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# First Steps towards a Cyclical Theory for LDCs

by Dr Roger Bratenstein, Nuremberg \*

**The development of the Third World countries which are producers of raw materials and agricultural products has become a cardinal problem of economic science and policy. Concentration on the question what is the best development strategy to obtain maximum growth of the national product has led to neglect of the complex of problems covered by the theory of the economic cycle which attempts to explain the short-term fluctuations of the national product.**

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The oscillations of the economic cycle have abated in the industrialised countries during the past two decades, with the result that the interest of economists has focused on the theory of growth. In the study of the developing countries this tendency has been reflected by over-emphasis of the theory of development. This would only have been justified if the developing countries were free from cyclical fluctuations. If not, there exists an urgent need for an empirically tested theory of the economic cycle as it affects developing countries so as to clarify the causes of these cyclical fluctuations. Findings in this field can also be of great importance for the theory of development. For this however it would be necessary to elucidate first the relationship between growth and the economic cycle<sup>1</sup>. If the relationship between these two phenomena is negative, it would be possible to attain objectives of development policy coincidentally by measures taken in the interests of an anticyclical policy.

The designation of a country as a "developing country" often depends on such criteria as a high share of agriculture in the national product, low per-capita incomes, heavy dependence on other countries and rapid population growth. In our investigation the added-value element in the per-capita production of manufacturing industry in 1958 serves as the criterion: a country is rated a developing country if this figure was below US\$ 125.

The selected (38 countries) were examined in regard to the occurrence of recessions during the period from 1950 to 1969. A recession was

defined as a decline (in the annual average) of the real national product which has not been caused by a decline of agricultural production. Recessions generated by natural disasters, wars and political imbroglios were similarly disregarded.

These empirical findings are now to be explained by reference to two hypotheses — one resting on the theory of foreign trade and the other one on the theory of investment.

## **The Approach of Foreign Trade Theory**

The theory of employment propounds, i.e., theses on the relationships of exports, imports and national income. Exports add to the effective domestic demand while imports have the opposite effect of reducing domestic demand. It follows that only a balance of trade in surplus can have an expansive effect on the demand and the national product whereas a balance of trade in deficit has a restrictive influence. In national economies where exports account for a large part of the national product an export crisis resulting in a balance of trade deficit may therefore entail a cyclical downturn. As however many developing countries are suffering from constant balance of trade deficits, changes in these deficits must be considered.

Balance of trade deficits are indispensable if the development aid for the financing of import surpluses is to have a positive effect on growth and is not merely to swell the foreign currency reserve. If the development aid consists at first only of imports of money capital, the domestic supply of money will increase, which may result in a higher national income. This expansive effect is cancelled out if development aid resources are used to pay for a balance of trade deficit, which has a negative multiplier effect.

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<sup>1</sup> Cf. my study: *Konjunkturschwankungen in Entwicklungsländern. Erklärungsansätze und theoretische Grundlagen einer Konjunkturpolitik* (Cyclical fluctuations in developing countries. First steps towards an interpretation and theoretical foundations for an anticyclical policy). Diss. Erlangen-Nuremberg 1973, p. 147 ff.

Import surpluses financed in this way therefore leave the money supply unaffected if both occurrences are taking place at approximately the same time.

If developing countries experience a decline in exports, it is usually accompanied by a decline in imports because the development aid and available foreign currency reserves are not sufficient to finance an unchanged volume of imports in the face of lower export earnings. Income shortfalls due to a downturn of exports will in themselves have the result of reducing imports as in the developing countries the demand for imports is by their very nature (luxury and investment goods) highly susceptible to changes in incomes. It is however to be assumed that the exports will undergo wider fluctuations than the imports because it is to a certain degree possible to draw on the foreign currency reserves, if they are larger than absolutely needed, to compensate for a shortfall in export earnings. Hence a decline in exports can have a restrictive influence on effective demand and on the development of the national product. According to the theory mentioned above this takes effect through an increase of the balance of trade deficit.

Export crises have however a further destabilising effect. Apart from the loss of export demand, the supply of imported investment goods, primary products and raw materials is reduced by the lowering of the import capability indicated above. It must be borne in mind that this effect can be avoided as long as the imports of luxury goods can be curbed by exchange controls or there are free foreign currency reserves to be drawn upon. If however the imports of investment goods, primary products and raw materials decline, investment and production are bound to fall off because the imports are for the most part complementary to goods which can be produced inside the country. If the former demand for import goods can be diverted to domestic supplies, this will have an expansive effect compensating the loss of export demand provided there is no change in the current account balance. The demand is however bound to fall off if the reduction of imports is followed by cuts in investment because there are no adequate substitutes for the previously imported goods. Cuts in production which are caused by inadequate imports will likewise cause demand losses on the way over reduced employment. If the imports do not decline, the supply of imported investment goods will remain constant but the demand will fall off owing to shortfalls in exports.

