SUSTAINABLE INDUSTRIALIZATION
A NEW STRATEGIC TREND IN ASIAN DEVELOPING ECONOMIES

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SUMMARY

This paper starts from the analysis of the comparative advantages of Asian developing economies such as labor, natural resources, capital, technologies and markets, with an aim to reassess the industrialization strategies having been implemented since the 1950s to the present time, including the import-substitution, export-orientation and heavy-industries-based strategies. Of these, the third obviously failed to succeed, while the other two resulted in miracle economic growth with too much inward-looking or vulnerable exposure to foreign capital, technologies and markets, hence less consideration for internal factors. This has led to great economic, social and environmental imbalances. One of the most serious and undeniable consequences of these biases is the current financial crisis. As a result, Asian developing economies have now turned to a new development trend or, may it be said, a new development strategy, that is, sustainable industrialization which is characterized by more balanced and flexible economic and social development with greater international and regional integration and better ecological environment.

INTRODUCTION

This paper is the result of the Research Project entitled "Industrialization and Modernization by Enhancing Comparative Advantages: Experiences of Asian Developing Economies" and the development of some ideas suggested on various occasions by the author since the beginning of the 1990s.

The leading idea of this research is the perception that comparative advantage can be used with high efficiency in the industrialization and modernization of a developing economy. The analysis of the major sources of comparative advantage such as labor, natural resources, capital, technologies, and market exploited by Asian developing economies in their industrialization and the review of those industrialization strategies adopted by Asian developing economies such as import-substitution, export-orientation, and heavy-industry-based industrialization suggests this.

I. IMPORT-SUBSTITUTION AND EXPORT-ORIENTATION: RAPID BUT BIASED; HEAVY-INDUSTRY-BASED: TOO HEAVY TO MOVE.

1. Market.

It was not by chance that the narrow view point of "self-reliance" which played the role as the background of the import-substitution strategy either went bankrupt or needed reorientation and redefinition as we have seen in the case of India and a number of other developing economies. Even such a country as China, which considered itself to be a great socialist nation with a vast labor reservoir, rich natural resources and huge domestic market, with every possible means at hand for building up the country and developing the economy from within and which regarded the principle of independence and self reliance as fundamental for economic construction, finally had to admit that

> owing to prolonged seclusion from the outside world, many opportunities were missed. The technological gap between China and foreign countries has widened in the absence of competition from the international market, and domestic products have become less and less competitive. Some industrial products could not be qualitatively or quantitatively improved owing to the limitations of the domestic market. (1)

A state of over one billion people had, finally, to admit to "the limitation of the domestic market" This runs directly counter to the view of China, India and many other developing economies in the 1950s, when they always emphasized the importance of domestic factors. The new situation has posed to the economists in developing economies the question of re-examining a whole series of problems concerning possibilities and limitations of their own states in the process of economic development and in the new international division of labor.

In the sixteenth and seventeenth centuries, international trade developed vigorously due to two main factors: the growth of the capitalist economy itself and the discovery of new lands. In the eighteenth and nineteenth centuries, classical economists demonstrated that a highly efficient division of labor could be realized not only among individuals in a single country, but also between countries and nations. It is unfortunate that in the 1950s most of the economists and policy makers in developing economies, from fear of exploitation by imperialism, and motivated by a high sense of independence with a strong will to build the economy by themselves, ignored the lessons of history and underestimated the opportunities that could be brought about by the international division of labor. In some economies, the size of the population was taken as a principal criterion for determining the capacity of the market. According to this approach, the more populated a country is, the larger the market it has. But when it came to developing modern industry, with large-scale production, the limitations of domestic markets were gradually uncovered.

Step by step it was realized that the determining factor of the capacity of a market was the purchasing power and not solely the population size, even though the latter may play an important role. In India for instance, after over four decades of development, it is only now realized that from a population of around 900 million people with an average annual per capita income of nearly 400 US dollars, only about 10 per cent are able to buy durable family consumer goods such as radios, television sets, air conditioners and refrigerators. Most of the rest of the population can afford to buy only 'basic needs' goods or minimum necessities such as food and clothing. People living below the poverty line – and they account for about half of the population in India – have not enough money to buy even those items of basic needs. In such conditions, how can we say that the world market should not be relied upon by developing economies to develop their domestic industry?

2 . **Capital.**

As far as capital is concerned, it can be said that almost all developing economies in their first stage of industrialization find themselves in a period of primitive accumulation. The lesson provided by mercantilism is that if we want to accelerate this process of primitive accumulation, there is no better way than to develop foreign trade. However in the 1950s and 1960s, most developing economies, starting from the theories of balanced development, overemphasized the development of domestic agriculture and industry, and some advanced the theory of 'walking on two balanced legs' (balance between agriculture and industry). Excessive attention paid to the value created by labor in production blurred the advantages that could be obtained from labor in trade. In other words, the prominence given to peasants and industrial workers undervalued the role of merchants, who hold a very important position in the market economy. In countries and territories advocating an open economic policy, called Asian NIEs (Hong Kong, Singapore, Taiwan, South Korea) the role of foreign trade as an engine of growth, and its ability to increase accumulation and attract foreign capital in the initial stage of industrialization, demonstrated all the more the necessity for developing economies to increase their participation in the international division of labor in order to accelerate the process of accumulation in their economy and acquire capital for their industrialization.

3. **Technology.**

In the field of technology, the role of the international division of labor is also very large. It is true that the import-substitution strategy has helped developing economies to build a number of new branches of industry with a low technology--mainly local and traditional technology. Practical experiences, however, have shown that traditional technology was able to help new branches of industry to develop only when they were young, but could not help them to raise their productivity when they entered the stage of modernization, or strengthen their competitiveness with respect to the international market. What was needed in developing economies was the reception of advanced foreign technology and its transformation into local technology, before talking about the discovery or invention of new technologies.

In other words, the process of change from old, backward technologies to advanced technologies requires from developing economies a transitional stage where intermediate technologies are used. It is impossible to bypass this transitional stage, just as one cannot bypass the technique of motors when moving from the manufacture of bicycles to that of motorcycles. This transitional stage may be short or long, depending mainly on the acquisition of vantage points reserved by the international division of labor to the 'late-comers' (now the NIEs) and the "*later-comers*" (the present beginners of industrialization).

