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CHUNG-HUA INSTITUTION FOR ECONOMIC RESEARCH

**THE ROLE OF THE STATE
IN ECONOMIC RESTRUCTURING
AND DEVELOPMENT:
THE CASE OF TAIWAN**

JOSEPH S. LEE

OCCASIONAL PAPER SERIES No. 9403

April 1994



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**The Role of the State
in Economic Restructuring and Development:
The Case of Taiwan**

by
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JOSEPH S. LEE

**The Role of the State
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I. Introduction

What role should government play in economic restructuring and development? In general there is no argument among economists on the government's role in providing national defense, infrastructure and other public goods. The disagreement is on how large is the government's role beyond public goods. Should the government have industrial policies and intervene into private investment decisions. On this point three different roles have been posited: the free market approach, the "simulated" free market approach, and the "governed" market approach (Wade 1989).

The free market approach argues that there is only a very limited role for the state to play in economic development. That role is to remove distortions in the function of markets, to improve the allocation of resources, and to provide a conducive environment for private investment, and leave the rest to the market. The World Bank and the IMF are fervent promoters of this approach. They strongly believe that the market mechanism can help to achieve efficiency and, hence, rapid rates of economic growth. In a 1983 study, the World Bank showed that the average annual growth rate of developing countries with low price distortions in the 1970s was above seven percent, two percentage points

This paper presented at the conference on "The Role of the State in Economic Restructuring and Development," held in Hanoi, Vietnam, December 14-16, 1993.

higher than the overall average (Wade 1989, p. 19).

In a more recent study, "East Asian Miracles--Economic Growth and Public Policy", the World Bank once again shows that eight Asian countries (Japan, Korea, Taiwan, Singapore, Hong Kong, Malaysia, Thailand, and Indonesia, the so-called HPAEs, or High-Performance Asian Economies) which enjoyed rapid rates of economic growth during the last three decades achieved them precisely because of the free market operation promoted by their governments (World Bank 1993). However, in this study, their position is modified to say that the state can play a useful role in promoting export industries, and should intervene in certain areas if the market mechanism is clearly not functioning efficiently there, and if the government withdraws its intervention as soon as its goal is achieved (Shimizu, 1993). In short, the World Bank is no longer taking a pure neo-classical free market approach. Instead, it is taking a modified free market approach i.e., the government is permitted deliberately to distort some prices which causes the market to function in a way more closely resembling a free market, thus raising growth rates.

In a recent position paper, the Japanese Overseas Economic Cooperation Fund (OECF) argued that the World Bank approach is too simplistic and always proposes the same formula to all developing countries without taking into consideration their special conditions. They argue that there is a useful role for state intervention because the removal of restrictions on the private sector does not automatically improve and stimulate the investment climate. Additional measures are needed to achieve this purpose. Protection of infant industry for a period of time is also necessary for developing countries. However, the government needs at the same time to guard against the negative effects of protective measures. The government should identify promising industries and withdraw protection as soon as its goal has been achieved. Government intervention is needed sometimes because in developing countries certain sectors of the economy are underdeveloped. The free market mechanism thus does not work. For example, financial markets in most developing countries are quite underdeveloped (Shimizu 1993).

OECF is not alone in its position, Wade and Amsden want to go even further and promote the "governed market" approach. According to Wade and Amsden the government must choose and promote certain types of investments which can bring about high growth. In other words, industrial

policy and government intervention is useful. Professor Wade cites the Taiwan case and argues that the Taiwan government utilizes the persuasiveness of incentives and controls on private firms through import restrictions, entry requirements, domestic content requirements, fiscal investment incentives, and concession credits to achieve the promotion of export-oriented, labor-intensive industry (Wade, p. 113.) Similarly, Amsden points out that in Korea the government used trade protection, selective credit subsidies, export targets (for individual firms), public ownership of the banking sector, and export subsidies to build their industries to make them competitive in the international market (Amsden 1989).

These arguments are not free of criticism, because some of the evidence presented by these two writers is contradictory and some is not convincing. For example, Snape argues that both writers failed to show clearly whether or not the various intervention policies adopted by the government actually cancelled out the targeted negative effects, making them neutral (Snape 1991, Rodrick 1993, p. 24.)

