

The Comparative-advantage-following Strategy

To catch up with and even surpass the economic development level of advanced countries is the aspiration of the political and social elite of almost all backward economies. However, most economies that attempted to do so through the adoption of the leap-forward strategy ignored their own development stages and their comparative advantages in factor endowment. Consequently, instead of achieving their goals, they were overwhelmed by various difficulties. The problems they encountered included increasing poverty in rural and urban areas, persistent high inflation rate, and unbalanced economic structure. If the leap-forward strategy were the only choice, and if there were no instances of a backward economy catching up with a developed one by implementing another strategy, we could not conclude that the leap-forward strategy is an ineffective one. Under those conditions, we could only say that implementing the leap-forward strategy, and suffering the ensuing consequences, was inevitable.

However, some developing countries and regions that did not adopt the leap-forward strategy experienced rapid economic growth. Japan was the first, followed by South Korea, Singapore, Taiwan, and Hong Kong. Although these economies started from the same stance as other developing countries, their performance over the past several decades has been unique. They have become models for high and sustainable economic growth; their achievement have become known as the "East Asian Miracle".¹ What are the differences between the development

1. The World Bank, *The East Asian Miracle: Economic Growth and Public Policy*. New York: Oxford University Press, 1993.

strategies in these economies and the leap-forward strategy? What new knowledge can the performance of these countries contribute to the economic development theory? In this chapter we try to answer these questions.

4.1 Different Interpretations of the East Asian Miracle

Like most other developing economies, after World War II, Japan and the four Little Dragons were at a low level of economic development. In the 1950s, the Little Dragons' industrialization level was very low, and they had almost no capital or foreign reserve. Their per capita GNP was only about US\$100. However, over the next 20 to 30 years, these economies experienced fast and sustained growth. They gradually developed their capital- and technology-intensive industries and emerged as newly industrialized economies, ranking among or near advanced economies in terms of per capita income and industrial structure.

It is useful to examine the four Little Dragons' pace of development during their period of economic takeoff² and their growth rates in the following decade. From 1965 to 1973, South Korea, Singapore, and Hong Kong recorded an average annual GDP growth of 10.0%, 13.0%, and 7.9%, respectively. During this period, Taiwan's GNP rose by 11.0% per year, but the average annual growth rate was only 5.6% for low-income countries, 6.8% for lower-middle income countries or regions, 7.7% for upper-middle income countries, 9.0% for high-income oil-exporting countries, and 4.7%

2. Basing his calculations on the economic take-off precondition that the average saving rate is higher than the product of capital output ratio and the population growth rate, Jiang Shuojie estimates that the four Little Dragons' economies all took off in the mid-1960s. See "Economic Take-off of the Four Little Asian Dragons", *Taiwan China Times*, 29 March 1984. Using the "turning point" analysis method of John Fei and Gustav Ranis, we can also estimate the economic growth acceleration or the so-called take-off period (John Fei and Gustav Ranis, *Development of the Labor Surplus Economy: Theory and Policy*. Homewood, III: Richard D. Irwin, Inc, 1964).

for industrialized market economies. In the following 11 years (i.e., from 1973 to 1984) South Korea, Singapore, and Hong Kong recorded an average annual GDP growth rate of 7.2%, 8.2%, and 9.1%, respectively, and Taiwan had a GNP growth rate of 7.8%. During the same period, the average annual growth rate was 5.3% for low-income countries, 4.2% for lower-middle-income countries or regions, 4.5% for upper-middle-income countries or regions, 4.5% for high-income oil-exporting countries, and 2.4% for industrialized market economies.³ It is worth noting that during the period of rapid development in these countries, the income distribution was relatively equal. At the same time, their economic structures and indices for social welfare improved significantly.

How did Japan and the four Little Dragons achieve such rapid economic development? Scholars have offered a number of different explanations. Some have presented explanations that go beyond economic factors. One such theory explains the phenomenon in a cultural perspective. For example, it holds that Japan and the four Little Dragons are deeply influenced by Confucianism. Since Confucianism stresses hard work and thrift, it has contributed to economic success in these countries.⁴ If this were the case, why is it that these countries and regions, which have been under the influence of Confucianism for thousands of years, had not led the world in modernization and economic development since the 16th or 17th century? Moreover, why have some countries influenced by Confucianism not achieved any economic success to date? At the same time, why have many countries with no connection to Confucianism achieved economic modernization long ago?⁵

3. The World Bank, *World Development Report, 1986*. Beijing: China Finance and Economics Press, 1986, p.183; Fu Zhengluo, et al., *The Four Little Asian Dragons and the Export-oriented Economy*. Beijing: China Foreign Trade Press, 1990, pp. 34–35.

4. An example is: Jin Yaoji, "An Explanation of the East Asian Economic Development from a Cultural Perspective", *Information Newspaper Finance and Economy Monthly*, No. 11 (1987).

5. China is the country most deeply influenced by Confucian culture. But the fact that China has had a backward economy since 1840 shows that China's economic development was not benefited by such a cultural tradition. In fact,

Some scholars offer a different explanation from the geo-political perspective. They hold that during the Cold War, the United States and other Western countries invested heavily in and provided financial assistance to Japan and the four Little Dragons to offset the influence of socialist nations. During this period, the United States was willing to transfer knowledge and skills and open its market to Japan and the four Little Dragons.⁶ However, the West patronized many economies during the Cold War, not just the Little Dragons. If the geo-political scholars' explanation were correct, it should follow that the Philippines and a good number of Latin American countries would be economically successful by now. On the contrary, these countries are clear-cut failures in terms of their economic development. It is therefore safe to conclude that political factors resulting from the Cold War were at most auxiliary contributors to Japan's and the Little Dragons' economic success.

Explaining these countries' success from an economics perspective has attracted the attention of many economists. We can organize their viewpoints into three categories. The first is represented by the World Bank economists.⁷ They hold that the economic success in these countries can be directly attributed to their free market economy, smaller price distortions, and the proper and efficient allocation of resources. However, this explanation focuses on the

some cultural extremists, ashamed of China's backwardness and history of being bullied, have demanded that Confucianism be eradicated. So it is clear that Confucian culture can neither explain the Joseph Needham Puzzle nor answer the question of how the East Asian miracle occurred, just as this interpretation is invalid in the case in which Max Weber explained the well-known "Weber's Conjecture" in his work *The Protestant Ethic and the Spirit of Capitalism* (London: Harper, 1991).

6. For example, S. Haggard, "The Politics of Industrialization in the Republic of Korea and Taiwan", in H. Hughes, ed., *Achieving Industrialization in Asia*. Cambridge: Cambridge University Press, 1988, p. 265; J. E. Woo, *Race to the Swift: State and Finance in Korean Industrialization*. New York: Columbia University Press, 1991, p. 45.
7. The World Bank, *The East Asian Miracle: Economic Growth and Public Policy*. New York: Oxford University Press, 1993; William E. James, Seiji Naya, and Gerald M. Meier, *Asian Development: Economic Success and Policy Lessons*. San Francisco: ICS Press, 1987.

ideal while ignoring deviations from it. Serious observers will notice that government interventions as well as barriers to competition and even price distortions and trade protectionism exist in these economies. For example, authorities in Taiwan, South Korea, and Japan have all adopted import quotas and licenses, credit subsidies, tax concessions, and state ownership to cultivate and protect their infant industries.

