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CHUNG-HUA INSTITUTION FOR ECONOMIC RESEARCH

**POLICIES FOR INDUSTRIAL
DEVELOPMENT AND EVALUATION
OF THEIR ACHIEVEMENTS
IN THE REPUBLIC OF CHINA
ON TAIWAN**

TZONG-SHIAN YU

DISCUSSION PAPER SERIES No. 9503

April 1995



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**Policies for Industrial Development
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by
Tzong-shian Yu

President

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TZONG-SHIAN YU*

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I. Introduction

Since the 1980s, the so-called four Asian dragons, Taiwan, Korea, Hong Kong and Singapore, have attracted great attention in both developed and developing countries because of their remarkable economic performance. The achievements of the Republic of China on Taiwan in the area of economic development in particular have been regarded as an economic miracle. In retrospect, it was agricultural development that first provided a strong foundation for Taiwan's economic development, and then industrial development not only launched Taiwan's economy but also accelerated Taiwan's continued economic development. Consequently, Taiwan has been successfully transformed from a developing to a mature economy with a high growth rate, equitable income distribution, mild inflation, very low unemployment and huge foreign exchange reserves.

* President, Chung-Hua Institution for Economic Research.

** Presented at the meetings with Policymakers from Panama, Nicaragua and Costa Rica, March 18-25, 1995.

Many visitors to Taiwan have asked the question: what experiences of Taiwan's economic development are useful as references for other countries? Although it is not easy to give an exact answer, one can draw up a list of causes.

The main purpose of this report is to provide such a list. To address the topic, I would like to talk about the changes in the industrial structure of Taiwan over the past forty years, review the contributions of industrial development to Taiwan's economy and the policies for encouraging that industrial development, and then to evaluate those industrial policies. In my concluding remarks, I want to point out the role of the government in the process of industrial development.

II. Change in Industrial Structure

Prior to 1962, Taiwan could have been called preindustrial, since the share of the agricultural sector in GDP was larger than that of the industrial sector, indicating that Taiwan's economy was predominated by the agricultural sector. For instance, in 1952, the agricultural sector accounted for 32.22 percent of GDP while the industrial sector accounted for 16.69 percent. In 1962, the former accounted for 26.25 percent while the latter accounted for 24.74 percent. However, the period from 1963 to 1980 may be called the period of industrialization in Taiwan, since the industrial sector came to dominate the economy of Taiwan. Due to the rapid growth of the industrial sector, the amount of structural change occurring in all sectors of Taiwan's economy was obviously impressive. For example, during this period, the average growth rate of the industrial sector was 13.95 percent while that of the agricultural sector was only 2.94 percent. So the share of the agricultural sector has fallen substantially, from 24.59 percent in 1963 to 7.91 percent in 1980 while that of the industrial sector has correspondingly increased from 25.43 percent in 1963 to 45.98 percent in 1980.

It should be noted that from 1980 on to the present the structural change in sectors has continued. The share of the agricultural sector has continued to decline, from 7.91 percent in 1980 to 3.05 percent in 1994, while that of the industrial sector reversed its upward trend and started to

decline from 1986. From 1982 the service sector started to dominate Taiwan's economy. By 1994, the industrial sector made up 39 percent of GDP while the service sector made up 58 percent (see Table 1).

As for changes within the industrial structure itself, the share of mining declined from 12.70 percent in 1961 to 0.87 percent in 1994, while the share of construction and utilities remained rather stable. But the share of manufacturing rose from 66.38 percent in 1961 to a peak of 83.91 percent in 1987, and then began to decline to 79.07 percent in 1994, due mostly to the low overall growth rate since 1988 (see Table 2). However, the structure of manufacturing has gradually changed. The share of light industries has substantially declined from 59.71 percent in 1976 to 36.69 percent in 1994, while that of heavy industries has correspondingly increased from 40.29 percent in 1976 to 63.31 in 1994 and this trend will probably continue in the future (see Table 3). In other words, the share of labor-intensive industries has declined while that of technology-intensive and capital-intensive industries has risen correspondingly.