The purpose of this paper is not to engage in academic debate as to which approach is the most appropriate government role in development. Rather, Taiwan is analyzed as a case study to illustrate that during its process of economic development, Taiwan government has certainly taken an interventionist role in trade and industrial development, however, at the same time it retained a hands-off stance in other areas, e.g., the labor market. In fact, several prominent economists such as Professors Hsing and Tsiang have argued fervently that the protective measures adopted by the government in the 1970s are the very causes of Taiwan's serious economic problems of recent years (Hsing 1993, Tsiang 1991).

II. The Role of the State in Taiwan's Development

The economic development history in Taiwan clearly showed that during different stages of development the government has played different roles. By and large, public enterprises played a larger role in the early stage of development than the later stage and government intervened more into industrial development than in the later stage. In the following we discuss the government's role in providing key elements in infrastructure for

industrial development and in maintaining stable macroeconomic conditions and to promote targeted industries and exports through industrial policies and other measures.

A. Providing Infrastructure for Industrial Development

As in all other developing countries the private sector is unable to provide road, utility and other public utilities thus the government must take up this job. In Taiwan the government perform this job well in its early stage of development. Thus, immediately after the World War II the nationalist government restored the war ruined rural transportation and other infrastructure quickly. This is made possible by the inflow of a large number of professional and technical and administrative personnel from mainland China, following the retreat of the nationalist government to Taiwan, and by the effective use of foreign aid, especially U.S. aid. The restoring of the extensive transportation network in the rural areas had made it possible for Taiwan to build small businesses and to utilize the surplus labor in the rural areas. In 1960s, as the industrial sector expanded rapidly the demand for electricity, road, rail, and port rose quickly. As it was shown that in 1973 ships in Keelung and Kaosuing harbors had to wait for over 20 hours before they could unload their cargo (Yeh 1979, P. 10). To remedy these deficiencies the government then started its ten major construction plan in the late 1960s. These projects included a nuclear power facility, four industrial projects, six transportation projects, the North-south Highway, a new airport, a new Taichung port facility, and expanded railways. these projects upgraded the capacity of Taiwan's rail, road, port and power capacity significantly. They also improved citizen's confidence in Taiwan's economic self-sufficiency which is important for national security when Taiwan has no diplomatic relationship with most countries in the world. This, in turn, improved the investment environment of the island. In 1970s the government started the 12 major construction projects and in 1980s the 14 construction projects. However, many of the construction projects in the 1980s were delayed and were merged into the Six-Year National Development Plan.

B. Developing a Well Educated Workforce

The government also played a very important role in developing a well educated workforce. As a latecomer, Taiwan has had the advantage of being able to learn and borrow advanced technologies from the industrialized countries at a low cost. However, in order to take advantage of all these benefits, workers in Taiwan must have the ability to learn and to adapt. Thus, education is important. Throughout the last forty years the government on Taiwan has indeed paid special attention to the development of a well-educated workforce. Thus, the government's expenditure on education increased rapidly, from 1.7 percent of GNP in 1952 to 3.6 percent in 1972 and 5.2 percent in 1988.

In primary education, the government implemented the National Constitution in 1945, making primary education the national education system, i.e., free and compulsory for children between 6 to 12 years old. The enrollment ratio reached more than 90 percent for boys and 70 percent for girls in 1950. Universal enrollment was accomplished in the early 1950s for boys and in the 1960s for girls. Thus, as Taiwan was embarking on its economic development effort, the goal of enrolling all school-age children into the national education system had already been accomplished.

In secondary education, the expansion of junior high schools was very impressive in the postwar period. The annual rate of increase in enrollment was 14% during the 1951-55 period, 12% between 1956 and 1960, 16% between 1960 and 1965, and 13.3% between 1966 and 1970. The rapid expansion of enrollment in junior high schools in the 1950s and 1960s prepared the workforce needed for development and the rapid expansion of labor-intensive industries in the 1960s and 1970s.

The senior high school system can be divided into two types: academic senior high schools (ASHs) and vocational senior high schools (VSHs). The purpose of ASHs is to provide students with a general academic preparation, and its curriculum emphasizes the development of students' ability to read and to write, and basic knowledge in natural science. The VSHs are intended to provide students with a technical education.

