Occasional Paper

CHUNG-HUA INSTITUTION FOR ECONOMIC RESEARCH

75 Chang-Hsing St., Taipei, Taiwan

Republic of China

This paper is intended to provide economic information and stimulate further research. Any opinions expressed within are solely those of the authors and not those of the Chung-Hua Institution for Economic Research.

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A Trade-oriented Economic Development Model:
-- The Case of Taiwan, R.O.C.

Tzong-shian Yu

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A Trade-oriented Economic Development Model:* -- The Case of Taiwan, R.O.C.

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I. Introduction

From the experiences of postwar economic development, it has been shown that it is impossible for an isolated country to achieve rapid economic development but that a country without abundant natural resources can, if the country develops an open economy. Many communist countries can be considered examples of the former while the newly industrializing countries of East Asia are good examples of the latter.

The purpose of this paper is to take Taiwan, one of the newly industrializing economies, as an example to examine a trade-oriented economic development model. The island's population density is very high and its natural resources are limited, to the extent that Taiwan can not considered to be self-sufficient. In order to overcome this shortcoming, it is very natural that Taiwan would promote the development of foreign trade. Over the last four decades, Taiwan has achieved spectacular success in economic development, as expressed in its sustained high economic growth rate with equitable, distribution of income, moderate inflation rate, low unemployment rate and huge foreign exchange reserves. It should be added that all these occurred without any burden resulting from foreign debt or fiscal deficit(1). Of course, there are many reasons that can explain why Taiwan has been

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successful. However, the rapid development of foreign trade is no doubt the key factor giving rise to the success of Taiwan's economic development. Through the development of foreign trade, Taiwan has effectively taken advantage of the principles of comparative advantage to overcome its shortage of natural resources and overly abundant supply of labor.

In the following, we will first present Taiwan's economic-development background that will be used in our formation of a trade-oriented economic development model which will be used in the analysis of Taiwan's exports, production motivation and the contribution of exports to its economic growth. Then, we will analyze the role of the government in the process of economic development. Finally, some concluding remarks are given.

II. Taiwan's Economic-development Background

Before we examine Taiwan's economic-development background, to give the reader some basic information on Taiwan would seem necessary. Taiwan is a mountainous island; its total area is about 360,000 square kilometers and only one-fourth of the area is arable. The soil is not inherently fertile, so that agricultural production has to depend on the heavy use of chemical fertilizers. The rivers are small and their currents fast, causing flooding and drainage problems. Its state of natural endowments is rather poor when compared to its neighboring countries. Moreover, in the 1950s, its social and political conditions were also very unstable. The whole island was under a military threat from the Chinese communist regime on the mainland and most of the government's expenditures were for national defense and security. All of these factors were unfavorable for economic development. Faced with its limited natural resources, it was not realistic for Taiwan to model its economy as if it was a self-sufficient entity. As it also was faced with a situation of an excess in the supply of labor and a shortage of capital, it was not in Taiwan's best interests to develop

heavy and capital-intensive industries either so trade development seemed the likely alternative.

In the early 1950s, Taiwan's economy was dominated by agriculture. The production of the agricultural sector accounted for 32.28 percent of GDP in 1952; 29.09 percent in 1955 and 28.54 percent in 1960, which were all larger than the production of the entire industrial sector. More than 50 percent of the population were farmers during this period, which indicates that, before 1960, Taiwan's economy was an agricultural in nature (see Table 1). More than 1.6 million people, to include military personnel, civilians and businessmen, immigrated to the island from the mainland in 1949, increasing the local population by 30 percent creating a situation where the agricultural sector could not accommodate these new workers.

During the 1950s, its major exports were agricultural products and processed agricultural products. These accounted for 91.9 percent of Taiwan's total commodity exports in 1952 and 54 percent in 1965. Though the importance of agricultural exports had tended to decline over time, it did, however, make the greatest contribution to the creation of foreign exchange which, in turn, was used for the import of raw materials and capital equipment. Since 1954, the import of consumption goods has accounted for less than 10 percent of total good imports; the remaining percentage can be accounted for by the import of raw materials and capital equipment used in industrial production (see Table 2).

