

ECONOMIC DEVELOPMENT OF TAIWAN

A Thesis

Presented to

the Faculty of the College of Arts and Science

The University of Houston

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts in Economics

by

Thomas Tung-shan Tsao

June 1966

347747

ECONOMIC DEVELOPMENT OF TAIWAN

**An Abstract of
a Thesis
Presented to
the Faculty of the College of Arts and Science
The University of Houston**

**In Partial Fulfillment
of the Requirements for the Degree
Master of Arts in Economics**

**by
Thomas Tung-shan Tsao**

June 1966

ABSTRACT

Taiwan, also known as Formosa, was restored to Chinese sovereignty in 1945 when Japan surrendered unconditionally in the second Sino-Japanese War. It soon became one of the thirty-five provinces of the Republic of China.

In 1949, the Central Government of China moved to Taiwan when the Chinese Communists took over the mainland. Being damaged by the devastating bombing, Taiwan's industry and agriculture were paralyzed. Taiwan was deemed one of the major underdeveloped areas in the world. However, fifteen years later, Taiwan's economy has developed to the extent that it not only enjoys the second highest standard of living among the nations in the Southeast Asia but has also entered the stage of "take-off" to becoming a fully developed nation.

An attempt is made to analyze the economic development of Taiwan during the past fifteen years and to examine the development process utilized. The dual policy adopted by the Chinese Government for development progress called for coordinated growth in agriculture and industry. This policy has been proven successful in developing the economy of this

primarily agricultural country. It is hoped that Taiwan's economic achievements and developmental techniques can serve as a pattern of growth for other underdeveloped countries in the world.

TABLE OF CONTENTS

	PAGE
INTRODUCTION	1
CHAPTER	
I. ECONOMIC BACKGROUND OF TAIWAN	4
Historical Background	4
Natural Environment	5
Topography	5
Climate	7
Resources	9
Population	9
Land	10
Mineral Deposits	10
Forestry	12
II. GENERAL SURVEY OF TAIWAN'S ECONOMY	13
Agriculture of Taiwan	13
Agricultural Population	13
Agricultural Production	13
Industry of Taiwan	17
Foreign Exchange and Trade Control System . . .	23
Foreign Exchange and Trade Control Policy . .	23
Existing Exchange Rate System	25

CHAPTER	PAGE
Foreign Trade of Taiwan	28
III. LAND REFORM OF TAIWAN	32
General Factors	32
Scarcity of Arable Land	32
Population Pressure	33
Maladjustments in Land Distribution	33
Tenancy Situation	35
The Land Reform Program	36
Farm Rental Reduction	40
Sale of Public Farm Land	41
Land-to-the-Tiller Program	44
Achievements of the Land Reform	51
IV. FOUR-YEAR ECONOMIC DEVELOPMENT PLANS	55
First Four-Year Economic Development Plan	55
Second Four-Year Economic Development Plan	58
Third Four-Year Economic Development Plan	61
Fourth Four-Year Economic Development Plan	64
V. NATIONAL INCOME AND EMPLOYMENT	67
Gross National Product	67
National Income and Per Capita Income	67
Employment	70

CHAPTER	PAGE
Wages	75
VI. MONEY, CREDIT, AND PRICES	78
Money	78
Currency System of Taiwan before 1949	78
Currency Reform	80
Credit	85
Interest Rates	85
Deposits	91
Loans	93
Prices	95
VII. ECONOMIC GROWTH OF TAIWAN	103
Determinants of Economic Growth	103
Population Growth	103
Capital Accumulation	103
Technology	104
Natural Resources	110
Efficient Political and Economic System	110
Comparison of Economic Growth Rates with	
Other Countries	112
Comparison with Rates of Growth of Other	
Countries for the Same Period	112

CHAPTER	PAGE
Comparison with the Past Comparable	
Records of Developed Countries	115
The Stage of Economic Growth of Taiwan	119
VIII. CONCLUSION	127
Problems of Future Economic Development of	
Taiwan	127
Prospects of Future Economic Development of	
Taiwan	128
Summary	131
BIBLIOGRAPHY	135

LIST OF TABLES

TABLE	PAGE
I. Geographical Position of Taiwan	6
II. Average Temperature of Taiwan	8
III. Principal Mineral Reserves of Taiwan	11
IV. Agricultural Population of Taiwan	14
V. Output of Principal Agricultural Products	15
VI. Output of Principal Industrial Products	20
VII. Composition of Imports	29
VIII. Composition of Exports	30
IX. Index Numbers of Imports and Exports	31
X. Population Density and Natural Increase Rate	34
XI. Index Numbers of Agricultural Production	53
XII. Comparison of the Goals and Results of the First Four-Year Plan	57
XIII. Comparison of the Goals and Results of the Second Four-Year Plan	59
XIV. Comparison of the Goals and Results of the Third Four-Year Plan	62
XV. Goals of the Fourth Four-Year Economic Development Plan	65

TABLE	PAGE
XVI. Gross National Product of Taiwan	68
XVII. National Income of Taiwan	69
XVIII. Per Capita Income of Taiwan	71
XIX. Population over 12 Years of Age by Employment	72
XX. Industrial Wage Index	76
XXI. Quantity of Old Taiwan Dollars	81
XXII. Currency Issue in Taiwan	86
XXIII. Interest Rates on Deposits of Bank of Taiwan .	87
XXIV. Interest Rates on Loans and Rediscounts of the Central Bank of China	89
XXV. Interest Rates on Loans of Bank of Taiwan . .	90
XXVI. Deposits of All Banks	92
XXVII. Loans and Discounts of All Banks	94
XXVIII. Wholesale Price Index for Taipei	96
XXIX. Consumer Price Index for Taiwan	98
XXX. Gross Domestic Capital of Taiwan	105
XXXI. Economic Growth Indicators for Different Countries	113
XXXII. Economic Growth Indicators for Different Countries	116

TABLE**PAGE****XXXIII. Average Annual Growth Rate of Real Per Capita****Income for Selected Countries in Different****Periods 118****XXXIV. Ratios of Net Domestic Capital Formation to****National Income for Selected Countries in****Different Periods 120**

INTRODUCTION

The purpose of human life today is not only survival but also a progressively higher standard of living for all the people of the world. Undoubtedly, the economic life of human beings has improved greatly throughout the centuries. But today millions of people in many parts of the world are still fighting against poverty and starvation. Most of those people live in the underdeveloped areas, which have many common characteristics, such as shortage of capital, backward technology, low productivity, political instability, surplus population, and so on. In order to enable all the people in the world to live better, it is necessary to help the people of the underdeveloped areas to improve their standard of living.

Taiwan, also known as Formosa, was an underdeveloped area ten years ago but now enjoys the second highest standard of living among the nations in Southeast Asia. In view of its recent economic achievements it seems appropriate that an attempt be made to examine its process of development. It is hoped that its pattern of growth will be of some interest to the other underdeveloped areas.

Taiwan was ceded to Japan in 1895. In 1945 it was restored to the Republic of China becoming one of the thirty-five provinces of China. When the Chinese Communists took over the mainland in 1949, the Central Government of China moved its seat to the island. Since then, the Chinese Government strove to achieve a high rate of economic development. It adopted a two-track policy in developing Taiwan's economy. The policy called for a coordinated growth in agriculture and industry. The economic achievements made in the past fifteen years prove that the policy was correct and effective, especially for a primarily agricultural nation. However, there is still much to be done in order further to develop the economy of Taiwan toward industrialization. Many problems still remain to be solved, such as surplus population, lack of heavy industry, shortage of entrepreneurs, military burden and so on.

Chapter I describes Taiwan's historical background, its natural environment and resources. The scope and limitations of Taiwan's economy are dealt with in Chapter II. The land reform program, playing a vital role in over-all economic development, and the Four-Year Economic Development Plans, are

discussed in Chapter III and Chapter IV. National income, money, credit, prices, and employment are analyzed in Chapters V and VI. The analysis of economic growth of Taiwan is presented in Chapter VII. The problems faced by Taiwan in its economic development now and in the foreseeable future are discussed in Chapter VIII.

CHAPTER I

ECONOMIC BACKGROUND OF TAIWAN

I. HISTORICAL BACKGROUND

The story of the island begins with the Malay people, who came first, followed by the Chinese who crossed the Taiwan Straits from Kwangtung and Fukien in the 12th century. In 1661, General Cheng Chen-Kung of Ming Dynasty, better known as Koxinga, led his fleets and soldiers at Fort Zeelandia, now known as Fort Anping, near Tainan, to continue his fight against the Manchus who had overrun the Chinese mainland. Koxinga drove the Dutch out of the island and restored it to Chinese rule. Unfortunately, he died before he could return to the mainland. His grandson, Cheng Ke-Song, carried on the fight. But the odds were too great. In 1686, the island was finally subdued by the Manchus.

Chinese settlers arrived steadily during the next two centuries. And the population stood at 2,600,000 when the first Sino-Japanese War broke out in 1894.¹ China had

¹ Free China 1963 (China Color Printing Company, Inc., 1963), p. 23.

to cede Taiwan and the neighbouring Penghu Island (Pescadores) to Japan when the war ended. Taiwan was not restored to Chinese sovereignty until August 1945 when Japan surrendered unconditionally in the second Sino-Japanese War.

II. NATURAL ENVIRONMENT

Topography. Lying off the Fukien coast, between the Philippines on the south and Japan on the north, the Taiwan island is about 100 miles off the Chinese mainland. The main island (Taiwan), covering 13,808 square miles, is approximately 250 miles in length and between 60 and 90 miles in width. Taiwan comprises 14 islands in the Taiwan group and 64 islands in the Penghu group. The combined area of the 78 island is 13,886 square miles. The exact geographical position of Taiwan Province and two groups of island is shown in Table I.

There are two main mountain ranges with ten mountains more than 12,000 feet in height. The towering central range bisects the island length-wise into the rocky rugged regions in the western half. Rivers are short and run mostly toward the east or west.

Taiwan, including the offshore island, has a 1060-mile

TABLE I
GEOGRAPHICAL POSITION OF TAIWAN

	LONGITUDE		LATITUDE	
	ASPECT	APEX	ASPECT	APEX
Taiwan Province	Eastern Point	122° 06' 25"	Southern Point	21° 45' 25"
	Western Point	119° 18' 13"	Northern Point	25° 37' 53"
Taiwan Island	Eastern Point	122° 06' 25"	Southern Point	21° 45' 25"
	Western Point	120° 01' 00"	Northern Point	25° 37' 53"
Archipelago of Penghu	Eastern Point	119° 42' 54"	Southern Point	23° 09' 40"
	Western Point	119° 18' 13"	Northern Point	23° 45' 41"

Note: At flood tide.

Source: Bureau of Accounting and Statistics, Provincial Government of Taiwan, Taiwan Statistical Abstract No. 19, p. 1.

coast line. The terrain on the eastern coast is interlaced with deltas and small rivers with sandy banks. The winding northern coast has many small bays and inlets, while the plains are the dominating feature of the southern coast.

Since the Pacific earthquake range lies nearby the island, Taiwan is quite tremulous. Fortunately, most of the earthquakes are weak and sectional.

Climate. Since the Tropic of Cancer lies through the middle part of the island, sub-tropical climate prevails over the great part of Taiwan. Only in the southern section the climate is tropical. { Spring and autumn are very brief. Summer usually lasts from May through October. Short and mild, winter covers only the months of December, January, and February.

Annual average temperature is 21.8°C at Keelung in the north and 24.3°C at Kaohsiung in the south. Table II shows the monthly and annual average temperature of selected counties from the north, south, east, west and center. There is no great difference in temperature between summer and winter. It hardly snows in the winter except in the high mountain area.

The rainfall is fairly distributed over the whole island.

TABLE II

AVERAGE TEMPERATURE OF TAIWAN

		KEELUNG (North)	HSINCHU (West)	TAICHUNG (Center)	KACHSIUNG (South)	HUALIEN (East)
Monthly Average Temperature (C)	JAN	15.5	15.0	15.8	18.7	17.2
	FEB	15.2	14.6	15.7	19.3	17.4
	MAR	16.7	17.0	18.2	21.6	19.0
	APR	20.2	20.5	22.0	24.5	21.6
	MAY	24.1	24.1	25.2	27.2	24.1
	JUN	26.5	26.7	26.9	27.9	26.3
	JUL	28.2	27.9	27.7	27.8	27.2
	AUG	28.0	27.7	27.5	27.7	27.1
	SEP	26.5	26.5	26.6	27.6	26.0
	OCT	23.4	23.7	23.8	26.0	23.6
	NOV	20.3	21.5	20.6	23.5	21.2
	DEC	17.3	16.8	17.3	20.1	18.7
Annual Average		21.8	21.8	22.3	24.3	22.5
Number of years re- corded		43	8	49	13	35

Source: Joint Commission on Rural Reconstruction (JCRR), General Agricultural Statistics of Taiwan, 1962, Taipei: Government Printing Office, December, 1962, p. 21.

Only Keelung, well known as a harbor of rain, is the exceptional region. Generally speaking, the northern part has more rainfall than the southern.

Since the island is situated in the Pacific Ocean, seasonal winds are common. The typhoon season comes between May and October. It usually brings a great deal of rain in its path. The mild ones help to bring the rainfall needed for crops, but the strong ones cause a lot of damage.

III. RESOURCES

Population. The total population of Taiwan was little over six million at the end of 1946, 3,060,527 males and 3,030,333 females.² By 1949, the population amounted to 7,396,931, an increase of more than 25 per cent in three years.³ There were two reasons for this phenomenon: a) higher birth rates, and b) the rising tide of immigrants from other provinces. The former amounted to about one million persons, and the latter about four hundred thousand including civilians and

²Bureau of Accounting and Statistics, Provincial Government of Taiwan, Taiwan Statistical Abstract No. 19, p. 18.