The developing economies have seen patterns of gradual industrialization in the British way, rapid industrialization in the American way, and short-cut industrialization in the Japanese way. Other patterns have also been designed to solve first the problem of 'basic needs' (still without success, for example, in African countries), or to carry out rapid industrialization "by leaps", starting immediately from heavy and basic industry , as in the case of India, Vietnam and China. But up to now, due perhaps to the very heaviness of those branches, rapidity has not been achieved. On the other hand, in a number of countries and territories such as Singapore, Hong Kong, Taiwan, and South Korea where industrialization began with light branches, not only was industrialization rapid, but those countries now have the possibility of building selective branches of heavy industry. Thus, whilst light industries deviate from the theory of those who advocate solving "basic" problems first, in fact they contribute to the effective solution of the central problems in the first stages of industrializa-tion, namely the accumulation of capital , appropriate technology, the ability of labor efficiently to use technologies, and the quality and competitiveness of products in the international market. Among all the solutions mentioned above the most efficient are those tending to take advantage of the international division of labor. The United States, for instance, has succeeded in putting to use the most diversified and advanced "brain-power" from many countries in the world. Japan and South Korea have been successful first in the reception and improvement of technology from foreign countries, enabling them to study, discover and invent new technologies of their own following a strategy of "catch up" and "over-take".

4 . <u>Natural resources.</u>

Another problem is that of raw materials. In the 1950s, many developing economies believed they enjoyed large advantages in land, natural resources, climate and the existence of rich and abundant raw materials, thanks to which they would be able to carry out industrialization in accordance with a strategy of self-reliance. They have taken great pains over the years, and have eventually realized that their natural resources will not be used efficiently if they do not know how to avail themselves of the most advanced technologies in the world and other possibilities offered by the international division of labor. China would never be in possession of modern technology in metallurgy if it had not given up the handicraft ovens that had been built everywhere in the course of the movement for "every household to do smelting". To transform existing natural resources into products required by society, industry and the people, there should be capital, technology and market. Most of the developing economies are short of them and cannot fail to rely on foreign sources.

Moreover, if we do not pay attention to the international division of labor when defining our own national strategy for the use of natural resources, we will unconsciously fall into the unfavorable division of labor that colonial powers once imposed, as sources of raw materials and agricultural produce, as well as markets for the industrial products of industrialized countries. Theoretically, this division of labor would not be accepted now by any developing economy, but in fact not a few are still trading on such a track. The Middle East countries, for instance, are continuing to devote their whole strength to the exploitation of oil for export, not taking into account the possible development of their economy in some other way, even though they know that their oil resources will be exhausted in about 30-40 years if they are exploited at the current rate, and that then they will have to face a tragic situation. A number of Asian economies continue to give top priority to the development of agriculture, although they have crossed the threshold of famine and succeeded in solving their most urgent problems of food and have shifted to a period of development relying mainly on economic efficiency.

The main economic trend in developing countries at present is that of industrialization. Therefore, to assess an economy, one often takes into consideration the indexes of industrial growth, rather than those of agricultural growth, and of the exploitation of natural resources. The success of Taiwan, South Korea and a number of other newly-industrialized countries and territories lies in their early perception of that trend and their determination to follow it; and after three decades of industrialization, they have transformed their agrarian economies into newly-industrialized ones.

5 . **Labor.**

Developing economies have an abundant source of manpower. When their economy is still underdeveloped and cannot provide enough jobs for the people, this manpower constitutes an economic burden and a political and social pressure, but when it can be used it becomes a potential force for economic development. Experience in the development of those countries in the last four decades shows that narrow-minded nationalism or self-reliance, with an import-substitution or inward-oriented strategy, was not able to solve the problem. It should now be admitted that among developing economies those implementing an open-door, export-oriented strategy, participating actively in the international division of labor, are the ones that have done better in developing employment and living standards. Moreover when a comparison is made between developing economies rich in natural resources, and those poor in natural resources, one sees that when the latter know how to make the best use of human resources, they attain a rate of development higher than economies which, although rich in natural resources, do not pay enough attention to the great potentialities of human resources.

At present, as a result of the development of science and technology and of the new requirements of modern society, some people think that expenditure in labor, especially in non-professional or untrained labor, has become "less decisive" in the process of production, and that, alongside labor, other factors such as an "industry-supporting environment" or "supportive industries" are increasingly becoming essential for attracting foreign capital investment.[(2)]

Experience has shown that wages paid to the worker are always one of the prime factors taken into account by firms when deciding any investment of capital, and low-priced labor always represents one of the advantages of developing economies in attracting foreign capital investment. However, to raise the quality and efficiency of labor, developing economies need to pay attention to the cultural and technical training of their existing labor force.

We have thus seen the main factors used by developing economies: labor, natural resources, technology, capital and market. Among those factors, the one available in developing economies in abundance and indeed in excess, with constant addition, is manpower. As regards natural resources, only some economies have them in abundance while others are rather poor. As regards market, the bulk of developing economies have only a small market. Some are densely populated but the capacity of their market is not large, contrary to what has previously been thought. As regards capital and advanced technology, developing economies suffer from an acute shortage. Developing economies have few of the ingredients for development, and so cannot rely solely on domestic sources, but have to rely on foreign sources as well. As Albert Hirchman has suggested "the developing countries would need an appropriate alternation of contact and insulation, of openness to trade and capital of developed countries, to be followed by a period of nationalism".[(3)]

The theory of openness thus has a rational aspect in so far as it criticizes a narrow-minded emphasis on national independence, self-reliance and seclusion from the international division of labor, which limit the capacity for development. On the other hand, extremists among the advocates of the theory have gone too far, overemphasizing external factors and underestimating the capabilities of domestic elements in developing economies. They tend to suggest that growth in those economies can be achieved only by relying on the capital, technology and aid of foreign countries, hence accepting one-way dependence on a number of developed industrial centers. The well-known Indian economist Sukhamoy Chakravarty since 1983 criticized the "dependency theorists" for having over-estimated "structural heterogeneity" and encouraged the development of "a strong interlocking of interests and transactions that exclude large masses of people from the circuit of growth". [(4)]

The inevitable consequence of the over-dependence on "external factors" has now been the Asian financial crisis which broke out since 1997. This is the undeniable evidence of the bias of the export-orientation strategy. Though this strategy has been a miracle, it is now time for it to be restructured to avoid further instability and crisis, and to create a new balance and stability for the sake of long-term development.