Alice Amsden of the Massachusetts Institute of Technology and Robert Wade of the London School of Economics and Politics represent a different perspective. Both hold that the success of Japan and the four Little Dragons should be attributed to their governments' interventions that deliberately distorted prices, limited the role of the market, and implemented policies that support strategic industries.⁸ It is true that such interventions do exist in these countries. However, although some countries with government interventions and price distortions have succeeded, many more have failed. As we have already shown, the economic failure of countries that adopted the leap-forward strategy shows that this explanation is not convincing.

Another hypothesis attributes the success of Japan and the four Little Dragons to their export-oriented development policy. With such a policy in place, a country or region must be internationally competitive and thus efficient.⁹ According to this view, international trade is crucial to successful economic development. However, it is questionable whether the outward economy is the consequence or the cause of economic development.¹⁰ If it is the cause, a country should

8. Alice H. Amsden, *Asian's Next Giant: South Korea and Late Industrialization*. Oxford: Oxford University Press, 1989; C. Johnson, *MITI and the Japanese Miracle*. Stanford: Stanford University Press, 1982; Robert Wade, *Governing the Market: Economic Theory and the Role of Government in East Asian Industrialization*. Princeton: Princeton University Press, 1990.

9. Anne O. Kruger, *Economic Policy Reform in Developing Countries*. Oxford: Basil Blackwell, 1992.

10. Francisco Rodriguez, and D. Rodrik, "Trade Policy and Economic Growth: A Skeptic's Guide to the Cross-national Evidence", in B. Bernanke and K. Rogoff, *NBER Macroeconomics Annual 2000*. Cambridge, MA: MIT Press, 2000.

implement a development policy that encourages export at any cost, so as to raise the proportion of foreign trade in the economy. In fact, many countries that adopted a leap-forward strategy viewed an export-stimulating policy as necessary at a certain stage of development. However, because they had distorted prices and foreign exchange rates and used direct subsidies to encourage export, the resources were misallocated and their economies ran into serious problems. Recent economic research also finds no significant connection between the proportion of exports and the increase in an economy's total factor productivity.¹¹

4.2 An Alternative Development Strategy

Any effective theory must be on the one hand logically coherent and on the other able to withstand empirical tests. The explanations presented above undoubtedly touch on some aspects of the success in Japan and the four Little Dragons, but they fail to reveal its essence. In addition, they are contradictory in nature, and their strengths are offset in the contradiction. Therefore, we offer here a theory that attempts to encompass all the aforementioned explanations.

The experiences of Japan and the four Little Dragons indicate that economic development is a gradual process. One distinct difference between their process and that of the leap-forward strategy is that, during every stage of economic development, the former make good use of their comparative advantages, determined by their factor endowments. Table 4.1 shows that at different development stages, because of different endowment structures, their key industries changed. In all of them, however, it held true that with economic development, capital accumulation and per capita capital availability increased, and the endowment structure improved. The leading industries then shifted from labour-intensive to capital-intensive

11. Robert Z. Lawrence and David E. Weinstein, "Trade and Growth: Import-led or Export-led? Evidence from Japan and Korea", in Joseph E. Stiglitz and Shahid Yusuf, eds., *Rethinking the East Asia Miracle*. Oxford: Oxford University Press, 2001; D. Rodrik, *The New Global Economy and Developing Countries: Making Openness Work*. Washington, DC: Overseas Development Council, 1999.

and technology-intensive, and finally became more information-intensive.

Neither Japan nor any of the four Little Dragons have ever articulated a development strategy. However, with the exception of Hong Kong, all these economies attempted to implement an import-substitution strategy or emphasized heavy and chemical industries during the early periods of their development. If they had continued along that path, the East Asian Miracle may never have occurred. However, these economies were different from other developing countries and regions. Early on, the former became aware of the heavy costs incurred by the leap-forward strategy, and abandoned it accordingly. They developed labour-intensive industries based on their comparative advantages in factor endowment which fully explored their comparative advantage and resulted in the increasing export and outwardness of the economy. Since the key industries, at every stage of their economic development, were consistent with their comparative advantages at the time, we call this "comparative-advantage-following strategy".

Why were Japan and the Little Dragons able to give up the leap-forward strategy early on? Economists have come up with various answers to this question. Compared with other economies that retained the leap-forward strategy, the per capita natural resources of Japan and the Little Dragons were very limited and their populations relatively small. The leap-forward strategy is highly inefficient and costly. Two factors determine how long an economy can sustain a leap-forward strategy: the amount of per capita natural resources and the population size. The extent to which natural resources can be exploited at little costs determines how long an economy can sustain an inefficient development strategy. The population size determines the average amount of costs that need to be shared per person. A relatively small population cannot sustain the waste of resources for long.

The leap-forward strategy in the early period of their development brought Japan and the four Little Dragons face to face with an increasing fiscal deficit, an imbalance in foreign trade, and high inflation. Because of these, the governments were forced to give up

Table 4.1 Key Industries in Different Development Stages of Japan and the Four Little Dragons

	Japan	South Korea	Taiwan	Hong Kong	Singapore
Textile	1900–30s, 1950s		1960s and 1970s	Early 1950s	Early 1960s and 1970s
Garment	1950s		1960s	1950s and 1960s	
Toy, watch, shoe			1960s and 1970s	1960s and 1970s	
Refinery		Early 1960s (promoted)			
Iron and steel	1950s and 1960s	Late 1960s and early 1970s (promoted)			
Chemicals	1960s and 1970s	late 1960s and 1970s			
Ship building	1960s and 1970s	1970s			
Electronics	1970s	Late 1970s and 1980s	1980s		1970s
Automobile	1970s and 1980s	1980s			
Computer and semi- conductor	1980s	Late 1980s			
Bank and financing				Late 1970s and 1980s	1980s

Data source: Takatoshi Ito, "Japanese Economic Development: Are Its Features Idiosyncratic or Universal?" Paper presented at the XIth Congress of the International Economic Association at Tunis, 17–22 December 1995.

the intervention policy, and enterprises were allowed to develop spontaneously. Enterprises, to achieve maximum profits, chose the technology and industries that were consistent with the comparative advantages of their economies. These economies did not deliberately select the comparative-advantage-following strategy as a policy guideline; rather, it developed on its own after the leap-forward strategy had failed. Other economies that still adhere to the leap-forward strategy will surely benefit from this experience.