III. The Contribution of Industrial Development

Comparing the agricultural sector with the industrial sector, even in the period of pre-industrialization (before 1962), the industrial sector made greater contributions to Taiwan's economic growth than the agricultural sector. For instance, from 1952 to 1962, when the average growth rate of GDP was 7.93 percent, the contribution of the industrial sector to that growth was 27.63 percent while that of the agricultural sector was 21.94 percent. From 1963 to 1980, when the average growth rate of GDP was 10 percent, the contribution of the industrial sector was 48.17 percent while that of the agricultural sector was 5.8 percent, and that of the service sector was 46.06 percent. From 1981 to 1994, the average growth rate of GDP was 7.62 percent, with the contribution of the industrial sector being 41.3 percent and that of the agricultural sector being 0.8 percent.

It should be noted that the contribution of the service sector started to be greater than that of the industrial sector in the period 1981 to 1994. But the increase of the contribution of the service sector was mainly due to the

rapid growth of the industrial sector, because the two sectors are closely related to each other. This change also implies that Taiwan's economy has gradually been transformed from a developing stage to a mature one (see Table 1).¹

The growth of the industrial sector has also made great contributions to the growth of foreign trade,² even in the period of pre-industrialization. For instance, while the share of the export of industrial products was only 8.1 percent in 1952, it had increased to 50.5 percent in 1962. The share of agricultural products and processed agricultural products in exports was 91.9 percent in 1952 and then decreased to 49.5 percent in 1962. In 1993, the share of the export of industrial products had increased to 95.9 percent while that of the export of agricultural products and processed agricultural products had decreased to 4.1 percent, from which it can be seen that the export of industrial products has made the greatest contribution to total exports (see Table 1).

The industrial sector of Taiwan's economy has also created more job opportunities than other sectors, particularly before 1987. Employment in the industrial sector accounted for 42.76 percent of total employment in 1987, while that of the service sector accounted for 41.95 percent and that of the agricultural sector for 15.28 percent in the same year. From 1952 to 1962, the average growth rate of employment in the industrial sector, 4.25 percent, was the highest, that in the agricultural sector was the lowest at 0.64 percent, and that in the service sector was 2.62 percent. From 1963 to 1980, employment in the industrial sector had the highest growth rate and made the greatest contribution to total employment, and employment in the service sector was the next in importance, but employment in the agricultural sector made a negative contribution. From 1981 to 1994, employment in the service sector has had the highest growth rate and made the greatest contribution to total employment, while the importance of employment in the industrial sector has been substantially reduced because

¹In all developed countries, the tertiary sector (or service sector) accounts for a higher percentage of GDP than the secondary sector (or industrial sector), which is the result of being at a mature stage of economic development.

²The growth of the industrial sector and the growth of foreign trade are closely related. The growth of the industrial sector is the cause of the growth of foreign trade on the one hand, and the growth of foreign trade has also been the cause of the growth of the industrial sector on the other for Taiwan.

of the sluggishness of industrial growth in Taiwan since 1988. It can be recalled that in 1987, Taiwan started to have "financial fever" caused by a rapid increase in the trade surplus and money supply which in turn caused a sharp rise of stock prices and skyrocketing of land prices (see Table 4).³

IV. Policies for Encouraging Industrial Development

The government has played a key role in the process of Taiwan's economic development, particularly in the earlier stage. In the early 1950s, Taiwan was in crisis, not only because of the military threat from communist China, but because of domestic social disturbances as well. Taiwan's economy in the early 1950s, as stated before, was dominated by agriculture, and the living standard of the populace was poor. Income levels were extremely low, so the saving ratio was also very low, 15.3 percent in 1952. Even in 1960, it was only 17.8 percent, which was insufficient to launch the investment necessary for economic development.⁴ To cope with the situation, the government initiated several development strategies, the most important of which can be stated as follows.

³From 1987 through 1990, Taiwan enjoyed a huge trade surplus and foreign exchange reserves. Due to the government's control of foreign exchange, all the revenue of exports in U.S. dollars must be surrendered to the Central Bank of China and then the Central Bank of China issues currency to traders, so, in this three-year period, the money supply increased dramatically. When the people who held this money used it in the stock market, the prices of stock rose sharply; and when they used it in the real estate market, the prices of real estate skyrocketed, so, during that period of time, speculation prevailed.