II. SUSTAINABLE INDUSTRIALIZATION.

1. Export-orientation complemented by import-substitution.

The above analysis leads us to a dilemma between the inward-and outward-looking strategies, between the reliance on internal resources and external factors. Experience has shown that it is not advantageous to lean too far to either side. Where is the way out? Our answer is *complementation*: to mobilize external factors as complements for missing factors in developing economies and combine both internal and external factors with a view to achieving maximum efficiency, both economically and socially. Developing economies lack capital, advanced technology and markets. Therefore, they have to practice an open-door policy, putting into effect measures of liberalization, and to this end, they should ensure the legitimate interests of foreign investors. On the other hand, developing economies should not neglect internal advantages, such as manpower, land, natural resources and the domestic market. To this end they should take measures to protect and/or assist their home industries, especially the infant ones which show bright prospects in the mobilization of domestic manpower and materials and present possibilities of success in foreign markets.

The liberalization of foreign economic relations and protection or subsidy of home industries are not contradictory; they complement each other. The combination of these two sets of measures is the *realistic* trend in developing economies in their relations with other countries in the contemporary world. Today, full implementation of the "laissez faire" theory would be detrimental to developing economies, since most of the advantages are in favor of developed partners. On the other hand, too much intervention in the economy by the governments of developing countries, especially in the form of prohibitions in international relations, would be no less detrimental because it misses many opportunities in the international division of labor, as has happened during the implementation of the import-substitution strategy.

From the above viewpoint, we think that the parallel and interwoven existence of the two strategies of import-substitution and export-orientation in a number of developing economies[5], particularly the "*later-comers*", may well become a strong trend in the future as it responds to the essential requirements of developing economies, in both the medium and the long run. It enables developing economies to avail themselves of the rational core of the theory of comparative advantage to enlarge their participation in the international division of labor so as not to miss favorable opportunities to serve the industrialization of their economies and do away with the division of labor imposed on them by colonialism. This trend of development assumes the acceptance of dependence; but apart from the reliance on external resources, it also stimulates the development of internal resources by enhancing internal potentials and creating impetus and capacity for a firm development from inside which then helps reduce the dependence on the outside. In other words, this way of acceptance of dependence helps gradually reduce one-way dependence, in the interest of interdependence, and promotes the economic complementation of developing countries.

This perception brings us to a new strategic and realistic idea of accepting the necessity of the *export-orientation-complemented-by-import-substitution strategy*. This new development means, in the long run, export orientation is the dominant trend for developing economies in their industrialization, with such characteristics as fast growth, successful competition in the domestic and international markets and expansion of external economic relations (especially exports, foreign investment, and ODA). But solely focusing on exports would miss the opportunities provided by the domestic market, neglect the traditional and infant industries and agriculture; and more seriously, abandon the main task of building a powerful national economy, which is the firm base for national independence. For this reason, in addition to measures of export-orientation, some measures of import-substitution are needed to assist the weak industries of the country, taking advantage of the favorable opportunities and capacities of the domestic market. Import-substitution measures are necessary, especially for the "*later-comer*s" in their early stage of industrialization. However, in the general context of industrialization, import-substitution measures only play a complementary role to the export-oriented strategy and therefore are often of a short-term nature and should be readjusted in timely compliance with market demand and economic development in order to improve the efficiency and dynamism of economic sectors and the competitiveness of products. Import-substitution measures thus should not last for long since they would by so doing result in the inertia and stagnancy of domestic industries, the protection of monopoly, and the decline of efficiency, dynamism and competitiveness, as has been the case of many industries in India and elsewhere.

It is no doubt that the import-substitution strategy did help many developing economies to build up and develop a number of industries which were not in existence or were very weak before the 1960s. But on the other hand, this strategy did not, later on, make use of the advantages of the international division of labor, and thus failed to raise efficiency and productivity, and failed to develop and modernize these industries. The present trend is that the import-substitution strategy is not totally rejected while the export-orientation strategy is getting high reputation. Sound policies and measures of each strategy should be selected to be used in a complementary manner and appropriate to the socio-economic conditions of each nation in each period. In this connection, more and more economies have followed the option to combine the export-orientation and import-substitution strategies, with export-orientation as the core, playing the decisive and dominant role, with import-substitution as a complement.

2. **Two-stages of industrialization and modernization.**

The restructuring process of manufacturing industries is closely twinned to the process of change of comparative advantage in developing countries. As long as labor is cheap and natural resources are abundant, labor-intensive and natural-resource-based industries are in better position. When the above advantages faded away and new advantages of capital, technology, and high quality labor gained momentum, higher value-added industries, including the capital-, technology-, and human capital-intensive ones moved to the forefront. This development process may be characterized as a two-stage industrialization based on the principle of the changes in comparative advantage in a developing market economy.

This fact has an important implication for researchers and policy makers in a "*later-comer*" country like Vietnam which starts its industrialization from a backward agrarian economy, where per capita income is low and most of the population lives in the rural areas where the main source of earnings is low-productivity agriculture, and where unemployed and underemployed labor makes up about 20 per cent of the total labor force of the country. The escape route for these countries from the current underdevelopment situation must be industrialization. However, the pattern of industrialization should not be that of a"great leap" nature or the one based on heavy industries as "nuts and bolts", as pursued by a number of countries over the past few decades. Those kinds of industrialization have been a complete failure, and further and greater failures would follow if one tried to rehabilitate or stick to them.

