

The Choice Between Alternative Strategies of Growth and Industrialization

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With a firm belief that industrialization is a must for the elimination of economic backwardness, many underdeveloped countries have ignored the guidelines of the Comparative Cost Doctrine. Irrespective of the fact that investment in agriculture is more productive than in industries, more emphasis is given to industrial development, sometimes even at the cost of agriculture. The welfare loss that stems from this strategy in the current period is believed to be recouped after some years and result in larger welfare gains in terms of increased employment, income and output. Many economists consider such a policy entirely irrational and strongly plead for the reliance on the principles of comparative advantages. This paper attempts to examine this controversial issue and bring out the dangerous consequences of reliance on comparative advantage. Furthermore, it is also concerned with examining the implications of alternative strategies of growth and industrialization for future growth and economic structure of the country.

1. THE FALLACY OF COMPARATIVE ADVANTAGES

According to the exponents of the theory of comparative advantage, any emphasis on industrial development is entirely irrational and unjustifiable if agriculture possesses the comparative cost advantage. "Industrial development at any cost" strategy will cause a severe misuse of scarce resources if growth and development can be achieved at a cheaper cost through agricul-

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ture development. The argument suggests that if the rate of return on investment in agriculture is higher than in industries, there is a real loss to the country should more fund be invested in industries. Economists like A. J. Robinson [1966] and others fully subscribe to this view and advocate the development of agriculture if it possesses the comparative advantage.¹

This approach, however, overlooks the fact that reliance in agriculture alone would keep the underdeveloped countries under the vicious circle of dependence on the industrial world and would deny them the advantages of industrialization.

First, there will be a heavy dependence on foreign countries for manufactured goods. Some portion of the foreign exchange earned by exporting primary products will be used for importing consumer goods. Since there will be no expansion at all of the production base in the economy, every year consumer goods equivalent to some proportion of foreign exchange will be imported. This will not only make the country virtually dependent on foreign countries for consumer goods but also make the actual volume of consumables very instable. Any fluctuation in the volume of exportables and its prices vis-a-vis the price of importables will cause a change in the volume of consumer goods. If we assume the foreign exchange earnings to be fixed and if all foreign exchange is spent on importing consumer goods, every year the volume of C - goods will be equal to F, and, as a result the rate of growth of consumption over time

$$\frac{\delta c}{\delta t} = 0 \text{ [Raj \& Sen 1961]}$$

Secondly, the staple exports will constitute the leading sector of the economy and set the pace for economic growth. In the process, the economy will invest its capital both domestic as well as foreign to bring new land under cultivation and on intensive use of the existing land. This will result in an expansion of exportables. If the demand for these exports do not

1 To quote A. J. Robinson, "Where the resource basis and market potentialities in the non-agricultural sector are not adequate for the development of viable industries, it may be preferable to retain the surplus above subsistence on the agricultural sector investing it in further increases of agricultural output. The additional agricultural products could then be exchanged in world markets for imports of consumer goods, or for the purchase of equipment or materials for the further improvement of productivity and an increase of output in the agricultural sector, thus leading to the sustained increases in output that constitutes the sinequanon of economic growth Whether this surplus will in fact be used to develop manufacturing will depend, ceteris paribus, upon whether manufacturing yields higher returns so capital invested than to alternative form of investment."

rise,² the country's terms of trade will deteriorate and the same volume of exports will exchange for lower volume of imports, or, conversely, larger volume of exports will be required to have the same amount of imports. As a result, growth may become 'immiserized' in which despite the increase in the country's productive capacity, its terms of trade move so adversely that its real income in terms of imports of manufactured goods actually falls [Bhagwati, Rybezyanski]. Furthermore, if the economy fails to shift its export base with the change in external markets, it may get caught in a 'staple trap'. And if stagnation persists for any extended period, because of a weak resource base, the economy will bend further towards the traditional system [Watkins 1978.] Hence, the strategy favouring the development of agriculture would cause a permanent loss to the economy in terms of weaker bargaining position with the foreign counterpart and cause structural rigidities in the economy. The country would forego several advantages and the industrial development which would have occurred at home would occur abroad, further perpetuating the semi-colonial system [Cukor, 1971.]³