⁴During the 1950s, U.S. aid gave Taiwan a big hand. Many investments were partly financed by the Sino-American Relatives Foundation.

The Protection of Fledgling Industry

In the early 1950s, the government in Taiwan adopted the strategy of enacting protection measures to shelter fledgling domestic industry from the threat of competition from developed foreign industry. Policymakers believed that the infant industries would have the opportunity to establish themselves and become strong enough to face international competition if they could be protected in their initial period. This idea has exerted profound influence on policymakers in Taiwan.

The Development of Trade-oriented Industry

Taiwan is a comparatively small island, with limited natural resources and high population density, and is not endowed with highly fertile soil. Taiwan cannot be self-sufficient. The island needs imports to feed its people and to supply domestic production. This is why government policies have been directed toward the development of foreign trade. The rationale is to increase imports for increasing domestic production, and to expand exports for increasing imports. Accordingly, exports are regarded as an engine while imports are the fuel to generate the power for accelerating Taiwan's economic growth.

The Development of Labor-intensive Industry

Taiwan, in the early stage of its development, was rich in manpower but poor in capital, so it was very natural for Taiwan to develop labor-intensive industry. This kind of industry can create many job opportunities and so is helpful in improving living standards. Above all, the development of labor-intensive industry gave Taiwan its comparative advantage during that period of time (1950s-1980). That was also a time when Taiwan lacked capital, so it was extremely difficult to develop capital-intensive industry.

The Development of Public Enterprises

Prior to the 1970s, private enterprise in Taiwan was characterized primarily by small- and medium-scale enterprises. These smaller companies could not set up large factories and also could not obtain credit from foreign banks. So the government in Taiwan took the lead and established large factories such as Taiwan Power company, China

Petroleum Company, China Steel Company, etc. to support the development of private enterprises. These big factories played a very important part in Taiwan's development before the 1980s.

To materialize these strategies, the government took effective steps and carried out the following policy measures.⁵

The 19-point Financial and Economic Reform Program

This program was established in 1959 and served as a guideline for Taiwan's economic development. The program called for the government to begin to transfer state-owned enterprises to private ownership and also to accord protection or assistance to private firms, including the application of tax relief, the provision of foreign exchange and the expansion of credit.

The Statute for Encouragement of Investment

In 1960, the government promulgated this statute, which was intended primarily to encourage the channeling of private savings into investment by productive enterprises. The statute provided tax and other benefits for such activity and also facilitated the acquisition of land for industrial use. In order to cope with changes in social and economic conditions, the statute has since been revised many times.

Export-Processing Zones and the Hsinchu Science-Based Industrial Park

In 1966, the government set up several export processing zones. These are a combination of a free-trade area and an industrial park designed to promote export-oriented industries by providing a favorable climate for industrial development. They are supposed to stimulate economic growth, promote foreign trade and expand job opportunities. Additionally, in 1981, the government established the Hsinchu Science-

⁵Refer to Feng-Hsiung Hsiao's *Industrial Policies and Industrial Development: The Experiences of Taiwan* (in Chinese), published by the Far-Eastern Economic Research and consulting agency, 1994. In this book, all the important policies are presented and discussed.

Based Industrial Park to introduce new technology and management skills into Taiwan's industrial enterprises, and to help transform the industrial structure of Taiwan from labor-intensive industries to technology-intensive ones.

The Statute for Upgrading Industrial Structure

In view of the decreasing effectiveness of the old Statute for Encouragement of Investment, the government in 1991 decided to promulgate this new statute, which is aimed at encouraging investment in R&D, training programs for workers, automation, and equipment for eliminating pollution rather than encouraging exports directly by means of fiscal and financial measures.

V. Evaluation of Taiwan's Industrial Policies⁶

From the 1950s to the 1980s, the government adopted many policy measures, both fiscal and financial, to foster industrial development. Although it goes without saying that the purposes of these policies were justifiable in the very beginning, the consequences of their implementation may not have been as effective as expected in the long run, and these policies may even have brought about some drawbacks in their later stages. This possibility is examined in the following section.