In 1950, there were more students in ASHs than in VSHs (in 1950 the ratio of graduates of ASHs to VSHs was 1.7:1), however the government decided to expand VSHs in order to provide the skilled workers necessary for industrialization. As a consequence, the government limited the

expansion of ASHs, and encouraged the expansion of VSHs. The share of VHS graduates among all high school graduates consequently rose rapidly. For example, in 1988 the ratio of graduates of ASHs to VSHs was 1:2, whereas it was 1:1 in 1975 (Lee 1991).

Not only are more students found in the vocational track within the senior high school system, but there is also a shifting of students within vocational high schools from agricultural and other areas to the industrial field. For example, in 1950 agricultural students made up 37 percent of all vocational graduates, while only 22 percent were in industrial fields, and 32 percent were in commerce and other related fields. The figures were 10 percent, 36 percent, and 43 percent, respectively, in 1970, and 36 percent, 44 percent, and 37 percent respectively in 1992. Thus, VHSs have become a major supplier of skilled and technical workers in Taiwan.

During the last three decades, the number of students enrolled in post-secondary institutions has increased rapidly. In 1952, only three percent of 18 to 21-year-old males and an insignificant proportion of females in the same age bracket were enrolled in post-secondary institutions. The ratios increased to eight percent and three percent, respectively, in the mid-1960s, and 12 and 7 percent in the mid-1970s. By the mid-1980s, there were more college and university students per ten thousand persons in the population in Taiwan than in France and the U.K., though the number was still lower than in the U.S., Japan, and South Korea (Lee 1991).

C. Creating a Favorable Investment Climate

Maintaining stable macroeconomic conditions.

Tight control of inflation: One of the most important reasons why the Nationalist government lost its control over mainland China was the hyperinflation. Thus, when the Nationalist government retreated to Taiwan in 1949 it was in the midst of hyperinflation, attested to the fact that the rise in the wholesale price index was as high as 3,406 percent in 1949 and 305.5 percent in 1950. In order to bring the hyperinflation under control, the government took several steps, including reform of Taiwan's monetary system by converting the Taiwan dollar into the New Taiwan dollar, and the selling of gold to the public in order to build up citizens' confidence on the NT dollar. It also drastically raised the interest rate to 7 percent monthly or a compounded 125 percent annually. This drastic increase in

the interest rate proved very effective in curbing inflation because the WPI dropped to 66 percent in 1951, 23.1 percent in 1952, 8.8 percent in 1953, and has been remaining a low level of inflation since, except for the two oil crises. In short, the government was able to keep the average inflation rate at 7.6 percent between the period 1953 and 1962, 1.8 percent between 1963 and 1972, and 6.1 percent between 1973 and 1988 (Huang 1991).

Encouragement of savings: During Taiwan's early stage of development, in order to encourage investment the government maintained a low interest rate policy. The effect, though, was that it failed to induce citizen to save and resulted in insufficient funds in the capital markets. The government then dropped the low interest rate policy in late 1950s which resulted in increase in savings and also decline in inflation.

D. Using the Public Enterprises to Finance State Activities and to Provide Public Services at Low Costs

The importance of public enterprises in Taiwan's economic development can be seen from Table 1. In 1952, public enterprise production accounted for 56.6 percent of total value-added, 56.2 percent of total value-added for the manufacturing sector, and 100 percent in the utility industries. The importance of the state enterprises steadily declined as the economy developed, and by 1992 its share of total value-added was only 18.0 percent. However, it is important to note that the decline of the importance of the state enterprises is not because its number declined (there were 13 state enterprises during the 1950s and 1960s, 14 in 1970s and 10 in 1993); instead, it is because of the rapid expansion of private enterprises (Chao 1991, p. 308).

These public enterprises performed the following functions for the country:

1. *Economic function:* Public enterprises such as Taiwan Power Corporation and China Petroleum Corporation provided the private sector with urgently needed energy. Other public enterprises such as China Steel Corporation and China Petroleum Corporation are upstream industries which provide downstream private enterprises such as those in shipbuilding, machinery, and construction, and the automobile and chemical industries with industrial inputs at reasonable prices. In addition, maintaining the enterprises in the public domain allowed the government to provide employment for the citizens of

Taiwan in the early years of economic development when unemployment rates were very high (Yu 1993).