The industrial structure in a market economy cannot be a fixed and readily planned one based on a voluntarist perception as was the case under a centrally planned economy, where heavy industries were stressed as "nuts and bolts" locked in a rigid or static formula without a possibility for change. Under this formula, opportunities and capabilities of other industries were underestimated or missed. The new structure is a dynamic one based on the principle of the most effective use of the comparative advantage of the country. As comparative advantage changes, the structure changes accordingly, and only then it is compatible with the performance of the market economy, providing possibilities for capturing the good opportunities created by market forces. In the market economy, dynamism overshadows staticism, hence no static model can succeed. Thus the "catch-up" model of the Asian NIEs makes sense.

The large advantages of many developing countries in their early stage of industrialization are cheap labor, mineral resources, and tropical agricultural products. Experiences of developing countries indicate that in the early stage it is appropriate to focus on industrialization, to promote industries that harness those advantages for the first 20-30 years of industrialization. This would be most beneficial both economically and socially since the development of these industries may quickly form a new industrial base and create many new jobs, contributing to solve the high unemployment problem, and generating more income and savings, as a preparation for the development of greater industrial potential with more capital-and technology-intensive industries in the next stage. Modernization will then be the focus when per capita income has reached about US$ 1,500-2,000 or more and when manufacturing industries represent about 35 to 40 per cent or more of GDP.

This is not to say that in the early stage of industrialization the focus should be solely on labor- and natural resource-intensive industries. It is necessary to develop a number of capital- and technology-intensive industries right from the beginning, but these are not the focus nor the main priority of industrial policy at its early stage. These industries, if they are to be developed, should be selected with utmost caution, based on their capabilities and efficiency, and on the market demand, not on a subjective desire. Though a dual industrial and technological structure is not desirable for developing countries in the long-run, it is a reality in many developing countries in the early stage of industrialization. What makes sense is that if one cannot reject it, one has to accept it and try to shorten its existence. That the suitable solution for the objective of rapid industrialization.

With such a view, one can see that for the first two or three decades of industrialization, the focus of developing countries is on labor-intensive and natural resource-intensive industries, particularly the export-oriented ones. At the same time, there are also a small and selective number of capital- and technology-intensive industries, mainly in the area of infrastructure, such as telecommunication, electronics, financial and banking services that need to be developed at this stage. The closer an economy comes to the latter stage of industrialization, the less such factors as cheap labor, natural resources, and agricultural products of developing countries contribute to determine comparative advantage, and new factors with new advantages such as capital and technology increasingly develop both in terms of quantity and level of development. In parallel to this change, the economic structure also changes in such way as to increasingly utilize the new advantages in combination with the enhancement of the already available ones. To this stage, since the traditional factors can no longer develop fast, while the new ones develop at a much higher speed, the share of industries that can harness the latest advantages uses in the economic structure; these include advanced industries and modern services which bring about higher value-added. That explains why in the economic structure of NIEs, the share of agriculture drops sharply, usually from 70-80 to 10-20 per cent of GDP, while the shares of industries and services go up from about 10 to 30-40 per cent, and from 20-30 to 40-50 per cent or more, respectively. This development proves a new trend of modern industrialization in which the economic structure shifts not just from an agrarian to an industro-agrarian one, as was the case in the classic transformation, but instead, to a new structure of industry-service-agriculture, or service-industry-agriculture, as occurred in a number of developing economies among which Taiwan is one of the most typical cases.

3. **Formulation of motivations for development.**

In the market economy, though the government plays a very big role in economic development, it does not assume an exclusive or nearly exclusive power in governing the economy, nor reject the market and the private sector, interfere in each production target, each product, and each daily operation of enterprises like the situation under the “command state” of the centrally planned economy, because side by side with the state, there exist the market and the private sector which are dynamic, efficient, and of high growth. The private sector is the most resourceful force in the market economy, or the “main motive of economic growth”, as it was affirmed by the Prime Minister of Malaysia Mahathir Mohamad.[6] The government is strong when it cooperates well with this sector, promotes the development of the private sector and relies on the private sector for the strengthening of the government. The close links between a strong government and a strong private sector strengthen industries and shorten the industrialization process. That new trend takes shape and corrects the distortions of the two theoretical perspectives: “the developmental state” applied during the early stage of industrialization in Japan and Korea, and the “market-friendly state” applied by Thailand. During the recent decades, both of these patterns have been adjusted in such a way as to combine with and complement each other. With regard to the former, more market forces have been mobilized, while as for the latter, the regulatory role of the government has been enhanced.

Early aware of this issue, sine the 1950s, the NIEs implemented policies to encourage the development and participation of different economic sectors in their industrialization process. The intervention by the government in the market has accelerated the industrialization process and enhanced efficiency and productivity. The government tried to coordinate and enable both the domestic and foreign private sectors to select areas and forms for their operation. The public sector has taken care of activities which the private sector has been not interested in or unable to assume. When national entrepreneurs become mature and are capable of handling more advanced industries, the government hands over these activities to them and moves to areas of higher level of production. This displacement method has been continually deployed over the whole industrialization process. This typical pattern of the division between the private and the public sectors makes Asian NIEs different from many other developing countries. In a number of countries which advocate the high self-reliance or almost isolation pattern, the governments keep key industries. In the NIEs, the governments organize industries and industrial units under the government plan when the private sector is unable to invest. Therefore, there is no excluding and/ or restricting competition between the public and private sectors by which one excludes the other or vice versa, except in some special industries of national security. In the NIEs, apart from the voluntary division as mentioned above, there is also a concept of voluntary integration between the public and private economic activities. This direct combination is done through joint ventures for industrial development.

One of the major factors bringing about the success of Asian NIEs is the prompt emergence of the local entrepreneurs, particularly those with large capital, high technology, and good management. These entrepreneurs, particularly the private industrialists and financiers, not only play the role as the driving force of economic development from inside- an internal strength- but also act as the main counterweight to external partners, especially when the country opens to foreign investors. Without this counterweight to external partners, who would be capable enough of maintaining the economic independence which is the base for political independence ? Without an economic counterweight, political independence would be endangered. In newly industrialized economies, facilitating the development of local entrepreneurship has become a regular policy of the government. A developed entrepreneurship will mobilize fund, build up industries, and create jobs. That is the best approach to the efficient utilization of accumulated and mobilized fund. This policy has become effective in reality, making entrepreneurs resourceful enough to operate in most of industrial areas, including high-tech industries such as electronics and computers.