³Ibid.

military personnel retreating from the mainland to the island redoubt. The number of immigrants continued to increase in the subsequent years. As of 1964, the total population of Taiwan stood at 12,257,000.⁴

Land. The total area of Taiwan is 35,961.21 square kilometers (roughly equal to 13,808 square miles), of which 19,941.97 are plain area and 16,019.24 mountain area. The Central Mountain Range on the island divides the plain area into two parts, the east and the west. Most of the plain or cultivated land is on western side. The total cultivated land area in 1963 amounted to 872,208 hectares, of which 528,709 hectares were paddy fields, including single and double cropping fields, and 343,499 hectares were dry land.⁵

Mineral Deposits. Taiwan is not blessed with abundant mineral deposits. All principal mineral items are listed in Table III, together with reserves. Important mineral items necessary for developing heavy industry are

⁴"Industry of Free China," Vol. XXIII, No. 6, June, 1965, p. 70.

⁵Directorate-General of Budgets, Accounts & Statistics (DCBAS), the Republic of China, Statistical Abstract of the Republic of China, 1964, p. 44.

TABLE III

PRINCIPAL MINERAL RESOURCES OF TAIWAN

ORE	UNIT	RESERVES as of 1960
Coal	m.t.	531,290,000
Gold (Hydrothermal)	m.t.	7,900,000
Copper (containing gold)	m.t.	6,300,000
Pyrite	m.t.	2,140,000
Placer Magnetite	m.t.	300,000
Linconite	m.t.	1,000,000
Nickel	m.t.	2,000,000
Manganese	m.t.	300,000
Titanite	m.t.	45,000
Zircon Ore	m.t.	24,000
Thorium	m.t.	9,000
Sulphur	m.t.	2,676,000
Petroleum	k.l.	339,000
Natural Gas	1,000 m ³	38,220,000
Asbestos	m.t.	100,000
Dolomite	m.t.	10,000,000
Marble	m.t.	30,000,000
Talc	m.t.	5,000,000
Glass Sand	m.t.	83,634,000

Source: Council for U. S. Aid, the Republic of China,
Taiwan Statistical Data Book, June, 1961, pp. 5-6.

non-existent. Petroleum and iron ores are mostly imported from other countries.

Forestry. Since almost half of Taiwan is mountainous, forests become a rather abundant and important resource. The forested area on Taiwan is fairly evenly distributed between four elevations: 0-599, 600-1199, 1200-1999, and 2000+ meters. However, the proportion of the forest stands in the higher volume categories increases rapidly with elevation. Only 3.6 per cent of the forest land below 600 meters has 100 cubic meters or more per hectares, while 60.6 per cent of the stands above 2,000 meters have over 100 cubic meters per hectare.⁶ The forest capacity in 1962 was 238,986,066 cubic meters, of which 98,541,067 were conifers and 140,444,999 were broad-leaf trees.⁷

⁶Taiwan Forestry Bureau, Provincial Government of Taiwan, Forestry of Taiwan, Taipei: Government Printing Office, 1958, p. 44.

⁷DGBAS, Statistical Abstract of the Republic of China, 1964, p. 50.

CHAPTER II

GENERAL SURVEY OF TAIWAN'S ECONOMY

I. AGRICULTURE OF TAIWAN

Agricultural Population. Despite efforts to speed up industrialization in Taiwan, the agriculture is and will remain important for some years to come. Today over 50 per cent of the total population still live on farms. (see Table IV.)

Agricultural Production. Agricultural products of Taiwan may be divided into two categories: rice which is produced in the paddy fields and other crops produced on dry land. Ever since the land reform was undertaken in 1949, agricultural production has increased rapidly. [Table V shows the output of several selected principal agricultural products from 1949 to 1964 as well as the yield per hectare.]

The main factors responsible for the agricultural progress in Taiwan are as follows: a) the incentive given to farmers through the implementation of the Land-to-the-Tiller Program, which has succeeded in converting a vast majority of

TABLE IV

AGRICULTURAL POPULATION OF TAIWAN

1952 - 1963

PERIOD	No. OF FARM HOUSEHOLDS	NO. OF FARMERS	TOTAL POPULATION
1952	679,750	4,257,136	8,128,374
1953	702,325	4,381,816	8,438,016
1954	716,582	4,488,763	8,749,151
1955	732,555	4,603,138	9,077,643
1956	746,318	4,698,532	9,390,381
1957	759,234	4,790,084	9,690,250
1958	769,925	4,880,901	10,039,435
1959	780,402	4,975,233	10,431,341
1960	785,592	5,373,375	10,792,202
1961	800,835	5,467,445	11,149,139
1962	809,917	5,530,832	11,511,728
1963	824,560	5,611,356	11,883,523

Source: DGBAS, Statistical Abstract of the Republic of China, 1963, pp. 30 and 39; Ibid., 1964, pp. 30 and 45.

TABLE V

OUTPUT OF PRINCIPAL AGRICULTURAL PRODUCTS

1949 - 1964

PERIOD	RICE		SWEET POTATOES	
	Production m.t.	Yield per hectare (kilos)	Production m.t.	Yield per He. (kilos)
*Peak before restora- tion	1,402,414	2,242	1,769,985	12,734
1949	1,214,523	1,624	2,166,048	9,172
1950	1,421,486	1,845	2,200,833	9,443
1951	1,484,792	1,882	2,021,719	8,737
1952	1,570,115	1,998	2,090,463	8,953
1953	1,641,557	2,109	2,276,942	9,576
1954	1,695,107	2,183	2,556,823	10,328
1955	1,614,953	2,151	2,437,443	9,928
1956	1,789,829	2,284	2,568,104	11,154
1957	1,839,009	2,348	2,693,417	11,774
1958	1,894,127	2,434	2,957,893	12,934
1959	1,856,316	3,392	2,894,146	12,778
1960	1,912,018	2,495	2,978,676	12,654
1961	2,016,276	2,577	3,233,563	13,713
1962	2,112,874	2,660	3,079,586	13,180
1963	2,109,037	2,815	2,148,171	9,469
1964	2,246,639	2,937	3,347,797	13,609

*Peak period: 1938 for rice, 1937 for sweet potatoes.

Source: "Industry of Free China," Vol. XXIV, No. 2, August, 1965, pp. 72-77.

TABLE V (continued)

PERIOD	WHEAT		SUGARCANE		FORESTRY PRODUCTS (Cu. M.)
	Produc- tion m.t.	Yield per He. (kilos)	Production	Yield per He. (kilos)	
*Peak before restora- tion	6,559	628	12,835,395	79,039	588,443
1949	10,051	721	6,193,818	50,606	246,794
1950	19,100	1,042	5,860,958	48,064	326,689
1951	15,165	1,058	3,584,997	45,237	368,447
1952	16,604	1,139	4,800,883	49,003	448,570
1953	14,288	1,058	8,394,348	74,136	462,874
1954	15,493	1,397	6,310,090	65,950	476,783
1955	19,304	1,503	6,088,871	78,121	480,954
1956	27,099	1,735	6,343,248	69,782	492,911
1957	36,129	1,812	7,083,395	72,110	577,216
1958	39,850	1,755	7,521,085	74,142	719,350
1959	43,029	1,884	8,093,447	81,571	818,080
1960	45,574	1,808	6,736,236	70,505	822,326
1961	44,248	2,034	7,922,383	79,082	897,978
1962	42,100	2,067	6,142,408	65,697	904,722
1963	18,739	1,304	6,506,590	69,145	879,026
1964	19,709	2,097	6,746,961	70,999	1,069,582

*Peak period: 1941 for wheat, 1938-39 for sugarcane, and 1942 for forestry products.

former tenant-farmers into owner-farmers; b) the organization and strengthening of farmer associations through which improved farming techniques are demonstrated, credit facilities provided, and cooperative marketing and purchasing conducted; c) heavy investments by the government in developing irrigation projects and the fertilizer industry; d) technical and financial assistance afforded under the U. S. aid programs; e) government planning and execution of an agricultural development program.

II. INDUSTRY OF TAIWAN

The Japanese, who ruled Taiwan for fifty-one years, left behind a number of agricultural processing industries, including sugar refining, pineapple canning and tea processing. In order to meet their wartime needs, the Japanese also started, on a rather small scale, a few industries, such as petroleum refining, shipbuilding, and fertilizer, aluminum and textile plants.

Taiwan's industrial activity came to a standstill when the war ended because of the damage inflicted by the devastating air raids, the lack of proper maintenance throughout the war years, and a general shortage of industrial raw materials.

Rehabilitation was difficult and slow in the early postwar days due to a lack of funds and materials. The unstable political situation on the Mainland prevented the central government from contributing much to solve problem. The loss of the Mainland to the Communists and the evacuation of thousands of Mainlanders to Taiwan made the situation even worse.

Late in 1950, U. S. aid arrived just in time. It made available materials and equipment for the rehabilitation and construction of power plants, textile mills, fertilizer factories, steel works and some other important industries. Economic and technical assistance from the United States not only speeded up the rehabilitation work, but also helped stabilize Taiwan's economy by permitting the importation of large quantities of consumer goods.

In 1953, upon completion of its rehabilitation task, the Chinese Government began its long-range economic development efforts. In the same year it launched its first four-year plan followed successively by a second, third, and fourth. The purpose of the four-year plans was to improve the living standards of the people. At the same time, the government pursued a policy of fostering private enterprises. { For

example, four large government-owned manufacturing establishments, namely, the Taiwan Cement Corporation, the Taiwan Pulp and Paper Corporation, the Taiwan Industrial and Mining Corporation and the Taiwan Agricultural and Forestry Development Corporation were converted to private ownership in the 1950's.

In order to further encourage industrial investment and promote the growth of private industry, a number of measures have recently been adopted by the government:

A. In order to hasten capital formation and to encourage domestic savings, a series of education programs were launched and an island-wide network of savings institutions, comprising banks, post offices, farmers associations and credit cooperatives established to fulfill the purpose. Also, the Statute for Encouragement of Investment was promulgated in September 1960 to induce foreign investment. A five-year income tax exemption was extended to new and essential industries. Undistributed profits used for reinvestment were made tax-exempt. So were export sales. Many other benefits for local and international investors were provided under the law.

B. For coordinating investment promotion activities

within the government and providing general investment service to private investors, the Industrial Development and Investment Center was activated in December 1959. The Center serves as a liason among government, private domestic and foreign investors.

C. Long and short term credit assistance is provided by the government through banks and other financing institutions to improve the productivity of private industries and to finance the manufacture of export commodities. Also, technical assistance is given to private industries by the China Productivity and Trade Center, a private organization established with the backing of the government in 1955.

D. A number of restrictions on the use of farmland for plant sites have been removed in recent years, and two carefully designed industrial districts, Liutu in the north and suburban Kaohsiung in the south, have been created to provide prospective investors with suitable plant sites.

E. For promotion of exports, the government has offered assistance to improve packing, inspection and transportation of export goods. It has also encouraged and assisted in the organization of export associations in addition to sponsoring

trade missions and exhibits at various international trade fairs.¹

All the above-mentioned measures are aimed at encouraging capital investment in private industry. The result has been most encouraging. The most noticeable improvement (see Table VI) is the increase of electric power production from 1,040,414,000 k.w.h. in 1950 to 5,914,078,000 k.w.h. in 1964. The production of cement, gasoline, paper and calcium superphosphate is also phenomenal. Needless to say, Taiwan's economy is on the high road toward greater industrialization. The change in economic structure may be evidenced by the fact that in 1963, industry accounted for 29.1 per cent of net domestic production and agriculture 28.6 per cent.² For the first time industrial production has exceeded agricultural production. It may safely be said that the Taiwan economy has finally reached the "take-off" point.

¹Han Lih-Wu, Taiwan Today, Hwa Kuo Publishing Company, Taipei, Taiwan, China, 1964, p. 106.

²"Annual Report on Taiwan's Economy, 1963," Industry of Free China, Vol. XXII, No. 4, October, 1964, p. 25.

TABLE VI

OUTPUT OF PRINCIPAL INDUSTRIAL PRODUCTS

1949 - 1964

PERIOD	COAL	CRUDE OIL	NATURAL GAS	SALT	SUGAR	COTTON FABRICS
Unit	M.T.	KL.	1000 m ³	M.T.	M.T.	1000 m
1949	1,614,127	3,567	25,449	253,948	618,361	29,051
1950	1,404,631	3,644	40,454	175,063	586,224	39,370
1951	1,656,858	3,409	30,155	274,766	355,955	55,978
1952	2,286,394	2,894	27,804	311,714	623,980	85,148
1953	2,392,704	2,830	30,295	171,499	947,899	130,232
1954	2,117,603	5,572	29,064	388,910	642,022	166,648
1955	2,359,316	3,745	25,952	449,718	802,925	167,244
1956	2,529,046	3,357	27,118	328,504	775,797	142,426
1957	2,916,084	2,778	28,755	387,093	917,861	155,453
1958	3,181,418	2,390	26,212	443,919	866,847	147,186
1959	3,563,131	2,071	26,332	429,663	887,568	156,101
1960	3,961,946	2,256	25,438	453,244	845,696	176,202
1961	4,236,574	2,641	37,069	434,879	851,856	200,105
1962	4,553,581	2,228	38,397	594,715	686,364	199,651
1963	4,810,040	2,949	50,653	626,122	722,827	221,056
1964	5,027,653	9,686	169,394	602,179	903,307	241,188

Sources: Industry of Free China, Vol. IV, No. 1, July, 1955, pp. 50-57, and Vol. XXII, No. 4, October, 1964, pp. 82-95, and Vol. XXIV, No. 2, August, 1965, pp. 84-97.