The Effects of Protecting Fledgling Industries

In Taiwan, many policymakers believed that infant industries should be protected from competition until they matured. This idea has strongly influenced policymakers in Taiwan, and elsewhere, for many years. Actually, it can now be seen that if an industry has always been protected,

⁶Refer to Tzong-shian Yu's "Does Taiwan's Industrialization Have Its Own Paradigm?," *Journal of Asian Economics*, Vol. 5(4) Winter, 1994, pp.499-514.

it cannot grow strong. Take, for example, the effect of protection on the development of the domestic automobile industry. This industry has been protected in Taiwan for more than 35 years, but it still cannot compete with foreign carmakers in the world market. Insurance is another example of an industry that has been protected by the government since its beginning, but is still unable to face international competition.

The Effects of Long-run Government Subsidies

Prior to the 1990s, many policy measures were in the form of subsidies. Government policymakers supposed that subsidy measures, such as tax exemptions, tax reductions, tax refunds and loans with low interest rates, could stimulate investment. Now it is becoming clearer that while it is true that such measures may be very effective in the short run, usually in the long run they prove detrimental. For instance, many firms took advantage of tax refund measures to promote exports by making false exports. These days, any kind of subsidy to domestic industries is considered an unfair trade practice by Taiwan's trade partners. According to a 1984 survey, what businessmen really care about is not government subsidies but the prospects for their business.⁷ If their business looks promising, businessmen usually are not motivated by how much they can gain from subsidies.

The Effects of Accelerating Industrial Development by Any Means

"Everything for export" has been the slogan for economic development in Taiwan. For this purpose, many firms have developed their industries at the expense of Taiwan's natural environment, so pollution problems have accumulated. Today, air pollution, water pollution and noise pollution throughout Taiwan have become major issues causing serious concern. Extensive areas of farmland have been polluted, and many rivers cannot support fish. The overdevelopment of inland aquacultural enterprise has caused the appearance of sinkholes in many places, even though the export of these products made large profits for a few entrepreneurs. The mistakes so made were mainly due to the

⁷ Sun, Keh-nan, 1984. "Evaluation of the Statute for the Encouragement of Investment and its Economic Efficiency." Taipei: Chung-Hua Institution for Economic Research.

ignorance and greed of the entrepreneurs and policymakers.

The Effect of Overemphasis on Short-Run Benefits and Profit

Many policy measures which may have had advantages in the short run, also have had serious drawbacks in the long run. Unfortunately, what policymakers are concerned with is short-run interests rather than the public's long-run interests. For instance, land ownership in Taiwan has long been a highly significant issue. In the early 1950s land reform, in a "land-to-the-tiller" policy, was successful not only in raising farm productivity but also in improving farmers' livelihoods. This eased tensions regarding land ownership for several decades. However, since the 1980s, land has again become an object of speculation. If one holds a piece of land, he can become a billionaire overnight. This kind of real estate speculation has become a key factor in deepening the inequality of income distribution in Taiwan. Moreover, if the government decides to build some infrastructural project, such as a railway or harbor, an extremely high price must be paid to obtain the land for public use.⁸

VI. Concluding Remarks

Despite these difficulties, industrial development has been a key factor in accelerating economic growth in Taiwan. For Taiwan, agricultural development was the basis for initiating industrial development, which, in turn, has been the key factor in fostering the development of the service sector. During the last four decades, the government in Taiwan has played an important role in improving the domestic investment climate and in stimulating investment. Consequently, the industrial base of Taiwan has gradually transformed from labor-intensive industry to technology- and capital-intensive industries. More importantly, Taiwan has successfully

⁸In Taiwan, land is a limited natural resource. The price of land rises with increases in population and rapid economic growth. Some argue that if the land belongs to the public and not to individuals, speculation could be avoided. Currently, land problems have again become the most important social problem to be resolved in Taiwan.

transformed itself from a developing to a mature economy. It cannot be denied that the role of the government has been gradually decreasing with the rapid expansion of the private sector over the past 40 years.

The Republic of China on Taiwan can be regarded as a model for developing countries. Its development shows how a country can improve itself, developing from poverty to prosperity, and transforming itself from a backwater to a modern cosmopolitan society. The strengths of Taiwan's industrial development can be valuable positive references for other developing countries, while its weaknesses and failures may be lessons to be learned in avoiding waste and pollution.