Table 1 Distribution of Industrial Production by Ownership
(based on value-added at 1981 prices)

Period	Total			Manufacturing			Electricity, Gas & Water
	Total	Private	Public	Total	Private	Public	
1952	100.0	43.4	56.6	100.0	43.8	56.2	100.0
1960	100.0	52.1	47.9	100.0	56.2	43.8	100.0
1970	100.0	72.3	27.7	100.0	79.4	20.6	99.8
1980	100.0	79.1	20.9	100.0	85.5	14.5	99.9
1985*	100.0	81.2	18.8	100.0	88.0	12.0	100.0
1990*	100.0	81.3	18.7	100.0	89.3	10.7	100.0
1991*	100.0	81.9	18.1	100.0	90.0	10.0	100.0
1992*	100.0	82.0	18.0	100.0	90.0	10.0	100.0

Note: * Based on value-added at 1986 prices.

Source: *Taiwan Statistical Data Book*, 1993.

2. *Financial function:* The surplus earned by public enterprises was an important source of income for the government. For example, during the 1950s, revenue from state enterprises contributed 21.4 percent of the central government's income, 24.7 percent between 1960 and 1980, and 18.8 percent between 1980 and 1989. State enterprises were also important in earning foreign exchange for Taiwan during its early stage of development. For example, between 1953 and 1963, sugar consisted of half of total exports (Chao 1992, pp. 310-311). In the 1970s when the private sector expanded very rapidly, the state enterprises' role in this area become smaller and smaller. In recent years it has even become a burden for the state treasury because they have outlived their function and many are in deficit. The government is seriously considering privatizing some of these state enterprises, although it has encountered serious opposition from employees within the firms, fearing of losing job security.
3. *Social function:* The government-owned railway system and other transportation systems helped Taiwan to provide low-cost transportation services to the public (Chao 1991, and Yu 1992).

Besides these functions, state enterprises also contributed to the function of national defense, including such enterprises as China Steel and China Shipbuilding, and the promotion of international relations, such as Taiwan Power and Taiwan Sugar Corporation by providing some developing countries with agricultural and other technical assistance.

E. Using Money and Fiscal Measurements in Promoting Target Industries and Exports

1. Using the exchange rate to discourage domestic consumption and to encourage exports

In the 1950s, Taiwan adopted a very complex multiple exchange rate system. The system established differing exchange rates between the New Taiwan dollar and the U.S. dollar for different trading agents and for different purposes. For instance, the exchange rate for public enterprises importing raw materials in 1956 was set at NT\$18.75 to one U.S. dollar. For private firms importing luxury goods, the rate was NT\$24.78 to the U.S. dollar. In 1958, one U.S. dollar earned through the export of manufactured goods could be exchanged for NT\$36.08, while for the export of agricultural products the rate was NT\$24.58. The purpose of this complicated exchange rate system was to discourage consumption and to encourage the development of Taiwan's public enterprises. In the 1960s, the government abandoned the multiple exchange rate system. For the next two decades, however, the government maintained an intentionally undervalued exchange rate in order to facilitate Taiwan's exports.

2. Protecting infant import-substitution industries

In the 1950s and 1960s, the government adopted a protective industrial strategy by raising the import tariff to more than 30 percent and imposing strict import controls. The government also used the multiple exchange rate system described above to protect the import-substitution industries.

3. Promoting Industrial development through industrial development policy

It is well known that one of the key factors contributing to the success of Taiwan's economic development is the development of the industrial sector. The reason behind this success is that the government adopted an industrial policy appropriate for Taiwan's comparative advantages. That is, it was labor-intensive and light industry-oriented, and it focused on

exports. These policies helped to create a large number of jobs for Taiwanese workers and to generate a large amount of foreign exchange. Table 2 demonstrates that employment in the agricultural sector was more than 50 percent in 1962, but by 1992 had dropped to close to one-tenth. Employment in manufacturing increased correspondingly from 12.4 percent to 30.1 percent during the same period.