TABLE VI (continued)

PERIOD	PLYWOOD	PAPER	CALCIUM SUPERPHO- SPHATE	GASOLINE	CEMENT
Unit	1000 m ²	M.T.	M. T.	KL.	M.T.
1949	-----	9,066	31,830	58,931	291,170
1950	-----	15,047	37,790	31,258	331,976
1951	-----	20,554	54,151	79,920	389,033
1952	1,393	27,633	62,065	81,274	445,618
1953	2,453	27,897	69,145	110,261	519,676
1954	3,872	33,792	78,049	137,099	536,416
1955	4,149	38,560	80,188	169,038	589,883
1956	3,721	49,357	100,714	162,713	591,206
1957	4,372	59,634	103,605	186,551	603,933
1958	6,864	71,883	103,810	201,493	1,014,739
1959	8,759	85,740	116,550	233,758	1,067,431
1960	10,315	97,268	121,460	298,477	1,183,101
1961	18,641	98,534	130,000	312,739	1,509,588
1962	26,287	110,010	143,714	318,159	1,870,411
1963	31,170	106,067	172,160	328,222	2,245,960
1964	66,925	126,203	184,850	344,910	2,355,246

TABLE VI (continued)

PERIOD	ALUMINUM INGOTS	GENERAL MACHINERY & PARTS	ELECTRIC FANS	*AUTO- MOBILES	ELECTRIC POWER	GAS
Unit	M.T.	M.T.	Units	Units	1,000 k.w.h.	1000 m ²
1949	1,312	2,988	59	-----	854,300	-----
1950	1,761	4,493	355	-----	1,040,414	-----
1951	2,984	4,081	2,807	-----	1,285,104	-----
1952	3,856	6,155	9,852	-----	1,420,313	1,851
1953	4,906	7,752	14,052	-----	1,564,341	3,029
1954	7,132	7,748	30,153	-----	1,805,322	3,234
1955	7,001	8,815	53,183	-----	1,966,358	3,942
1956	8,759	9,322	81,544	-----	2,249,810	4,256
1957	8,259	9,980	102,775	-----	2,555,187	5,015
1958	8,577	10,073	104,546	98	2,880,332	5,130
1959	7,455	14,282	169,024	514	3,212,839	5,634
1960	8,260	19,308	203,843	917	3,627,960	5,321
1961	9,017	54,454	188,357	1,008	4,083,707	12,648
1962	11,009	60,129	206,950	1,752	4,692,662	39,103
1963	11,928	67,785	185,299	1,291	5,018,536	53,876
1964	19,372	91,797	158,461	1,797	5,914,078	59,486

*Automobiles include sedans, trucks and buses.

III. FOREIGN EXCHANGE AND TRADE CONTROL SYSTEM

Foreign Exchange and Trade Control Policy. Most of the countries in the world which experience difficulties in their external economic relations impose exchange and trade controls in varying degrees. Taiwan is one of them.

The existing foreign exchange and trade control system of Taiwan is based on the Program for Improvement of Foreign Exchange and Trade Control promulgated in April 1958. The major policies of this program are:³

A. Realization of a unitary exchange rate and trade liberalization: The main purpose of the existing foreign exchange and trade control is to realize a unitary exchange rate, with free convertibility and free trade as the final goal when the payments position is balanced.

B. Price mechanism and the exchange rate: To bring

³Foreign Exchange and Trade Control Commission, the Republic of China, Foreign Exchange and Trade Handbook, Taipei: Government Printing Office, 1961, p. 7.

about a single exchange rate and to encourage free trade, the price mechanism operating on the exchange rate must be permitted to function so that trade may be rationalized and administrative controls eliminated. However, to maintain exchange rate stability, full functioning of the free price mechanism at the present stage of development may not be advisable. Thus, the price mechanism has been allowed to operate only on a limited scale since the exchange control reform in 1958. Hence, the existing exchange rate, though realistic, is not a true equilibrium rate and its effects on both exports and imports are partially mitigated. A restrictive screening of imports is still imposed on invisible payments while certain difficulties are encountered in inducing inward transfer of funds.

C. Full development of the mechanism and function of the exchange settlement certificate: The existing foreign exchange and trade control system is based on exchange settlement certificates, which serve as a link between exports and imports. The actual rate of exchange is determined by the demand for and supply of these certificates, and export promotion and import restriction are exercised through these instru-

ments. The certificates also serve as a medium for equalizing profits realized from exports and imports, with an ultimate goal of balancing trade payments. Export proceeds are all paid in exchange certificates, which in turn represent full import rights. However, the existing market rate for exchange certificates is still far from realistic because of the influence of the controlling authorities.

Existing Exchange Rate System. In order to further understand the function of the foreign exchange and trade control it is necessary to explain the existing exchange rate system. The existing exchange rate is a unitary one based on an exchange certificate selling rate of NT\$40.03 to US\$1.00 of the Taiwan Sugar Corporation. Exchange certificates are issued for exports and inward remittances in the amount of exchange surrendered while certificates equivalent in value are required of imports and outward remittances. The exchange certificate rate, therefore, represents the effective exchange rate.

The Taiwan Sugar Corporation only quotes a selling rate on exchange certificates, but not the buying rate inasmuch as the purpose of designating the Corporation to quote a selling

rate is to permit the market rate of exchange certificates to fluctuate below the posted rate. The following are the characteristics of the existing exchange rate:

A. It is restrictive. As the Taiwan economy is not fully stabilized, the Taiwan Sugar Corporation has been authorized by the Chinese Government to sell exchange certificates at the rate of NT\$40.03 to US\$1.00 without any limitation in amount in order to avoid undue fluctuation in the market rate of exchange certificates. The latter rate can fluctuate via supply and demand from the posted price of Taiwan Sugar Corporation down to the government stabilized rate, usually NT\$40 to US\$1.00. Therefore, the rate is highly restrictive.

B. It is fluctuating. In principle, the posted exchange certificate rate is not pegged but allowed to fluctuate according to the demand and supply situation of the market. When the posted rate of Taiwan Sugar Corporation is considerably higher than the market rate, importers will naturally buy their required certificates in the open market and Taiwan Sugar Corporation will be forced to lower its posted rate. Conversely, when the market rate rises, importers will acquire their certificates from the Taiwan Sugar Corporation which may have

to raise its posted rate in order to slow down the demand for certificates. The exchange rate is, therefore, a fluctuating one.

C. It is a free market rate. The purpose, posting only the selling rate but not the buying rate of exchange certificates, is to permit the existence of a free certificate market with certain restrictions, i.e., the maintenance of a fluctuating market exchange rate. The reason for not posting a buying rate is to force the exporters to sell their certificates in the open market where importers will buy them only if the rate is lower than the rate posted by Taiwan Sugar Corporation.⁴

In short, the above-mentioned foreign exchange and trade control system is a measure adapted to the changing economic conditions in Taiwan. Taiwan's economy has been growing by leaps and bounds in recent years. It is gratifying to see some tendency toward exchange relaxation. It can be expected that controls will be lifted when and if the economy

⁴ Ibid., p. 8.

develops to the point where it is feasible to adopt a freer foreign trade policy.

IV. FOREIGN TRADE OF TAIWAN

In the past decade Taiwan has made considerable progress in promoting foreign trade, as shown in Tables VII, VIII and IX, covering the period from 1952 to 1964. There are two characteristics which are worth noting. First, in the 1952 to 1964 period exports of industrial products showed a marked increase; surely this should be considered as a reflection on industrial growth. Second, since 1963, exports exceeded imports. This favorable balance of trade amounted to US\$20 million in 1963 and US\$52 million in 1964. This is the first time that China has ever had a favorable balance of trade throughout its entire history. However, if U. S. aid had been eliminated, there still would have been a deficit.

TABLE VII

COMPOSITION OF IMPORTS

1952 - 1964

Value: US\$1,000

PERIOD	TOTAL	CAPITAL GOODS	AGRICULTURAL & INDUSTRIAL RAW MATERIAL	CONSUMPTION GOODS
1952	206,980	27,115	153,482	26,383
1953	190,597	32,988	130,731	26,878
1954	203,976	39,376	140,927	23,673
1955	190,065	35,339	135,419	19,307
1956	228,225	55,076	155,100	18,049
1957	252,235	66,632	165,965	19,638
1958	232,785	60,200	146,501	26,084
1959	244,350	75,980	149,502	18,868
1960	252,216	69,489	158,835	23,892
1961	324,050	91,952	193,644	38,454
1962	327,542	84,354	211,536	31,652
1963	336,787	82,936	225,580	28,271
1964	410,401	102,491	264,861	43,049

Note: Imports include bank's exchange settlements, U. S. aid and others.

Source: Council for International Economic Cooperation and Development (CIECD), Executive Yuan, China, Taiwan Statistical Data Book, 1965, Government Printing Office, 1965, p. 120.

TABLE VIII

COMPOSITION OF EXPORTS

1952 - 1964

Value: US\$1,000

PERIOD	TOTAL	AGRICUL- TURAL PRODUCTS	PROCESSED AGRICULTURAL PRODUCTS	INDUSTRIAL PRODUCTS	OTHERS
1952	119,527	32,194	81,637	4,328	1,368
1953	129,793	17,019	103,275	8,288	1,211
1954	97,756	14,481	75,571	6,665	1,039
1955	133,441	39,600	83,582	8,193	2,066
1956	130,060	19,504	93,343	15,454	1,759
1957	168,506	28,071	125,820	12,066	2,549
1958	164,433	39,135	103,725	18,571	3,002
1959	160,540	38,460	86,088	33,575	2,417
1960	169,866	19,857	95,014	51,674	3,331
1961	214,041	32,731	91,405	84,978	4,927
1962	238,609	33,045	85,821	112,555	7,188
1963	357,524	51,176	154,160	141,164	11,024
1964	463,110	74,208	187,002	184,602	17,298

Source: Ibid., p. 117.

TABLE IX

INDEX NUMBERS OF IMPORTS AND EXPORTS

1952 - 1964

PERIOD	INDEX (1952=100)			ANNUAL GROWTH (%)		
	TOTAL TRADE	IMPORTS	EXPORTS	TOTAL TRADE	IMPORTS	EXPORTS
1952	100.0	100.0	100.0	---	---	---
1953	98.1	92.1	108.6	-1.9	-7.9	8.6
1954	92.4	98.5	81.8	-5.8	7.0	-24.7
1955	99.1	91.8	111.6	7.2	-6.8	36.5
1956	109.7	110.3	108.8	10.8	20.1	-2.5
1957	128.9	121.9	141.0	17.4	10.5	29.6
1958	121.7	112.5	137.6	-5.6	-7.7	-2.4
1959	124.0	118.1	134.3	1.9	5.0	-2.4
1960	129.3	121.9	142.1	4.2	3.2	5.8
1961	164.8	156.6	179.1	27.5	28.5	26.0
1962	173.4	158.2	199.6	5.2	1.1	11.5
1963	212.6	162.7	299.1	22.6	2.8	49.8
1964	267.5	198.3	387.5	25.8	21.9	29.5

Source: Ibid., p. 115.

CHAPTER III

LAND REFORM OF TAIWAN

Land distribution may be man's oldest socio-economic problem. It arose in ancient China and Egypt, in India and the Middle East. When population outran land resources, trouble occurred. Even when balance was established, the interests of tenants clashed with those of landlords. Those who tilled the soil have always felt that they should own the land. The problem of land ownership remains as thorny as ever -- especially in Asia and Latin America -- and the demand for reform is expected to intensify in the years ahead. (9)

Taiwan with its limited land and fast-growing population is undoubtedly in need of reform for the purpose of economic development. The Taiwan Provincial Government decided to initiate land reform in 1949 through a peaceful, orderly process. The overall picture of land reform will be discussed in this chapter.

I. GENERAL FACTORS

Scarcity of arable land. The cultivated land in Taiwan

is only about 23 per cent of the total area, nine-tenths of the remainder is mountainous and forest land. In 1963, the total area of the cultivated land was 872,208 hectares, and there were 5,611,356 farmers. On the average, each individual would have only 0.1554 hectare of cultivated land. Obviously, it is too small. Since the cultivated land area remains relatively constant, the man-land ratio rises as population grows. This is indeed an acute problem for Taiwan.

Population pressure. In 1964, Taiwan had a population density of 882.73 persons per square mile (see Table X). The average annual rate of natural increase was 3.36 per cent for the period from 1952 to 1964. It is considered one of the highest rates in the world. Should the population continue to increase at that rate, it would double every thirty years. The pressure is too high.

Maladjustments in land distribution. According to official statistics compiled by the Taiwan Provincial Department of Agriculture and Forestry and the Taiwan Provincial Office of Accounting and Statistics, the number of tenant-farm families at the end of 1945 was 68.8 per cent (37.8 per cent of tenant-farm families and 31 per cent of part-owner

TABLE X

POPULATION DENSITY AND NATURAL INCREASE RATE

1952 - 1964

PERIOD	POPULATION DENSITY (per sq. mile)	BIRTHS		DEATHS		NATURAL INCREASE	
		Number (1,000)	Rate (%)	Number (1000)	Rate (%)	Number (1000)	Rate (%)
1952	585.41	373	4.66	79	0.99	294	3.68
1953	607.71	375	4.53	78	0.94	297	3.59
1954	630.12	384	4.47	70	0.81	314	3.65
1955	653.77	404	4.53	77	0.86	327	3.69
1956	676.30	414	4.48	74	0.80	340	3.68
1957	697.89	395	4.14	81	0.85	314	3.29
1958	723.04	411	4.17	75	0.76	336	3.41
1959	751.27	421	4.11	74	0.72	347	3.39
1960	772.26	419	3.95	74	0.70	345	3.25
1961	802.96	420	3.83	74	0.67	346	3.16
1962	829.10	423	3.74	73	0.64	350	3.10
1963	855.81	424	3.62	72	0.61	352	3.01
1964	882.73	417	3.45	69	0.57	348	2.88

Source: CIECD, Taiwan Statistical Data Book, 1965,
Government Printing Office, 1965, p. 5.