The question is how to create such an entrepreneurship and where to start? A common psychological desire of many developing countries is to have right away big entrepreneurs and large enterprises. That is the desire of those who start from the agrarian economies with petty and fragmented production. This hasty and voluntarist psychology has resulted in many unnatural and uneconomic merges and takeovers, whose inevitable consequences are collapse, dissolution, and/or restart from the beginning. Experiences of NIEs indicate that real and effective large enterprises and big entrepreneurs may possibly come into being only after a process of accumulation of capital, technology, knowledge, and management skill. This process can be shortened through a naturally dynamic performance of the enterprises themselves, with the positive influence by the government. There has never been a successful case recorded where merges and takeovers were artificial without that process of accumulation of capital, technology, knowledge, and management skill.

To build large, one cannot bypass or underestimate small and medium enterprises which form the initial and decisive foundation for the formulation of up-coming enterprises and future industries, because small and medium enterprises play an important role in creating jobs for workers, strengthening industrial linkages, penetrating markets, and increasing exports. These industries play the decisive role in the formulation of large enterprises and form the important foundation for a developed industry.

4. **Development of human resources.**

According to Danny M. Leipziger and Vinod Thomas, the World Bank economists[7], a common feature in the success of East Asia is that all policies aim at macroeconomic stability, investment in human resource, and outward-looking. So the efficient development and utilization of human resources have become the central factor of the industrialization strategies of East Asian economies, and every NIE follows this path. Human resource development policies and social policies of these countries focus primarily on the following areas:

- Planning of the population growth with an aim to prevent the population explosion from undermining the fruits of economic growth.

- Promotion of the development of general education, and enhancement of the cultural knowledge and literacy level of the people.

- Improvement of the thirtery and vocational education in order to meet the demands of the industrialization and modernization processes.

- Creation of a greater number of jobs and reduction of unemployment through the prioritized development of labor-intensive industries in the early stage of industrialization, encouragement of all economic sectors, particularly the private sector, and implementation of conducive policy measures to develop small and medium enterprises.

- Implementation of income redistribution policies and measures in order to reduce the income disparity among different groups, to bring the benefits of industrialization and economic growth to most of the population, to avoid the wide disparity which causes instability in the society.

5. **<u>Protection of the environment.</u>**

While the positive side of rapid industrialization proves the improvement of efficiency and productivity, hence the accelerated economic growth, its negative side, on the other hand, shows instability, imbalance, inequality, damage of ecological environment, and in turn, these negative factors hamper the capability of sustainable development of industrialization and economic growth.

In recent years, a number of negative outcomes of high economic growth and rapid industrialization have become evident and threatened the sustainable development of developing economies in Asia. Those are the overurbanization, the imbalanced development of different regions, the depletion of natural resources and the destruction of the ecological environment. In a number of countries, these problems become very serious. In Thailand, for example, overurbanization and urban pollution not only cause traffic jams, environment pollution, but also directly harm the people's health, including the loss of the average weight and height of newly born babies in Bangkok; the overexploitation of coastal wetland for industrial shrimp breeding destroyed about 90% of the total area of mangrove forests of this country within 20 years. Leakage of toxic chemicals such as the case occurred in Bombay (India) by an American company, the careless disposal of industrial wastes, the application of polluting technologies transferred from developed countries, forest cutting for timber, firewood, and slash-and-burn cultivation practice, etc. have devastated the potentials for industrialization and sustainable development. Unless further damages are prevented, no sustainable industrialization would be possible.

Asian developing countries have been increasingly aware of these problems. They have individually and/or coordinatedly adopted policies and measures, for each nation and for the region and the world at large, to overcome these problems. However, the efforts so far, though great and incremental, have been far from sufficient to control the disastrous consequences, yet to say about improving the situation. In most of developing countries, the legal framework, physical investment, technological solution, policy enforcement and public movement for environment protection are all, weak, and/or inefficient. Only a few countries like Singapore, thanks to their fairly high economic development level and capability of investing in this field, the governments with a good legal framework, have committed and already implemented sound environment protection policies, hence better solved these problems. In most other developing countries, much greater efforts are needed to prevent the negative and serious consequences of industrialization. As long as the ecological environment is not well protected, human resource is not developed, and social policies do not benefit most of the people, industrialization and modernization, though achieved high for a certain period, cannot be a sustainable development.

In short, the realities and factors mentioned above, including the changes in comparative advantages, the achievements and the distresses of the miraculous growth strategies, the steps of industrialization, the impacts on the society and environment, all are calling for the renovation of thinking and the restructuring of developing economies, particularly the ones in Asia. A new strategic trend or, may it be called, a new strategy of sustainable industrialization has emerged to overcome the in-so-far mistakes, bias and distortions, and to formulate a more balanced and dynamic development mechanism, with greater international and regional integration, and a better environment protection.

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7. Danny M. Leipziger and Vinod Thomas: "The Lessons of East Asia: An Overview of Country Experiences", World Bank Publication, 1993.
8. Some ideas in this paper were discussed in other papers, articles and research projects, including :

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- Industrialization and Modernization: Experiences of Other Countries and Possible Innovative Application in Vietnam, *Communist Review*, June 1994;
- Two-Stages of Industrialization with the Complementation of Export-Orientation by Import-substitution: Other Countries' Experiences and the Trend in Vietnam, *World Economic Problems*, April 1994;
- Industrialization and Modernization Basing on the Enhancement of Comparative Advantages, Research Project sponsored by the Vietnam National Center for Social Sciences and Humanities, 1995-1997, National Publishing House of Politics, Hanoi 1999.

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- Complemnetarity – A New Trend in International Division of Labor, International Social Science Journal, No 135, Feb. 1993.

