodity composition and relative share indexes was extended to include the summation of the values of exports of plant, oil, and industrial products. The analysis reflects the livestock sector only via advantage in coarse grains.

Since the relative share index technique is computed from the percentage ratios of the corresponding commodity compositions, each of the countries considered will show a strong advantage in at least one product within the group of commodities included in the analysis. That is, the share index would reveal a relative advantage for a country with a small total export plant sector, if the base of specialization was plant products only. Therefore, as the base of specialization is extended, the accuracy of the resultant relative advantage would increase.

TABLE 5. Relative share index of selected agricultural products and sub-sector exports, 1960-1964.

Products	Lebanon	Syria	Jordan	Egypt	Iraq
I n d e x e s					
Apples	712.70	34.11	4.01	0.0	0.0
Bananas	611.32	1.32	269.10	18.86	0.0
Citrus	583.68	1.06	60.16	48.93	0.26
Onions & Garlic	16.19	13.35	20.17	219.17	0.0
Potatoes	112.50	3.98	28.45	193.61	0.0
Tomatoes	88.20	31.46	1687.64	15.16	0.0
Legumes	215.49	156.26	166.50	60.90	30.57
Coarse grains	21.70	318.90	10.48	1.95	160.60
Wheat	9.50	439.60	20.90	0.59	34.85
Oils (animal & vegetable)	96.25	285.56	237.40	36.36	13.90
Agro-industrial	136.70	144.50	102.50	106.65	6.44
Others ¹	26.04	39.44	74.62	121.88	172.40

1. Includes all plant products not specified in this table; commodity classification is SITC.

Source: Computed from official trade statistics.

(1) These products were defined to consist of animal and vegetable fats and oils and their cleavage products; prepared edible fats; animal and vegetable waxes. These products appeared in Chapter 15 in SITC recording.

(2) These products included preparations of meat, fish, crustaceans or molluscs; sugar and sugar confectionery; cocoa and cocoa preparation; preparation of cereals, flour or starch; pastry cook's products; preparation of vegetables prepared or preserved; with or without sugar whether or not containing salt spices or mustard; miscellaneous edible preparations; beverages; spirits and vinegar; residues and wastes from the food industries; prepared animal feeds; and tobacco. These products appeared in Chapter 16, 17, 1, 19, 20, 21, 22, 23 and 24 in SITC recording.

TABLE 6. Relative share index of selected agricultural products and sub-sector exports, 1965-1967.

Products	Lebanon	Syria	Jordan	Egypt	Iraq
I n d e x e s					
Apples	610.60	5.50	1.06	0.0	0.0
Bananas	390.00	0.0	568.70	6.25	0.0
Citrus	513.40	0.22	96.12	25.00	0.0
Onions & Garlic	16.50	35.56	10.70	206.50	0.0
Potatoes	148.80	4.40	93.60	159.30	0.0
Tomatoes	24.77	74.33	1382.30	8.80	0.0
Legumes	216.10	248.10	123.60	39.30	19.30
Coarse grains	20.00	291.00	24.80	2.50	265.90
Wheat	17.64	250.00	65.20	16.10	250.00
Oils (animal & vegetable)	50.30	388.10	102.50	63.70	2.90
Agro-industrial	144.70	235.50	137.40	72.70	9.30
Others ¹	19.70	46.00	50.50	128.20	159.40

1. See footnote to table 5.

Source: Computed from official trade statistics.

TABLE 7. Relative share index of selected agricultural products and sub-sector exports, 1968-1970.

Products	Lebanon	Syria	Jordan	Egypt	Iraq
I n d e x e s					
Apples	347.70	3.00	1.36	0.0	3.00
Bananas	347.80	0.0	826.00	2.10	0.0
Citrus	279.50	0.0	164.00	86.40	0.0
Onions & Garlic	19.80	40.70	12.80	159.70	0.90
Potatoes	172.50	1.20	33.00	127.00	0.0
Tomatoes	65.30	139.40	1273.00	6.10	4.00
Legumes	138.90	435.10	177.30	35.90	27.90
Coarse grains	22.80	577.50	6.20	4.00	238.10
Wheat	100.00	147.80	217.30	0.0	530.40
Oils (animal & vegetable)	73.50	364.50	298.70	23.20	142.50
Agro-industrial	163.00	170.70	54.40	77.90	26.30
Others ¹	22.00	40.90	69.40	124.30	157.37

1. See footnote to table 5.

Source: Computed from official trade statistics.

Lebanon exhibited a strong advantage in fruits (apples, citrus and bananas), potatoes and legumes. Jordan, with a relative share index larger than 100 in tomatoes and bananas, was competing with Lebanon in bananas. Jordan emerged as a competitor of Lebanon in citrus in 1968-70 (Table 7). Likewise, Syria became a competitor with Jordan in tomatoes only in the last period. Egypt held a unique trade advantage in onions and garlic, and was competing with Lebanon in potatoes.