The early Mercantilism School, the German historian school of economies, the Hoffman Law School, the advocates of development strategy after the World War II, and practitioners of the leap-forward strategy¹² — all viewed differences in industrial structure and technological structure as the fundamental difference between advanced and backward economies. Upgrading the industrial and technological structures of an economy was viewed as equivalent to economic development.¹³ Therefore, in the eyes of those who believed in the Big Push Theory or the Core-Periphery Theory, in the heavy-industry-oriented strategy or the import-substitution strategy, such upgrades were seen as equating economic development and as being the key to overtaking advanced economies. To upgrade their industrial and technological structures, these countries or regions mobilized their limited resources to support the development of one or two capital-intensive industries.

The problem is that the upgrade of industrial and technological

12. In the 1980s, the World Bank invited those economists and critics that had been famous for their economic development theories and policy suggestions to review the implementation result of their theories. The review was published under the title: G. M. Meier and D. Seers, *Pioneers of the Development Economics* (Beijing: Economic Science Press, 1988).

13. The followings are the typical remarks: "The inevitable prerequisite of development is industrialization" by E. A. Preobrazhensky, quoted in John Eatwell, Murray Milgate and Peter Newman, eds., *The New Palgrave: A Dictionary of Economics*, Vol. 3. Beijing: Economic Science Press, 1992, p. 1001; and "The development of heavy industry is the synonym of industrialization" by Jawaharlal Nehru, quoted in Sun Peijun, ed., *The Comparative Research on the China's and India's Economic Development*. Beijing: Beijing University Press, 1991, p. 51.

structures is an endogenous variable in the economic development process. In other words, it is only the outcome of development or the result of change in an economy's factor endowment structure. The factor endowment structure refers to an economy's relative abundance in natural resources, labour, and capital. Natural resource endowment is usually fixed, and the increase in the labour endowment is determined by population growth, with small differences (usually 1–3%) from country to country. The only factor endowment that can vary greatly is capital. Some countries on the average enjoy an annual growth rate of 20–30% in capital accumulation, while others see an average of 10% or even less. If these differences remain for a long period, say for a century, the impact will be enormous. Hence, when we speak of upgrading the factor endowment structure we are referring to the increase of relative capital abundance.

Severe lack of capital characterizes an economy's early stage of development. When the development of heavy industries was promoted by price distortion and other administrative measures, limited capital could be channeled to a few industries. At the same time, however the development of other industries had to be suppressed. Several problems arise as a result.

First, the development of a few industries at the cost of overall economic performance cannot help to upgrade the factor endowment structure or improve the overall economy. Protected industries, which are not viable in a competitive market, produce little economic surplus, while suppressed industries lack sufficient capital to develop and thus cannot produce the necessary surplus for capital accumulation. Under such circumstances, the factor endowment structure cannot be upgraded. The former Soviet Union, for example, mobilized resources through mandatory planned measures to develop its military industry and space industry so that it could compete with those in the United States. Soviet industrial output value was also high compared with that of advanced economies. However, the former Soviet Union's per capita GNP, which indicates a country's overall strength and factor endowment structure, lagged behind the per capita GNPs of the United States and other advanced capitalist

countries. More importantly, the former Soviet Union also lagged far behind in industries for consumer goods. Living standards have remained at a low level for a long period.

Second, industries supported by the leap-forward strategy could survive only when prices were distorted and the state policy remained protective. They could grow only in a noncompetitive environment and could show positive changes in industrial structure only from a statistical perspective. They were doomed to be inefficient and noncompetitive. The difficulties currently faced by China's SOEs, especially those in capital-intensive industries, illustrate this point.

Third, under the leap-forward strategy, the distorted industrial structure ran against China's comparative advantage of abundant labour resources. This distorted industrial structure suppressed the absorption of the labour force; thus most people could not enjoy the benefits of economic development on an equal basis. Consequently, a large number of people remained in poverty.

Fourth, the leap-forward strategy often focuses on the gap in frontier technologies between developing and advanced economies, aiming at reaching advanced countries' technological level. However, as the factor endowment structure cannot be changed, a high concentration of capital in some industries can lead only to less capital in others, so the overall gap between developing and advanced economies in the areas of capital and technology cannot be narrowed under such a strategy.

To sum up, true economic development does not mean isolated growth in certain heavy industries but rather the increase of the overall strength of a state. A backward economy should focus on upgrading its factor endowment structure or on increasing per capita availability of capital. Industrial structural transformation, improvement in technology, and the increase of per capita income are the spontaneous outcomes of the economic development process.

Because Japan and the four Little Dragons were restrained by their per capita natural resources and population sizes, they were not able to sustain the development of a few industries at the heavy cost of most other industries. Therefore, they gave up the leap-forward

strategy very early. Their enterprises then developed labour-intensive industries based on their comparative advantage of abundant labour endowment. This in turn enhanced the factor endowment structure. Greater per capita availability of capital sped up the improvement of the industrial and technological structure, thus placing Japan and the four Little Dragons among the advanced economies. The principle of comparative advantage is suitable not only for economies with abundant labour but also for those rich in natural resources.

It is very instructive to compare Australia and New Zealand with Argentina and Uruguay. In the late 19th and early 20th centuries, these countries shared the same level of economic development. In Australia and New Zealand, which took advantage of their comparative advantages in rich natural resources, manufacturing accounted for only 15% and 18% of the GNP, respectively, in 1991 — which were much lower than those of the other developed countries. Nevertheless, the countries' high per capita GNPs, US\$17,050 and US\$12,350 respectively, ranked them among developed countries. On the contrary, Argentina and Uruguay, which followed the leap-forward strategy, enthusiastically developed their manufacturing industries (35% and 25% in proportion to their respective economies). Their per capita GNP, however, stood at only US\$2,790 and US\$2,840, respectively, in 1991.¹⁴

The experiences of Japan and the four Little Dragons show that the comparative-advantage-following strategy is the key to economic success for developing economies. Understanding how this strategy works can help us understand these countries' experiences and thus understand the reason for the failure of the leap-forward strategy.

14. Argentina's manufacturing's proportion is a 1984 figure. All other figures are 1991 figures. (The World Bank, *World Development Report, 1993*. New York: Oxford University Press, 1993, p. 243; The World Bank, *World Development Report, 1989*. New York: Oxford University Press, 1989, p. 209.)

4.3 Comparative Advantage and Upgrading the Factor-endowment Structure

Economic development requires a change in the factor endowment structure (i.e., an increase in the relative abundance of capital in the factor endowment). Capital comes from accumulation, and the accumulation of capital is determined by the scale of economic surplus, which in turn depends on the performance and the characteristics of production activity. If the industrial and technological structures of an economy can make full use of its comparative advantage in existing factor endowment, the economy will enjoy low production costs and become highly competitive. It will also accumulate more capital. There are two types of production activities: social production activity and private production activity. Social production activity can increase the total products or services available in society, while private production activity can increase personal incomes but not necessarily the products and services of the society. One of the main reasons for the inconsistency is rent-seeking. For example, if the government sets a production quota on a product, the domestic manufacturers will gain higher profits from this product. Manufacturers will thus take various measures to persuade government officials to set up and implement such production control. These types of activities consume social resources to effect personal gains without adding to social output. They are beneficial to individuals but detrimental to society. If each individual's private production activity is equivalent to his or her social production activity, there will be more social output and more accumulated surplus. In this section we try to show that if an economy can tap the full potential of its comparative advantage, private and social production activity will be in agreement.