In 1952, Taiwan's major export was agricultural products; the export of sugar accounted for 73.46 percent, the export of rice for 15.26 percent and the export of bananas for 5.25 percent of Taiwan's total commodity exports--no one industrial product monopolized Taiwan's exports. In 1959, the export of sugar was still number one among the island's major exports, while the export of textiles rose to become number two; the export of rice

Table 1. Relative Importance of Agricultural Sector

Unit: %

	1952	1955	1960	1965	1970	1975	1980	1985	1990
Gross domestic product of agricultural sector as a % of total GDP	32.22	29.09	28.54	23.63	15.47	12.70	7.68	5.78	4.22
Gross domestic product of industrial product as a % of total GDP	19.69	23.23	26.87	30.21	36.83	39.92	45.75	46.28	42.29
Export of agricultural Products and processed agricultural product as a % of total exports	91.90	89.60	67.70	54.00	21.40	16.40	9.20	6.10	4.40
Agricultural population as a % of total population	56.10	53.60	50.20	46.50	36.70	30.40	19.50	17.50	12.80

Sources: Statistical Abstract of National Income, Taiwan Area, ROC, Prepared by DGBAS, 1991
Taiwan Statistical Data Book, Council for Economic planning and Development, 1990

Table 2. Composition of Imports

Year	Total		Capital Goods	Agricultural & Industrial Raw Materials	Consumption Goods
	Value (US$ Million)	100%	%	%	%
1952	187.20	100.00	14.21	65.87	19.93
1953	191.70	100.00	15.60	67.14	17.27
1954	211.40	100.00	15.14	72.28	12.58
1955	201.00	100.00	16.52	74.73	8.76
1956	193.70	100.00	18.69	73.88	7.43
1957	212.20	100.00	20.64	72.48	6.88
1958	226.20	100.00	21.79	71.79	6.41
1959	231.40	100.00	25.06	67.55	7.39
1960	296.80	100.00	27.86	63.98	8.15
1961	322.10	100.00	26.36	63.55	10.09
1962	304.10	100.00	23.41	68.27	8.32
1963	361.60	100.00	21.43	72.12	6.44
1964	428.00	100.00	22.13	71.78	6.10
1965	556.00	100.00	29.33	65.54	5.13
1966	622.40	100.00	29.40	65.54	5.06
1967	805.80	100.00	32.14	63.15	4.70
1968	903.30	100.00	32.45	62.94	4.62
1969	1212.70	100.00	34.73	60.83	4.44
1970	1524.00	100.00	32.32	62.83	4.85
1971	1843.90	100.00	31.96	62.93	5.11
1972	2513.50	100.00	31.12	63.21	5.68
1973	3792.50	100.00	28.55	65.84	5.61
1974	6965.80	100.00	30.76	62.38	6.86
1975	5951.70	100.00	30.64	62.61	6.75
1976	7598.90	100.00	29.07	64.75	6.18
1977	8510.90	100.00	25.84	66.37	7.80
1978	11026.90	100.00	24.71	68.48	6.81
1979	14773.70	100.00	24.57	69.02	6.41
1980	19733.10	100.00	23.43	70.78	5.79
1981	21199.60	100.00	16.23	76.93	6.84
1982	18888.40	100.00	16.32	75.45	8.23
1983	20287.10	100.00	13.90	78.30	7.80
1984	21959.10	100.00	13.62	78.65	7.73
1985	20102.00	100.00	14.11	76.90	8.99
1986	24164.60	100.00	14.96	75.61	9.43
1987	34957.20	100.00	16.06	74.09	9.85
1988	49655.80	100.00	14.87	73.68	11.44
1989	52248.60	100.00	16.37	72.14	11.49
1990	54719.00	100.00	17.52	70.44	12.04

Source: Ministry Of Finance, 1990

was number three. In 1965, the export of textiles became Taiwan's number one major export while the export of sugar was reduced to number two and the export of bananas took over the number three spot.

