UNITED ARAB REPUBLIC

THE INSTITUTE OF NATIONAL PLANNING

التخطيط القومى

Memo. No. 198

AGRICULTURE VERSUS INDUSTRALIZATION

by

Mr. R. O. Khalid

7th July, 1962.

CAIRO
3. MOHAMED MAZHAR - ZAMALEK

The vital and positive role of agricultural productivity and farm incomes in the process of economic development is lucidly presented by Bruce F. Johnston and John W. Mellor in their paper "The Role of Agriculture in Economic Development"[1)] which was discussed in our last seminar.

In this article, it is our intention to approach this problem from a different angle - or rather a negative angle. The major arguments of the proponents of industrialization <u>versus</u> agriculture are evaluated to see whether or not they are valid and compatible with the facts of underdeveloped economies.

1) American Economic Review. Sept. 1961 p.p. 566 - 593.

Industry versus Agriculture.[1)]

Industrialization and Economic Development.

A large body of opinion in under-developed nations and some economists[2)] tend to regard industrialization as the key to and the measure of economic development; their desire for industry stems from the apparent correlation between industrialization and the higher per capita income in advanced economies, and the beneficial effects of the industrial system on "education, skill, way of life, inventiveness, habits, store of technology, creation of new demands, etc."[3)] Industry is therefore desired because of its dynamism and resilience as well as its contribution to the Marshallian external economies.

Arguing historically, the proponents of industrialization show that the correlation between industrialization and the higher standards of living is true and that the spread of the industrial system accompanied by the growth of knowledge is associated with an increasing gap between the incomes of those that adopted the system and those that do not. Such an argument is not valid. The real question lies in identifying the cause and the effect - if any - in the apparent relationship between higher per capita income and industrialization.

---

1) Agriculture is used in this paper synonomously with Primary Production.

2) See Singer, H.W., "The Distribution of Gains Between Investing and Borrowing Countries," American Economic Review, Vol. XL, No. 2, May 1950. p.p. 473 - 485, and Nurkse, R., Problems of Capital Formation in Under-developed Countires, Basil Blackwell, 1953. Nurkse, however, considers industrialization not as a cause of economic development, but an effect of the underlying forces of capital formation. His views will be considered in a following paper.

3) Singer, H.W., Ibid, p. 476.

Economic historians have shown that all economically advanced countries of today were, in their early stages of development, predominantly agricultural, and have repeatedly pointed out that a prosperous and expanding agricultural sector forms the basis for industrial expansion by raising the level of real income in the agricultural sector and thereby extending the potential market for manufactured goods, opening a new source of capital for the establishment of industry, and making possible the purchase of foreign tools and equipment necessary for industrialization. If this is historically true, industrialization cannot be considered as the cause responsible for economic growth. On the contrary, it would be, as is often the case, the increase in agricultural productivity and the subsequent rise in the level of real income of the agricultural sector that is responsible for the establishment and expansion of manufacturing industries. The confusion in the logic of the proponents of industry seems to arise out of the inadmissable comparison of an under-developed country, with its particular structure and resources, with mature economies of completely different characteristics.

Another set of arguments is based on the need for industrialization to absorb unemployed and under-employed[1] labour in under-developed countries. Though this point may be highly relevant to some countries - e.g. Egypt, it is not conclusive evidence in favour of establishing new industries. It may be possible to absorb the surplus labour in the few established lines of industrial production and, with

1) Under-employment may be defined as "a situation in which the withdrawal of a certain quantity of the factor labour to other uses, will not appreciably diminish the total output of the sector from which it is withdrawn. This is as much as to say that the marginal productivity of these units of the factor labour in their original employment is zero, or very close to zero." See Alfredo Navarrete Jr. and Ifigemin, M., de Navarrete, "Under-employment in Under-developed Economies," The Economics of Under-development, edited by Agarwala, A.N., and Singh, S.P., Oxford University Press, 1958.

the help of modern techniques, in the extension of cultivable lands and agricultural production in general.

Whether under-developed economies should industrialize and produce their own manufactured goods instead of importing them, depends, on the final analysis, on the relative efficiencies of the resources used for home production and production for export. Such consideration of the profitable possibilities of international specialization leads the proponents of industrialization versus agriculture to seek support for their arguments in the proposition that the terms of trade are generally unfavourable to agriculture and that they have shown a secular tendency to deteriorate. They add that the primary producing countries suffer from severe instabilities over the business cycle and industrialization is, therefore, sought to stabilize the range of exports and, far more important, to deliver the poor countries from heavy dependence on imports. To this question we turn next.