In addition, the accumulation level is determined by saving propensity. The higher the saving propensity, the greater the increase of capital, and the faster the factor endowment structure is upgraded. If a developing economy can make full use of its comparative advantage, the marginal return to capital will be high and the saving propensity will be high as well. The traditional economic growth

theories also emphasized the importance of capital accumulation, even to the extent that the savings rate and the investment rate are the key determinants of economic development.¹⁵ An important issue that the traditional economic growth theory failed to address is that of how to increase total social surplus, make all activities productive and competitive from a social viewpoint, and raise savings rate.

Theoretically, how can a country fully exploit its comparative advantage? According to the Heckscher-Ohlin Model,¹⁶ if a country enjoys abundant labour resources, then its comparative advantage lies in labour-intensive industries. Taking this advantage into account, it will make an effort to develop light industries, or labour-intensive industries. Since the production process in such industries requires cheap labour, such industries will become competitive and profitable, and the amount of surplus that can be used for accumulation will be large.

To induce correct responses to the economy's comparative advantage in production, it is necessary to have a factor-price structure that can fully reflect the relative abundance of each factor in the endowment structure. That is, when labour is relatively abundant, labour should be relatively inexpensive; whereas if capital is relatively abundant, capital should be relatively inexpensive. If the factor price structure of an economy can fully reflect the relative scarcity of all the factors, enterprises will automatically adjust so that they can use as many cheap productive factors as possible. Relative scarcity is accurately reflected as a result of market competition, not of government intervention or of a planned mechanism. It is thus reasonable that World Bank economists attributed the economic success of the four Little Dragons to the role of the market.

15. See Roy F. Harrod, "An Essay in Dynamic Theory", *Economic Journal*, Vol. 49, No. 193 (March 1939), pp. 14–33; Evsey Domar, "Capital Expansion, Rate of Growth, and Employment", *Econometrica*, Vol. 14, No. 2 (April 1946), pp. 137–47. Robert M. Solow, *Growth Theory: An Exposition*. Oxford: Oxford University Press, 1988.

16. Bertil Ohlin, *Interregional and International Trade*. Cambridge, MA: Harvard University Press, 1968.

Japan and the four Little Dragons are market economies, and, as previously mentioned, their governments abandoned the leap-forward strategy at an early stage. The prices of products and factors in these countries are basically determined by market supply and demand and thus reflect the relative scarcity of various factors. In its product and technology choice, an enterprise will thus take into consideration the economy's comparative advantages at each development stage. In addition, the prices, determined by market competition instead of government, can reduce rent-seeking in the society. Therefore, enterprises and individuals can increase their revenues and incomes only through the improvement of technology and management. Hence, private productive activity is in line with social productive activity. Meanwhile, in developing countries, capital is a scarce factor. The price of capital, or the interest rate, will be high if it is determined by market competition. At the same time, the interest rate is the relative price of current consumption and future consumption. A higher interest rate means a relatively high price for current consumption and a lower price for future consumption, so naturally current consumption will be curbed, and saving propensity will be enhanced.

A competitive market system requires a flexible and effective financial market. In the early stages of development, capital is the scarcest factor, so market interest rate should be relatively high. This encourages saving and conserves the use of capital. Only efficient and profitable enterprises (i.e., those that make the best use of the comparative advantage) can afford to pay such a high price of capital. Therefore, in an economy in which labour is plentiful and capital is scarce, a flexible and effective capital market can guarantee that capital is allocated to labour-intensive enterprises and industries so as to exploit the comparative advantages to the greatest extent.

A competitive market system also requires a competitive labour market. As labour is a relatively abundant production factor in the early stage of development, compared with interest rate, the wage rates for labour should be relatively low. So that enterprises choose to use cheap labour instead of expensive capital, which also helps realize maximum employment of the large workforce.

Finally, a competitive market system requires a competitive and well-developed product market. Dwight Perkins has identified five conditions for the market mechanism to function well:¹⁷ (1) prices are stable, so manufacturers depend on production and sales for profits instead of on speculation; (2) products are distributed through market channels and not by government agencies; (3) prices should reflect relative scarcity in the economy; (4) competition exists, and manufacturers are price takers; and (5) production decision-makers act according to market rules, they make profits by reducing costs and increasing sales, and not by subsidy or monopoly. The major reason that the comparative-advantage-following strategy can speed up economic development also depends on the above aspects of the market mechanism.

Because prices for products and production factors are determined by competition, they can reflect supply, demand, and relative scarcity. Enterprises, based on such prices, can understand the demand and supply situation and the relative scarcity of products and factors, take corresponding measures, and choose product mix and technology based on market demand and resource endowment. From the viewpoint of the whole society, the result of such product and technology choice leads to the industrial and technology structures that are in line with the specific factor endowment.

In a free competitive economy where prices for products and factors are not distorted, an enterprise has to look for cheaper input, new markets, to improve operation and management, and to apply proper technology and other methods to bring about technological innovations in its pursuit of survival and development. Therefore, the enterprise must pay close attention to market conditions, to take advantage of appropriate technologies in production. At the same time, it must do research and forecast future market trends and

17. Dwight H. Perkins, "China's Gradual Approach to Market Reform". Paper presented at the "Conference on Comparative Experience of Economics Reform and Post-Socialist Transformation", EL Escorial, Spain, 6-8 July 1992.

predict where the economy's future comparative advantage lies. Making use of the existing comparative advantages can speed up economic development. Capital can accumulate much faster than the increase of labour and natural resources. Therefore, capital becomes relatively abundant, and its price becomes relatively low. In addition, to be competitive, enterprises must adjust their industrial and technological structures based on the changes of relative prices; thus dynamic comparative advantages can be achieved.

For an economy with relatively abundant labour endowment, implementing a comparative-advantage-following strategy enables it not only to achieve efficient growth through the utilization of static and dynamic comparative advantages but also to realize full employment. With economic growth, labour becomes relatively scarce, and wages increase steadily. The work force can continue to benefit from economic growth. As long as the leap-forward strategy is in place, priority is given to capital-intensive industries, the employment level falls, and wages remain suppressed for long periods. The work force cannot share the benefits of growth. Therefore, the comparative-advantage-following strategy is preferable to the leap-forward strategy because the former enables an economy to achieve equity and efficiency at the same time.

In a fully competitive market system, a manufacturer's profits or losses are determined solely by whether or not it can quickly and accurately react to market signals. According to research, direct efficiency losses in resource allocation caused by distorted prices are not the only social welfare losses caused by the policy environment, because rent-seeking can cause an even more severe indirect efficiency loss. In a macro-policy environment where prices are determined by the market, there is no opportunity for rent-seeking; hence the waste of social resources and related institutional problems are avoided.