As for the two main factors of production, labor and capital, the former was in abundant supply in Taiwan while the later was not. The surplus of labor was a serious social problem--a result of the lack of jobs--and the shortage of capital created bottlenecks to investment--a result of Taiwan's low saving ratio[2]. Out of this difficult situation, labor-intensive industries were naturally developed.

It should be noted that, before 1960, the export of agricultural products accounted for 67.7 percent of total exports and that the gross domestic product of the agricultural sector accounted for 28.54 percent of total GDP, which was larger than gross domestic product of the industrial sector, indicating that not only that the export of agricultural products dominated total exports but also that agricultural production was greater than industrial production. As late as 1965, agricultural exports still accounted for 54 percent of total commodity exports. However, from 1965 on, the export of agricultural products began to no longer play a key role in exports; its share declined and the export of industrial products began to climb.

Just like in many other developed countries in the early stages of their economic development, the textile industry was first developed in Taiwan. In 1965, the export of textile products became Taiwan's number one export accounting for 15.77 percent of total commodity exports; textiles were the major product of the industrial sector. In the early 1980s, textile products were still Taiwan's number one export. However, since 1968, many other industrial products had also become major exports, such as plywood, wood-products, plastic articles, chemicals, metal manufactures and machinery. Among agricultural products,

only canned foods and fishery products could keep up a steady rate of growth in exports. In 1990, more than 95 percent of total exports were industrial products--the remainder being accounted for by agricultural products. Some of them utilizing a labor-intensive production process; however, most of them utilizing technology-intensive and/or capital-intensive ones.

As for the destination of Taiwan's exports, more than 70 percent of the island's total exports go to developed countries, not only because of the fact that these countries have greater purchasing power, but also because there is a great demand for Taiwan's products in these countries[3]. The United States and Japan have long been Taiwan's major trade partners. In 1957, 39.9 percent of Taiwan's imports came from the United States and 33.2 percent from Japan. And 35.2 percent of Taiwan's total exports went to Japan with only a very small percentage going to the United States. After 1957, Japan became the number-one country exporting to Taiwan, and the United States slid back to number two. From 1967 on, the United States became the number-one country for Taiwan's exports with Japan being number two. The sum of exports to the two countries accounted for 44.08 percent of the island's total exports in 1967, 45.09 percent in 1980, 59.3 percent in 1985. Since then, however, the ratio has declined. Since Taiwan's exports have heavily depended on the markets of the two countries, the industrial development of Taiwan has been related to changes in their policy. In particular, trade with the United States has been a headache to Taiwan, eventually forcing Taiwan to diversify its exports to other countries in the world. It should be noted that the diversification of Taiwan's exports has been successful.

Since 1980, the world has undergone some drastic changes; many developed countries have gradually lost their competitiveness and have implemented protectionist measures in order to save their declining industries. At the same time, many developing countries have been successful in increasing their competitiveness and have given up their protectionist policies and adopted ones of economic liberalization instead, allowing for the upgrading their

economic structures. Taiwan, one of these developing economies, has not only successfully diversified its exports but also has strengthened the development of sciences and technology to meet these new challenges.

III. Exports and the Motivation of Production

Commodity exports can be classified into two categories: agricultural products and processed agricultural products, and industrial products. The former made a greater contribution to Taiwan's exports before 1965, while the latter has made a greater contribution to exports since 1965. For instance, the export of agricultural products and processed agricultural products accounted for 54 percent of total exports in 1965 and for 4.4 percent in 1990, while the export of industrial products accounted for 46 percent in 1965 and for 95.6 percent in 1990 (see Table 3).

If we take a look at Taiwan's economic development process, we discover that a very interesting area is the change in the relationship between exports and the motivation of production. First, let's take a look at the relationship between the export of agricultural products and the motivation of their production.

(1) Production - domestic consumption = export

In the early stages of agricultural development, the motivation for export is the sale of the residual or surplus product. In other words, agricultural production is originally developed not for export, but for domestic consumption. Under this assumption, the export price of the product can be substantially reduced in order to facilitate its sale, since there is no relation to the cost of production--the export of rice, in Taiwan's case, being a good example.