Notes: (1) Birth rate, death rate and rate of natural increase are computed as follows:

Birth Rate = Number of Births ÷ Mid-year Population x 100

Death Rate = Number of Deaths ÷ Mid-year Population x 100

Rate of Natural Increase = Number of Natural Increases ÷
Mid-year Population x 100

(2) End of year data used.

farm families) of the total number of farm families. According to figures for 1950, 1951, and 1952, there were 169,216 part-owner farm families, who constituted 24 per cent of the total number of farm families; 242, 754 tenant-farm families and 44,924 farm-hand families, constituting 34.5 and 6.4 per cent respectively of the total number of farm families in Taiwan. All together, these part-owner farmers, tenant farmers, and farm-hand families, who do not have enough cultivated land or no land at all, amounted to 64.9 per cent of all the farm families. In other words, there were only 35.1 per cent of owner farmers, totaling 247,675 families, who have enough land to till.¹

Tenancy situation. Tenancy is widespread on cultivated land in Taiwan and the conditions are harsh. Land rent is generally more than 50 per cent of the harvest. In more fertile areas, it even runs as high as 70 per cent. In addition, there is a so-called "iron-clad rent," which means that regardless of the harvest the lessee is required to pay a certain minimum amount of rent. There is also a by-product

¹Chen Cheng, Land Reform in Taiwan, Taipei: China Publishing Company, 1961, p. 7.

rent, which means that in addition to the regular rent, the tenant has to pay the landlord 50 per cent or more of the by-products he produces through the application of additional labor. Instances of subleasing by tenants to other tenants are also common. Generally speaking, only a few lease contracts are for definite periods of time, and most of them are oral in nature. Occasionally, extraordinary extortions in the form of security deposits, guarantee money, and payment of rent in advance are also demanded. It goes without saying that under these conditions the tenant farmer suffers unbearable hardships. He feels no love for the soil and has little interest in increasing production. Such a state of affairs could cause serious conflict between the two classes, as it is a source of social and political unrest.

∥ The land reform program. The land reform program was based on "The Three Peoples' Principles," propounded by Dr. Sun Yat-sen in 1924. In the "Principle of People's Livelihood," he stated two fundamental measures by which his political ideal could be put into practice, namely, equalization of land rights and regulation of capital. { So far as the equalization of land rights is concerned, Dr. Sun had this

to say:

A large majority of the people in China are peasants, at least nine of every ten, yet, the food which they raise with such wearisome labor is mostly taken away by the landowners. What they themselves can keep is barely sufficient to keep them alive. This is a most unjust situation. If we are to increase the production of food, we must make laws regarding the rights and interests of the farmers; we must give them encouragement and protection and allow them to keep more of the fruit of their land When the Principle of People's Livelihood is fully realized and the problems of the farmer are all solved, each tiller of the soil will possess his own fields -- that is to be the final goal of our efforts... Of the food produced in the fields, 60 per cent, according to our latest rural surveys, goes to the landlord, while only 40 per cent goes to the farmer. If this unjust state of affairs continues, when the farmers become intelligent, who will still be willing to toil and suffer in the fields? But if the food raised in the fields all goes to the farmers, they will be more eager to farm and production.

This is Dr. Sun's "land-to-the-tiller" theory behind the present land reform program.]

In the land reform program, five principles have been adopted by the Chinese Government:

A. The program is to be carried out gradually and by peaceful means. Landlords are permitted to retain a reasonable amount of tenanted land. Amounts over and above this limit must be sold to the government at reasonable prices

for resale to tenants. Furthermore, the government will extend loans to the tenants to enable them to buy the lands sold by the landlord.

B. Both the compulsory purchases of land and its resale are handled by the government without direct contact between landlord and tenant so as to prevent abuses or disputes.

C. Care is taken to see that the buyer is the original tiller, that the land is the same land that he has been tilling, and that the way of operating the farm is unchanged.

D. For protection from other enterprises, limits are set on farmlands owned educational, social, and economic organizations and by industrial and commercial plants. Such lands are exempt from compulsory purchases and resales.

E. Protection is given to owner-cultivators by preventing the transfer or lease of farmlands purchased under the land-to-the-tiller program before the price has been fully paid.

Based on the above principles, the Chinese Government has taken the following measures for carrying out the program:

(1) A. Farm rental reduction. In 1949 the Taiwan Provincial Government drew up a set of "Regulations Governing the Lease of Private Farm Lands." Upon approval by the Provincial Council, the Regulations were promulgated on April 14, 1949. At the same time, all the counties and municipalities in Taiwan were instructed to enforce the program beginning with the harvest of the first crop in 1949.

The major points of the rent legislation are as follows:

1. Reduce rental rates. As it stands, the law provides that rents should not exceed 37.5 per cent of the total annual yield of the main crop. If the rents originally agreed upon exceed 37.5 per cent, they must be reduced to 37.5 per cent. However, if they are less than 37.5 per cent, they should be increased. At same time, all extra burdens such as advance rent payments and security deposits are to be abolished.

2. Protection of tenant's rights. The law also provides that all farm lease contracts must be in writing and that the lease period should not be less than six years. For the duration of the contract, except for legally specified reasons, the landlord may not terminate the contract unilaterally.

Even if the lessor should give up his right of ownership to third party, the contract will remain valid with respect to that third party. If, at the end of the lease contract, the lessee is willing to continue the lease, the contract must be renewed, unless the lessor takes back the land for his own cultivation in accordance with legally specified procedures.

3. Protection of landlord's rights and interests.

According to the farm lease contract, the tenant must pay rentals when due. The landlord's rights and interests are duly protected by the provision that he may terminate the contract if arrears total two years' rental payments.

(c) B. Sale of public farm land. Public farm land in Taiwan is that which under the Japanese rule was owned by various levels of government as well as by private Japanese subjects. When Taiwan was restored to China, all this land was taken over by the Chinese Government as its public property, amounting to some 180,000 chia (430,000 acres).²

²Ibid., p. 50.

Most of the public land is in the southern part of the island. It is classified, according to the provisions of land laws and regulations, into four types, namely, state-owned, county (hsien) or municipality (shih)-owned, province-owned, and district (hsiang) or township (cheng)-owned.

All public land, except those retained by public enterprises for their own use, is leased directly to farmers for cultivation, so that the deep-rooted abuses in land tenure that had prevailed under the Japanese administration were completely wiped out. The leasing of public farm land has not produced fully the anticipated results. In the case of public farm land leased to individual farmers, owing to the low rental rates and keen competition for the leases, there is still room for greater equity in the selection of the lessees and the parceling of land. Besides, some lessees often sublease the land or part of it to other farmers and it is not unusual to find that parcels of farm land lie uncared for and uncultivated.

With the successful conclusion of the farm rental reduction program in 1951, the Taiwan Provincial Government drew up

another set of "Regulations Governing the Sale of Public Farm Lands to Establish Owner-Farmers in Taiwan Province." The sale of public land was a device by which the government offered to sell public farm land to farmers who were qualified to purchase such land according to relevant regulations and who made application for the purchase according to prescribed procedures.

The purposes of the sale of public farm land are:

1. To promote land ownership by farmers. The sale of public farm land is to enable farmers to terminate their tenant relations with the government and become owner-farmers by acquiring the land outright.

2. To reform the land system. The government, by taking the initiative to sell public farm land, sets an example for private landowners. This serves as a harbinger for the compulsory purchase of private farm land for resale to farmers and thereby as a reform measure paves the way to the realization of the "land-to-the-tiller" ideal.

3. To increase land utilization. Since ownership

enhances pride and stimulates a desire for further gain, the owner-farmer can be expected to cultivate his land with greater enthusiasm and ingenuity.

(u) C. Land-to-the-tiller program. To repeat, the ultimate objective of rural land reform is to realize the "land-to-the-tiller" ideal. Following the reduction of farm rent to 37.5 per cent and the sale of public land, the government made a final effort to implement the land-to-the-tiller program, and the effort was guided by three principles:

1. To help tenant farmers acquire landownership without increasing their financial burden so as to avoid producing ill effects on their livelihood and on the operation of their farms.

2. To protect the interests of the landlords. While shaking off the shackles of the tenancy system in order to improve the living conditions of the tenant farmers, the enforcement of the land-to-the-tiller program must take into consideration the interests of the landlords so as to prevent them from suffering too great a loss. The measures adopted were that the government would purchase the tenanted land of the landlords, leaving them a reasonable amount of land for

their own use.

3. To convert landholdings into industrial holdings.

Having been forced to sell their tenanted land, the landlords would need other sources of income. To help solve this problem and to make profitable use of the money paid to them for the land sold, the government decided that the landlords should be encouraged to take part in industrial uses. Concrete measures taken by the government were to transfer the jointly-owned state and province Taiwan Cement Corporation, the Taiwan Pulp and Paper Corporation, the province-owned Taiwan Industrial and Mining Corporation, and the Taiwan Agricultural and Forestry Development Corporation to private ownership by offering the government stocks for sale to private investors. Proceeds were used to pay for land compulsorily sold by the landlords.

The "land-to-the-tiller" program could not be carried out without a clear picture of landownership. Therefore, a general landownership classification was necessary as a basic preparation for the implementation of the land-to-the-tiller program. The job was carefully to investigate and register

the land categories, changes in land rights, conditions of land utilization and the distance between the land and the landlord's place of residence to show whether it was resident- or non-resident owned. This task began in January 1951, and was completed in February 1952. The calculation of the land acreage under purchase and retention was based on the "land-record cards" and "landownership cards." The former identified the owner of the plot of land by specifying first the plot and then the name of its owner, while the latter reversed that order.

For the promulgation of the land-to-the-tiller program, the Land-to-the-Tiller Bill was passed by the Legislative Yuan (the highest legislative organization of the Chinese Government) on January 20, 1953. The bill, as finally enacted under the title of the Land-to-the-Tiller Act, was divided into five chapters and 36 articles.

{ In addition to the three principles mentioned in the preceding paragraph, other important features of the Act are as follows:

1. Abolition of the tenancy system by peaceful means.

The purpose of the Act was to abolish land tenancy gradually by peaceful means. The first step taken for enforcement of the program was compulsory government purchase of all tenant-cultivated land owned by the landlords in excess of the prescribed retention limit for resale to the tiller or tillers. Next was purchase by the tiller or tillers with loans granted by the government.

2. Purchase and resale by the government. Tenants were by no means on an equal footing with landlords. If the transfer of farm land to tenants were to be carried out privately between the two contracting parties, it would most likely involve irregularities and entail disputes, and the situation eventually would get out of control. Thus, this was why the government was used as the vehicle for transfer of landownership, i.e., the government undertook to purchase the land from the landlord and resell it to the tiller or tillers, with the landlords and the tenants having no direct contact with each other.

3. Land reform through an orderly procedure. The Act provides for sale of land to the original tiller so that the

tenant system might be gradually abolished. The procedure did not require the subdivision of farm land, nor any change in its cultivation.

4. Equal protection of other enterprises. Many educational and philanthropic organizations and public and private enterprises depend upon farm land as a source of their revenue or as the basis of their operations. Such lands should not be compulsorily purchased. The Act, therefore, provided that land used for purchases of experimentation, research or agricultural extension, or land needed by educational and philanthropic institutions, and land required by public and private enterprises for the supply of raw materials, were to be exempt from compulsory purchase by the government.

5. Continued protection of owner-farmers. Tenant-farmers who had just become owner-farmers after acquiring land under the land-to-the-tiller program probably would be short of funds. The Act, therefore, provided a Production Fund from which loans might be extended to the farmer-purchasers. Also they were given assistance to operate their farms with modern techniques on a cooperative basis. Restrictions were

also provided that land acquired under the land-to-the-tiller program was not to be transferred before its purchase price had been paid in full and that farmer-purchasers were not allowed to use the name of a third party to purchase the land and lease it out after purchase for their own personal gain.]

Since changes in land rights were frequent and the relationship of man to land arising from failure to sign lease contracts, from subleases, fake owner-cultivation and false purchase and sales were so complicated, it was necessary to undertake a comprehensive investigation. The items to be checked before carrying out the purchase and resale of the farm lands included whether the description of the land was correct, whether the conditions of its use and the amount of annual yields were normal and whether the man power of the families to undertake farming was adequate. After the completion of this check, the compulsory purchase of farm land and its resale to the farmer-purchasers began on May 1, 1953, and was brought to a successful conclusion by the end of December 1953. All in all, a total of 143,568 chia (344,092 acres) of farm land had been compulsorily purchased by the government and resold to farmer-purchasers, not including 14,045 chia

(33,662 acres) of farm land which tenant farmers had purchased directly from the landlords. The total number of farming families which had purchased farm land resold by the government was 194,823.³

According to the provisions of the Land-to-the-Tiller Act, compensation to landlords was paid 70 per cent in land bonds and 30 per cent in stocks in government enterprises. No cash was paid in order to avoid price inflation which would be damaging to all concerned. Land bonds are of two kinds: rice bonds and sweet potato bonds. Compensation for paddy fields was paid in rice bonds, and dry land in sweet potato bonds. These two kinds of bonds were to be paid in equal installments spread over a period of ten years, and bore an interest of four per cent per annum. The 30 per cent compensation in government enterprise stock shares to landlords consisted of stocks of the four corporations mentioned above. The work of compensation to landlords was completed in 1954.

Proceeds from the sale of the government-purchased land were the chief source of revenue to pay for the land compulsorily

³Ibid., p. 75.

purchased from landlords. Therefore, the success or failure of the land-to-the-tiller program would rely upon how the resale price of the land acquired. According to the Land-to-the-Tiller Act, the price of farm land offered by the government for resale was calculated on the same basis as that of farm land compulsorily purchased from landlords, namely two and half times the value of the annual main crop yield. Land-ownership certificates were to be issued only after the payment of the first installment. The entire price was to be paid in equal annual installments over a period of ten years, and each annual amount was to be collected in equal semi-annual payments to be closely coordinated with the harvest seasons. Thus, the entire purchase price was to be paid off in 20 installments spread over a period of ten years. Collection of the first semi-annual installment payment began in July 1953.