In conclusion, I would like to quote an old Chinese saying, "A stone taken from distant mountains can still be useful as a sharpener."

Table 1. Structural Change in Sectors of Taiwan, R.O.C.
(at 1991 Prices)

Year	Growth Rate of GDP	Agricultural Sector			Industrial Sector			Service Sector		
		Percen- tage	Growth Rate	Contri- bution	Percen- tage	Growth Rate	Contri- bution	Percen- tage	Growth Rate	Contri- bution
1952	11.98	32.22	11.75	3.79	19.69	3.33	0.71	48.10	16.11	7.47
1953	9.33	34.45	16.92	5.45	19.39	7.71	1.52	46.15	4.91	2.36
1954	9.54	28.03	-10.89	-3.75	23.92	35.13	6.81	48.05	14.04	6.48
1955	8.11	29.09	12.09	3.42	23.23	4.99	1.19	47.68	7.28	3.50
1956	5.50	27.45	-0.42	-0.12	24.41	10.86	2.52	48.13	6.51	3.10
1957	7.36	27.32	6.86	1.88	25.26	11.07	2.70	47.42	5.76	2.77
1958	6.71	27.76	4.52	1.24	24.83	4.88	1.23	48.41	8.94	4.24
1959	7.65	26.35	5.97	1.60	27.10	17.50	4.34	46.56	3.53	1.71
1960	6.31	28.54	15.14	3.99	26.87	5.42	1.47	44.59	1.83	0.85
1961	6.88	24.95	3.00	0.85	23.70	-3.70	-0.99	51.35	15.74	7.02
1962	7.90	23.81	2.95	0.74	24.19	10.15	2.41	52.00	9.27	4.76
1963	9.35	22.29	2.40	0.57	24.88	12.46	3.01	52.83	11.09	5.77
1964	12.20	22.48	13.15	2.93	26.01	17.27	4.30	51.51	9.41	4.97
1965	11.13	21.81	7.83	1.76	26.50	13.23	3.44	51.69	11.52	5.94
1966	8.91	20.56	2.66	0.58	27.76	14.13	3.74	51.67	8.88	4.59
1967	10.71	19.53	5.18	1.06	28.92	15.34	4.26	51.54	10.43	5.39
1968	9.17	18.77	4.93	0.96	30.57	15.36	4.44	50.66	7.30	3.76
1969	8.95	16.55	-3.97	-0.75	33.01	17.65	5.39	50.45	8.49	4.30
1970	11.37	15.49	4.27	0.71	34.71	17.12	5.65	49.80	9.94	5.01
1971	12.90	13.84	0.84	0.13	36.84	19.84	6.89	49.32	11.81	5.88
1972	13.32	12.58	3.00	0.42	38.92	19.71	7.26	48.50	11.43	5.64
1973	12.83	11.50	3.11	0.39	40.07	16.15	6.29	48.44	12.69	6.15
1974	1.16	11.61	2.19	0.25	38.96	-1.65	-0.66	49.43	3.24	1.57
1975	4.93	10.61	-4.09	-0.47	39.44	6.24	2.43	49.94	6.01	2.97
1976	13.86	10.09	8.26	0.88	42.13	21.60	8.52	47.78	8.94	4.46
1977	10.19	9.51	3.79	0.38	42.97	12.41	5.23	47.52	9.59	4.58
1978	13.59	8.28	-1.04	-0.10	44.78	18.36	7.89	46.94	12.21	5.80
1979	8.17	8.01	4.64	0.38	44.50	7.51	3.36	47.49	9.43	4.43
1980	7.30	7.32	-2.00	-0.16	45.33	9.28	4.13	47.36	7.01	3.33
1981	6.16	6.87	-0.38	-0.03	45.38	6.30	2.85	47.75	7.04	3.34
1982	3.55	6.79	2.45	0.17	44.40	1.30	0.59	48.81	5.85	2.79
1983	8.45	6.38	1.78	0.12	44.95	9.80	4.35	48.68	8.15	3.98
1984	10.60	5.87	1.80	0.11	45.80	12.69	5.71	48.33	9.82	4.78
1985	4.95	5.71	2.22	0.13	45.24	3.66	1.68	49.05	6.51	3.15
1986	11.64	5.12	-0.04	0.00	45.91	13.30	6.02	48.98	11.48	5.63
1987	12.74	4.80	5.86	0.30	45.78	12.43	5.71	49.41	13.75	6.73
1988	7.84	4.50	1.05	0.05	44.65	5.18	2.37	50.85	10.97	5.42
1989	8.23	4.14	-0.55	-0.02	43.11	4.50	2.01	52.75	12.28	6.25
1990	5.39	4.01	2.08	0.09	41.35	1.09	0.47	54.64	9.17	4.84
1991	7.55	3.79	1.76	0.07	41.07	6.82	2.82	55.14	8.54	4.66
1992	6.76	3.45	-2.87	-0.11	40.11	4.28	1.76	56.44	9.27	5.11
1993	6.32	3.42	5.44	0.19	39.29	4.12	1.65	57.29	7.93	4.48
1994	6.51	3.08	-4.11	-0.14	39.00	5.73	2.25	57.93	7.69	4.40
Average										
1952-1962	7.93	28.18	6.17	1.74	23.87	9.76	2.17	48.04	8.54	4.02
1963-1980	10.00	14.49	3.06	0.55	35.91	14.00	4.75	49.60	9.41	4.70
1981-1994	7.62	4.85	1.18	0.07	43.29	6.51	2.87	51.86	9.17	4.68