The need for developing the modern sector i.e., the industrial sector is also reinforced by the surplus labour model developed by Lewis [1954]. Lewis suggests that a labor surplus economy has a great potentiality of developing the modern sector and thereby generate larger surplus which would be reinvested again leading to further increases in employment, output and surplus. The expansion of the industrial sector would imply either import substitution or export promotion or a combination of both. This would lead to an increase in foreign exchange earnings which often constitutes the 'binding constraint' in the process of development. [Mckinnon, 1964] The current trend prevalent in most of the underdeveloped countries starkly reveals that industrialization is the necessary condition for getting out of the vicious circle of poverty

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- 2 The demand for staple exports by the industrial countries has been declining rapidly over the last several years due to low elasticity of demand for food, production of synthetic substitutes for raw materials, efficiency in the use of raw materials etc. The interaction of the falling demand on the part of buyers and rising supply from the suppliers will further force down the prices of agricultural products in terms of manufactured goods.
 - 3 In this context Cukor provides a very cautious remark, "A one sided specialization and renunciation of the development of manufacturing would mean foregoing (several) advantages. In that case, the industrial development due to agricultural development would occur abroad and the typically colonial or semi-colonial situation would be perpetuated. It is not certain nor is it likely in the present situation—that, by leaving the matter to the short term rate of return on investment or to the profit motive of private capital, industrial development would automatically follow".

and underdevelopment. It is believed that industrial development if rightly pursued would provide productive employment to the surplus labour, lessen the balance of payments problem and promote further industrialization and growth through forward and backward linkages.

2. SEQUENTIAL PROCESS OF IMPORT SUBSTITUTING INDUSTRIALIZATION (ISI)

In the drive towards industrialization most of the underdeveloped countries have followed the sequential process of substituting imports by domestic production. Entrepreneurs are encouraged to establish import substituting industries through a whole barrage of protectionist and other measures like tariffs, quotas, licences, overvalued exchange rate, multiple exchange rate, custom duty concessions, low interest on loan, tax holidays etc. The sequence of import substitution starts from consumer goods to be followed by intermediate and capital goods after some years. The simplest reason for starting from the consumer goods is that the cost differential between domestically produced and imported consumer goods is less than for intermediate and capital goods. This argument is supplemented by the existence of market, i.e., these goods are being imported, whereas the demand for capital and intermediate goods depends upon further industrial development. When the economy moves to the further stages i.e., intermediate and capital goods, there will be a dynamic change in the economic system and a continued industrialization. But as the Latin American experience suggests this process of industrialization if not carefully designed, fails to achieve the attributes of industrialization for generating a dynamic and sustained industrial growth. [Hirschman, 1968]. Though perceptible industrialization took place in the Latin American countries following the import substituting strategy the original dependence did not disappear but manifested into a higher level. Previously imported goods were replaced by domestically produced goods, but these goods satisfied the demand of a small privileged class while the large part of the population were virtually unaffected. Since these goods catered to the needs of a small group, mass production was not possible and hence the employment effect of industrialization was very low. The problem was further heightened by promotion of foreign firms which used techniques suited to industrialized countries.

The pitfalls of import substitution strategy arise because the countries usually start by imposing higher tariffs on the imports of non-essential goods to permit the imports of essential goods at the cost of the former. But they fail to take a rigid stand on various other crucial issues. The shortages and the induced rise in domestic prices of the restricted goods stimulate the establishment of industries producing these goods. If the entrepreneurs become successful in soliciting the permission, as they do, the process of industrialization will start but in which the

products manufactured will be similar to those of previously imported goods with techniques that are highly capital intensive in nature. Use of capital intensive techniques is encouraged by the gateways given to the imports of the capital goods and the overvalued exchange rate. As a result, the masses of unemployed and underemployed continue to increase constantly and the large part of the population remain alienated from the process. As regards foreign exchange saving, machines and spare parts need now be imported in contrast to previous imports of final goods. These outcomes cannot be remedied even if the essential consumer goods industries take the precedence in the process. Though the previously imported consumer goods will now be produced domestically, the dependence on imports will be more acute than before. As the country has to depend on external source for machine and spare parts, any irregularity in their supply would impose severe setbacks in terms of unemployment of both human and non-human capital.