Table 3. Composition of Exports

Year	Total		Agricultural Products %	Processed Agricultural Products %	Industrial Products %
	Value (US$ Million)	100%			
1952	116.50	100.00	22.10	69.80	8.10
1953	127.60	100.00	13.80	77.80	8.40
1954	93.30	100.00	13.30	76.10	10.60
1955	123.30	100.00	28.10	61.50	10.40
1956	118.30	100.00	18.50	64.50	17.00
1957	148.30	100.00	15.90	71.50	12.60
1958	155.80	100.00	23.70	62.30	14.00
1959	156.90	100.00	23.60	52.80	23.60
1960	164.00	100.00	12.00	55.70	32.30
1961	195.20	100.00	14.80	44.30	40.90
1962	218.20	100.00	11.90	37.60	50.50
1963	331.70	100.00	13.50	45.40	41.10
1964	433.00	100.00	15.00	42.50	42.50
1965	449.70	100.00	23.60	30.40	46.00
1966	536.30	100.00	19.80	25.10	55.10
1967	640.70	100.00	15.20	23.20	61.60
1968	789.20	100.00	11.10	20.50	68.40
1969	1049.40	100.00	9.30	16.70	74.00
1970	1481.40	100.00	8.60	12.80	78.60
1971	2060.40	100.00	7.90	11.20	80.90
1972	2988.10	100.00	6.80	9.90	83.30
1973	4483.40	100.00	7.50	7.90	84.60
1974	5639.00	100.00	4.80	10.70	84.50
1975	5308.80	100.00	5.60	10.80	83.60
1976	8166.30	100.00	5.00	7.40	87.60
1977	9360.70	100.00	5.40	7.10	87.50
1978	12687.10	100.00	5.00	5.80	89.20
1979	16103.40	100.00	4.40	5.10	90.50
1980	19810.60	100.00	3.60	5.60	90.80
1981	22611.20	100.00	2.60	4.60	92.80
1982	22204.30	100.00	2.00	5.10	92.90
1983	25122.70	100.00	1.90	4.80	93.30
1984	30456.40	100.00	1.70	4.30	94.00
1985	30725.70	100.00	1.60	4.50	93.90
1986	39849.30	100.00	1.60	4.90	93.50
1987	53611.70	100.00	1.30	4.80	93.90
1988	60585.40	100.00	1.40	4.10	94.50
1989	66201.20	100.00	0.70	3.90	95.40
1990	67214.20	100.00	0.60	3.80	95.60

Source: Ministry Of Finance, 1990

(2) Production - export = domestic consumption

In the latter stages of agricultural development, the motivation behind production of a commodity is mainly for export, and the residual is for domestic consumption. Therefore, changes in the export price can influence the cost of production--the export of shrimp, in Taiwan's case, being a good example.

Before 1963, the revenue from exports was insufficient to cover the cost of imports resulting in a balance-of-trade deficit. From 1963 through 1964, Taiwan's exports of sugar helped to turn the island's balance of trade from deficit into surplus[4].

The relationship between the export of industrial products and the motivation behind their production is much different than in that of agricultural products since all agricultural products are used for consumption while all industrial products are not--some are used for consumption and some for intermediate goods.

(1) Domestic demand - domestic production = import

In the early stages of industrial development, a country also produces industrial products but which, in numbers, are insufficient to meet demand, so the import of these products is required. Because the country does not have any foreign exchange to purchase these products, the country usually adopts a protectionist policy to restrict their import, on the one hand, and, on the other, substitute the use of domestically produced products for them.

(2) Domestic demand - domestic production = 0

Under this situation, domestic production is deemed sufficient to substitute domestically produced products for imported ones. And when domestic production exceeds domestic demand, the residuals are for export.

(3) Domestic production - domestic demand = export

In the latter stages of industrial development, the production of many industrial products are for export and the residuals are for domestic consumption--in Taiwan's case, a good example of this is textile products.