CHART I: FIVE MAIN COMPARATIVE ADVANTAGES

Labor	**Simple**
	High quality
Materials	**Traditional**
	New
Capital	**Large**
	Small & medium
Technologies	**Appropriate**
	Modern
Markets	**Population**
	Purchasing power

CHART II: TWO STAGES OF INDUSTRIALIZATION

HIGH COMPARATIVE ADVANTAGES

- High quality labor
- New materials
- Large capital
- Modern technologies
- High purchasing power

LOW COMPARATIVE ADVANTAGES

- Simple labor
- Traditional materials
- Small and medium capital
- Appropriate technologies
- Low purchasing power

STAGE I → STAGE II

NIE

Or US $2000 per capita income

STAGE I
- → To be Newly Industrialized.
- → Enhancing mainly Low Comparative Advantages.

STAGE II
- → To be Industrialized.
- → Enhancing mainly High Comparative Advantages.

CHART III: EXPORT-ORIENTATION COMPLEMENTED BY IMPORT-SUBSTITUTION

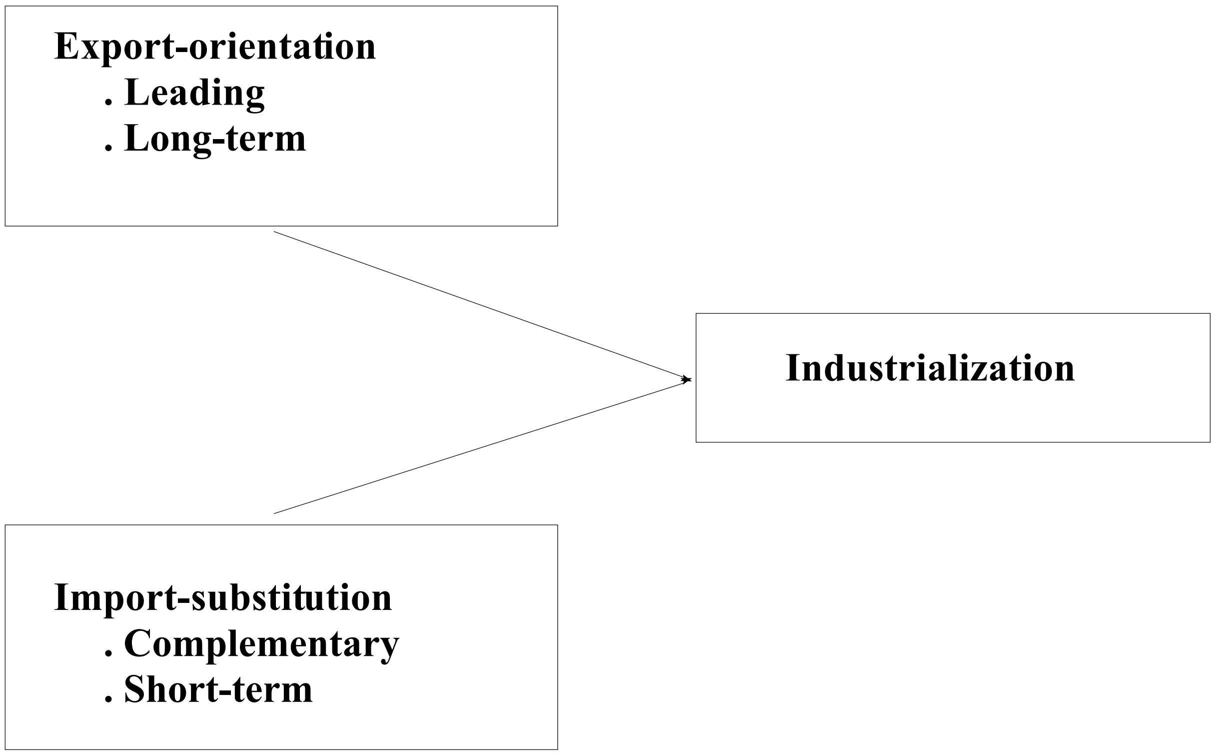
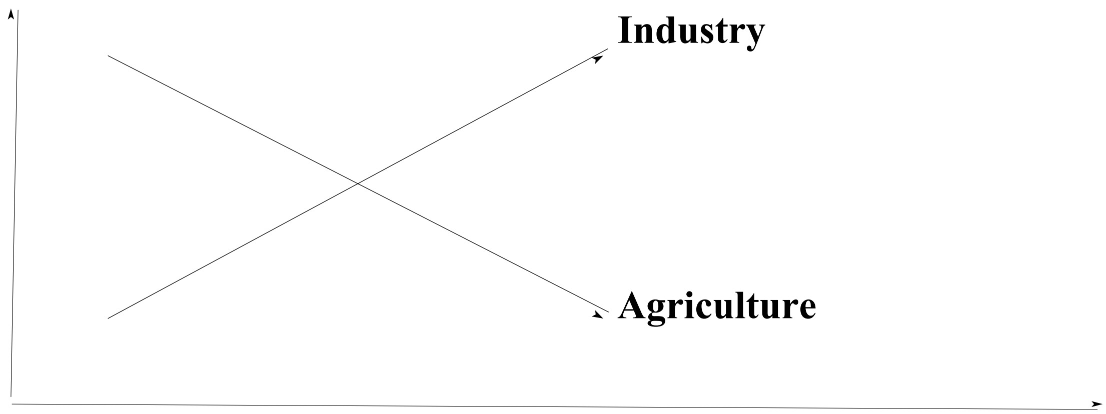
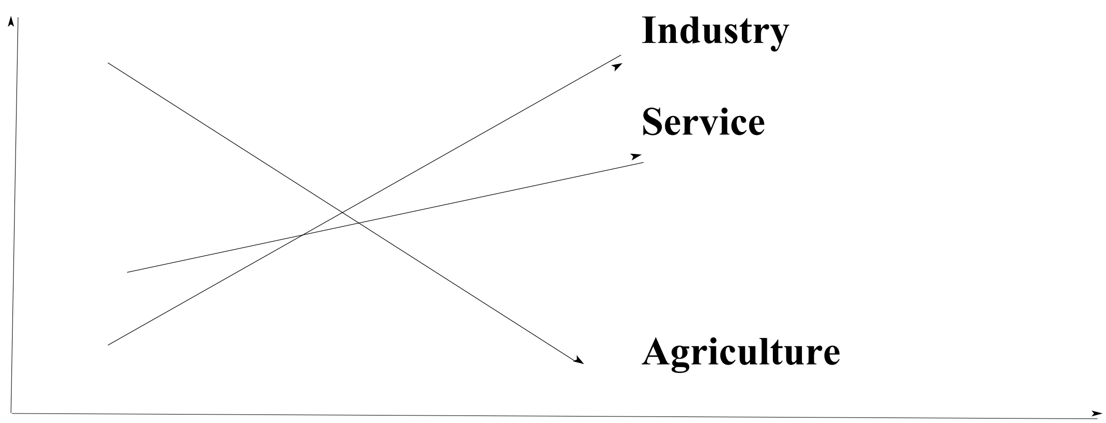