Although the strategy of sequential import substituting industrialization may lead to a high rate of growth in the early years but beyond this, the growth rate, tapers off ultimately resulting in a stagnation. This happens because the initial structural rigidities and dependence is reinforced by the process itself and because the capital goods sector necessary for enhancing the productive capacity is kept dormant with little or no investment. It is, therefore argued that the strategy of import substitution should be initially started from capital goods industries which produce means of producing other means of production and intermediate goods.

3. 'CAPITAL GOODS FIRST' STRATEGY

The rationale of 'capital goods first' strategy is that the consumer goods sector cannot increase its rate of growth unless its capacity to do so is increased by acquiring additions to its capital stocks. This would require larger investment in the capital goods or the basic industries. Mahalanobis [1953, 1955] has shown that higher the allocation of investment to capital goods sector, the higher will be the future growth of both income and consumption. Initially this strategy would result in a lower growth rate of income and consumption than these would otherwise be with larger proportion of investment to consumer goods industries, but after some years the growth rates of both income and consumption would exceed the original higher rates associated with larger proportion of investment allocation to consumer goods sector. This strategy demanded that the underdeveloped countries embarking on the planned process of growth and industrialization should allocate as much higher proportion of investment to capital goods industries as possible. India followed this model in the Second Five Year Plan (1956-1961) while the Soviet Union had adopted this strategy in the early process of industrialization perhaps in the thirties.

One major problem with the Mahalanobis model is that the distinction between capital goods (K-goods) and the Intermediate goods is blurred and the wide range of K-goods having different implications is lumped together into one category. When K-goods sector contains various types of K-goods, the Mahalanobis prescription that "investment in K-goods sector must be high" raises the question of which K-goods. Hence a more rational approach would be to disaggregate investment in terms of three sectors:

- (a) Investment in Sector K, producing K goods for sectors I and K (heavy machinery, plant, machine tools etc.)
- (b) Investment in sector I, producing I-goods for C-goods sector (shoe machinery, textile machinery etc.)
- (c) Investment in sector C, producing C-goods (shoes, clothes etc.)

Mathematically,

$$Y_t = K_t + I_t + C_t + C_t^*$$

or, $Y_t - C_t^* = I_t^*$ (1)

Where Y_t = National Income in period t
 K_t = Investment in Sector K in period t
 I_t = Investment in Sector I in period t
 C_t = Investment in Sector C in period t
 C_t^* = Consumption in period t
 $I_t^* = K_t + I_t + C_t$

The present output of K-goods, I-goods and C-goods is determined by the last year's investment allocation to these sectors and the productivity of capital in the respective sectors. We have, therefore,

$$K_t = \lambda_k \beta_k I_{t-1} \quad (2)$$

$$I_t = \lambda_I \beta_I I_{t-1} \quad (3)$$

$$C_t = \lambda_c \beta_c I_{t-1} \quad (4)$$

$$\text{and } \lambda_k + \lambda_I + \lambda_c = 1$$

Where λ_k , λ_I and λ_c represent the share of investment going to K goods, I-goods and C-goods sectors respectively, and β_k , β_I and β_c represent output capital ratio in these sectors.

$$\therefore Y_t = (\lambda_k \beta_k + \lambda_I \beta_I + \lambda_c \beta_c) I_{t-1} + C_t^*$$

If C_t^* is assumed to be the residual ($Y_t - I_t^* = C_t^*$), Y_t will be determined by the output of K-goods, I-goods and C-goods sectors. The whole system will reduce to the Harrod Domar conclusion if $\beta_k = \beta_I = \beta_c$ and investments in K, I and C sectors are aggregated into I_t^* .

$$Y_t = \delta I_{t-1}^*$$

A more realistic approach would be to assume $\beta_k \neq \beta_I \neq \beta_c$ and investments in K, I and C sectors are non-aggregateable. This would imply that different values of λ_k , λ_I and λ_c will have different implications for future growth of income and consumption.