(4) Domestic production - export = domestic demand

Under this set of circumstances, a country's exports are easily affected by changes in the economic policies of his trade partners. Since 1976 Taiwan has enjoyed, in every year, a surplus in trade, which has become a big issue, not only within Taiwan but also in its relations with the United States[5].

IV. The Contribution of Exports to Economic Growth

During the last four decades, foreign trade has made a great contribution to Taiwan's economic growth in the sense that the import of capital goods and raw materials has supported industrial production and the export of goods has earned enough foreign exchange to be used for the purchase of imports. From 1952 to 1990, the average rate of growth of real GDP was 8.85 percent--the highest growth rate of any country in the world. Among the components of GDP, the greatest contribution to its growth was made by private consumption expenditure followed by the export of goods and services. The rate of the former was 4.74 percent while that of the latter was 3.9 percent. It can also be found, examining the data, that exports made the greatest contribution to economic growth in the period 1971-1990.

	Private Consumption Expenditure	Exports of Goods and Services
1952-60	4.95%	0.64%
1961-70	5.31%	3.28%
1971-80	4.58%	5.83%
1981-90	4.13%	5.52%

It can also be observed that private consumption expenditure made the greatest contribution to GDP growth only in the period, 1952-1970 (see Table 4).

The importance of foreign trade can be also seen from the ratio of total foreign trade to GDP. For instance, total foreign trade (sum of exports and imports) accounted for 53.08 percent of GDP in 1970. From that year on, the proportion has been increased every year. In 1980, it was 85.62 percent and, in 1987, the value of total foreign trade was larger than total GDP by 5.18 percent.

Taiwan's foreign trade has had several special features as shown in the following:

(1) Since 1987, the value of total trade was larger than GDP.

(2) Before 1967, Japan was the biggest importer of Taiwan's products while the United States was second. Since 1967, the United States has been the biggest importer of Taiwan's products while Japan slipped to number two.

(3) Taiwan has had a huge trade deficit with Japan since 1956 and a huge trade surplus with the United States since 1968.

(4) Taiwan's exports have been concentrated in the developed countries; exports to the United States accounted for 48 percent of total exports in 1984.

Table 4. Taiwan's Economic Growth and Its Sources

unit: % (at 1986 prices)

	GDP	Private Consumption Expenditure			Government Consumption Expenditure			Gross Domestic Fixed Capital Formation			Increase in Stock			Export of Goods and Services			Import of Goods and Services		
	Growth Rate (1)	Growth Rate (2)	Contribution Rate	Share of Contribution Rate	Growth Rate (3)	Contribution Rate	Share of Contribution Rate	Growth Rate (4)	Contribution Rate	Share of Contribution Rate	Growth Rate (5)	Contribution Rate	Share of Contribution Rate	Growth Rate (6)	Contribution Rate	Share of Contribution Rate	Growth Rate (7)	Contribution Rate	Share of Contribution Rate
Average																			
1952-55	9.74	10.24	7.05	70.38	9.38	2.44	25.47	12.92	1.02	9.08	-0.19	-0.06	-1.35	6.06	0.29	3.79	7.87	1.00	7.40
1956-60	6.72	4.98	3.27	47.57	7.79	2.18	34.05	15.07	1.32	20.06	30.03	0.34	5.34	12.35	0.92	13.55	11.25	1.33	20.56
1961-65	9.49	9.20	5.79	61.23	5.72	1.52	16.77	11.84	1.36	14.14	24.68	0.55	4.80	22.24	2.43	25.15	14.94	2.15	22.09
1966-70	9.82	8.01	4.84	49.46	9.05	2.09	21.51	19.00	2.93	30.03	24.05	0.09	-0.40	22.36	4.13	42.02	21.13	4.24	42.62
1971-75	9.03	8.69	4.80	87.64	4.30	0.82	-14.29	16.89	3.52	83.11	27.47	-0.54	51.93	17.02	4.99	-4.55	15.28	4.57	103.84
1976-80	10.62	8.21	4.35	42.49	8.96	1.54	15.25	9.87	2.30	25.26	-96.84	0.93	7.27	16.88	6.66	58.64	13.91	5.17	48.90
1981-85	6.74	6.35	3.17	50.86	5.75	0.93	16.10	-0.16	0.00	-1.36	-80.85	-0.44	-14.77	9.56	4.50	58.01	3.85	1.42	8.84
1986-90	8.80	10.35	5.09	63.79	9.27	1.37	18.89	12.99	2.51	29.99	-163.71	0.03	-1.75	11.84	6.55	63.67	16.68	6.76	74.60
1952-60	8.05	7.32	4.95	57.71	8.50	2.30	30.23	14.11	1.19	15.18	16.60	0.16	2.36	9.56	0.64	9.21	9.75	1.19	14.71
1961-70	9.66	8.61	5.31	55.34	7.39	1.80	19.14	15.42	2.14	22.08	24.36	0.32	2.20	22.30	3.28	33.59	18.04	3.20	32.35
1971-80	9.83	8.45	4.58	65.07	6.63	1.18	0.48	13.38	2.91	54.18	-34.69	0.20	29.60	16.95	5.83	27.04	14.59	4.87	76.37
1981-90	7.77	8.35	4.13	57.33	7.51	1.15	17.49	6.42	1.25	14.31	-122.28	-0.20	-8.26	10.70	5.52	60.84	10.27	4.09	41.72
1952-90	8.85	8.20	4.74	58.89	7.48	1.59	16.49	12.29	1.89	26.73	-30.17	0.12	6.58	15.01	3.90	33.27	13.25	3.39	41.97