Stabilization and the Terms of Trade.

To prove the unfavourable position of agriculture relative to industry, the proponents usually compare some relations between agricultural and industrial output, inputs and relative prices.[1)] Agricultural output, they argue, is much more stable in the short run than industrial output. That is to say, the supply of agricultural products from year to year is on the whole very inelastic. On the other hand, the supply prices of agricultural inputs are seen as flexible enough to permit continuous employment and maintenance of output. Because of this stability of output, which is dependent on the more competitive nature of the agricultural sector and the relative inelasticity of its inputs, a decline in world demand for agricultural products has a far greater effect on prices and incomes of primary producers than upon the volume of outputs; and conversely an increased demand raises agricultural prices while output responds little and very slowly. In the industrial sector, it is argued, that the -

1) For a good discussion of instability in agriculture see Chapter II Schultz, T.W., The Economic Organization of Agriculture. McGraw Hill Co., 1953.

fluctuations of demand affect the rate of output partly because of the oligopolistic and monopolistic structure of the markets of industrial products and partly because of the short run relatively elastic supply of their inputs. Moreover, the low price elasticity of demand for and supply of agricultural products coupled with the shift in industrial demand and supply schedules increases the instabilities of agricultural prices and incomes. For all these reasons the real income of primary producers falls drastically over the business cycle when the industrial output is decreasing relatively to agriculture. From these relations the proponents of industrialization jump to the conclusion that with the introduction of manufacturing industries a large amount of primary products will be used domestically, a tendency which would help to reduce the downward fluctuations in the terms of trade and make the prices of primary products less vulnerable during periods of business contraction in industrial countries. This argument assumes that the domestic cycle is more subject to control than the international, and overlooks the possibility that agriculture may well continue to be the most profitable occupation in some or most of underdeveloped economies despite the cyclical fluctuations in the terms of trade. If this is the case, cyclical policy should be confined to the internal measures of preventing home prices from fluctuating with foreign prices and of accumulating foreign exchange during booms to be spent during depressions; and the primary producing countries may even expect to do better by increasing their agricultural output if the advanced industrial economies continue their policies of full employment.

Secular Trend of Unfavourable Terms of Trade.

An economist[1] expresses the secular trend of the unfavourable terms of trade as follows:

"It is a matter of historical fact that ever since the seventies the trend of prices has been heavily against the sellers of food and raw materials and in favour of the sellers of manufactured articles." [1]

---

1) Singer, H.W., Op. cit., p. 477.

These changes, he continues, do not reflect changes in real costs since all the evidence shows that productivity has increased far much less in agriculture. The fruits of technical progress, he argues, can be enjoyed by producers in the form of rising incomes or by consumers in the form of lower prices. Manufacturing industries were able to use the first method while agriculture could not. He then proposes industrialization as a solution to the problem of the declining trend of the terms of trade. Other economists [1] attribute the declining export prices of agriculture relative to export prices of manufacturing countries to the high price and high incomes elasticity of demand for manufactured goods and the low price and low income elasticity of demand for agricultural products. All this may well be true but "the terms of trade" is a concept too illusive to be used for preferring one line of economic activity to another. A change in the terms of trade in favour of primary producers may for example indicate any one of the following situations [1]:

1. An increase in the volume of imports of primary producing countries in exchange for each unit of exports.

2. An increase in the number of units of productive factors in manufacturing industries over whose products a unit of productive power in the primary producing industries can excercise a command.

3. An increase in the volume of imports from industrialized countries over which a unit of productive power in the primary producing industries can excercise a command.

---

1) See Baldwin, R.E., "Secular Movements in Terms of Trade" American Economic Review, Vol. XLV, No. 2, May 1955, p.p. 259 - 68.

2) See Robertson, D.H. "The Terms of Trade", International Science Bulletin, Vol. III, 1951, p.p. 28 - 33.

All these meanings are legitimate but their use is limited to certain situations. The first meaning is more relevant to problems of balance of payments, the second one is the true terms of trade which is useful in comparing productivity and standards of living between countries. Favourable terms of trade in the second sense of increased productivity may be quite compatible with a deteriorating commodity terms of trade in the first sense. The third meaning is useful in discussing the change in the absolute standard of living as affected by foreign trade. It is a combination of (1) and (2) above.