Achievement of the land reform. In the execution of the land reform program, it was inevitable that many problems arose. However, as a whole, the program proceeded smoothly and successfully. In 1962 the land reform program was considered completed when the purchase payments were made in full. Agricultural production increased significantly (see Table V),

particularly rice production which increased from 1,214,523 metric tons in 1949 to 2,112,874 metric tons in 1962.

As the area of the farm land is relatively constant, the rising agricultural production should be attributed to the improvement of overall productivity (see Table XI).

The resulting higher farm income has been responsible for rising standards of living enjoyed in the rural areas, as observed by the Cabinet Rent Reduction Inspection Team:

Out of a total farming population of about 200 families in Tahchiao Village, Changhua County, there are 140 tenant families which have better living conditions now, as may be seen from such facts as these: a) seven families have built new houses; b) 20 families have had their farmhouse newly repaired; c) four families have purchased farm land; d) 40 families have bought draft cattles; e) 25 families have had marriage celebrations.⁴

Other than improving the welfare of the people in the rural area, the land reform contributed to the gradual transfer of capital originally tied up in land to industry and commercial pursuits, resulting in a phenomenal growth of trade and industry, a transformation of the social and economic structure

⁴Ibid., p. 44.

and a giant step toward a more developed society.) Therefore, implementation of the land reform program was not only basic to the betterment of the livelihood of the people and the promotion of political and social stability; but also it was a force working toward furtherance of the economic development and industrialization of Taiwan.

CHAPTER IV

THE FOUR FOUR-YEAR ECONOMIC DEVELOPMENT PLANS

The Economic Stabilization Board was established by the Chinese Government on July 1, 1953 to serve as the sole agency for overall planning and general coordination and implementation of the economic development plans. So far four consecutive four-year plans have been adopted.

In this chapter the discussion will center on the accomplishments under the various four-year plans in terms of GNP, national income and per capita income.

I. FIRST FOUR-YEAR ECONOMIC DEVELOPMENT PLAN (1953-1956)

A Four-Year Economic Development Plan for Taiwan was first drafted in October 1952, designed to achieve an equilibrium in the federal budget, in international payments and between production and consumption by the end of the four-year period. The plan was also designed for the purpose of promoting foreign trade, increasing agricultural and industrial production and raising the

living standard of the people.

With 1952 as the base year, the goals for 1953 to 1956 were calculated on the basis of an average annual rate of increase of 8 per cent for GNP and national income and 5 per cent for per capita income. As indicated by Table XII, the goals for GNP were NT\$17,007 million in 1953, NT\$18,367 million in 1954, NT\$19,836 million in 1955, and NT\$21,422 million in 1956. The actual results were phenomenal. GNP rose to NT\$21,200 million in 1953, NT\$23,154 million in 1954, NT\$27,885 million in 1955, and NT\$32,297 million in 1956. National income in turn was projected to reach NT\$14,090 million by 1953, NT\$15,217 million by 1954, NT\$16,434 million by 1955, and NT\$17,748 by 1956. The results of the four-year plan were that national income reached NT\$17,882 million in 1953, NT\$18,807 million in 1954, NT\$22,561 million in 1955, and NT\$26,041 million in 1956. Per capita income also exceeded the goals in each of the four years. Per capita income reached NT\$2,609 in 1956 as compared with a goal of NT\$1,829.

In addition, the indices of agricultural production, with 1952 as the base year, rose to 114.2 in 1953, 116.5 in

TABLE XII

COMPARISON OF THE GOALS AND RESULTS OF
THE FIRST FOUR-YEAR PLAN

1953 - 1956

(In current prices)

	PERIOD	GNP (NT\$ MILLION)	NATIONAL INCOME (NT\$ MILLION)	PER CAPITA INCOME(NT\$)	CPI ¹
GOALS	1952 (Base year)	15,748	13,047	1,505	---
	1953	17,007	14,090	1,580	---
	1954	18,367	15,217	1,659	---
	1955	19,836	16,434	1,742	---
	1956	21,422	17,748	1,829	---
RESULTS	1953	21,200	17,882	1,993	---
	1954	23,154	18,807	2,024	---
	1955	27,885	22,561	2,334	---
	1956	32,297	26,041	2,609	---

Sources: Industry of Free China, Vol. XXII, No. 1, January, 1962, pp. 60-61, and Vol. XXIV, August, 1965, pp. 66-67.

Notes: 1. Data on CPI (consumers' price index) for the years before 1956 are not available.

2. The average annual rate of increase projected under the plan for GNP and national income was 8 per cent and for per capita income 5 per cent.

3. NT\$ may be converted to US\$ through the official exchange rate promulgated by the Chinese Government for NT\$24.78=US\$1.00 from 1952 to 1957.

1954, 119.3 in 1955, and 127.6 in 1956. For industrial production, the indices were 124.1 in 1953, 133.0 in 1954, 147.8 in 1955, and 155.4 in 1956.¹ In other words, during the four-year period, the agricultural production increased 27.6 per cent, and the industrial production increased 55.4 per cent. Industrial production did much better than agricultural production.

The First Four-Year Economic Development Plan, concluded in 1956, was deemed a great success. However, in spite of the government appeal for austerity, private consumption increased over the four years to such an extent that saving became inadequate for investment. This necessitated reliance on United States aid for covering the deficiencies.

II. SECOND FOUR-YEAR ECONOMIC DEVELOPMENT PLAN (1957-1960)

In 1957, the government drafted the Second Four-Year Plan. The objective was to accelerate economic development. The performance of this Plan is presented in Table XIII.

¹Council for International Economic Cooperation and Development, Taiwan Statistical Data Book, Taipei: Government Printing Office, 1965, p. 1.

TABLE XIII

COMPARISON OF THE GOALS AND RESULTS OF
THE SECOND FOUR-YEAR PLAN

1957 - 1960

(In current prices)

	PERIOD	GNP (NT\$ MILLION)	NATIONAL INCOME (NT\$ MILLION)	PER CAPITA INCOME(NT\$)	CPI
GOALS	1956 (Base year)	32,297	26,041	2,609	100.00
	1957	34,880	28,124	2,739	
	1958	37,670	29,894	2,876	
	1959	40,683	32,285	3,020	
	1960	43,937	34,868	3,171	
RESULTS	1957	37,986	29,982	2,915	110.35
	1958	41,650	32,827	3,087	113.91
	1959	48,675	38,513	3,508	125.95
	1960	59,929	48,008	4,237	149.21

Sources: Industry of Free China, Vol. XXII, No. 1, January, 1962, pp. 60-61, and Vol. XXIV, No. 2, August, 1965, pp. 66-67, and CIECD, Taiwan Statistical Data Book, Taipei: Government Printing Office, 1965, p. 100.

Notes: 1. The average annual rate of increase projected under second four-year plan for GNP and national income again was 8 per cent and for per capita income 5 per cent.

2. NT\$ may be converted to US\$ through the official exchange rate promulgated by the Chinese Government for NT\$24.78=US\$1.00 from 1952 to 1957, NT\$36.38=US\$1.00 from 1958 to 1960.

The Second Four-Year Plan was consummated in 1960 with very encouraging results. GNP in current prices rose from NT\$32,297 million in 1956 to NT\$37,986 million in 1957, NT\$41,650 million in 1958, NT\$48,675 million in 1959, and NT\$59,929 million in 1960. National income increased from NT\$26,041 million in 1956 to NT\$29,982 million in 1957, NT\$32,827 million in 1958, NT\$38,513 million in 1959, and NT\$48,008 million in 1960. Per capita income also rose from NT\$2,609 in 1956 to NT\$2,915 in 1957, NT\$3,087 in 1958, NT\$3,508 in 1959, and NT\$4,237 in 1960. A good part of the gains, however, were offset by a rising CPI which rose 49.21 per cent during the four years.

With 1952 taken as the base year, the indices of agricultural production rose from 140.4 in 1957 to 151.9 in 1958, 155.3 in 1959, and 154.5 in 1960. During the same period, indices of industrial production increased from 176.5 in 1957 to 190.0 in 1958, 214.9 in 1959, and 244.6 in 1960.² The industrial production still took the lead in progress. However, agricultural production did much better under the Second Four-Year Plan than under the First Plan.

²Ibid., p. 1.

III. THIRD FOUR-YEAR ECONOMIC DEVELOPMENT PLAN (1961-1964)

The Third Four-Year Economic Development Plan, extending from 1961 through 1964, was formulated on the basis of implementing the previous development plans in terms of current economic conditions and development trends. Major targets of the plan are shown in Table XIV.

GNP in current prices was projected to rise from NT\$59,929 million in 1960 to NT\$64,723 million in 1961, NT\$69,901 million in 1962, NT\$75,493 million in 1963, and NT\$81,532 million in 1964. National income was expected to increase from NT\$48,008 million in 1960 to NT\$51,848 million in 1961, NT\$55,996 million in 1962, NT\$60,475 million in 1963, and NT\$64,113 million in 1964. Per capita income was anticipated to rise from NT\$4,237 in 1960 to NT\$4,449 in 1961, NT\$4,671 in 1962, NT\$4,904 in 1963, and NT\$5,149 in 1964.

The results were remarkable, especially in the year of 1964 when the CPI actually declined--over the full four years the CPI only rose 7.11 index points or 4.3 per cent.

TABLE XIV

COMPARISON OF THE GOALS AND RESULTS OF
THE THIRD FOUR-YEAR PLAN

1961 - 1964

(In current prices)

	PERIOD	GNP (NT\$ MILLION)	NATIONAL INCOME (NT\$ MILLION)	PER CAPITA INCOME(NT\$)	CPI
GOALS	1960 (Base year)	59,929	48,008	4,237	1956= 100
	1961	64,723	51,848	4,449	
	1962	69,901	55,996	4,671	
	1963	75,493	60,475	4,904	
	1964	81,532	64,113	5,149	
RESULTS	1961	66,334	53,531	4,580	160.90
	1962	72,375	58,367	4,483	164.72
	1963	82,248	66,601	5,361	168.30
	1964	94,331	76,856	6,003	168.01

Sources: Industry of Free China, Vol. XXII, No. 1, January, 1962, pp. 60-61, and Vol. XXIV, No. 2, August, 1965, pp. 66-67, and CIECD, Taiwan Statistical Data Book, Taipei: Government Printing Office, 1965, p. 100.

Notes: 1. The average annual rate of increase projected under the third four-year plan for GNP and national income was 8 per cent and for per capita income 5 per cent.

2. NT\$ may be converted to US\$ through the official exchange rate promulgated by the Chinese Government for NT\$40.03=US\$1.00 from 1961 to 1962, and NT\$40.10=US\$1.00 from 1963 to date.

GNP rose from NT\$59,929 million in 1960 to NT\$94,331 million in 1964. National income increased from NT\$48,008 million in 1960 to NT\$76,856 million in 1964. Per capita income also rose from NT\$4,237 in 1960 to NT\$6,003 in 1964.

With 1952 as the base year, the industrial production showed a great progress as shown by the indices, 270.3 in 1961, 304.9 in 1962, 335.7 in 1963, and 422.4 in 1964. The indices of agricultural production increased from 170.8 in 1961, 173.0 in 1962, 179.2 in 1963, and 197.6 in 1964.³

In the international sector, on an average, sugar export prices reached the highest level in the postwar years notwithstanding a declining world market. The balance of trade surplus continued to rise, thanks to pronounced increases in sugar and other exports. In the domestic sector, agricultural production benefited greatly the good behavior of mother nature; there was the absence of destructive typhoons.

Because of the great economic and industrial achievements in Taiwan, the United States Government announced that

³Ibid., p. 1.

it would terminate all economic aid, but not military aid, effective July 1965. This was carried out on schedule. This action attests to the fact that the economic development of Taiwan has reached the stage of what W. W. Rostow characterizes as a "self-sustained economy."

IV. FOURTH FOUR-YEAR ECONOMIC DEVELOPMENT PLAN (1965-1968)

A Fourth Four-Year Economic Development Plan was drawn up for the period 1965 through 1968. The basic objective of the plan is to accelerate the rate of economic growth and development. Generally it calls for increasing GNP and national income at an average annual rate of 10 per cent and per capita income at 7 per cent. As indicated by Table XV, GNP is projected to increase from NT\$94,331 million in 1964 to NT\$138,109 million in 1968. National income is scheduled to rise from NT\$76,856 million in 1964 to NT\$112,523 million in 1968. Per capita income is expected to rise from NT\$6,003 in 1964 to NT\$7,867 in 1968, all at current prices.

Specifically, the goals of the latest plan are as follows:

TABLE XV

GOALS OF THE FOURTH FOUR-YEAR ECONOMIC

DEVELOPMENT PLAN

1965 - 1968

(In current prices)

PERIOD	GNP (NT\$ MILLION)	NATIONAL INCOME (NT\$ MILLION)	PER CAPITA INCOME(NT\$)	CPI
1964 (Base year)	94,331	76,856	6,003	<u>1956=100</u> 168.01
1965	103,764	84,541	6,423	169.81
1966	114,140	92,995	6,872	171.61
1967	125,554	102,294	7,353	173.41
1968	138,109	112,523	7,867	175.21

Source: Industry of Free China, Vol. XXIV, No. 3, September, 1965, pp. 68-69.

Notes: 1. The consumer price index (CPI) is calculated on the basis of a projected average annual rate of increase of 1.8 index points which is computed by averaging the total annual rate of increase from 1961 to 1964.

2. NT\$ may be converted to US\$ through the official exchange rate promulgated by the Chinese Government for NT\$40.10=US\$1.00.

3. The average annual rate of increase projected under the Fourth Four-Year Plan for GNP and national income is 10 per cent and per capita income 7 per cent.

A. To set up an economic system based on the "Principle of People's Livelihood."⁴ The Chinese Government is determined to take all necessary measures to ensure that an optimum allocation and utilization of economic resources will be achieved, and that the economic rewards for individuals is commensurate with their economic contributions. Private enterprises will be protected but over-concentration of wealth will not be permitted. Certain government-owned enterprises will be transferred to private ownership in an orderly manner over time.