In such an institutional environment, every enterprise and even the whole economic structure can make full use of the economy's comparative advantage. The international and domestic competitiveness of products will be high. Meanwhile, the comparative-advantage-following strategy will make it easier for the economy to

discover and realize their comparative advantage through foreign trade and to improve the competitiveness of domestic industries and enterprises accordingly. Therefore, the economy will be outward oriented. We can see that the export-oriented aspect of Japan and the four Little Dragons is an important factor in their economic success. However, it is actually the consequence of the development that follows comparative-advantage-following strategy rather than the cause of the success.

4.4 The Government's Role in Economic Development

The government's role in economic development is also part of the comparative-advantage-following strategy. What role the government can play in economic development and how it can help boost such development has long been a topic of discussion in economic and political circles.

The economic success of Japan and the four Little Dragons can be used to support neoclassical economic theories, which stress the market and the individual contribution of entrepreneurs and oppose government intervention. However, these countries' success can also be used to highlight the effectiveness of government intervention — in the form of industrial policy. Arthur Lewis' comments show both sides of the point. "No country has made economic progress without positive stimulus from intelligent government, ... On the other hand, there are so many examples of the mischief done to economic life by government that it is easy to fill one's pages with warnings against government participation in economic life." To be more exact, "the failure of government might be that it does not do enough of what it should do or that it does too much of what it should not."¹⁸

The comparative-advantage-following strategy can help us understand that government does have a role to play in economic development. At the same time, the strategy can help us identify the

18. Arthur Lewis, *The Theories of Economic Growth*, Shanghai: Shanghai Sanlian Bookstore and Shanghai People's Press, 1994, pp. 475–576.

proper boundaries of government's functions. We can see the government's roles in the comparative-advantage-following strategy by comparing this strategy with the leap-forward strategy. For a government to adopt the leap-forward strategy, it must intervene in the economy and distort price signals and the function of market to support the development of non-viable industries. Thus, such governments' inappropriate interventions hamper economic development, usually with disastrous results.

Under the comparative-advantage-following strategy, a government must ensure that the market is given full play and that price signals are correct. Therefore, the role of government is, first of all, to maintain the competitive nature and rules of the market. The government's economic functions should include the following:

- (1) Formulating market rules and implementing anti-monopoly laws. This is crucial to guarantee that market mechanism is given full play in resource allocation. When the market is monopolized, price signals and comparative-advantage information is distorted, and the enterprise cannot make investment decisions according to comparative advantage. In this sense, the government's function lies in protecting rather than eliminating market competition and protecting rather than eliminating the operation of price mechanism. In this way, the price mechanism can fully play its role in resource allocation.
- (2) Adopting independent monetary policy and fiscal policy to reduce the adverse impact of economic fluctuation. When price mechanisms adjust production and consumption, economic fluctuations are inevitable, and manufacturers will suffer. When such cyclic fluctuations occur, information about market demands will be in disarray and the enterprises will be hard to digest the information and respond appropriately. The government thus could adopt anti-cyclic fiscal and monetary policies. Obviously, such policies would not deny the role of market competition and of the price mechanism.

- (3) Investing in some industries with externalities. These include industries that require large-scale initial investments and that take a long time to build, and those with positive externalities, such as infrastructure, education, health care, transportation, and energy. Such participation helps build the infrastructure necessary for social and economic activities, reduces transaction costs for economic activities, and smoothes the operation of the market mechanism.

At the early stages of economic development, a country's comparative advantages usually lie in land and labour-intensive products, such as agricultural products. As capital accumulates and labour increases, land becomes relatively scarce. Labour-intensive farming (e.g., farming of flowers, fruits, vegetables) and some manufacturing industries (e.g., the textile industry, the shoe-making industry, the electrical-home-appliances-assembly industry) gain a comparative advantage. With further economic growth, labour becomes relatively scarce, and its cost increases steadily, while capital become relatively abundant and cheap. Capital- and technology-intensive industries become the economy's comparative advantage. The more effectively an economy exploits its comparative advantage, the faster economic growth and capital accumulation takes place, and the faster comparative advantage shifts to capital-intensive industries.

Therefore, if a country takes advantage of its comparative advantages, the bottlenecks caused by scarce resources will ease. This will lead to more rapid upgrading of the endowment structure. As a result, speedy changes in industrial and technological structures will take place. The fact that adopting the comparative-advantage-following strategy can speed up the upgrading of industrial and technological structures makes government's roles more complicated. In addition to the maintenance of law and order in the market, the government has a lot more to do, especially in the formulation and implementation of its industrial policy. The following is a summary of the nature and content of industrial policies under a comparative-advantage-following strategy, and of the difference

between these policies and the industrial policies in a planned economy with the leap-forward strategy in place.

First, as the endowment structure of a country changes, so do the industrial and technological structures. In order to upgrade the industrial structure, both entrepreneurs and the government need information about the technology and sectors that can make full use of the economy's new comparative advantages, about the market potential of a new product, and about the economy's possible competitors. However, most information is a quasi-public good. Although the enterprise has to spend some resources to acquire the information, once the information is obtained, the cost of sharing it with other enterprises is almost zero. The best solution is thus for the government to make the information known to all enterprises. In addition, information gathering, processing, and distribution display economies of scale. The government should thus gather, process, and make the information available to enterprises in the form of an industrial policy so that enterprises can use the information as a reference in their technology and industrial selection. The main distinguishing feature of industrial policy under the comparative-advantage-following strategy is that the policy provides enterprises with options rather than telling them what to do and how to do it.

Second, the government should act to improve social infrastructure and coordination. When the endowment structure upgrades, industrial structure also need to be upgraded; the latter usually requires investments in many related activities. Because of limited capital and because of the existence of risks and externalities, individual enterprises cannot invest in all activities. Uncoordinated investment activities may miss the optimal social investment opportunities. For example, when the agriculture-dominated industrial structure upgrades to a light-industry-dominated structure, education, transportation, commerce, the distribution network, and import and export facilities need to be adjusted accordingly. When the light-industry-dominated industrial structure upgrades to a capital- and technology-intensive structure, adjustments should be made accordingly in education, scientific research, and capital

markets. An individual enterprise cannot do all these. The government's role is to decide on the direction of the efforts and to provide information on the steps to be taken. The government should also assist individual enterprises and coordinate the investment activities of various enterprises. Since government guidance is coordination according to the changes in endowment structure, rather than being mandatory or distorted, serious policy mistakes will not ensue.