Note: The distribution of growth rate of GDP:(1) = (2) + (3) + (4) + (5) + (6)-(7)
Contribution rate: The growth rate of component i at t year multiplied by the share of component i in GDP at t-1 year.
Share of contribution rate: Contribution rate of component i at t year divided by the growth rate of GDP at t year.
The figure of 1990 is estimated value.

Source: Directorate-General of Budget, Accounting and Statistics, National Income of the Republic of China, 1990.

V. A Trade-oriented Economic Development Model

From Taiwan's experiences of economic development that it has gained over the past four decades, we can draw a trade-oriented development model as follows:

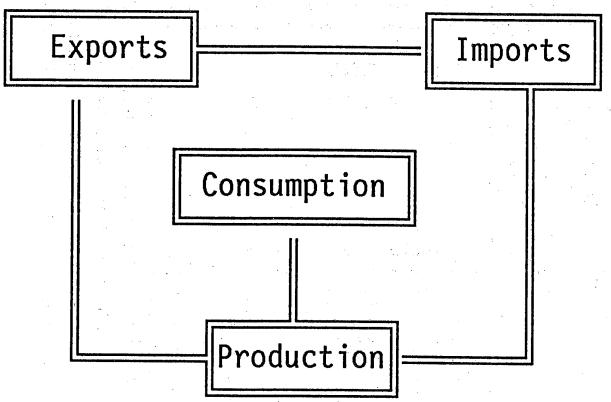
(1) Taiwan is an open economy and its economic growth has mainly depended on the growth of its foreign trade.

(2) Taiwan's imports are mainly for production and only a small percentage of what is produced is for domestic consumption.

(3) Taiwan's exports are primarily to cover the cost of imports and subject to the import volume of the rest of the countries in the world and the degree of competitiveness of their export sectors which, in turn, depends on their relative costs of production and changes in foreign exchange rates.

(4) Taiwan's production is not only for domestic consumption but also for export.

(5) The general framework of the model can be depicted by the following:



Since the core of Taiwan's economic growth came as the direct result of foreign trade, it may be necessary for us to examine the development of foreign trade. Generally speaking, over the last four decades, a high level of trade competition has prevailed in the free world. Taiwan, a developing country, joined in and began to compete in the trade arena, not only with other developing countries but also with the developed countries. This relationship can be described through the following matrix[6]:

Table 5 Trade Competition

	Developing Countries	Developed Countries
Developing Countries	11	12
Developed Countries	21	22