B. To promote industrial development. Under the plan emphasis will be placed on heavy industries, such as steel, machine tools, electrical appliances and chemicals, with medium and small industries playing a supporting role.

C. To maintain stable and rapid economic growth. Proper fiscal and monetary policies will be formulated to create a healthy milieu for long-term economic growth.

D. To raise living standards. The ultimate goal of economic development is to raise standards of living of the common people.

⁴One of "The Three People's Principles" advocated by Dr. Sun Yat-sen.

CHAPTER V

NATIONAL INCOME AND EMPLOYMENT

I. GROSS NATIONAL PRODUCT

The growth of Taiwan's economy in terms of the GNP for the years 1953-1964 is shown in Table XVI. With 1953 as the base year, the GNP in current prices increased from NT\$21,200 million in 1953 to NT\$94,331 million in 1964, or a 344.9 per cent increase. In 1963 prices the GNP rose from NT\$41,997 million in 1953 to NT\$90,645 million in 1964, or an increase of 115.8 per cent.

II. NATIONAL INCOME AND PER CAPITA INCOME

Data on national income for Taiwan for the years 1953-1964 are presented in Table XVII. It shows a constant increase in national income for Taiwan in past twelve years. With 1953 taken as the base year, the national income in current prices rose from NT\$17,882 million in 1953 to NT\$76,856 million in 1964, an increase of NT\$58,974 million or 329.8 per cent. In 1963 prices, it rose from NT\$33,718 million in 1953 to NT\$73,666 million in 1964, an increase of 104 per cent.

TABLE XVI

GROSS NATIONAL PRODUCT OF TAIWAN

1953 - 1964

PERIOD	AMOUNT (NT\$ MILLION)	INDEX (1953=100)	LINK INDEX (PREVIOUS YEAR=100)
<u>In current prices</u>			
1953	21,200	100.0	-----
1954	23,154	109.2	109.2
1955	27,885	131.5	120.4
1956	32,297	152.4	116.2
1957	37,986	179.2	117.6
1958	41,650	196.5	109.6
1959	48,675	229.6	116.9
1960	59,929	282.7	123.1
1961	66,334	312.9	110.7
1962	72,375	341.4	109.1
1963	82,248	392.6	113.6
1964*	94,331	444.9	114.6
<u>In 1963 prices</u>			
1953	41,997	100.0	-----
1954	45,519	108.4	108.4
1955	48,935	116.5	107.5
1956	50,898	121.2	104.0
1957	54,432	129.5	106.9
1958	57,992	138.1	106.5
1959	62,304	148.3	107.4
1960	67,151	159.8	107.8
1961	72,535	172.7	108.0
1962	77,136	183.7	106.3
1963	82,248	195.8	106.6
1964*	90,643	215.8	110.0

Sources: Industry of Free China, Vol. XXIII, No. 3, March, 1965, p. 68, and CIECD, Taiwan Statistical Data Book, 1965, p. 11.

*Estimated.

TABLE XVII

NATIONAL INCOME OF TAIWAN

1953 - 1964

PERIOD	AMOUNT (NT\$ MILLION)	INDEX (1953=100)	LINK INDEX (PREVIOUS YEAR=100)
<u>In current prices</u>			
1953	17,882	100.0	-----
1954	18,807	105.2	105.2
1955	22,561	126.2	120.0
1956	26,041	145.6	115.4
1957	29,982	167.7	115.1
1958	32,827	183.6	109.5
1959	38,513	215.4	117.3
1960	48,008	268.5	124.7
1961	53,531	299.4	111.5
1962	58,367	326.4	109.0
1963	66,601	372.4	114.1
1964*	76,856	429.8	115.4
<u>In 1963 prices</u>			
1953	33,718	100.0	-----
1954	37,577	104.0	104.0
1955	39,912	110.5	106.2
1956	42,082	116.5	105.4
1957	44,888	124.3	106.7
1958	47,398	131.2	105.6
1959	50,660	140.3	106.9
1960	54,477	150.8	107.5
1961	58,826	162.9	108.0
1962	62,517	173.1	106.3
1963	66,601	184.4	106.5
1964*	73,666	204.0	110.6

Source: Industry of Free China, Vol. XXIII, No. 3,
March, 1965, p. 68.

*Estimated.

The per capita income for Taiwan for the years 1953-1964 is shown in Table XVIII. An increase in real per capita income means that each individual has more money in real terms to spend or to save; it indicates a rising of standard of living. Per capita income in current prices increased from NT\$1,993 in 1953 to NT\$6,003 in 1964 or 201.2 per cent. NT\$6,003 converted to U. S. dollars only amounts to US\$150.00, but it is the second highest per capita income in the Far East. In real purchasing power in Taiwan it represents much more than \$150.00 would in the United States. In 1963 prices, it increased 42.9 per cent from 1953 to 1964 for an average annual rate of increase of 3.3 per cent, this despite very large increases in the total population of Taiwan.

III. EMPLOYMENT

According to the household registration statistics of the Taiwan Provincial Department of Civil Affairs, significant changes have occurred in employment in the past decade. Some of the important changes are shown in Table XIX.

The number of employed persons over 12 years of age rose from 3,015,000 in 1956 to 3,710,000 in 1964, an increase

TABLE XVIII
PER CAPITA INCOME OF TAIWAN
1953 - 1964

PERIOD	AMOUNT (NT\$)	INDEX (1953=100)	LINK INDEX (PREVIOUS YEAR=100)
<u>In current prices</u>			
1953	1,993	100.0	-----
1954	2,024	101.6	101.6
1955	2,334	117.1	115.3
1956	2,609	130.9	111.8
1957	2,915	146.3	111.7
1958	3,087	154.9	105.9
1959	3,508	176.0	113.6
1960	4,237	212.6	120.8
1961	4,580	229.8	108.1
1962	4,843	243.0	105.7
1963	5,361	269.0	110.7
1964*	6,003	301.2	110.0
<u>In 1963 prices</u>			
1953	3,759	100.0	-----
1954	4,044	100.4	100.4
1955	4,130	102.6	102.1
1956	4,217	104.7	102.1
1957	4,363	108.4	103.5
1958	4,457	110.7	102.2
1959	4,616	114.6	103.6
1960	4,808	119.4	104.2
1961	5,034	125.0	104.7
1962	5,188	128.8	103.1
1963	5,361	133.1	103.3
1964*	5,753	142.9	107.3

Source: Industry of Free China, Vol. XXIII, No. 3, March, 1965, p. 69.

*Estimated.

TABLE XIX
POPULATION OVER 12 YEARS OF AGE BY EMPLOYMENT

1956 - 1964
(Unit: 1,000 persons)

Year	Total	Number of Persons Employed												
		Sub-Total	Agriculture	Fisheries	Mining	Salt	Industry	Commerce	Transportation	Personal Service	Public Service	National Defense	Professions	Others
1956	5,850	3,015	1,718	88	31	7	260	252	80	269	114	63	87	46
1957	5,953	3,110	1,710	100	34	7	282	262	86	292	120	74	94	49
1958	6,102	3,178	1,705	108	35	7	303	275	90	303	126	78	99	49
1959	6,320	3,273	1,739	114	37	7	318	289	95	310	130	82	107	45
1960	6,529	3,344	1,755	122	37	7	333	298	99	309	134	90	115	45
1961	6,775	3,429	1,781	131	38	7	342	307	101	316	139	98	122	47
1962	7,025	3,504	1,800	136	40	7	357	310	106	324	145	105	130	44
1963	7,353	3,617	1,833	139	42	8	375	322	113	334	154	114	139	44
1964	7,663	3,710	1,861	149	42	7	390	328	117	341	160	127	146	42

Source: CIECD, Annual Report on Taiwan's Economy, 1964, Taipei: Government Printing Office, August, 1965, p. 77.

TABLE XIX (continued)

Year	Economically inactive population		
	At school	Housekeeping	Unemployed & others
1956	625	1,772	438
1957	556	1,842	445
1958	542	1,934	448
1959	599	1,985	464
1960	652	2,039	494
1961	736	2,098	512
1962	798	2,156	577
1963	898	2,217	621
1964	984	2,289	680

of 23 per cent. Of this total, 1,861,000 persons were still engaged in farming, an increase of 8.3 per cent over 1956. However, the ratio of persons engaged in farming to total employment dropped from 57 per cent to 50.2 per cent.

As a result of the rapid development and expansion of fisheries, especially deepsea and inshore fishing, employment in fisheries rose from 88,000 to 149,000, an increase of 69.3 per cent, and its ratio to total employment rose from 2.9 per cent to 4 per cent.

The rapid industrial development increased the number of employed in the various industries from 260,000 to 390,000 between 1956 and 1964, an increase of 50 per cent. Its ratio to total employment rose from 8.6 per cent to 10.5 per cent. It is evident that industrialization has absorbed and will continue to absorb more of the labor force.

Employment in service industries (including commerce, transportation and communications, personal service, public service, and national defense) though showing an increase, has not changed its ratio to total labor force. However, the number of persons engaged as professional people increased

from 87,000 to 146,000 between 1956 and 1964; its ratio to total employment rose from 2.9 per cent to 3.9 per cent.

The number of persons over 12 years of age enrolled in schools increased from 10.7 per cent of the total population in 1956 over 12 years old to 12.8 per cent in 1964. Over 50 per cent of primary school graduates enter high schools and go to college. Persons engaged in household work rose from 1,772,000 to 2,289,000 though their ratio to total population over 12 remained unchanged.

The number of the unemployed because of old age, disability or unwillingness to work rose from 438,000 to 680,000 between 1956 and 1964.

IV. WAGES

Rapid industrial development in recent years in Taiwan has raised the wages in mining and industry substantially. (see Table XX). However, the range of increase varies widely among the various industries due to differences in skill and demand and supply conditions. In general, new industries requiring advanced technical training offer substantially

TABLE XX

INDUSTRIAL WAGE INDEX

1956 - 1964

Base Period: 1956=100

Year	Mining	Manufacturing										Elec- tric Power	Gas
		Group Index	Food	Tex- tiles	Paper	Chem- icals	Products of Petro- leum and Coal	Metal	Mach- inery	Elec- trical Products	Trans- port Equip- ment		
1956	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1957	130.4	109.8	106.2	104.9	103.5	109.8	102.4	104.7	108.8	112.3	121.5	107.6	115.0
1958	139.7	116.6	108.7	115.0	105.9	115.4	106.3	112.1	118.1	123.3	135.7	105.6	116.5
1959	141.7	125.2	115.6	126.0	111.9	121.8	113.8	130.6	131.0	138.2	144.7	107.4	122.7
1960	155.6	146.7	145.5	145.3	141.5	149.8	141.9	149.1	156.7	146.9	168.8	136.1	146.0
1961	172.2	178.3	193.9	154.4	166.4	197.7	223.0	174.5	181.5	162.9	201.9	183.8	145.6
1962	183.8	187.7	197.8	164.7	164.0	208.2	235.7	196.1	182.8	203.0	205.9	187.2	155.5
1963	189.9	195.2	210.8	165.7	166.4	219.5	231.5	202.2	186.0	209.3	210.6	196.9	169.5
1964	203.0	199.3	236.5	180.4	174.6	227.0	263.5	239.8	196.5	233.9	215.0	218.3	153.6

Source: CIECD, Annual Report on Taiwan's Economy, 1964, Taipei: Government Printing Office, August, 1965, p. 84.

higher wages. Wage increase for manual labor have been relatively small.

With 1956 as the base period, wages for major industries, such as electric power and gas, mining and manufacturing, have doubled. As to individual industries, they may be classified into three types. The highest increase, ranging from 120 per cent to 170 per cent, was in petroleum and coal products, foods, electrical products, chemical products, metals, transport equipment and electric power. These industries offering higher wages are new industries and they require labor with advanced technical training. The second group consists of machinery and tools and mining where wages have gone up by about 100 per cent. These industries usually employ semi-skilled labor. The third group consists of textile, paper and gas, mostly employing women or unskilled labor, and the increase ranged from 50 per cent to 80 per cent.

CHAPTER VI

MONEY, CREDIT AND PRICE

I. MONEY

Currency system of Taiwan before 1949. At the time Taiwan was restored to China in 1945, there were three kinds of currency in circulation: (a) Bank of Taiwan Notes issued by the Bank of Taiwan, (b) Bank of Japan Notes issued by the Bank of Japan and (c) subsidiary coins issued by both the Bank of Japan and the Japanese Government.

The amount issued increased from 1.65 billion at the end of August 1945 to 2.89 billion at the end of October 1945, principally due to the excessive issue of Bank of Taiwan Notes.¹ A serious inflation ensued after Taiwan was restored to Chinese sovereignty. The Taiwan Provincial Administration at once took action to cope with the situation. Thus, (a) as of November 8, 1945, Bank of Japan Notes with denominations of one-yuan (dollar) up to thousand-yuan endorsed by the Bank of Taiwan were prohibited from circulation, and

¹Chen Yung-fu, The Money, Banking and Foreign Exchange of Taiwan, Taipei: Chin Hwa Publishing Company, 1954, p. 5.

(b) within a period of one month, from November 10, 1945 to December 9, 1945, such notes were required to be deposited in the Bank of Taiwan as a special time deposit, of which two separate accounts were set up for Bank of Japan Notes and Bank of Taiwan Notes.

Total Bank of Japan notes frozen amounted to 705 million yuans, of which 92.4 per cent or 693 million were thousand-yuan notes endorsed by the Bank of Taiwan.

As to subsidiary coins, the Taiwan Provincial Government announced on August 8, 1947 that they must be exchanged for Taiwan dollars in equal value before August 31st and that they would be prohibited from circulating after September 1, 1947.