On the basis of the assumed framework, ΔK , ΔI and ΔC are derived as follows:

$$K_t = K_0 (1 + \lambda_k \beta_k)^t \quad (5)$$

$$\Delta K = K_t - K_0 = K_0 \left[(1 + \lambda_k \beta_k)^t - 1 \right] \quad (6)$$

$$\Delta I = \frac{\lambda_I \beta_I}{\lambda_k \beta_k} \cdot K_0 \left[(1 + \lambda_k \beta_k)^t - 1 \right] \quad (7)$$

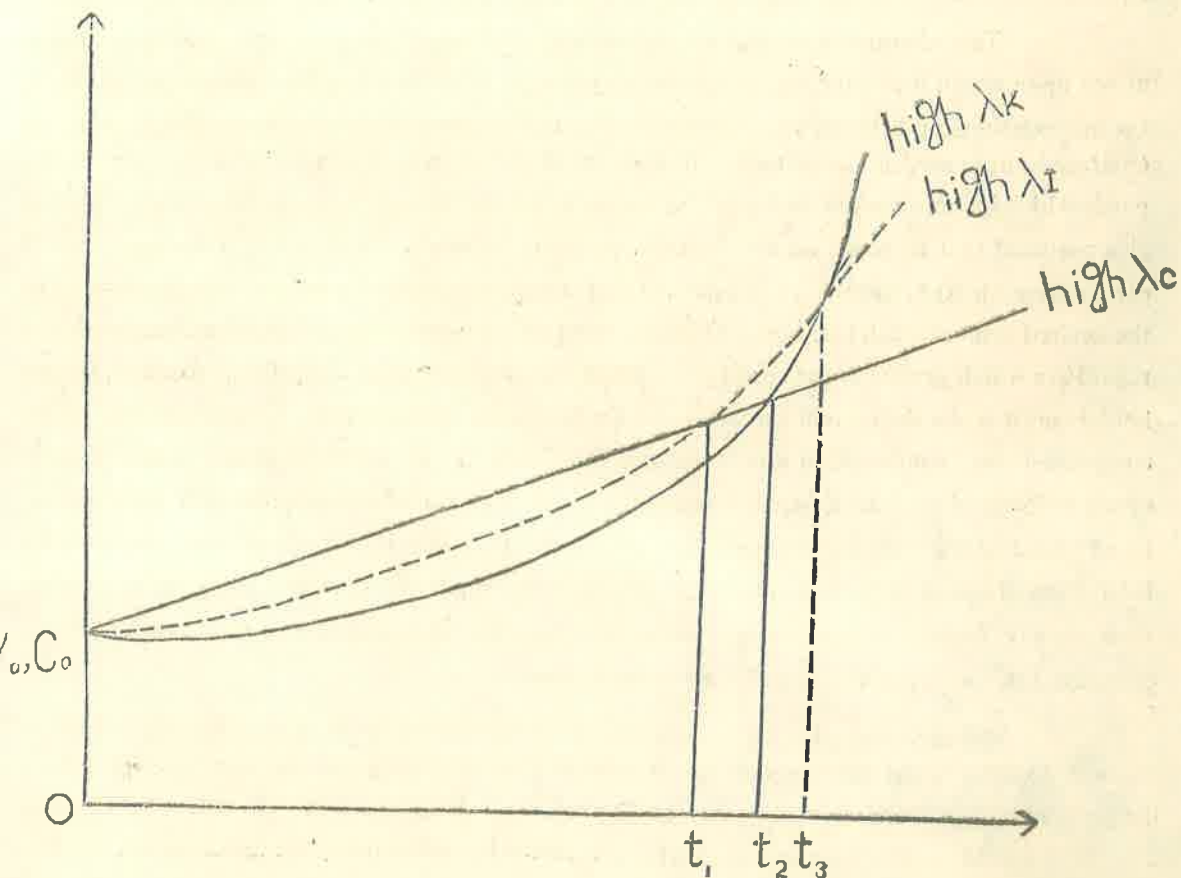
$$\Delta C = \frac{\lambda_c \beta_c}{\lambda_I \beta_I} \cdot K_0 \left[(1 + \lambda_k \beta_k)^t - 1 \right] \quad (8)$$