Finally, the government should provide a certain amount of financial support to compensate for the externalities faced by enterprises when they upgrade their technology and industry. The upgrading of technology and industry is a type of innovation. Just like any innovation, enterprises that follow the government's industrial policy and make technology and industry upgrading face externalities. That is, as the government is not always right, enterprises following the government's industrial policy can either succeed or fail. If they succeed, other enterprises will follow suit, and the above-normal profits will soon disappear. If they fail, other enterprises will take care to avoid similar mistakes. The costs that innovating enterprises pay thus benefit all other enterprises. Whether the innovative enterprises succeed or fail, their experience are valuable to society. If the government does not compensate such enterprises, the overall amount of innovation will be less than the optimal level. Thus, governments should encourage innovative investment through tax reductions, exemptions, or interest subsidies.

Similarly, such government interventions are implemented with changes in the endowment structure. The supported industries are viable. Subsidies are used to compensate for the externalities of innovation efforts, and the scope and size of subsidies are limited. Therefore, these subsidies are different from those under the leap-forward strategy, where subsidized enterprises are not viable.

If the government is limited to activities tied to economies of scale (such as sharing information) and providing subsidies for externalities in innovation, it is necessary and effective. Those that attribute the success of Japan and the four Little Dragons to government intervention are partially correct. However, they fail to consider that

such government interventions were intended to compensate for the externalities — quite a different scenario from the one in which intervention were implemented under the leap-forward strategy.

In sum, the success of industrial policy depends on two things: first, the policy should provide information about the changing trends in comparative advantage, and second, the policy's target should not be too far away from existing comparative advantages. In the late 19th century, Germany overtook Great Britain and France with its "Blood and Iron" policy. This is often cited as an argument to support government intervention. It is worth pointing out, however, that Germany made the move when its factor endowment, comparative advantages, and level of economic development were similar to those of Britain and France.¹⁹ In the 1950s, when Japan formulated a strategy to develop its heavy industries, its per capita GNP had reached one-fourth that of the United States.²⁰ Japan began with relatively labour-intensive type of heavy industries, such as ship building and steel. The experiences of Japan and the four Little Dragons, along with the lessons of socialist and Latin American countries, show that the target of government industrial policy should be to encourage the development of industries consistent with the economy's comparative advantages in the short run. If the objective is too lofty, relative prices of production factors have to be distorted. When the objective is relatively short-term and foreseeable, the government's role will be market conforming instead of market distorting.

Focusing on short-term comparative advantages can save the government from spending too much on the intervention itself. The government has limited administrative resources. If it is mired in direct intervention and in making decisions for enterprises, other areas of policy will suffer. The focus on short-term comparative

19. In 1870, per capita GDP in Germany was 60% of that in Britain and a bit higher than that in France. See Angus Maddison, *Monitoring the World Economy, 1820–1992*. Paris: OECD, 1995, pp. 194, 196.

20. Angus Maddison, *Monitoring the World Economy, 1820–1992*. Paris: OECD, 1995, p. 197.

advantages will help to properly define the government functions, and government's influence on industry will result primarily from an exchange of information. This is the watershed between the industrial policies of East Asian economies and the leap-forward strategy of socialist and Latin American economies.

During Japan's and the four Little Dragons' economic development process, these countries' governments were characterized by two important features. First, the governments were small. The extent of government intervention can be judged by the proportion of central government expenditure in the GNP. In 1980 and 1992, the proportions were 18.4% and 15.8% in Japan, respectively, 20.8% and 22.7% in Singapore, and 17.9% and 17.6% in South Korea. In Latin American economies, the proportions were much higher; they were 29.1% and 22.1% in Chile, 20.9% and 25.6% in Brazil, and 29.0% and 22.5% in Bolivia.²¹

Second, the industrial policy implemented by Japan and the four Little Dragons was market-oriented and was implemented within a price-mechanism framework. The government did not intervene in enterprises' decision-making process but rather used informal persuasion techniques to effect change.²² The development of heavy industry in Japan is a good example. It is true that the Japanese government became too involved in the economic process for a period of time during the economic recovery after World War II.²³

21. The World Bank, *World Development Report, 1994*. New York: Oxford University Press, 1994.

22. Yujiro Hayami, "A Commentary on the 'East Asian Miracle': Are There Lessons to Be Learned — Review Essay", *Journal of the Japanese and International Economies*, Vol. 10, No. 3 (September 1996), pp. 318–25.

23. Nevertheless, the government had not distorted the market during this stage. In fact, in the 1950s, Japanese industrial development was based on comparative advantage. For instance, the textile, garment, and ship-building industries made full use of the country's rich labour resources. As a matter of fact, Japan's most successful industrial policy and development examples were not in the areas of iron, steel, or automobiles, as is commonly thought, but in ship building, and ship building was the industry that used rich labour resources in the 1950s, thereby aligning itself with Japan's comparative advantage in those years. (See M. Shinohara, *Industrial Growth, Trade, and Dynamic Patterns in the Japanese Economy*. Tokyo: University of Tokyo Press, 1982.)

However, in the early 1960s, Japan's industrial policy began to shift from direct intervention to guidance and indirect influence. The industrial planning of 1963, when heavy and chemical industries were selected as the keys to development, was a product of this shift.²⁴ In the early 1960s, Japan's per capita GDP was already more than one-third that of the United States. It had already passed the stage of insufficient capital, and was no longer at a comparative advantage for non-skilled labour-intensive industry. Under these conditions, Japan speeded up the development of its energy-intensive and material-intensive heavy and chemical industries in the 1960s. In the late 1960s, investments in factories and equipment increased by an annual average rate of more than 20%. Japan's industrial policy was thus formulated pragmatically. The government, industry and experts from the fields of science and technology worked together to create a dynamic vision of Japan's visible comparative advantages.

4.5 The Comparative-advantage-following Strategy and the Asian Financial Crisis

When people were still talking about Japan's and the four Little Dragons' miraculous economic ascent, the Asian financial crisis erupted, affecting all these economies. People may well ask whether a link exists between the financial crisis and the development strategies of Japan and the four Little Dragons. The answer begins with an explanation of the cause and progression of a financial crisis.

Financial crises are often directly linked to cross-border capital flow. It makes sense that money flows to areas that yield the greatest returns. When the economy is growing fast and projections are positive, investments and credit activities are naturally active. If an economy is healthy, investments can be reclaimed by increased production. Cross-border capital flow will not lead to a financial crisis. However, in Southeast Asia, Japan, and South Korea, there was a high non-performing loans ratio, which was the direct occasion

24. C. Freeman, *Technology Policy and Economic Performance: Lessons from Japan*. London and New York: Pinter Publishers, 1987.

for the financial crisis, and the high NPL ratio was mainly caused by the rupturing of the bubble economy and the wrong industrial development policies.

Economic bubbles usually take shape when continuous price increases are accompanied by optimistic market expectations. These two factors will encourage active purchases and create speculative opportunities. When people are too involved in the speculative purchases and sales, and are not at all concerned about real economic performance, the bubble economy forms.²⁵ Economic bubbles can be categorized as real estate bubbles or stock market bubbles. Real estate bubbles were prevalent in Japan, South Korea, and other Southeast Asian countries and regions prior to the onset of the financial crisis.