From Table 5, it can be seen that there are three categories of trade competition: The first category being trade competition among developing countries (11), such as that between Taiwan and Korea. In this category, the main markets in which the competition take place are not in the developing countries themselves but in those of the developed countries since they tend to have greater purchasing power than developing countries. Since the developing countries are in an earlier stage of development, their country's demand schedules are not very strong. The second category is trade competition between developing countries and developed countries (12) and (21). The developed countries relative comparative advantages lie in the production of industrial products, i.e., capital goods, and that of the developing countries lies in the production of labor-intensive products, i.e., agricultural and textile products. Trade competition among developed countries is the final category (22). This category includes trade competition between the United States and Japan for example.

low price is the optimal goal of competitors so that they can win the battle. Achievement of high quality and low price depends, to a great extent, on the level of wages and the level of technology in each country[7]. Table 6 displays the various combinations.

Table 6 Wage-and-technology-level combination

		Wage level	
		High	Low
Level of technology	High	HH	HL
	Low	LH	LL

HH: indicates an industry with a high technological level and a high wage level, which is the general case for a developed countries

HL: indicates an industry with a high technological level and a low wage level, which is the case in many newly industrializing countries

LH: indicates an industry with a low technological level and a high wage level--the situation which tends to exist in some developed countries with declining industries.

LL: an industry with a low technological level and a low wage level, which is the general case for developing countries.

An industry with a high wage level and a high technological level usually produces commodities of high quality and with high prices; sometimes, it may also provide commodities of high quality with low prices since technology could have the effect of reducing production costs. Many commodities produced in developed countries have such characteristics.

Taking Taiwan, once again, as an example. The wage level in Taiwan was low just a few years ago, but higher than in the neighboring countries. Taiwan manufacturers employed the same machinery equipment as the developed countries, which was also imported directly from them. Under this condition, industries with higher wage levels lost in the trade-competition battle to Taiwan manufacturers. As the wage level rose rapidly, without a complementary increase in the technological level, the industries of these developed countries began to decline. The problem is how can a country raise its level of technology so as to off-set the increases in the wage level.

As is well-known, technology is either embodied in the machinery or embodied in labor used in the production process. The former case is directly related to the R&D process while the latter is related to the process of employee education and training. Before 1968, Taiwan education system was comprised by six-year compulsory education where 56.8 percent of the people at and over the age of six received a primary education, 18.9 percent received a secondary education and 3.2 percent went on to obtain higher education. After 1968, the free-education system was extended to nine years; the general education level, as a direct result, was raised very rapidly. In 1989, 10.5 percent of the people received higher education, 44.9 percent received a secondary education, and 36.3 percent received a primary education. Secondary education and higher education are both important to support the labor supply so as to promote industrial development.

VI. The Role of the Government

So far as economic development is concerned, foreign trade is, and has been, very important to the country. And the government has played a key role throughout the process of economic development. During the past four decades, the government has made a great

contribution to the maintenance of political stability and social safety which are the most important requirements creating a healthy investment climate--increases in investment, depend on a good investment climate, and economic growth depends on increases in investment. The government has also adopted many effective measures to expand foreign trade.

(1) The Import Substitution period (1952-1961)

The main feature of this period was the fact that emphasis was placed on the development of import-substitution industries. The measures taken by the government in this period include:

(a) Adopting a protectionist trade policy focusing on various tariffs--tariff rates were raised in 1955--and non-tariff measures, such as restrictions on imports, import licensing and restrictions on the establishment of new factories.

(b) Strict controls over the allocation of foreign exchange because of its shortage.

To encourage the expansion of foreign trade, several major policy changes were made:

(a) Foreign exchange reform was undertaken in 1958 and the old multiple exchange rate system was gradually replaced by a devalued uniform rate.

(b) Tax rebates on industrial exports were liberalized and generalized.

(c) A large multifaceted package of fiscal incentives, for both domestic and foreign investors, was adopted. The most important of these measures were the "19-point Financial and Economic Reform Program" and "the Statute for the Encouragement of Investment" which were adopted in 1960.