One of the most important measures that the government used in promoting the targeted industries is the Statute for the Encouragement of Investment (SEI). SEI was implemented in 1960 and its goals were to encourage investment, savings, export promotion, profit assurance, and

Table 2 Employment by Industry

Period	Agriculture	Manufacturing	Communications
1952	56.1	12.4	10.6
1960	50.2	14.8	10.0
1970	36.7	20.9	13.6
1980	19.5	32.6	16.0
1985	17.5	33.5	18.0
1990	12.8	32.0	19.7
1991	12.9	30.9	20.4
1992	12.3	30.1	20.7

Source: Same as Table 1.

production expansion. According to the SEI, a five-year tax holiday, an enterprise tax ceiling of 18 percent, an exemption of personal income tax on interest revenue from time deposits over two years, a maximum of two percent taxable income deduction for enterprises' export earnings, and an exemption on business tax for exporting enterprises were available for businesses. The SEI was amended in 1971, thereby expanding its goals to include the encouraging of merger and pollution controls. Benefits under this program, in addition to the original ones, were expanded to include a five-year tax holiday or an acceleration on depreciation of equipment and machinery, a four-year tax holiday on expansion of equipment, a 35

percent income tax ceiling, a deductible income tax on R&D expenses, and a ten percent deduction on enterprise tax for export enterprises two years after a merger or consolidation. The SEI was amended again in 1980 to promote capital- and technology-intensive industries (San 1993).

III. The Role of the State in Restructuring Taiwan's Economy in the 1990s

During the latter part of the 1980s, Taiwan's currency (the N.T. dollar) appreciated by 30 percent, wage rates rose by 80 percent, and the price of land skyrocketed. As a consequence, Taiwan lost its comparative advantage in labor-intensive products. In search for new comparative advantages, many businessmen from Taiwan relocated their factories to other low-wage areas such as Southeast Asia and mainland China. Available figures show that in 1992 the total amount of cumulative direct investment from Taiwan to mainland China was US\$6.89 billion (6 percent of the mainland's total DFI inflow) (DBS Bank 1993), and the amount of investment from Taiwan to countries in Southeast Asia was US\$15 billion. Most of this investment has been in labor-intensive industries.

In order to survive, the government must restructure Taiwan's economy, helping capital- and technology-intensive industries predominate in the economy. The government on Taiwan has adopted the following measures to help restructure the economy.

A. Development of the Six-Year National Development Plan

In order to upgrade Taiwan's infrastructure, the government on Taiwan has launched a US\$300 billion Six-Year National Development Plan. This is one of the most ambitious infrastructure construction plans in the world. It has subsequently attracted many foreign companies to Taiwan in search of a piece of the pie.

The government also wants to use this plan to hasten technology transfer and the transforming of Taiwan into an Asia-Pacific regional operations center for international corporations. For this reason, the government has announced that bidders for Six-Year National Development Plan projects must contribute a certain percentage of the value of the construction project for the purpose of procuring local equipment,

transferring technology to local companies or making other types of local investment. The government aims to bring US\$1 billion more in foreign procurement, technology transfers, and investments to Taiwan to accelerate the restructuring of Taiwan's economy. In the case of the fourth nuclear power plant project, for example, the government has announced that bidders for this US\$6.7 billion project must agree to set aside at least 15 percent of the project costs as offset credit, of which 60 percent will be used to procure local equipment, and the rest will be used to transfer technology or other investment to Taiwan.

In another project to procure aircraft, Boeing, McDonnell Douglas, and other U.S. manufacturers were required to set aside US\$8 million in offset credit before the government approved the procurement of their aircraft. As a general rule, the amount of offset credit cannot be included in the production costs of the project.

B. Promoting Taiwan as an Asia-Pacific Regional Operations Center for Multinational Operations

Recognizing that Taiwan is strategically located in the Asia-Pacific region, the government has proposed transforming the island into a regional operations center for international corporations. The concept of an operations center can include many things, including the idea of making Taiwan into an Asia-Pacific R&D center, a high-tech products manufacturing center, a center for the development and testing of new products, a personnel training center, and a strategic alliance center.