A negative multiplier process is generated in both instances. The hypothesis may now be expressed

in a simplified form: Export fluctuations operate on the national product in the same direction. As it is a structural factor — namely, the special position occupied by exports in the developing countries — which plays the decisive part in this interpretation of cyclical fluctuations, the protagonists of this theory — Prebisch, for instance — may be called “structuralists”.

#### **Import Fluctuations in Industrialised Countries**

Up to this point we have only considered the domestic reaction to foreign demand changes due to external factors. Fluctuations in the exports of the developing countries may however be interpreted as the result of fluctuations in the imports of the industrialised countries.

The structuralist view of the theory of the economic cycle may be summed up as follows: Cyclical fluctuations in the investment activity of the industrialised countries have an effect on the national product and the raw material imports of these countries. For the developing countries as exporters of raw materials this entails parallel fluctuations in their export earnings and national product.

If this hypothesis is correct, it implies that the possibility, which arises in industrialised countries when the economic cycle is following a non-synchronous course, that the depression is alleviated by an automatic rise of exports (through moderation of the price trend and state incentives) does not exist in the developing countries. A non-synchronous cyclical trend between a developing and an industrialised country is impossible as long as rigid traditional trade links are tying the developing countries to a small number of highly industrialised customer countries.

From the examination of this first hypothesis it emerged first of all that it cannot be treated as a general theory because in about 50 p.c. of all cases the exports actually rose during the recession. While the developing countries sent over 75 p.c. of their exports to industrialised countries and tended to concentrate on a few traditional trading partners (in most cases 50–80 p.c. of the exports went to 1–4 industrialised countries), the exports of the developing countries declined in many cases despite a positive cyclical trend in the industrialised countries.

When the national product of the industrial customer countries declined or their inventories were cut back during a downturn, on the other hand, the exports from the developing countries mostly also declined. Fluctuations in the speculatively held stocks in the industrialised countries

seemed quite generally to have a considerable influence on the exports of the developing countries.

### Export Diversification and Export Concentration

A relationship between the distribution of exports over the various categories of goods<sup>2</sup> and the severity of an export crisis is suggested by the rank correlation coefficient  $r = 0.43$  (significant at  $t = 2.55$ ). The examination of the relationship between export concentration on certain countries and the severity of export crises produced a less conclusive coefficient ( $r = 0.28$  probability of the null hypothesis at 10 p.c.). This result however is not incompatible with our hypothesis according to which there must be a positive relationship. The export crises led to recessions. This follows from a positive connection between the severity of the recession and the magnitude of the export shortfall ( $r = 0.66$  probability of the null hypothesis at 6 p.c.).

Further, an attempt was made to ascertain what particular conditions must exist for this dependence to arise. As compared with the cases in which the recession was not attributable to a decline of exports the cases in which they had been due to reduced exports were on average marked by a higher share of exports in the national product, a lower degree of export diversification by categories of goods, a stronger export concentration on certain countries and a lower per-capita income.

From the correlation analysis emerged that the state of development as measured by per-capita income has a relatively strong negative correlation with the export concentration on certain countries ( $r = 0.55$  probability of the null hypothesis at 1.6 p.c.) and spread of exports over different categories of goods ( $r = 0.44$  probability of the null hypothesis at 4.9 p.c.). This means that increasing industrialisation — which experience shows to be the sole means of increasing the per-capita income to the desirable extent — is capable of repressing factors which can cause dependence of the cyclical trend in the developing countries upon the course of exports.

The fact that the negative correlation between the export share in the national product and the state of development is not very close ( $r = -0.24$  probability of the null hypothesis: the calculations suggest that it is insignificant) further indicates that the process of increasing material and geographical differentiation of exports does not necessarily lessen the export intensity of these economies: they remain closely integrated with

the world economy even though the negative repercussions are lessened by changes in export diversification and concentration.

The empirical fact that manufactured goods are subject to smaller price oscillations than primary products (which constitute the principal exports of the developing countries) has cyclical implications for the developing countries: if the recession follows a parallel course in a developing and an industrialised country, the terms of trade change to the disadvantage of the developing country; and as the international purchasing power of the export earnings of the developing countries is thereby reduced, the recession will be aggravated.