Note: $(\text{Rate of contribution})_i = (\text{growth rate})_i \times (\text{percentage distribution})_i$

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

Table 2. Structural Change in the Industrial Sector

Year	Total		Mining		Manufacturing		Construction		Utilities	
	%	Growth rate	%	Growth rate	%	Growth rate	%	Growth rate	%	Growth rate
1952	100.00	29.13	10.39	104.05	65.40	21.57	19.64	38.10	4.56	5.44
1953	100.00	31.10	9.10	14.73	65.14	30.57	21.02	40.33	4.74	36.13
1954	100.00	35.44	8.14	21.23	65.99	37.21	22.01	41.77	3.86	10.43
1955	100.00	15.52	7.72	9.57	67.26	17.74	20.87	9.57	4.15	24.03
1956	100.00	20.60	9.06	41.45	68.10	22.11	18.40	6.33	4.44	29.07
1957	100.00	20.78	9.85	31.27	69.00	22.37	16.04	5.30	5.11	39.14
1958	100.00	10.01	11.30	26.23	67.55	7.71	15.47	6.08	5.68	22.16
1959	100.00	25.82	9.00	0.24	71.52	33.21	13.93	13.26	5.55	23.03
1960	100.00	19.59	8.35	10.92	71.00	18.72	14.47	24.28	6.18	33.08
1961	100.00	10.84	7.61	1.00	71.06	10.93	14.52	11.19	6.82	22.25
1962	100.00	16.95	8.35	28.39	70.70	16.37	13.92	12.13	7.03	20.57
1963	100.00	20.01	6.90	-0.77	73.40	24.58	13.39	15.41	6.31	7.78
1964	100.00	18.52	5.76	-1.16	75.45	21.83	12.27	8.66	6.52	22.50
1965	100.00	9.87	6.11	16.66	73.75	7.41	13.15	17.68	6.99	17.67
1966	100.00	13.13	6.09	12.79	73.79	13.18	13.12	12.88	7.00	13.42
1967	100.00	24.83	5.62	15.09	75.69	28.05	12.68	20.72	6.01	7.08
1968	100.00	21.79	4.53	-1.70	76.96	23.84	12.40	19.06	6.10	23.73
1969	100.00	23.99	3.54	-3.28	78.96	27.21	11.34	13.37	6.17	25.28
1970	100.00	15.11	3.65	18.82	79.21	15.48	10.54	6.98	6.60	23.15
1971	100.00	22.93	3.32	11.70	80.81	25.41	10.04	17.11	5.83	8.64
1972	100.00	28.23	2.98	15.20	82.32	30.62	9.51	21.44	5.19	14.25
1973	100.00	36.62	2.42	10.98	83.97	39.37	9.20	32.22	4.40	15.82
1974	100.00	24.30	2.98	52.78	80.56	19.24	11.05	49.35	5.41	52.83
1975	100.00	5.28	3.09	9.18	77.31	1.05	13.18	25.54	6.42	24.80
1976	100.00	29.74	3.03	27.21	78.24	31.29	13.16	29.58	5.57	12.68
1977	100.00	19.30	2.62	3.11	77.83	18.69	13.85	25.50	5.70	22.05
1978	100.00	22.95	2.24	5.19	78.85	24.56	13.42	19.11	5.49	18.43