C. Promoting the Development of Strategic Industries

In order to choose winning industries for development, the government uses the so-called "2-high, 2-large, and 2-low" criteria. In other words, strategic industries are deemed to be those industries which are high in technology intensity, high in value-added, large in market potential, large in industrial linkage (forward and backward), low in energy consumption, or low in pollution. The government offers preferential treatment for these industries as outlined below. The majority of these items are in the machinery industry and the electronics industry. Today there are more than 200 items listed as strategic products. The benefits to the involved firms include:

1. *Assistance from the government:* Firms which meet the criteria of

a strategic industry can apply for assistance from the Industrial Development Bureau and the government may subsidize up to 50 percent of the total assistance costs. Types of assistance include financial management, quality control, production management, material management, marketing, in-service training, and design assistance.

2. *Low-interest loans:* A fund of US\$250 million was set up in 1982 to provide low-interest loans to firms in the strategic industries. The amount of the fund has been increased from time to time and it now amounts to US\$12.5 billion. These low-interest loans are used by firms to purchase machinery.
3. *Preferential tax treatment:* Firms in the strategic industries are allowed a five-year tax holiday on their enterprise income tax for new investment or they may choose accelerating depreciation for the new investment. In addition, firms in this category face a tax ceiling of 20 percent.
4. *Benefits of R&D work:* Article 21 of the SEI stipulates that if an enterprise imports equipment or machinery specifically for R&D work it may be exempt from import tax. Experimental R&D expenses utilized for improving productive technology or in the development of new products can be deducted from the taxable income of the current year.

D. Establishment of the Central Satellite Factory System¹

In Taiwan the economy is dominated by small- and medium-sized businesses. For moving into high-tech industries, their economic scale is insufficient. Therefore the government wants to develop the central satellite factory system (CSF) to help small firms integrate and coordinate their activities. There are three types of CSF. The first type of CSF is a system which is composed of many parts and component suppliers. For example, the final assembly plants for the automobile industry or the house appliance industry are central plants in the CSF system. These central plants are supported by many satellite factories which supply various parts

¹ For a detailed description of this measure, please see San 1993.

and components to them. The second type of CSF is a system in which the central plant acts as an upstream raw and intermediate materials supplier to the large number of medium stream and downstream users. Under this system the price of the upstream products directly influences the competitiveness of the downstream products. The third type of CSF is centered by a few major manufacturers which are capable of exporting their products in large volume. When medium- and small-sized firms are grouped in such a manner, it is easier for the government to offer assistance to them. The central plants can also take the responsibility to help out the satellite plants and to coordinate their upgrading efforts. The advantage to the firms in being affiliated with this system is the benefits offered to them by the government in terms of financial assistance, manpower training, and technical engineering assistance. For example, if the central plant or satellite plants expand their facilities, they may receive long-term, low-interest loans from the central bank. The terms of preferential treatment are exactly the same as those for strategic industries. As for manpower training programs, the government may set up managerial training programs or training centers to provide training for the entire group of plants. The government may also hire foreign experts to set up training programs for the central and satellite plants. In addition, the government may also help the central and satellite plants to establish uniform standards or help these firms to obtain the required certification from abroad.

E. Setting Up a Credit Guarantee Program for Small Businesses

Small- and medium-sized firms always have difficulty getting loans from banks. To help them, the government set up the Small and Medium Business Credit Guarantee Fund (SMBCGF). They offer ten types of credit guarantees to small businesses. They are summarized in Table 3. The basic function of the SMBCGF is to share risk.

Table 3 The SMBCGF Credit Guarantees

Type of SMBCGF Credit Guarantee	Eligible Client	Credit Guarantee Coverage Ratio (1)	Maximum Limit for Post-Review Credit (2) (NT\$ million)	Guarantee Fee Per Annum (as % of credit coverage)
1. Credit Guarantee for General Purpose Loans	Manufacturing and Non-Manufacturing Businesses	80%	10 (3)	0.75%
2. Credit Guarantee for Commercial Paper Guarantees			5	
3. Credit Guarantee for Operational Input Procurement Loans			10	
4. Credit Guarantee for Policy-Oriented Loans			15	
5. Credit Guarantee for Import Duty and Tax Guarantees			7 (4)	
		90%	17 (5)	
6. Credit Guarantee for Import Duty and Tax Recorded Under Guarantees	Small-Scale Businesses	80%	5	0.50% (6)
7. Credit Guarantee for Contract Performance Guarantees			10	
8. Credit Guarantee for Small-Scale Business Loans			1	
9. Credit Guarantee for Youth Business Start-Up Loans	Young Prospective Entrepreneurs		0.5	0.75%
10. Credit Guarantee for Own Brand International Promotion Loans	Enterprises approved by Board of Foreign Trade, MOEA		20	