### Interrelation of Economic Trend and Exports

In 1951–1969 the prices of primary products fluctuated by an absolute average of 4.2 p.c. and those of manufactured goods by 2.7 p.c. The cyclical trend in developing and customer countries was synchronous, and the terms of trade in fact worsened in nearly all developing countries. This fact suggests incidentally that the developing countries have for the most part identical import and export countries.

In a cyclical upturn in the customer country the terms of trade improved in 11 cases and deteriorated in only 5 cases. In this situation the effect on the terms of trade is thus often favourable, the reason being that when the terms of trade were improving the purchasing power of the export earnings of the developing countries increased during the recession.

The fact that the exports of the developing countries declined in about 50 p.c. of the examined recessions led to the first hypothesis. Whereas in times of recession exports from the developed countries often rise because domestic demand declines (increasing the supply for exports) and prices steady (raising the demand for exports) and the state often provides additional export incentives, the exports of the developing countries followed the opposite course. Exports were not influenced by the cyclical trend but the trend was influenced by the exports. As this observation however can be applied only to half the cases, a second hypothesis had to be found.

### The Approach of Investment Theory

To judge from the experience in the developed countries to date, the overinvestment theories seem to offer a fairly satisfactory explanation of what happens at the upper turning point of the economic cycle. These theories rest on the basic assumption that the investment goods industries

<sup>2</sup> A high index figure indicates a low degree of diversification.

expand too much during the upward phase. The accelerator principle is offered as an explanation for the faulty development. According to this principle the demand for investment goods is determined not only by the absolute but, chiefly, by the relative changes in ultimate demand. If, for instance, the growth rate of the consumer goods production declines owing to a deceleration of the growth of the demand for consumer goods or due to other factors (bottlenecks in the labour market), the accelerator principle comes into operation and brings about an absolute decline in the demand for investment goods.

More investments are made in an unchecked upward phase than is consistent with the growth rate sustainable over the long term. If the capital goods for investment are imported, the foreign currency supply declines; if, on the other hand, part of the required capital goods are produced inside the country, excess capacity may emerge in the sectors concerned if the brake is applied too late (possibly only after large foreign currency outflows), a situation which according to the accelerator theory may already arise while the demand growth merely decelerates. Sales difficulties in the investment goods sphere will eventually, through curtailment of production in this sector, infect the whole economy. The cyclical instability of the economy is heightened by additional excessive speculative investment in housing. If the boom is accompanied by general price increases, the speculative inventories are also likely to rise. As this induces the industries at previous stages of the production chain to take too favourable a view of the trend of demand, there is a danger that when price expectations change and speculative interest dwindles these industries will no longer be able to make full use of their enlarged capacities.

It may therefore be stated quite generally that when the brake is applied to check an inflationary development which has gone on for several years, a recession (stabilisation crisis) is bound to set in because under inflationary conditions the supply at stable prices does not match demand. In the transitional phase income losses are bound to be caused by quantitative and qualitative discrepancies.

#### **The Effect of Inflation on the Foreign Currency Supply**

In regard to the second hypothesis which is based on the theory of investment it must be examined first whether high rates of inflation have caused a substantial fall of foreign currency reserves by leading to flight of capital and excessive imports. In many cases the recession

was preceded by considerable foreign currency losses which were accompanied by high rates of inflation (Argentina, Bolivia, Brazil, Chile, Greece, Mexico, Spain, Uruguay). As however foreign currency controls are usually introduced in such situations, there is often no direct relationship between the price increases and the foreign currency supply.

Some countries have suffered foreign currency losses even though the prices were relatively stable or even going down (Zaire, Dominican Republic, Egypt, Lebanon, Malaysia, Nicaragua). The changes in the money supply show however that in these cases foreign currency outflows due to other causes brought about the reduction of money supply which in turn affected the price level.

Monetary constraints were the only effective remedy against the frequently large price increases. The correlation analysis revealed a close relationship between changes in the growth rate of the money supply and changes in the growth rate of the prices ( $r = 0.49$  probability of the null hypothesis at 1.4 p.c.). The recessions which were not attributable to a decline of exports also indicated the existence of a relationship between changes in the rate at which the prices (and contingent profit expectations) advanced and the growth of the investments in fixed assets ( $r = 0.46$  probability of the null hypothesis at 8.6 p.c.). There existed a relatively close correlation between the decline in the investments in fixed assets and the decline in the national product ( $r = 0.59$  probability of the null hypothesis at 1.6 p.c.).