On May 20, 1946, the Chinese Government officially took over the Bank of Taiwan (hereafter referred to BCT) and reorganized it. In the meantime, a new currency (known as old Taiwan dollars as distinguished from the new Taiwan dollars issued later) was issued to circulate along with BOT Notes in denominations of one, five, ten, fifty, and hundred dollars. On September 1st, it was officially announced that

Bank of Taiwan Notes had to be converted to old Taiwan dollars in equal value within a period of two months.

When the Chinese Government took over the BOT in 1946, the amount of BOT notes issued stood at about 2.9 billion. By June 14, 1949, the amount jumped to 527 billion. In addition, the BOT in 1948 began to issue "cash draft"² in denominations of five thousand, ten thousand, one hundred thousand, and one million yuans, circulating along with old Taiwan dollars. As of June 14, 1949, the quantity of cash drafts issued amounted to 1,213.5 billion, as shown in Table XXI.

Currency reform. Because of the tremendous inflation mentioned above, the Taiwan Provincial Government, with the approval of the Central Government, launched a currency reform on June 15, 1949. A new currency unit was issued to replace the old Taiwan dollars. It was named New Taiwan Dollar (NT\$) to distinguish it from the old Taiwan dollar note. Eight hundred thousand ounces of gold and ten million U. S. dollars were appropriated as currency reserves. The

²Cash draft is a kind of cashier's check issued by the BOT itself, circulating with the equal value of old Taiwan dollars.

TABLE XXI

QUANTITY OF OLD TAIWAN DOLLARS

AND CASH DRAFTS ISSUED

Unit: Millions of Old Taiwan Dollars

PERIOD	QUANTITY OF OLD TAIWAN DOLLARS	INDEX 5-18-1946=100	QUANTITY OF CASH DRAFTS
May 18 1946	*2,943,949	100	-----
End of 1946	5,330,592	181	-----
End of 1947	17,133,236	582	-----
End of 1948	142,040,798	4,825	78,697
June 14 1949	527,033,734	17,902	1,213,580

Source: Chen Yung-fu, The Money, Banking and Foreign Exchange of Taiwan, Taipei: Chin Hwa Publishing Company, 1954, p. 7.

*The quantity of Bank of Taiwan Notes issued just before the Chinese Government took over the Bank of Taiwan.

principal points concerning the new currency system are as follows:

A. The BCT was designated as the bank of issue for the new Taiwan dollar.

B. The maximum quantity to be issued was set at 200 million.

C. The new Taiwan dollar was linked with the U. S. dollar at a rate of NT\$1.00 to US\$0.20.

D. The exchange rate of the new Taiwan dollar for the old Taiwan dollar was set at NT\$1.00 to OT\$40,000.00. The old Taiwan dollar had to be exchanged for the new Taiwan dollar before December 31, 1949.

E. The reserves behind the new Taiwan dollar included gold, silver, and foreign exchange. The reserve requirement was one hundred per cent.

A Board of Directors was established to supervise the issuance of the new Taiwan dollar note.

As to the subsidiary currency, the following was adopted:

A. The subsidiary currency was issued in denominations of one cent, five cents, ten cents, and fifty cents.

B. The subsidiary currency consisted of coins although paper money may be issued if necessary.

C. The quantity issued was limited to 20 per cent of the new Taiwan dollar issue or less.

D. The reserve behind subsidiary coins consisted of government bonds.

After the currency reform had taken place, the quantity of new Taiwan dollar issue soon began to soar due to the worsening political and military situation on the Chinese mainland. The Chinese Communists were at the gate of the City of Nanking. Numerous government agencies had to move to Taiwan and this involved greater and greater expenditures. Up to June 1950, the amount of new Taiwan dollars issued was close to the 200 million limit. There was no practical way to offset the tendency of increasing issuance of the currency. On July 7, 1950, the Taiwan Provincial Government decided to increase the issue of new Taiwan dollars by a device known as

the "extralimit issue."³

The principles of the "extralimit issue" were as follows:

A. An additional 50 million yuans were to be issued over the original limit of 200 million.

B. This amount was to be used solely for economic construction.

C. Reserves behind the 50 million yuans were set up consisting of valuable securities and foreign exchange.

D. A Board of Directors of Extralimit Issue was established to supervise the issuance.

E. The extra currency issued should be returned to the BCT whenever the monetary situation warranted it.

In addition, there was a so-called "outside of Taiwan issue" which was to be circulated only on the offshore islands

³The Chinese Government used the name of "extralimit" for the reasons: (a) to distinguish it from the original issue within the 200-million limit and (b) to lessen the fear of further inflation.

such as Kinmen and Matsu. It amounted to 43.5 million yuan in 1952.

The "extralimit issue" increased very substantially the total amount of currency in circulation. The issuance of new Taiwan dollars for the period from 1949 to 1963 is shown in Table XXII. By May 1965, total issuance of currency stood at NT\$5.3 billion, showing an increase of NT\$5.1 billion or almost 18 times the amount of currency circulation in 1950.

II. CREDIT

Interest rates. Interest rates in Taiwan have been traditionally high. This affects adversely construction costs, the competitive position of export goods in the international market and the overall growth of national economy. Therefore, in 1950 and in subsequent years the Chinese Government began to lower the interest rates.

Interest rates on deposits of the BCT, as shown in Table XXIII, were lowered 50 per cent in 1950 from the previous year. Since June 21, 1957, the interest rate on "A" type Demand Deposit was completely removed. The interest rate on

TABLE XXII

CURRENCY ISSUE IN TAIWAN

1949 - 1963

Unit: NT\$1,000

Year	Grand Total	Intra- limit Issue	Extralimit Issue	Subsidiary Notes and Coins	Notes Issued for Outside of Taiwan
1949	*197,628	197,628	-----	-----	-----
1950	287,915	198,544	50,000	39,371	-----
1951	472,935	199,615	191,000	82,320	-----
1952	798,453	199,045	440,000	115,908	43,500
1953	982,628	200,000	573,763	168,865	40,000
1954	1,227,877	200,000	843,594	144,283	40,000
1955	1,484,473	200,000	1,136,516	117,957	30,000
1956	1,675,469	200,000	1,344,445	114,165	16,859
1957	2,041,319	200,000	1,701,594	126,278	13,447
1958	2,500,185	200,000	2,127,716	143,025	29,444
1959	2,777,375	200,000	2,491,791	57,006	28,578
1960	2,905,289	200,000	2,615,138	62,060	28,091
1961	3,390,149	200,000	3,093,606	66,393	30,150
1962	3,766,536	200,000	3,464,648	66,030	35,858
1963	4,497,071	200,000	4,196,317	64,642	36,112

Sources: Chen Yung-fu, Money, Banking and Foreign Exchange of Taiwan, 1954, pp. 10-13, and Statistical Abstract of the Republic of China, 1960, p. 227, and Statistical Abstract of the Republic of China, 1964, p. 339.

*Data on subsidiary notes and coins in 1949 unpublished.

TABLE XXIII

INTEREST RATES ON DEPOSITS OF BANK OF TAIWAN

Unit: Per cent per annum

Effective Date of Change	Demand ¹ Deposit "A"	Demand ² Deposit "B"	Notice ³ Deposit	Time Deposits				
				1 Mo.	3 Mos.	6 Mos.	1 Yr.	2 Y
Mar. 21, 1948	1.08	2.88	3.60	---	----	10	12	15
June 21, 1949	2.16	12.60	17.64	---	----	40	45	60
Sept. 21,	1.80	7.20	10.80	---	----	18	20	22
June 21, 1950	0.90	3.60	5.40	---	----	18	20	22
July 1,	0.90	3.60	5.40	---	----	18	20	22
Aug. 1,	0.90	3.60	5.40	---	----	18	20	22
Oct. 1,	0.90	3.60	5.40			19.80		
July 16, 1953	0.90	3.60	5.40			16.20		
Oct. 10,	0.90	3.60	5.40			12.60		
July 1, 1954	0.90	3.60	5.40			10.80		
Mar. 5, 1956	0.90	3.60	5.40			---		
June 21, 1957	0	3.60	5.40			---		
July 16, 1957	0	2.88	3.60			---		
Jan. 1, 1959	0	2.88	3.60	7.20	9.00	12.60	---	---
June 21, 1961	0	1.44	1.80	5.40	7.20	10.80	---	---
Aug. 8, 1962	0	1.44	1.80	4.68	6.48	9.72		
July 1, 1963	0	1.44	1.80	4.50	6.00	9.00	---	---
Mar. 1, 1964	0	1.44	1.80	4.20	6.00	8.40	---	---

Sources: Statistical Abstract of the Republic of China, 1964, p. 352 and CIECD, Annual Report on Taiwan's Economy, 1964, August, 1965, p. 59.

Notes: 1. Demand Deposit "A" is a checking account.

2. Demand Deposit "B" is a savings account but the depositor can draw on his account without limit.

3. Notice Deposit is a deposit that the depositor cannot withdraw without advanced notice of a certain period as stipulated.

"B" type Demand Deposit was lowered from 3.60 per cent per annum to 2.88 per cent on July 16, 1957 and again to 1.44 per cent on June 21, 1961. The interest rate on Notice Deposit was also reduced from 5.40 per cent per annum to 3.60 per cent on July 16, 1957 and to 1.80 per cent on June 21, 1961. For the period from 1959 to 1964, interest rates on Time Deposits were lowered from 7.20 per cent per annum to 4.20 per cent on one-month deposits, from 9 per cent to 6 per cent on 3-month deposits, and from 12.60 per cent to 8.40 per cent on 6-month deposits.

Interest rates on rediscounts of the Central Bank of China⁴ were reduced from 1.20 per cent per month in 1961 to 1.08 per cent in 1962 and to 0.96 per cent in 1964, as indicated in Table XXIV. Interest rates on loans of the Bank of

⁴The Central Bank of China is a banking institution under the Ministry of Treasury of the Central Government of China. Its function may be compared with the Federal Reserve Bank of the United States.

TABLE XXIV
INTEREST RATES ON LOANS AND REDISCOUNTS OF
THE CENTRAL BANK OF CHINA
Unit: Per cent per month

Effective Date of Change	Call Loans	Secured Advances to Banks	Rediscounts
July 1, 1961	1.35	1.35	1.20
Jan. 1, 1962	1.35	1.35	1.08
Aug. 8, 1962	1.32	1.32	1.08
July 1, 1963	1.17	1.17	0.96
Mar. 1, 1964	1.17	1.17	0.96

Source: Statistical Abstract of the Republic of China, 1964, p. 352.

Taiwan for the period from 1950 to 1956 were also lowered from 6 per cent per month to 1.50 per cent on commercial bank loans, from 2.10 per cent to 0.99 per cent on time loans, 2.25 per cent to 0.99 per cent on overdrafts, and from 1.95 per cent to 0.90 per cent on discounts. (see Table XXV.) The lower interest rates also influenced the private money markets. The monthly rates on unsecured loans declined from 2.7 per cent to 2.4 per cent, and that on secured loans from 2.4 per cent to 2.1 per cent.

TABLE XXV
INTEREST RATES ON LOANS OF
BANK OF TAIWAN

Unit: Per cent per month

Effective Date of Change	Commercial Bank Loans	*Time Loans	*Overdrafts	*Discounts
July 1, 1950	6.00	2.10	2.25	1.95
Oct. 1,	3.45	1.80	1.95	1.65
Sept. 8, 1952	3.00	1.80	1.95	1.65
Apr. 1, 1953	3.00	1.20	1.35	1.05
Jul. 16,	2.70	1.20	1.35	1.05
Sept. 1,	2.40	1.20	1.38	1.05
Oct. 10,	1.80	1.20	1.38	1.05
Jan. 1, 1954	1.80	0.99	0.99	0.90
June 18, 1956	1.50	0.99	0.99	0.90

Source: Statistical Abstract of the Republic of China, 1964, p. 353.

*The rates for loans to private enterprises were set within the limit of rates charged by other banks.

In spite of the lowering of interest rates paid by banks, bank deposits actually increased because of the increased income of businessmen and exporters, resulting from stepped up exports and a stable currency.

Deposits. Deposits in Taiwan may be classified into three types, namely, business and individual, government agency and U. S. aid deposits.

Total bank deposits have risen continuously during recent years, as shown in Table XXVI, with especially large increases in 1963 and 1964. It surpassed the NT\$30,000 million mark at the end of 1964, a record increase of NT\$6,300 million over 1963. In the case of deposits held by business firms and individuals, the rate of increase of savings deposits slowed down and time and demand deposits accelerated.

As bank lending rates are being gradually lowered, long-term and savings deposits at fixed interest rates tend to reduce the profits of the banks. On the other hand, production and trade were at very high levels in 1964 and the need for demand deposits by the business community increased significantly. Increasing demand deposits reflect the fact

TABLE XXVI
DEPOSITS OF ALL BANKS
1952 - 1964

Unit: NT\$ million

Year	Total	Demand Deposits	Time Deposits	Savings Deposits	Government Deposits	Counterpart Fund Deposits	Foreign Currency Deposits
1952	1,816	516	474	---	460	353	13
1953	2,571	704	606	---	602	637	22
1954	3,179	930	775	---	823	630	21
1955	4,491	1,146	875	---	1,029	1,405	36
1956	5,295	1,571	854	---	1,320	1,485	65
1957	6,407	1,782	1,171	---	1,751	1,651	52
1958	8,133	2,574	2,114	---	1,783	1,553	109
1959	9,628	2,883	1,340	1,355	2,049	1,835	166
1960	12,006	3,302	1,375	2,377	2,139	2,624	189
1961	16,578	4,124	1,479	4,919	2,382	3,404	270
1962	19,350	4,298	1,177	6,716	2,978	3,955	226
1963	24,426	5,765	1,500	8,880	3,300	4,711	270
1964	30,726	7,890	4,136	9,099	3,642	5,614	345

Source: CIECD, Taiwan Statistical Data Book, 1965, p. 84.