Although Lebanon, Syria, and Jordan were shown here as competitors in legumes over the three periods, Syria's position was rising steadily and rapidly, indicating that this country might gain a unique position in this product over the long-run.

The resultant export indexes pertaining to the wheat trade situation cannot be relied on because this product is in general deficit in the Region.

The computed relative share indexes over the three periods revealed that the competition between Syria and Iraq in coarse grains had not changed (Tables 5, 6, and 7). This reflects an advantageous position in the livestock industry for these two countries, particularly for Syria whose associated indexes in these grains were highly erratic but rose rapidly from 318 percent in 1960-64 to 577.50 in 1968-70 (Tables 5 and 7).

Jordan and Syria revealed an advantage in oil crops and hence were competitive with each other but complementary with Lebanon, Egypt, and Iraq in this commodity category. The Syrian advantageous position shows an improvement from 285 percent (Table 5) to 364 percent (Table 7), while the improvement apparent in the corresponding Jordanian indexes was small and irregular.

The trade situation in the agro-industrial products suggests promise for Lebanon. Four out of five Regional countries, with relative share indexes larger than 100, were competing in 1960-64, in these products (Table 5). However, this situation changed rapidly in the next two periods. Egypt lost its advantage in this commodity category in the 1965-67 period, and Jordan's strong advantageous position was lost in the 1968-70 period. Moreover, prospects for the Lebanese agro-industrial industry are more favorable than that of the Syrians since the three successive indexes were rising steadily for Lebanon but fluctuated widely for Syria. More detailed analyses of the Food processing sector in Lebanon support these findings (Nightingale, 1972).

Advantage of Total Agricultural Products

Here the base of export composition was taken to be the total value of exported agricultural products. This wide base increases the validity

of the results and examines further the Regional advantage in animal products revealed by the previous analysis. Animal products were examined in aggregate to determine those countries that possess a trade advantage in this sector. Countries that reveal a strong advantage in this sector should specialize in those animal products whose relative share indexes for these countries were larger than 100. Other commodity categories that were re-examined in this analysis were: oils and agro-industrial products.

The Lebanese relative share index in apples declined slightly over the three successive periods because of the rapid growth in the value of animals (poultry and eggs) and agro-industrial products in the 1968-70 period.

The computed relative share indexes did not reduce the previously obtained strong Lebanese advantage in citrus. However, increasing competition is coming from Jordan and probably Egypt.

Jordan retained its strong and rapidly improving advantageous position in bananas, while Lebanon appeared to be losing its relative export share in this product.

The unique advantageous position of Egypt in onions and garlic was also apparent in this section, while Jordan's advantageous position in tomatoes became unique. The loss of the Syrian trade advantage in tomatoes revealed in this section may be due to the substantial value of animals and agro-industrial exports added to the base of the total value of agricultural exports for that country.

Although, the values of the relative share indexes of potatoes had changed in magnitude, the direction and advantageous position of countries were retained in this phase as revealed previously. Lebanon and Egypt were still competing strongly in this product although marketing prospects for Lebanese potatoes appeared to be relatively more favorable since the associated indexes were rising relative to that of Egypt (Tables 8, 9, and 10).

The rate of increase in the relative indexes pertaining to Syrian legumes revealed in this section was slower than those revealed in previous sections. This was due to the rapid rise in the value of exportable animals and agro-industrial products which had reduced the rise in the percentage ratio of the Syrian export composition of this product.

TABLE 8. Relative share index for total agricultural exports, 1960-64.

Commodity	Lebanon	Syria	Jordan	Egypt	Iraq
Apples	695.60	30.60	4.30	0.00	0.00
Bananas	597.90	1.00	285.70	19.30	0.00
Citrus	569.11	0.80	63.60	51.00	0.10
Onions & garlic	15.70	11.90	21.20	228.80	0.00
Potatoes	109.70	3.40	30.00	202.20	0.00
Tomatoes	86.00	28.40	1783.60	15.70	0.00
Legumes	209.70	142.00	175.50	63.50	31.50
Coarse grains	21.20	286.80	11.00	2.10	166.00
Wheat	16.20	395.0	22.10	6.30	36.00
Oils (animal & vegetable)	94.20	257.80	251.40	38.10	14.40
Agro-industrial	133.10	129.90	108.20	113.40	6.60
Animals	134.00	232.30	28.10	42.10	57.20
Others ¹	25.30	35.40	78.60	127.20	177.90

1. Agricultural product exports other than those listed in the table; commodity classification is SITC.

Source: Computed from official trade statistics.

TABLE 9. Relative share index for total agricultural exports, 1965-67.