The emergence of bubble economies is easily characterized. Generally speaking, the population density of Asian countries and regions is relatively high, and land resources are relatively scarce. Under normal conditions, land prices are relatively high. More importantly, in the course of economic development, the price of factors with low supply elasticity shoots up. With the increasing demand for land from the real estate sector, along with the over-concentration of economic activities in a few regions, land becomes the factor that is least flexible in supply. When an economy is developing quickly, people expect land prices will rise. Hence, they invest in real estate to gain capital returns, which in turn stimulates the continued increase of land prices.

Another factor contributing to the creation of a bubble economy is a price hike in the stock market. Much like what happens in the real estate market, in the short term, the supply elasticity of stocks is low. When the economy is growing, people see stock prices rising. They thus invest a great deal of capital in the stock market, fueling further price hikes.

Bubble economies burst as frequently as they appear. Their

25. John Eatwell, Murray Milgate and Peter Newman, eds., *The New Palgrave: A Dictionary of Economics*, Vol. 1. Beijing: Economic Science Press, 1992, p. 306.

sustainability is determined by two factors: the amount of capital in an economy that can be invested, and people's anticipation of economic growth. From a static point of view, when no more money can be mobilized, prices for real estate and stocks stop rising. Since there are risks and opportunity costs associated with funds, some people will then begin to sell; this results in falling prices, which in turn lead to more selling orders. From a dynamic point of view, when prices rise quickly, too much capital is invested in real estate development, and less is invested for production purposes. This leads to economic stagnation. In turn, expectations of rising prices in real estate and of stocks with a low elasticity of supply are less optimistic and may even become pessimistic. Meanwhile, an increased supply of real estate brings prices down quickly. In due time, the bubble bursts.

However, the existence of a bubble economy does not in itself necessarily lead to financial crisis. If all the capital used for speculation in the bubble economy belongs to individual investors, then the rupture of the bubble may not lead to a banking crisis. Unfortunately, when investors see that the prices of real estate and stocks continue to rise, they will take out loans to speculate further, using their real estate and stocks as pledge to apply for more collateral loans. Such self-enforcing expectations prompt banks and other financial institutions to grant loans and even to invest directly in real estate and stock markets. When the bubble bursts, prices for real estate and stocks fall sharply, and the price of collateral falls below its hypothecary value. Investors cannot recoup their investments, banks cannot call in their loans, and many bad debts result.

At such a juncture, whether a banking crisis will break out depends on the proportion of capital self-owned by investors in each loan and on the overall structure of bank assets. Therefore, the bank asset structure and banking supervision system are also involved. If there are no restrictions on loans that use real estate and stocks as collateral, or if there are no restrictions on the proportion of funds that can use real estate and stocks as collateral, or if supervision is weak in spite of the existence of certain restrictions, when the bubble increases, investors will choose to borrow money from banks to

make speculative investments. Banks and other financial institutions then have to bear the moral hazard.²⁶ A great deal of bank capital will be used in speculation. When economic growth slows, the economic bubble bursts, and bad loans become bad debts. A banking crisis thus occurs.

If only domestic savings are invested in bubble industries, when the bubble bursts, a banking crisis will not turn into a currency crisis of the type that erupted across East Asia. However, if foreign investment in addition to domestic savings is channelled into speculation either directly, or indirectly through financial institutions, the bubble will grow even bigger. When economic growth slows and expectations change — or, for example, if the government cannot save the economy from a series of investment failures — investors' confidence diminishes. If the currency is freely convertible so that capital can flow freely, capital withdrawal and bank run will occur. If capital has a high liquidity, fast capital outflow will speed up the collapse of the financial system. If exchange rates are fixed, the central bank has to intervene, which may give international financial speculators opportunities to make profits. For instance, speculators may borrow in local currency from a domestic bank, and then sell the currency on the international money market. The government has to use its foreign reserve to maintain the exchange rate in the monetary market. However, when domestic savers have noticed the potential crisis in domestic financial institutions, exacerbated by the attacks from foreign speculators, they may lose

26. Paul Krugman summed up the financial system's problem as moral hazard in financial intermediates' behaviours, that is, because financial institutions enjoy the government's explicit or implicit credit guarantees, they lack the incentives to supervise the borrower's uses of funds. Financial intermediates actually manage the savings of depositors. Their thinking might go as follows: "If I make money, it's mine; if I lose money, it's the depositors' money." Therefore, in the selection of investment projects, the intermediates would not choose risk-neutral projects, rather, they choose projects with the highest potential returns which generally involve the greatest risks. See Paul Krugman, "What Happened to Asia?" at <http://web.mit.edu/krugman/www/DISINTER.html>, January 1998.

confidence and sell domestic currency just as the international financial speculators do. As noted in a recent *Economist* article, when East Asia experienced the financial crisis, those who sold the most domestic currency were not speculators but local enterprises that wanted to avoid loss and needed U.S. dollars to repay their debts.²⁷ When the central bank has exhausted its limited foreign reserves and can do nothing more to support the local currency in the monetary market, the exchange rate falls sharply. This is how the currency and payment crises occurred during the Asian financial crisis.

An excessively high proportion of non-performing loans is another outcome of poor industrial policy. If the government chooses to support the development of nonviable industries, it will have to suppress the interest rate and instruct banks to provide loans to support the expansion of such projects. As such projects are unable to accumulate much capital on their own, investors will turn to foreign lending institutions when the limited capital of domestic banks is exhausted. However, East Asia's comparative advantage does not lie in capital- and technology-intensive projects. With government support, such industries can be established, but production cost will be so high compared with that in developed countries that every sale of the product will generate an amount of loss. As a result, enterprises investing in such projects cannot repay loans and interest, which then become the NPLs in domestic and international banks.

As a result, lendable funds in financial institutions shrink, bank capital tightens, and interest rates rise. The number of enterprises that cannot repay bank loans increases. Lendable funds decrease further as interest rates continue to rise, and NPLs quickly accumulate. Meanwhile, when the increase in NPLs shakes the public confidence in a bank, a bank run occurs, causing the bank to collapse. The collapse of one or two banks can lead to the collapse of many. A financial crisis follows. On the other hand, if an economy has real estate and stock bubbles, when lendable funds shrink, interest rates

27. "Keeping the Hot Money Out", *The Economist*, 24 January 1998, p. 71.

rise, demand for investment and consumption drops, and economic growth slows down, and lead to the burst of bubbles which then may result in the financial crisis.

If the overall investment of an economy is based on comparative advantage, there will be no serious flaws in the industrial structure. Enterprises will make profits, products will be competitive, capital accumulates quickly, and enterprises are less reliant on foreign loans. The economy's credit rating will be high, and it will have sufficient capacity to pay debts. Its growth will be sustainable, and real estate and stock bubbles may not burst. Even if they do burst and a banking crisis occurs, the economy as a whole is still competitive, foreign trade will continue to grow, and currency and payment crises will not occur. During the Asian financial crisis, this is what happened in Japan and Taiwan.