CHART IV: RESTRUCTURING

A. Classic pattern



B. Two modern patterns



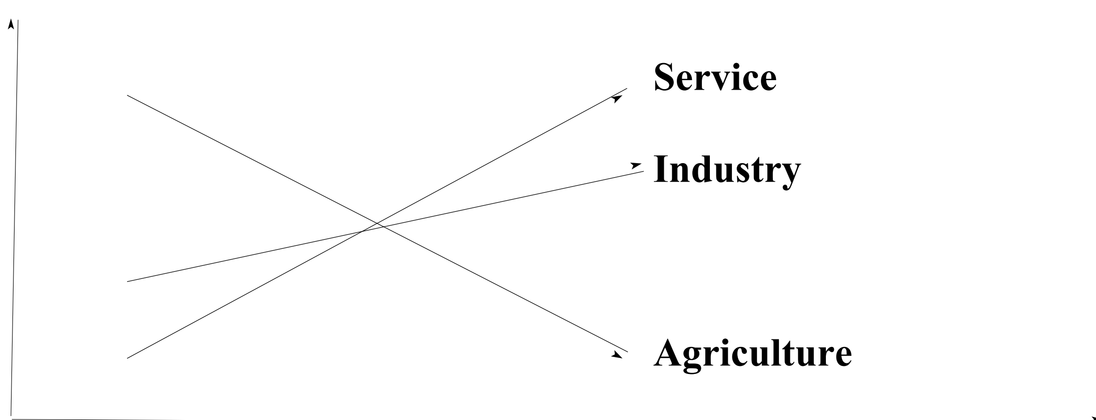
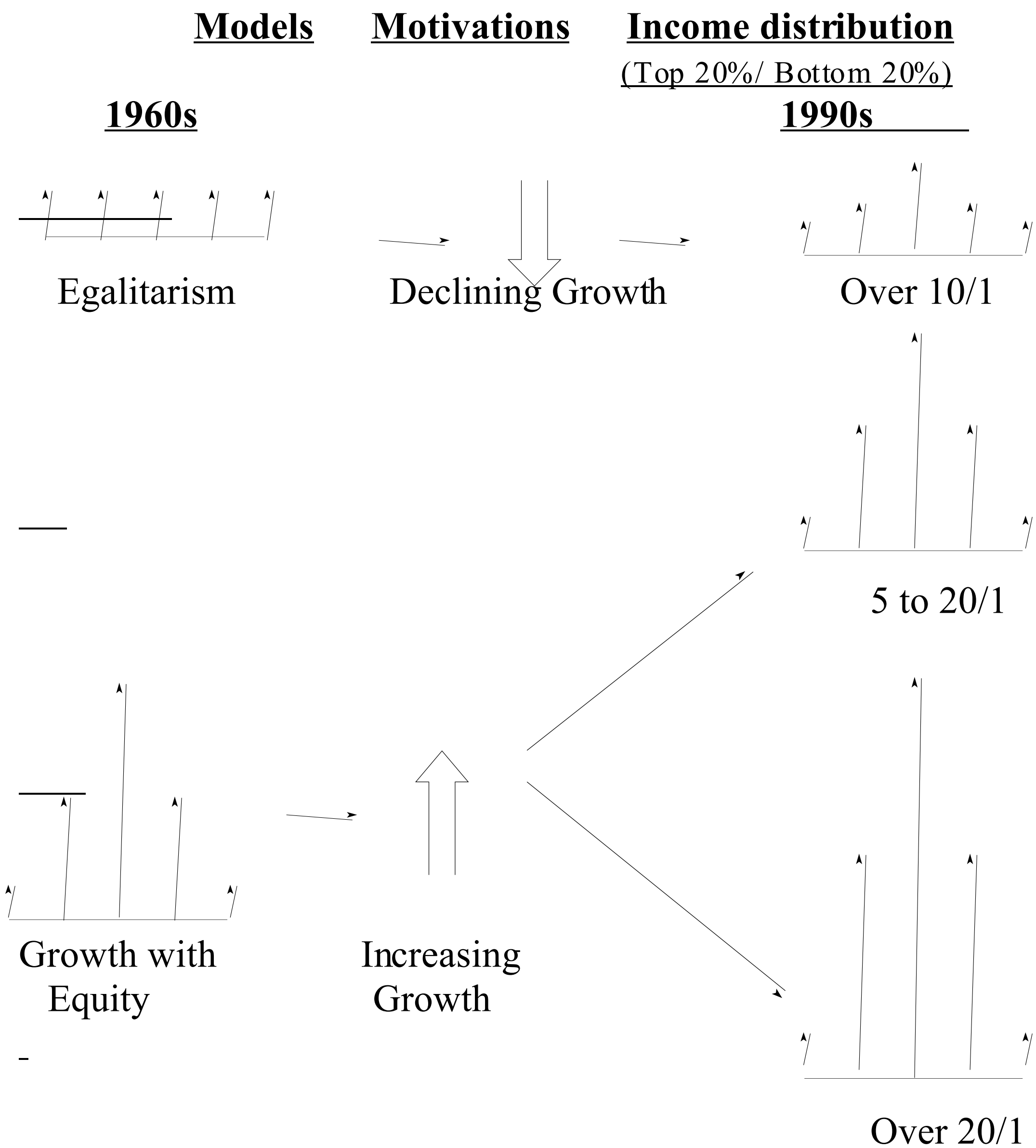


CHART V: MOTIVATIONS OF DEVELOPMENT AND REDISTRIBUTION



Development Models and Motivations:

. Egalitarism -> Motivations down -> Growth declining with income gaps widening in transition.