Commodity	Lebanon	Syria	Jordan	Egypt	Iraq
Apples	570.80	4.00	0.90	0.00	0.00
Bananas	362.30	0.00	669.50	7.20	0.00
Citrus	478.70	0.20	109.80	28.60	0.00
Onions & garlic	15.40	26.50	12.30	238.10	0.00
Potatoes	138.70	3.20	107.00	182.20	0.00
Tomatoes	23.10	55.60	1578.30	10.30	0.00
Legumes	202.10	186.0	141.30	44.90	19.80
Coarse grains	18.70	217.40	28.40	2.90	237.70
Wheat	17.20	187.90	98.20	18.90	09'85Z
Oils (animal & vegetable)	46.90	290.50	116.80	72.80	3.00
Agro-industrial	135.20	176.50	157.10	83.00	9.50
Animals	139.50	250.70	14.40	14.20	82.30
Others ¹	18.30	34.30	57.20	145.30	-162.30

1. See footnote to table 8.

Source: Computed from official trade statistics.

TABLE 10. Relative share index for total agricultural exports, 1968-70.

Commodity	Lebanon	Syria	Jordan	Egypt	Iraq
Apples	603.10	1.90	1.50	0.00	3.50
Bananas	315.00	0.00	937.50	2.50	0.00
Citrus	249.20	0.00	183.90	96.90	0.00
Onions & garlic	17.60	27.20	14.40	179.30	11.20
Potatoes	154.10	0.90	37.10	142.60	0.00
Tomatoes	58.10	93.00	1351.90	6.90	4.60
Legumes	124.20	291.50	199.30	26.50	29.90
Coarse grains	20.20	385.10	7.00	4.60	255.60
Wheat	90.00	100.00	265.00	0.00	575.00
Oils (animal & vegetable)	65.40	244.10	336.00	25.70	153.60
Agro-industrial	163.40	114.10	94.80	87.50	30.50
Animal	171.10	340.40	10.80	10.00	44.90
Others ¹	21.40	27.50	87.40	141.00	169.20

1. See footnote to table 8.

Source: Computed from official trade statistics.

Syria and Iraq, with relative share indexes that were larger than 100 in coarse grains, were competitive with each other in marketing this product. Both countries witnessed an improvement in the position of coarse grains, although the Syrian export position was more erratic.

Syria and Jordan also appeared here as competitors with each other in the production, extracting, and marketing of oil products; while Lebanon and Syria retained their competitive position in agro-industrial products over the three periods (Tables 8, 9, and 10). However, Lebanon was the only country that witnessed a steadily rising relative share position in this industry.

Lebanon and Syria were shown to possess a strong and rising comparative advantage in animal products. However, these two countries were not competitors as might be interpreted since the Lebanese advantage was shown previously to be strong in the poultry industry while that of Syria was strong in cattle, sheep, and goats.

Although, Jordan and Egypt were revealed previously to possess a relative shares index larger than 100 in poultry and bovine cattle, respectively (Tables 2, 3, and 4), in this total sector analysis these countries appeared to possess a weak position in this commodity category (Tables 8, 9, and 10). Actually, the position of these two countries was deteriorating throughout the three periods considered.

The «Others» category of products consisted of the same products included in Tables 5-7. Hence, Egypt and Iraq retained their comparative advantage in this category which included rice in Egypt and dates in Iraq.

An immediately apparent criticism of comparative trade advantage is that, in itself, it tells us nothing with regard to cause. There is no clue as to whether the changes revealed in market share arise from the behavior of buyers or sellers. For this purpose, even commodity market studies are more useful. The relative share index portrays trade relationships within a defined region, thereby revealing the generality of market trends. This focuses attention on developments in the regional agricultural economy and is a basis for guiding policy makers to the problem areas in regional planning, or agricultural perspective planning (Nightingale, 1974).

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SUMMARY

In the absence of comprehensive knowledge of supply and demand coefficients for the various markets within a region, such as an Arab common market, it becomes important to make maximal use of the more generally available agricultural trade statistics in conducting regional economic analysis. This study employs the computation of relative market share indexes in examining the relative advantage of Lebanon's agricultural sector. These indexes are a measure of comparative trade advantage, a first approximation of regional comparative economic advantage. Relative share indexes are supported by estimations of growth rates in Lebanon's share of individual commodity markets.

The principle findings based on these analyses are that Syria possess the strongest trade advantage in animal products, Lebanon's advantage in livestock being confined to poultry products, an enterprise which is heavily dependent on purchases of food grain from the world market.

Lebanon is strongly competitive in apples and is also competitive in regional citrus market. Among likely ACM countries only Jordan poses a threat to Lebanon in banana exportation.

Among the major vegetables, Lebanon was found to possess an advantage only in potatoes, in competition with Egypt.

Strong evidence exists that Lebanon has an advantage in agriculturally based industries, such as food processing and packaging.

Comparative trade advantage, as revealed by relative share indexes, focuses attention on developments in the regional agricultural economy and reveals emerging trends. It is a basis for guiding national policy makers to the problem areas in regional planning and focusing attention on markets in need of more intensive economic research.

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