#### **Correlation of Consumption and National Product**

The relationship between consumption and national product is relatively loose ( $r = 0.37$  probability of the null hypothesis at 13.9 p.c.). The coefficient approximates to the figure obtained when the investments in fixed assets in the year preceding the recession are correlated to the degree of the recession. This may mean that the investments play the crucial part in recessions whereas consumption declines only as part of the process of a general decline in demand owing to decreasing incomes. Significantly, the consumption which in almost all cases followed a course parallel to the national product in general went on rising in the year before the recession whereas the investments were in part already on a regressive course.

If we include the recessions due to changes in exports in the correlation calculation of the consumption-national product correlation, we arrive at a considerably higher coefficient ( $r = 0.42$

probability of the null hypothesis at 2.9 p.c.). It would thus appear that the consumption played a greater part in recessions brought about by foreign trade developments. In view of the low savings propensity in developing countries it was to be expected that a decline in export earnings would at first have a very strong impact on consumption. To test the validity of the second hypothesis a time series analysis of the development in Chile was carried out in addition to the cross-section analysis. It indicated that fluctuations in profit expectations caused by unstable prices can generate economic cycles through contingent variations in investment activity (especially in the building sector).

It seems remarkable that none of the countries with a steady uptrend of the national product in the review period (Costa Rica, Ecuador, Iran, Jamaica, Panama, Peru, Philippines, Portugal, Puerto Rico, Taiwan, Venezuela) suffered from prolonged severe inflation. In contrast, the countries which experienced large price increases (Argentina, Bolivia, Brazil, Chile, Uruguay) were without exception hit by severe setbacks.

#### Requirements of a Successful Cyclical Policy

Policies to cope with the economic cycle can only be successful in developing countries if they are based on an empirically tested cyclical theory. In cases in which the first hypothesis offers an explanation for the recession in a developing country, a prophylactic anticyclical policy will be very difficult to operate. In the short term the developing country has in this case only the possibility of taking compensatory action to counter destabilising influences from outside. For this it needs in the first place an adequate foreign currency reserve so as to ensure short-term independence of the imports from the goods exports and capital imports. Besides, it is important that the fluctuations in the earnings of the export industry should be moderated. Both can be achieved by sterilising part of the foreign currency income earned at times when demand expands, incomes rise, export prices are high, and tax revenue is also increasing. The expansion of the money supply which is generated by foreign currency inflows can be partly averted in this way. When exports decline, the earnings shortfall of the export industry can be offset by state subsidies and, if necessary, stock-piling of unsaleable products. The export goods stock-piled by state agencies can be sold later when the export demand has recovered, with the result that the foreign currency reserves will be replenished. This policy should be supplemented by an anticyclical investment policy provided adequate foreign currency reserves are available.

National stabilisation methods are in general problematic chiefly because of wrong forecasts about the long-term price trend which the politicians must use for their guidance, on the one hand, and political difficulties when profits from rising export prices are skimmed off by fiscal measures and sterilised and when the central bank makes vague promises that these funds will be used to bolster demand when exports decline, on the other.

#### Problems on the Way from Theory to Practice

In the long term industrialisation is the most effective means of countering or avoiding recessions resulting from foreign trade developments. Industrialisation of the developing countries can lessen the effect of concentration of exports on a few countries, of insufficient spread of the exports over different categories of goods and of excessive dependence on imports which is apt to generate foreign trade-induced recessions.

With the progress of industrialisation the developing countries however face a mounting danger that economic cycles of the traditional pattern are set up inside their economies. Such cycles can only be checked by timely recourse to restrictive intervention. A low level of foreign currency reserves or price developments should not be regarded as signals for corrective action. Attention must rather be directed at the early indicators — vacancies, unemployment, orders in hand, wage drift, etc. For this more statistical information would of course have to be collected first.

To ensure success such a policy must be shielded from an inflationary environment by means of external economic measures. This can be accomplished only through flexible exchange rates such as are already operated in several developing countries (e.g., Peru). Another prerequisite of effective anticyclical measures is that the severe domestic inflation encountered in many countries must be stopped. This calls for a change in price expectations which in turn can only be achieved by swift and drastic deceleration of the inflation rates, and this can only be done by restricting the growth of the money supply. If a stabilisation crisis occurs in such cases, it must be accepted.

Although it has been possible to expose some of the cyclical problems of the developing countries, their solution still depends to a large extent upon other factors. The way from the theoretical analysis of cyclical problems to the use of the findings for a practical anticyclical policy is very long everywhere — not only in the industrialised countries.