. Growth with Equity -> Motivations up -> Growth increasing with diversified income gaps depending on good or bad redistribution policies.

4 patterns of redistribution :

. Egalitarism.

. Tricle-down or pyramid growth.

- Deng Xiaoping: People (regions) rich first, people (regions) rich later.
- Park Chung Hee: Making the cake first, deviding the cake later.

CHART VI:
COMMON EXPERIENCES

1. Restructuring.
2. Agricultural Industrialization bound with rural development.
3. High savings (35-40% GDP).
4. Transfer and development of technologies.
5. Human resource development.
6. Social equity.
7. Environmental protection.
8. Opening.
9. Close collaboration between Government and private sector.

CHART VII: SPECIFIC EXPERIENCES IN EIGHT ECONOMIES

1. TAIWAN	. Typical and modern restructuring: Agrarian economy -> Industry-Service-Agriculture -> Service-Industry-Agriculture. . Relative equal income redistribution along human resource development. . High growth of small and medium enterprises.
2. S. KOREA	. Developmental State . Development strategies linked to fundamental industries. . Government supportive to large industrialists and financiers.
3. THAILAND	. Market-friendly State. . Free enterprise. . Government concentrates more on security, infrastructure and taxation.
4. SINGAPORE	. The first industrial revolution: industrialized. . The second industrial revolution: 2010= Switzerland; 2020= Holland; 2030= catch-up USA.
5. MALAYSIA	. Two stages of industrialization: 1950-1990= shortened industrialization; 1991-2020= a developed country.
6. INDONESIA	. Early tranformation from planned to market economy. . Two long-term industrial plans: 1965-1993 = formulation of industrialization bases; 1994-2018= a developed country.
7. CHINA	. Transformation form planned to market economy. . Four modernizations, including industrial modernization.
8. INDIA	. High self-reliance. . Mixed economy: half planning -- half market; half import-substitution -- half export- orientation. . Reform or liberalization (since 1991).

CHART VIII: INDUSTRIALIZATION ENHANCING COMPARATIVE ADVANTAGES

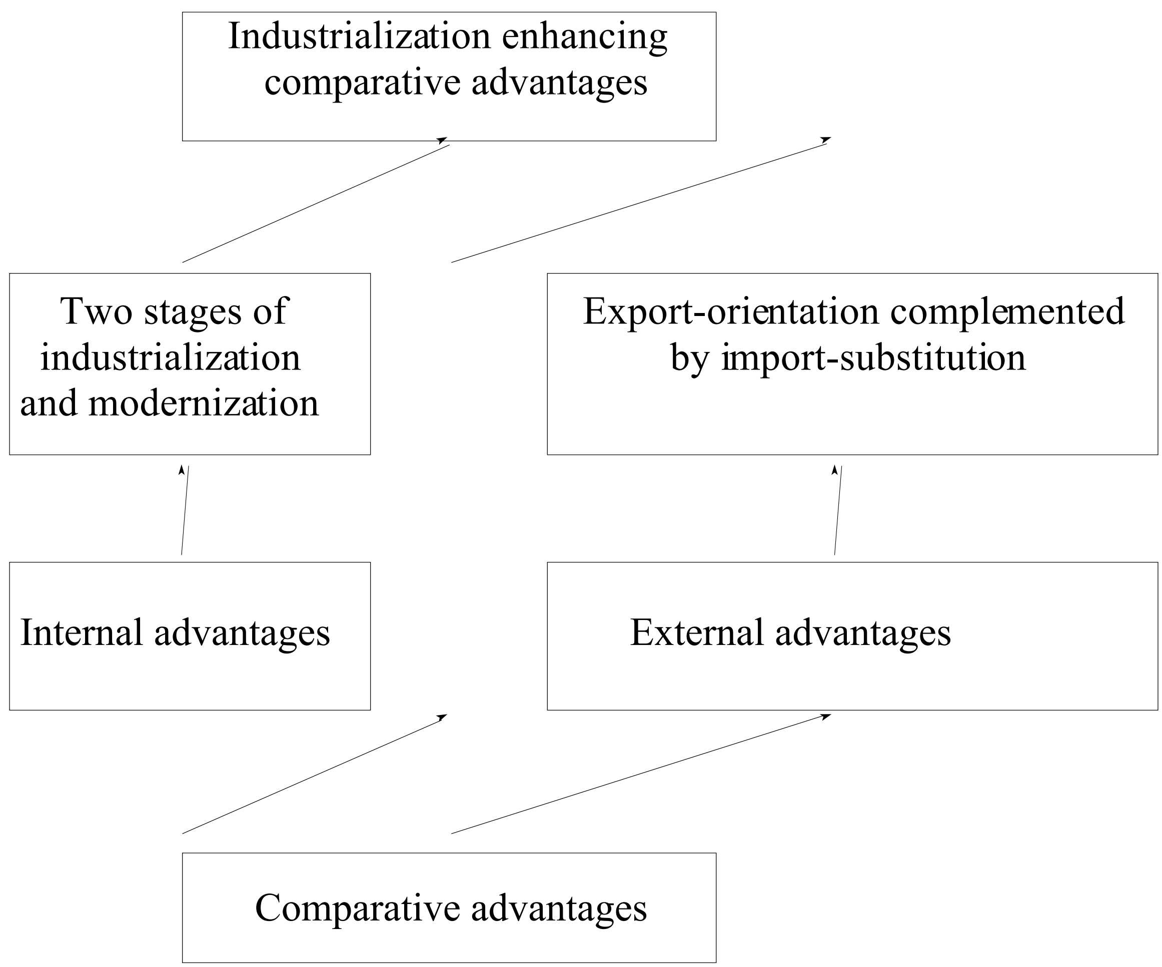


CHART IX: SUSTAINABLE INDUSTRIALIZATION

1. Export-orientation complemented by import-substitution.
2. Two stages of industrialization and modernization.
3. Formulation of development motivations.
4. Development of human resources.
5. Protection of the environment.