1979	100.00	21.03	2.05	10.99	79.18	21.53	13.64	23.07	5.12	12.91
1980	100.00	25.80	2.07	27.00	78.74	25.10	13.69	26.19	5.50	35.12
1981	100.00	18.26	1.90	8.71	78.25	17.53	12.48	7.83	7.37	58.25
1982	100.00	4.44	1.74	-4.32	79.40	5.97	11.33	-5.17	7.53	6.75
1983	100.00	12.07	1.54	-1.10	79.94	12.83	10.33	2.14	8.20	22.07
1984	100.00	14.55	1.31	-2.70	81.32	16.53	9.24	2.50	8.14	13.64
1985	100.00	5.84	1.22	-0.88	81.17	5.65	8.91	2.10	8.69	13.12
1986	100.00	17.50	1.03	-1.61	83.53	20.92	8.02	5.78	7.42	0.30
1987	100.00	12.33	1.00	8.98	83.33	12.06	8.34	16.73	7.34	11.09
1988	100.00	4.55	1.00	5.56	82.85	3.95	9.38	17.62	6.76	-3.64
1989	100.00	5.51	0.99	4.45	81.66	4.00	10.55	18.62	6.79	5.96
1990	100.00	6.54	0.93	0.10	80.79	5.40	11.45	15.68	6.82	6.95
1991	100.00	11.27	0.90	7.26	81.18	11.80	11.43	11.01	6.49	5.91
1992	100.00	7.73	1.19	42.23	79.51	5.51	12.50	17.85	6.80	12.87
1993	100.00	7.63	1.38	24.50	78.16	5.80	13.53	16.50	6.94	9.78
1994	100.00	4.01	0.88	-33.35	77.62	3.30	14.29	9.83	7.21	8.04
Average										
1952-1962	100.00	21.43	8.99	26.28	68.43	21.68	17.30	18.94	5.28	24.12
1963-1980	100.00	21.30	3.83	12.77	78.06	22.14	12.20	21.33	5.91	19.90
1981-1994	100.00	9.44	1.22	4.13	80.62	9.37	10.84	9.93	7.32	12.22

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

Table 3. Structural Change in Manufacturing

Year	Total %	Light Industries %	Heavy Industries %
1976	100.00	59.71	40.29
1977	100.00	57.15	42.85
1978	100.00	56.07	43.93
1979	100.00	55.60	44.40
1980	100.00	54.37	45.63
1981	100.00	53.24	46.67
1982	100.00	54.17	45.83
1983	100.00	52.45	47.55
1984	100.00	51.78	48.22
1985	100.00	52.56	47.44
1986	100.00	51.78	48.22
1987	100.00	49.86	50.14
1988	100.00	47.32	52.68
1989	100.00	45.89	54.11
1990	100.00	44.51	55.49
1991	100.00	43.33	56.67
1992	100.00	41.26	58.74
1993	100.00	38.19	61.18
1994	100.00	36.69	63.31
Average			
1976-1980	100.00	56.58	43.42
1981-1994	100.00	47.36	52.64

Source: Industrial Production Statistics Monthly, Taiwan Area,
 Republic of China, Department of Statistics,
 Ministry of Economic Affairs