The relative movements of index numbers of prices of exports and imports may not, therefore, be reliable in indicating the true terms of trade. And certainly they do not show whether the movement of the terms of trade against primary producers is due to a relative decline in the demand for their exports or to an increased need for imports: two situations that may call for two different policies. Apart from such conceptual difficulties a secular trend of the terms of trade is unreliable since it relates to a base period which may prove useless, as is often the case, if the composition and volume of trade has changed considerably.[1] Two other points often included against the terms of trade argument for industrialization are the change in quality of manufactured products which is in favour of primary producers, and the fact that individual countries are interested in the relative position of particular commodities and not in agricultural production as a whole. For all these reasons no great significance should be attached to a general terms of trade index in favouring one economic activity against another.

---

1) Paache Index $\frac{(\Sigma P_1 V_1)}{(\Sigma P_0 V_1)}$ which allows for changes in the composition and volume of trade would get around [illegible] difficulty, but comparisons between the terms of trade indices can only be made in relation to the base year. The index also tends to over-emphasize price increases and [illegible] under-emphasize price decreases. See Stigler, G. The Theory of Price, Macmillan Co., New York 1954, p.p. 87 - 91.

The recent trend in economic thinking which belittles the contribution of the agricultural sector to economic development 1/ and almost equates industralyzation with economic growth is , I think, derived from the Japanese and Soviet experience in the last few decades. But a careful study of Russian economic history prior to 1917, and even during the early years of the Soviet system, will show that agriculture far from being lagging was a leading sector generating demand for the products of other sectors and providing them with capital. This has also occured in Japan. 2/ Furthermore a study of the recent development plans of many under developed countries - e.g. most Latin American countries - will show that the inadequate emphasis given to agriculture in relation to other sectors resulted in:-

1) deterioration of agricultural exports with a consequent decrease in the capacity to import capacity ; capital goods and manufactured articles;

2) inflationary pressures as a result of the expansion in investment which set up a stron demand for the products of the agricultural sector, and finally;

3) the low individual incomes in the agricultural sector kept rural demand for all kinds of goods and services quite low thus affecting economic development in general.

To conclude, the basic function - I do not say contribution - of the agricultural sector in intiating the process of economic development is not theoretically or historically open to doubt.

1/ Simon Kuznets identifies three types of contributions by a sector to economic development: 1) Product contribution measured by the increase in the net product within the sector itself, 2) Market contribution indicated by the relative importance of capital purchases of a sector from other sectors at home and abroad and the sale of its products not only to pay for these purchases but also to be able to purchase consumer goods or dispose of its product in any way other than consumption inside the sector. In other words market contribution is the ability of a sectr to provide opportunities for other sectors to emerge and for the whole economy to participate in international trade and flows. 3) factor contribution which occurs when there is a transfer or loan of resources from a sector to other sectors. The three aspects are so inter-related that it is "often impossible to specify the contribution of a single sector to each aspect of economic growth." And since any sector is a part of an interdependent system, what a single sector contributes cannot be fully attributed to it; "Thus even if we deal with net product originating in, or contributed by, a sector, deducting the purchases or contributions from others and and limiting the total to the product of the factors

Conclusion

All things considered, I should like to state at this stage that agriculture is on the whole unfavourably situated relative to industry, if only became/use it does not lend itself easily to restrictons of entry. But this fact, as I have tried to indicate, is no proof that industrialization is more profitable to under-developed countries. We conclude therefore that the dichotomy, set up in planning, of agriculture versus inndustry as such, which implies the neglect of one for the other, is false.

The question of "whether to industralize or not" is of little more than academic interest nowadays. The real problem is to try to find out the proper combination of the various types of economic activities which would best suit the resources and requirements of an individual country bearing in mind such issues as the possibilities of using idle man-power, the uncertainity of the terms of trade and infant industry arguments. In this way the high sounding controversy of industry versus agriculture is rightly reduced to a question of choice, at a particular point of time in the economic history of a nation, between various types of industrial activities and agricultural production. This is so because in the chain of cause and effect of the process of economic growth there comes a time when continued economic progress will depend on the appearance of a new propelling factor without which there would be no change in the structural characteristics of the economy i.e change in the relative importance of various, industries, regions, final output, economic units, etc.. and therefore no progress. For example, if the agricultural sector exhausts itself, say in Egypt, as the dynamic factor inducing economic development, and new employment opportunities do not appear, there will obviously be now increase in demand for labour freed from the agricultural sector, food or capital. The frequent reference to industry as the dynamic force behind economic growth is in fact nothing more than a re-statement of the tautology that economic development must be accompanied by a structural change in the economy.