Notes:

- (1) The SMBCGF credit guarantee is provided on a risk-sharing basis. The credit risk beyond the SMBCGF guarantee coverage shall be assumed by the financial institution.
- (2) The SMBCGF sets a maximum limit on bank credits for each type of credit guarantee. Under the limit, a financial institution is not required to refer any application for guarantee to the SMBCGF for its review and approval prior to the institution's extension of credit. Beyond the limit, prior review by the SMBCGF is required.
- (3) For a single enterprise, if the General Purpose Loans and the Commercial Paper Guarantees come from the same single financial institution, the guarantee limits for these two types of credits may be combined into one limit and raised to NT\$15 million, with either one of these two types of credits allowed to cross its own limit, although it is still subject to the combined limit.
- (4) Refers to the combined limit for pre-export loans and the credits against export shipments.
- (5) Refers to the combined limit for pre-export loans and the credits against export shipments.
- (6) Refers to half of the guarantee fee, which financial institutions collect from guaranteed enterprises, handed to the SMBCGF.

Source: San 1993.

IV. Free Market Approach in the Labor Market

Although the government on Taiwan has played a very active role in many areas, it maintained a minor role in the labor market area. Thus, although most of the labor laws in Taiwan were enacted in the 1930s when the government was still in mainland China, the government had never revised any of them or enforced them seriously during the last three decades despite the rapid change of economic structure (except for the labor insurance law). The net result has been that the labor market operation and the determination of wage rates had not been influenced by institutional factors such as trade unions, minimum wages, and the public enterprises. Figures in Table 4 show that wage rates in Taiwan have risen at a similar rate to productivity. It has also been pointed out by many that high labor turnover in Taiwan has permitted the rapid diffusion of skills and technology, hence contributing to the fast pace of economic development.

Table 4 Productivity and Real Wage Increases in Taiwan

Unit: %

Years	Labor Share of Income (Annual Rate of Increase)	Labor Productivity (Annual Rate of Increase)	Real Wage Rate (Annual Rate of Increase)
1952-64	1.32	11.22	2.72
1965-75	1.86	5.19	5.91
1976-86	0.73	5.27	7.50
1952-86	1.32	5.94	5.30

Source: Wu, 1987, p. 13.

V. Problems of the Government's Intervention Approach in the Industrial Sector and the Free Market Approach in the Labor Market

The intervention approach in the industrial sector combined with the free market approach in the labor market adopted by the government have helped Taiwan to achieve the goals of rapid expansion of foreign trade, full employment, and attained a rapid rise in national income and foreign reserve. However, both approaches have their deficiencies, which include:

1. Overprotection of infant industry

In order to insulate industries from foreign competition, Taiwan adopted many protective measures for infant industries. For example, the automobile industry has been highly protected by high tariffs and nontariff barriers for the last 35 years. As a result, Taiwan has eight automobile companies, even though Taiwan is but a small island. The price of domestically produced automobiles is high and the quality is poor, and they are unable to compete with foreign-made cars. The government has been criticized by many that its protection of the financial and commercial sectors was too much and too long which is the main causes of most of the social illness of recent years (Hsing 1994).

2. Negative effect of long-term subsidies

To provide businessmen with incentives to invest, the government on Taiwan has adopted measures such as tax holidays and low-interest loans. These measures have positive effects in the short run, but in the long run they are negative because firms that receive prolonged subsidies do not become independent and they are unable to compete in the international market because they become accustomed to depending on government subsidies for survival.