Table 4. Change in Employment, by Sectors

Year	Total		Agricultural Sector		Industrial Sector		Service Sector	
	%	Growth rate	%	Growth rate	%	Growth rate	%	Growth rate
1952	100.00	1.24	56.06	0.12	16.90	4.87	27.04	1.41
1953	100.00	1.19	55.57	0.30	17.61	5.45	26.82	0.38
1954	100.00	2.09	54.76	0.61	17.71	2.68	27.53	4.78
1955	100.00	2.71	53.64	0.60	18.02	4.48	28.35	5.76
1956	100.00	1.32	53.19	0.48	18.32	3.04	28.49	1.82
1957	100.00	2.54	52.31	0.84	18.95	6.07	28.74	3.46
1958	100.00	3.44	51.11	1.07	19.73	7.68	29.16	4.96
1959	100.00	2.46	50.32	0.88	20.31	5.46	29.37	3.18
1960	100.00	1.49	50.16	1.16	20.53	2.59	29.31	1.29
1961	100.00	0.92	49.84	0.29	20.88	2.66	29.27	0.79
1962	100.00	1.03	49.70	0.74	21.04	1.78	29.26	0.97
1963	100.00	1.44	49.42	0.85	21.27	2.55	29.32	1.64
1964	100.00	1.87	49.47	1.97	21.29	1.96	29.24	1.61
1965	100.00	2.84	46.45	-3.43	22.30	7.70	31.25	9.91
1966	100.00	2.44	45.01	-0.74	22.57	3.69	32.43	6.29
1967	100.00	5.06	42.54	-0.69	24.57	14.37	32.89	6.56
1968	100.00	4.32	40.83	0.12	25.37	7.74	33.80	7.21
1969	100.00	3.91	39.32	0.06	26.31	7.74	34.37	5.67
1970	100.00	4.24	36.74	-2.61	27.93	10.65	35.34	7.16
1971	100.00	3.54	35.14	-0.95	29.91	10.88	34.95	2.41
1972	100.00	4.43	32.98	-1.98	31.83	11.15	35.19	5.13
1973	100.00	7.66	30.49	-0.49	33.70	13.97	35.82	9.59
1974	100.00	2.98	30.93	4.50	34.31	4.85	34.76	-0.05
1975	100.00	0.64	30.45	-0.94	34.90	2.39	34.65	0.31
1976	100.00	2.70	28.94	-2.38	36.42	7.16	34.64	2.67
1977	100.00	5.47	26.71	-2.68	37.63	8.96	35.67	8.60
1978	100.00	4.21	24.92	-2.76	39.47	9.33	35.61	4.03
1979	100.00	3.19	21.46	-11.14	41.51	8.78	36.93	7.03
1980	100.00	1.82	19.50	-7.46	42.52	4.04	37.98	4.72
1981	100.00	1.89	18.84	-1.57	42.39	1.58	38.77	4.02
1982	100.00	2.07	18.85	2.15	41.31	-0.53	39.84	4.87
1983	100.00	3.82	18.63	2.57	41.15	3.41	40.23	4.83
1984	100.00	3.38	17.59	-2.35	42.26	6.19	40.14	3.16
1985	100.00	1.64	17.46	0.86	41.57	-0.03	40.97	3.75
1986	100.00	4.09	17.03	1.54	41.58	4.11	41.39	5.16
1987	100.00	3.75	15.28	-6.91	42.76	6.72	41.95	5.15
1988	100.00	1.05	13.73	-9.22	42.47	0.35	43.80	5.50
1989	100.00	1.87	12.91	-4.22	42.09	0.96	45.01	4.67
1990	100.00	0.29	12.85	-0.19	40.83	-2.70	46.32	3.23
1991	100.00	1.90	12.95	2.73	39.93	-0.35	47.12	3.65
1992	100.00	2.27	12.34	-2.56	39.61	1.45	48.06	4.30
1993	100.00	1.32	11.49	-5.63	39.08	-0.03	49.43	4.22
1994	100.00	2.21	10.92	-2.83	39.23	2.59	49.86	3.08
Average								
1952-1962	100.00	1.86	52.42	0.64	19.09	4.25	28.48	2.62
1963-1980	100.00	3.49	35.07	-1.71	30.77	7.66	34.16	5.03
1981-1994	100.00	2.25	15.06	-1.83	41.16	1.69	43.78	4.26

Source: Monthly Bulletin of Manpower Statistics, Taiwan Area, Republic of China

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