The countries hit by the East Asian financial crisis, such as Thailand, Malaysia, Indonesia, and South Korea, fell victim to the crisis due both to the bubbles and to an inappropriate industrial policy. Real estate bubbles were pervasive in Japan, South Korea, Thailand, Malaysia, and Indonesia. In addition, bank loans were provided to inefficient industries and enterprises.

The governments of these countries had almost no regulation on the development of financial institutions or on the amount of loans. They also lacked supervision over the banking system. Sometimes political loans were combined with family-based management in the enterprises, which led to rampant corruption. As a result, many loans flew into real estate sector. Once a confidence crisis occurred, or when foreign speculators attacked, a large number of financial institutions went bankrupt, and the amount of NPLs rose sharply. It was estimated that, by the end of 1997, the average NPL ratio in Thailand, Malaysia, Indonesia, and Singapore had reached at least 15%, which accounted for 13% of the GDP. In Malaysia, NPLs amounted to 20% of the GDP in 1998. Excessive foreign debts in these countries exceeded what economic growth and export growth could support. With the exception of Malaysia, Southeast Asian countries had to pay a large part of their export earnings to repay foreign debts, the proportion were the internationally accepted

dangerous line of 25%.²⁸ Meanwhile, these countries also liberalized their financial system, made their currencies fully convertible, allowed the capital to flow freely and adopted a fixed exchange rate system. Therefore, when the economic growth slowed down in these countries, bubbles burst, bank, currency and payment crises occurred and a financial storm took place.

The above analysis shows that the implementation of a comparative-advantage-following strategy does not necessary lead to a financial crises. First, a bubble economy can appear in any fast-growing economy. As the comparative-advantage-following strategy can speed up economic growth, it may lead to the creation of a bubble in such an economy. Second, the comparative-advantage-following strategy does not necessarily lead to the bursting of the bubble. On the contrary, if an economy keeps on making use of its comparative advantage, it will enjoy a strong and a more sustainable growth, and thus postpone the rupture. Third, in a financial crisis there are two key linkages in converting a burst of bubble to a bank crisis and a bank crisis to a currency crisis. If bank supervision can be strengthened, bank loans flowing to real estate and stock markets can be reduced, the burst of a bubble will not lead to a bank crisis and to a currency crisis. The comparative-advantage-following strategy can also help stave off the financial crisis. Competitive industries can make a profit. Even if they take out bank loans, such loans probably will not become NPLs. Second, under such a strategy, the capital intensity of the industries is in line with the economy's endowment structure, and necessary capital come mainly from domestic savings, which minimizes the reliance on foreign debt. Thus, the currency and payment crises can be avoided.

Therefore, the comparative-advantage-following strategy does not in itself lead to financial crisis, nor does it increase the possibility of financial crisis. On the contrary, it can guard against financial crisis. The East Asian financial crisis provides us with two important

28. Chen Wenhong, et al., *Where Should the East Asian Economies Head For—A Review and Outlook of '97 East Asian Financial Storms*. Beijing: Economic Management Press, 1998, pp. 62–63.

pieces of information about the comparative-advantage-following strategy and the East Asian Miracle.

First, the comparative-advantage-following strategy can help limit government intervention, but this does not mean a financial crisis will never occur. Financial risk exists in all economic development. Therefore, a sound banking supervision system is a must.

Second, Japan and the four Little Dragons each adopted a comparative-advantage-following strategy. However, even within the same country or region, the strategy was abided to different extents at different development stages.²⁹ As a result, differences do exist among these economies in terms of their economic performance, the healthiness of their economic structure, and their ability to prevent financial crises.

Insufficient banking supervision is most often seen in South Korea and Japan. For example, Japan's main bank system allowed banks to hold shares of enterprises. In a bubble economy, the increase in asset prices enhanced banks' ability to lend, so they would invest more in bubble industries such as real estate. When the bubble ruptured, the stocks and real estate held by banks and financial institutions depreciated quickly, and their assets shrank dramatically. Most real estate loans become NPLs. In South Korea, the government focused on supporting super-large conglomerates and imposed no limit on loans to these conglomerates. Under its industrial policy, the top 30 conglomerates had a 350% debt/asset ratio in 1996. However, their products were not competitive, and the enterprises performed poorly. In light of their soft budget constraints, the solvency of these conglomerates was very low.

The later development approaches of Taiwan and South Korea are significantly different from one another. Both countries are Little Dragons, and both have enjoyed fast economic growth since the

29. Japanese industrial policies sometimes deviated away from its comparative advantages and were opposed and failed. For examples of such incidents, see Takatoshi Ito, *The Japanese Economy*. Cambridge, MA: The MIT Press, 1982, p. 202.

1960s. Before the 1970s, both had labour-intensive industries. But after that, the two adopted different development strategies, and their economic systems differed greatly. The South Korean government put a great deal of effort into developing capital-intensive industries by supporting super-large enterprise groups. Researchers have found that in the early 1980s the concentration ratio of Korean enterprises was much higher than that of Taiwan and even higher than that of Japan.³⁰ At present, South Korea's four largest conglomerates (Hyundai, Samsung, Daewoo and LG) account for one-third of the national sales volume and over half of the national exports. In contrast to South Korea, many Taiwanese enterprises chose to supply accessories to U.S. and Japanese enterprises instead of creating their own brands.

Take the auto industry as an example. South Korea manufactures and exports cars, while Taiwan manufactures and exports parts and components. In the personal computer industry, South Korea makes chips, while Taiwan produces mice, keyboards, mother boards, monitors, non-brand computers, assembly computers, and out-sourced chips for brand manufacturers. However, the cars and chips made in South Korea, which could not compete with products from Europe, the United States, or Japan, were exported at below-cost prices, while Taiwan's exports of vehicle parts and computer products returned tremendous profits. As Taiwan's industries enjoyed high profitability, they accumulated a large surplus, allowing the economy to upgrade their industries rapidly. New investment projects in Taiwan usually do not exceed the capital size that its capital market can mobilize, and its foreign debt is small. All these features reduced financial risk in Taiwan. Therefore, although Taiwan had traces of a bubble economy,³¹ its economy and export

30. The World Bank, *East Asian Miracle*. Beijing, China Finance Press, 1995, p. 66.

31. According to estimates of Merrill Lynch Taiwan Branch Co., 40% of Taiwan's bank loans are used for real estate investment. This percentage is similar to the percentages of Southeast Asian economies when they were hit by the financial crisis; two-thirds of all financial loans in Taiwan use land as collateral, twice the proportion of Japan.

could still grow at a reasonable rate. Its real estate and stock bubbles did not burst under the influence of the Southeast Asian financial crisis. Even if Taiwan's economy grows as much as Japan's economy did in history, moving from fast development to slower growth as its gap of technologies with the developed countries narrows, the burst of bubble may not throw Taiwan immediately into currency and payment crises, as what happened in Thailand, Korea, and Indonesia.