3. Unsafe work places

Free market operation works well if citizens have perfect labor market information and they can select what is best for them. In reality, though, this is not always the case. For example, in the area of industrial safety and occupational health, employees do not have good information. They do not know how to protect themselves, nor can they choose any job they

according to their preferences of risk and pay. Thus, because of the lack of governmental protection in occupational safety and health, industrial accident rate in Taiwan is higher than in all of its neighboring countries which have also enjoyed similar rates of economic development. For example, in 1990 the workers' fatality rate was 0.19 deaths per 1,000 workers in Taiwan, while it was only 0.02 in Singapore. (See Table 5)

Table 5 Fatal Industrial Accident Rates and Per Capita Income of Selected Countries: 1981-1990

Year	ROC	Canada	France	U.K.	Singapore	Korea
Manufacturing						
1981	0.31	0.08	0.08	0.02	0.03	0.18
1990	0.19	0.07	0.06	0.02	0.02	0.16
Construction						
1981	0.88	0.36	0.29	0.10	0.03	0.51
1990	0.46	0.24	0.25	0.10	0.05	0.21
Per Capita Income (U.S. dollars)						
1990	7,954	20,736	21,016	17,163	11,856	5,652

Source: *Yearbook of Labor Statistics*, Council of Labor Affairs, ROC, 1992 and *Taiwan Statistical Data Book*, 1993.

VI. Conclusions

What role should the government play in economic restructuring and development? The government in Taiwan used a mixed strategy. During its early period of development the government took an interventionist approach by utilizing measures such as tariff protection, subsidies to exports, direct credit, tax incentives, low-cost infrastructure, and government-sponsored research and development. These measures have no doubt facilitated the rapid increase of exports in the past and hastened the rate of growth in Taiwan. However, these tactics have not been

without their deficiencies since the government has given too much protection to some areas or has withdrawn at too slow a rate in other areas. The total free market approach adopted in the labor market contributed to the low unemployment and equal distribution of income in Taiwan. However, at the same time it has its deficiency since the government failed to recognize that workers do not have perfect information on occupational safety and health, and did not take appropriate action to correct the market failure. As a result Taiwan has one of the highest industrial accident record in the world.

A comparison of the government investment in infrastructure it shows that the government on Taiwan although played a leading role in providing infrastructure in the early development period it fell immensely during the last ten to fifteen years. As one can see from figures in Table 6 that the road length per thousand people is too small and there are too many cars per kilometer of road. Electric generating capacity and water supply, and sewage system are highly inadequate. And the environmental protection is just totally inadequate. As one study showed that the emission of all air pollutants is 12 times higher than the U.S. and 80 times than Canada, With 25 percent of the water streams have been classified as highly or medium polluted, 40 percent of the garbage treated as disposed improperly (Tsia 1993. PP. 16-21). Moreover there is a big gap between government's spending on infrastructure and citizen's priority on social overhead capital. while the government places its investment priority on transportation, ports, communication and energy development, the citizen has its priority on quality of life such environmental protection, cultural construction (Chou 1990).

However, as Taiwan enters into a mature economy the government needs to withdraw more and more of its function in the private sector and permits the market mechanism to function since the economy is much more complicated than in the past. As in the labor market there signs that the government is yielding to certain group's demand for more protective labor legislation. While there is an international movement for promoting international labor standards the government should nevertheless resists to special interest groups pressure in enacting more and more protective labor legislation. As the case of President Johnson's Great Society program showed that massive protective legislation will impede market mechanism and make workers worse off rather than better off. A lesson we should learn from the U.S. experiences.

Table 6 Infrastructure in Selected Countries

	Korea	Taiwan	Japan	USA	Italy	Holland	Singapore
<u>Highways</u> Km/1,000 persons	1.26 (1986)	1.01 (1988)	9.19	27.02	5.32	6.73	1.02 (1985)
<u>Cars</u> /100 persons	13 (1986)	13.1 (1988)	39.1	69.7	42.4	36.5	11.6 (1985)
<u>Telephones</u> Sets/100 persons	44.1 (1992)	48.6 (1992)	54.3 (1985)	71.6 (1985)	46.9 (1986)	61.8 (1986)	42.9 (1986)
<u>Electricity</u> Demand (MWH/persons) Supply (KWH/US\$ GNP)	1.64 0.47	2.99 0.48	5.48 0.26	10.64 0.54	3.69 0.28	4.73 0.33	4.07 0.44
<u>Sewer Systems</u> Percent population served	36 (1991)	3 (1989)	36 (1985)	72 (1979)			80 (1980)
Gross Fixed Capital Formation Percent of GNP	38.0	23.2	31.7	15.3	19.8	20.8	40.1
GNP/Capita (US\$ 1991)	6,493	8,788	27,196	22,537	19,768	19,032	14,818

Source: Reinfeld, 1994.

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