Since $\Delta Y = \Delta K + \Delta I + \Delta C$, by substitution we get,

$$\Delta Y = K_0 \left[(1 + \lambda_k \beta_k)^t - 1 \right] + \frac{\lambda_I \beta_I}{\lambda_k \beta_k} \cdot K_0 \left[(1 + \lambda_k \beta_k)^t - 1 \right] + \frac{\lambda_c \beta_c}{\lambda_I \beta_I} \cdot K_0 \left[(1 + \lambda_k \beta_k)^t - 1 \right]$$

$$\text{or } \Delta Y = K_0 \left[(1 + \lambda_k \beta_k)^t - 1 \right] \left\{ 1 + \frac{\lambda_I \beta_I}{\lambda_k \beta_k} + \frac{\lambda_c \beta_c}{\lambda_I \beta_I} \right\} \quad (9)$$

Equation (9) indicates that the growth in Y is largely determined by K_0 .



$[(1 + \lambda_k \beta_k)^t - 1]$ or ΔK . This is because increase in K-goods would enhance the productive capacity of I-goods and C-goods sectors thereby ensuring a higher output of C-goods.

When $\beta_c > \beta_I > \beta_k$ high λ_k would imply a lower immediate income and hence lower growth rate. However this happens to be the case only upto certain time period after which the rate of growth of both income and consumption would exceed the path projected by the initial high λ_I and λ_c . The growth path of income and also of consumption associated with high λ_k , high λ_I and high λ_c is projected in the diagram:

It is evident that devotion of larger share of investment to the K-goods sector (High λ_k) would keep income (and even more so consumption) lower than it would otherwise be in the short run (upto period of t_2 compared to high λ_c and upto period of t_3 compared to high λ_I), it makes the economy structurally strong and better off in the long run.

This alternative strategy of industrialization because of the highly restrictive assumptions upon which it is built, one has to be very careful in drawing policy conclusions. First, the interrelationship between sectors, is in reality, not as much simple and straight forward as envisaged in the model. For instance, it is assumed that K-goods can be produced only by K-goods which ignores the possibility of producing K-goods through C-goods [Findlay, 1966]. It is also assumed that K-goods do not directly produce C-goods, but in reality it does (e.g. motor cars, refrigerators). Secondly, it is assumed that marginal propensity to save can be adjusted to the desired level through taxation, physical control on consumption etc. The related issues in this regard are which groups in the society i.e., peasants, entrepreneurs, industrial workers, service holders must make the current sacrifices and for how long. The question of intertemporal consumption—lower consumption now versus higher levels of consumption in the future poses a severe problem of choice because the generation which sacrifices consumption now may not be able to have higher consumption in their life time. Fourthly, it is assumed that there are no limitations of resource endowment which precludes the impossibility of producing certain goods domestically. Finally, it assumes that the economy in question is big enough to absorb a volume of demand that will permit normal economies of scale.

Majority of the least developed countries embarking on the planned process of development do not possess the prerequisites for pursuing the capital goods strategy first. Moreover, the governments in these countries are quite weak in raising the required amount of saving and the planning horizon is generally short and oriented towards solving the immediate problems.