(2) Export Expansion Period (1962-1971)

The main features of this period were that the promotion of exports was expanded and that export-oriented industries were left under the protection of import controls and

high tariffs. In order to achieve Taiwan's export goals, the implementation of the Statute for the Encouragement of Investment was promulgated in 1960 and the establishment of Export Processing Zones was undertaken in the late 1960s. The former was mainly intended to reduce the cost of production through tax reductions and tax exemptions so as to increase the products' competitive stance in the world market.

(3) Structural Adjustment Period (1972-1981)

The features of this period were that Taiwan's physical infrastructure was enhanced and new technology introduced. The government completed its plans for the Ten Major Development Projects and the Twelve Major Development Projects in the 1970s, and established the Hsinchu Science-based Industrial Park in 1980; The later was mainly used to introduce key technologies to Taiwan's industries so as to more rapidly upgrade the economy's industrial structure and increase its trade competitiveness.

(4) Economic Liberalization Period (1982 –)

The features of this period are primarily that the investment climate has been greatly improved, so as to help stimulate investment, and that an economic liberalization strategy has been adopted so as to respond to the new challenges of regionalism. Recently, tariffs have been greatly reduced, and they will continue to be reduced until they reach the 3.5 percent level, that of the OECD countries; Taiwan's non-tariff barriers have also been substantially eliminated. Obviously, deregulation was a hot issue in the 1980s.

VII. Concluding Remarks

The trade-oriented economic development model described above is based on the factor endowments of the country. So far as the past forty years are concerned, foreign trade has been the propeller of Taiwan's economic growth. If Taiwan were a closed

economy, it would have been impossible for Taiwan to have successfully transformed from an agricultural economy to an industrial one, and from a situation of poverty to a situation of prosperity.

Since Taiwan is endowed with limited natural resources and an large population, it has to make effective use of manpower in order to offset this shortage in natural resources. Taiwan's experiences have shown that a lack of natural resources is not a determinant factor in economic growth since the development of foreign trade can help solve this difficult problem.

The principle of comparative advantage is still an effective doctrine with which to gauge the expansion of foreign trade. Whether in the past or in the future, countries will, or have had to, face two main obstacles: protectionism and competition. whether a country chooses to battle protectionist policies or to fight on the competition front, one thing is always a prerequisite to success: improvement in competitiveness. By improvement of competitiveness, we mean that which comes about, not only as a result of the upgrading of technology, but also by improvements in the quality of labor.

This leaves the following question still to be answered: What role should the government play to provide for a favorable investment climate? It is no longer possible for the government to protect infant or declining industries through fiscal or financial incentives, not only because of the new trend in retaliation from trade partners but also because of the draw backs caused by the implementation of these measures. Taiwan's economy is made up of small businesses. And over the last four decades, small businesses have made a greater contribution to the development of foreign trade than larger enterprises; these smaller firms were also not protected by the government while the larger firms enjoyed the advantages of protection.

Footnotes

(1) Yu, Tzong-shian, "Prospects for Taiwan's Economic Development in the 1990s", Industry of Free China, May, 1989, P.9-18.

(2) In 1952, the gross savings ratio was only 9.2 percent, which accounted for only 60 percent of gross domestic capital formation. Fortunately, U.S. aid gave a big hand in dealing with the shortage of capital.

(3) Many developing countries have the same kind of industries as Taiwan does, and their mutual demand is very small, so that their trade is very small.

(4) In the two successive years, the price of sugar increased sharply, the exports of sugar had caused a large foreign exchange surplus which greatly improved the balance of trade.

(5) The successive accumulation of trade surplus since 1976 has caused financial troubles within Taiwan, that is, abnormal activity, such as the formation of under-ground investment companies, the sharp rise in the price of real estate, and the skyrocketing of stock prices.

(6) Refer to Tzong-shian Yu, "Trade Competition and Industrial Development Strategy," Industry of Free China, July, 1990, pp. 9-20.

(7) Refer to Tzong-shian Yu, "The Role of the Government in Industrialization", Conference on Economic Development Experiences of Taiwan and Its New Role in An Emerging Asia-Pacific Area, The Institute of Economics, Academia Sinica, June 8-10, 1988, pp. 121-151.

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