In such a context, capital goods model can be considered to be of very little, if any, relevance. However, the strategic importance of this strategy in generating a flexible system and producing an industrial and technological structure more closer to the social and economic needs of the country can not be ruled out. Hence, it would be appropriate and beneficial to pursue this strategy in a selective basis concentrating first on mass consumer goods like textiles, shoes, tobacco products etc. The required technology for producing K-goods to produce these commodities can be developed by adapting the borrowed technology. Capital and skilled manpower requirement can be met through aid or loan. The process can be gradually extended to other goods as the country acquires knowhow and generates income and saving for further investment. Such an approach would require a systematic planning of import substitution rather than a short term response to balance of payments problems encountered in the process of development. Very often the latter gains strong support because of the apparent justification with which the case of action could be initiated.

4. CASE OF NEPAL

Since the initiation of planned process of development in 1956, one of the basic objectives of Nepal's industrial development strategy has been import substitution and export promotion. This is believed to generate foreign exchange, provide productive employment to the disguisedly unemployed and ever increasing number of people, and instigate forward and backward linkages to other sectors. The government policy is to encourage import substituting industries by offering various kinds of facilities, concessions and incentives to the private sector e.g. tax holidays, protection, customs duty exemptions, provision of foreign exchange etc. As a result of industrialization drive, some industries have been established over the last 18 year of planned process of development. Most of these industries, particularly the large ones are however, being set up under foreign aid. As for example, the Cigarettee Factory of Janakpur, the Sugar Factory and the Agricultural Tools Factory of Birgunj have been established under the USSR aid programme; The Bansbari Leather Shoe Factory of Kathmandu, the Harisiddhi Brick and Tile Factory of Patan, the Brick Factory of Bhaktapur and the Hetauda Textile Mill of Hetauda are the products of Chinese assistance; and the Himal Cement Factory of Kathmandu is partly funded by the German government. A few industries mostly in areas of confectionary, jute, match etc., have also emerged in the private sector. Thus, the industries which have emerged so far reflect import substitution of certain intermediate and consumption goods.

The industries in the C-goods sector, do not, however, entirely cater for the requirements of the mass. During the Third Plan (1965-70) period, production units like stainless steel,

nylon textiles and liquor serving the needs of minority group got established in the private sector despite the intention of the plan. Moreover, the performance of these industries was above those industries which were given high priority and targets in the Plan (Lohani 1970). This undesirable outcome suggests that the strategy of import substituting industrialization has yielded what the Latin American countries has experienced. The sequential process of import substituting industrialization has failed to deliver the production mix in favour of the needs of the overwhelming majority of the population. It appears that the question of import substitution of 'what,' 'how', and 'when' was never given serious thoughts and the administrative apparatus was not committed to ensure that the policies and strategies are effectively pursued.

Manufactured goods constitute Nepal's major item of import. Over the years the percentage share of manufactured goods in total imports has followed an increasing trend—28.1 percent in 1974/75 and 37.6 percent in 1978/79 (NRB, QEB 1979). Next to manufacturing comes the imports of machinery and transport equipment which have also been increasing over the last few years. In fact, all the machinery and intermediate goods are imported from abroad. As the domestic production of consumer goods starts increasing the imports of machinery would also increase simultaneously. A great potential therefore, exists for developing the capital goods industries for the manufacturing sector. A careful study of the lines of production most suited for having domestic production of capital goods will have to be made. In this regard, cotton textiles offers a good prospect.

Nepal being primarily an agricultural country, food processing industries need to be developed not only for enhancing the quality of our major export item but also for allowing people to consume finer products. The development of processing mills would require huge imports of plants, machinery and spare parts. But continued reliance on imports for these materials may not be a desirable thing from the longer run perspective. Hence, it is one area in which we can think of establishing K-goods industries which would ensure steady supply of machine to the food processing plants

Nepal's current need is thus to explore areas for building up the K-goods industries. The initial cost of starting from K-goods industries is, indeed, high but this is the opportunity cost of having a long run benefit in terms of structural dynamism and higher rate of growth of both income and consumption in the future. An ill-conceived industrial programme for the sake of import substitution may not only fail to make the economy self sustaining but eventually plunge the economy into a severe dependence on foreign countries and balance of payments problem. It is a fortunate thing that Nepal is not in a precarious position of eliminating the already achieved industrialization for the sake of erecting the solid foundations of a viable economy.

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