Note: Time deposits and savings deposits are same in nature, but the former includes one-month, 3-months, and 6-months deposits for which the unit of interest rates is per cent per month; and the latter includes one-year, three-year, and 5-year deposits for which the unit of interest rates is per cent per annum.

that more and more new industries have been established and that import and export businesses are flourishing.

Loans. Loans of all banks showed a continuous increase during the past decade (see Table XXVII). From 1953 to 1964, loans extended to private enterprises as well as to individuals rose sharply, especially in 1964. Loans to private enterprises amounted to NT\$10,892 million in 1964, an increase of NT\$2,622 million over 1963. Loans to government enterprises and agencies increased, but the percentage of such loans to total loans declined continuously over the period. On the other hand, the percentage of loans to private enterprises and individuals rose from 16.8 per cent in 1953 to 41.3 per cent in 1964. Furthermore, a substantial increase occurred in loans by credit cooperative, credit departments of farmer's associations and insurance companies. Most of the accommodations went to private enterprises and individuals.

Even though interest rates were reduced, loans failed to increase as rapidly as deposits. The reason was that rates were still too high to bring about the full investment potential.

TABLE XXVII
LOANS AND DISCOUNTS OF ALL BANKS
1953 - 1964

Year	Total	¹ Govern- ment	Public Enter- prises	² Private Enter- prises	² Individuals & All Others
I. Amount (NT\$ million)					
1953	3,094	1,120	1,358	520	96
1954	4,216	1,620	1,602	873	121
1955	5,539	1,883	1,983	1,469	204
1956	6,513	2,154	2,472	1,635	252
1957	7,924	2,466	2,816	2,297	345
1958	9,026	2,394	3,090	3,090	452
1959	10,584	2,583	3,183	4,188	630
1960	12,397	3,171	3,662	4,806	758
1961	16,956	4,364	4,904	5,896	1,792
1962	20,423	4,375	6,463	7,105	2,408
1963	22,207	5,077	5,298	8,270	3,562
1964	26,399	5,745	5,692	10,892	4,070
II. Percentage					
1953	100.0	36.2	43.9	16.8	3.1
1954	100.0	38.4	38.0	20.7	2.9
1955	100.0	34.0	35.8	26.5	3.7
1956	100.0	33.1	37.9	25.1	3.9
1957	100.0	31.1	35.5	29.0	4.4
1958	100.0	26.6	34.2	34.2	5.0
1959	100.0	24.4	30.0	39.6	6.0
1960	100.0	25.6	29.5	38.8	6.1
1961	100.0	25.7	28.9	34.8	10.6
1962	100.0	21.4	31.6	34.8	12.2
1963	100.0	22.9	23.9	37.2	16.0
1964	100.0	21.8	21.6	41.3	15.3

Source: CIECD, Taiwan Statistical Data Book, 1965, p. 86.

Notes: 1. Including public bonds.

2. Prior to 1961, the figures for loans extended to farmers were included under "Private Enterprises," and from 1961 on, these figures were included under "Individuals and All Others."

III. PRICES

As indicated by Table XXVIII, wholesale prices in Taipei, the largest city in Taiwan, showed a continuous increase during the past decade. With 1956 taken as the base year, the index reached 163.0 in 1964 or a 63 per cent increase over 1956. The average annual rate of increase was 6.3 per cent over the ten-year period. Wholesale prices rose sharply in 1960 because of a disastrous typhoon which hit the island in August 1959. The accompanying flood destroyed a large part of the crops in the central and southern regions of the island. As a result, food prices increased 20.84 per cent in 1960 over the previous year.

The general consumer price index for Taiwan, as shown in Table XXIX, also rose sharply from 1956 to 1964. With 1956 as the base year, the index reached 168.01 in 1964 or an increase of 68.01 per cent over 1956. Because of the late 1959 typhoon the cost of living index in 1960 increased

TABLE XXVIII
WHOLESALE PRICE INDEX FOR TAIPEI
1956 - 1964

Period	General Index	Food	Clothing	Fuel & Electri- city	Metals & Products	Timber
I. Fixed base index (Base: 1956=100)						
1956	100.00	100.00	100.00	100.00	100.00	100.00
1957	110.66	113.39	95.99	113.75	110.96	124.84
1958	111.04	114.36	95.60	118.93	110.46	113.83
1959	123.05	129.63	105.40	139.14	113.01	109.41
1960	140.46	156.52	107.16	141.65	121.11	107.78
1961	145.00	163.14	104.56	139.10	117.19	94.74
1962	149.41	167.29	108.14	146.39	112.34	89.10
1963	159.06	182.61	110.91	151.02	110.20	90.04
1964	163.00	191.00	111.49	151.80	112.79	89.11
II. Link index (Base: Previous year=100)						
1957	110.66	113.39	95.99	113.75	110.96	124.84
1958	100.34	100.86	99.59	104.55	99.55	91.18
1959	110.82	113.27	110.25	116.99	102.31	96.10
1960	114.15	120.84	101.67	101.80	107.17	98.51
1961	103.23	104.23	97.57	98.20	96.76	87.90
1962	103.04	102.54	103.41	105.24	95.86	94.05
1963	106.46	109.16	102.56	103.16	98.10	101.05
1964	102.48	104.59	100.52	100.52	102.35	98.97

Source: CIECD, Statistical Data Book of Taiwan, 1965,
p. 99.

Formula: Weighted aggregates of value.

TABLE XXVIII (continued)

Period	Building Materials	Rubber & Products	Paper & Pulp	Chinese & Western Medicines	Chemicals & Products	Miscellaneous
I. Fixed base index (Base: 1956=100)						
1956	100.00	100.00	100.00	100.00	100.00	100.00
1957	96.79	97.83	109.43	115.39	104.39	111.30
1958	84.46	91.39	107.70	110.38	110.68	126.56
1959	97.16	93.83	111.16	127.58	114.64	136.67
1960	108.62	108.04	128.55	183.16	120.19	135.71
1961	91.54	110.62	134.07	371.20	129.59	141.76
1962	88.26	113.25	133.44	500.32	136.50	142.12
1963	87.29	116.78	129.37	563.07	136.85	139.36
1964	87.89	113.29	128.79	504.50	132.67	141.38
II. Link index (Base: Previous year=100)						
1957	96.79	97.83	109.43	115.39	104.39	111.30
1958	87.26	93.42	98.42	95.66	106.03	113.71
1959	115.04	102.67	103.21	115.58	103.58	107.99
1960	111.79	115.14	115.64	143.56	104.84	99.30
1961	84.28	102.39	104.29	202.66	107.82	104.46
1962	96.43	102.38	99.53	134.78	105.33	100.25
1963	98.90	103.12	96.95	112.54	100.26	98.06
1964	100.69	97.01	99.55	89.60	96.95	101.45

TABLE XXIX
CONSUMER PRICE INDEX FOR TAIWAN
1956 - 1964

Period	General Index	Food	Clothing	Housing	Communi- cations Service	Medicine & Medical Care
I. Fixed Base Index (Base: 1956=100)						
1956	100.00	100.00	100.00	100.00	100.00	100.00
1957	110.35	110.39	103.07	110.15	105.22	134.53
1958	113.91	113.90	107.98	116.33	111.87	133.63
1959	125.95	127.43	117.88	124.26	116.37	150.68
1960	149.21	156.68	122.22	128.23	132.76	207.63
1961	160.90	163.08	121.18	130.18	137.33	341.24
1962	164.72	158.63	122.76	134.28	148.69	431.16
1963	168.30	161.83	125.23	137.52	145.82	444.81
1964	168.01	166.25	126.80	136.92	140.55	388.61
II. Link index (Base: Previous year=100)						
1957	110.35	110.39	103.07	110.15	105.22	134.53
1958	103.23	103.18	104.76	105.61	106.32	99.33
1959	110.57	111.88	109.17	106.82	104.02	112.76
1960	118.47	122.95	103.68	103.19	114.08	137.80
1961	107.83	104.08	99.15	101.52	103.44	164.35
1962	102.36	97.25	101.30	103.16	108.26	126.34
1963	102.17	102.02	102.01	102.41	98.07	103.17
1964	99.83	102.73	101.25	99.56	96.39	87.37

Source: CIECD, Taiwan Statistical Data Book, 1965, p. 100.

Formula: Weighted aggregates of value.

TABLE XXIX (continued)

Period	Education & Recreation	Miscellaneous
I. Fixed Base Index (Base: 1956=100)		
1956	100.00	100.00
1957	103.84	105.89
1958	110.93	109.53
1959	115.12	115.37
1960	121.27	129.13
1961	128.98	135.16
1962	135.09	147.74
1963	135.87	152.08
1964	136.19	150.45
II. Link Index (Base: Previous year=100)		
1957	103.84	105.89
1958	106.83	103.44
1959	103.78	105.33
1960	105.34	111.93
1961	106.36	104.67
1962	104.74	109.32
1963	100.58	102.94
1964	100.24	98.93

some 18.47 per cent over the previous year. But, since then, the rate of increase was more moderate, and in 1964 it even showed a slight decrease (0.17 per cent) from the 1963 level. Medicine and medical care, among the component items of the consumer price index, rose sharply until prices were rolled back in 1964. Foodstuffs experienced the second highest rate of increase but only one fourth that for medicine and medical care.

The factors affecting changes in the price level are as follows:

A. Limited supply of raw materials. As Taiwan is not rich in natural resources, their limited availability affects both production costs and price. For instance, steel prices were seriously affected by the short supply of scrap.

B. Fluctuating international prices. Sometimes prices of commodities traded in the world market such as sugar, lead, and copper are affected by international price changes. As the world price of sugar declined, domestic production of sugar declined.

C. Fluctuating export demand. Under the present policy

of encouraging export trade, efforts are often made to satisfy foreign demands first when production cannot fully meet domestic and overseas demands. As a result, the rising of foreign demands pushes up domestic prices. For example, cement price rose sharply from August to October 1964 due to strong overseas demand.

D. Relaxation of import controls. Imports have been liberalized as a result of the rapid expansion of exports which created a favorable trade balance during the past two years and greatly increased foreign exchange reserves. Because of ample supplies, imports price fell significantly, especially industrial raw materials.

E. Increased domestic production. The prices of some items declined because of the increase of domestic production. For example, as more foreign pharmaceutical manufacturers entered the joint local ventures with domestic producers, the production of pharmaceuticals increased in both variety and volume, resulting in lower costs and prices.

F. Increase of money supply. Normally, in a balanced and stable economy, the rate of increase of the money supply

is approximately equal to that of physical production. Excessive or inadequate money supplies cause abnormal price changes. For instance, real gross national product of Taiwan rose by 10.2 per cent in 1964, while the money supply increased by 31.7 per cent, causing a rising of price level. Nevertheless, the consumer price index fell slightly.

CHAPTER VII

ECONOMIC GROWTH OF TAIWAN

I. DETERMINANTS OF ECONOMIC GROWTH

Generally speaking, there are five basic factors which contribute to the economic growth of a nation, namely, population growth, capital accumulation, improvement of technology, natural resources and an efficient and effective political and economic system.

Population growth. Excessive population may be a drag on the economy if they do not occur in balanced and meaningful proportions. Population growth would ordinarily increase the available man power for productive purposes. For an area, however, where the exploding population has already become a considerable burden on economic development, such as Taiwan, additional population would only slow down the rate of economic growth by impairing savings and capital formation. Conversely, should the rate of population growth decrease, the economic development of Taiwan would advance more rapidly than at present.

Capital accumulation. In all economies real capital is

a very important element in industrialization. In the past decade, Taiwan has made noticeable progress in this field. Gross domestic capital increased from NT\$3,923 million in 1954 to NT\$15,861 million in 1963, as indicated by Table XXX.

Technology. The Republic of China has long been a recipient of technical assistance from other countries--mainly the United States of America. Currently, however, Taiwan is extending technical aid and cooperation to a number of other friendly nations. { This achievement is worth describing in detail.

Since 1954, more than 2,500 foreign technicians have received various kinds of technical training in Taiwan, and a great number of Chinese technicians have been sent abroad to render advisory and technical services in Africa, Southeast Asia and Latin America.

In Asia, in collaboration with the U. S. Aid Training Program, the Chinese Government has trained 2,255 foreign technicians from 14 countries through December 31, 1964. Thailand leads with 643 participants, followed by 493 from Vietnam, 487 from the Ryukyus, 316 from the Philippines, and

TABLE XXX
GROSS DOMESTIC CAPITAL OF TAIWAN

1954 - 1963

(In current prices)

Unit: NT\$ Million

Period	Total	Fixed Capital				Increase in Inventory		
		Subtotal	Public Enter- Prises	Private Enter- prises & Households	Govern- ment	Subtotal	Public Enter- prises	Private Enterprises
1954	3,923	2,737	635	1,598	504	1,186	383	803
1955	4,264	3,487	1,201	1,756	530	777	274	503
1956	4,858	4,007	1,581	1,777	649	851	329	522
1957	6,253	5,044	2,011	2,089	944	1,209	464	745
1958	7,574	6,381	2,578	2,531	1,272	1,193	583	610
1959	9,718	8,478	2,793	3,733	1,952	1,240	573	667
1960	12,989	10,598	2,937	5,435	2,226	2,391	866	1,525
1961	14,608	11,748	3,687	5,746	2,315	2,860	292	2,568
1962	15,249	11,945	3,368	6,150	2,427	3,304	646	2,658
1963	15,861	13,480	3,600	7,299	2,581	2,381	-184	2,565

Source: Industry of Free China, Vol. XXIII, No. 5, May, 1965, p. 67.

220 from Korea.¹ The fields of training fall principally under four categories; namely, (a) development of agriculture and natural resources, (b) education, (c) industrial development, and (d) health and sanitation.

Since 1962, four agricultural seminars have been held for African technicians with a total attendance of 168 participants representing 24 African countries; namely, Cameroun, the Central African Republic, Chad, the Congo (Brazzaville), the Congo (Leopoldville), Dahomey, Ethiopia, Gabon, Ivory Coast, Kenya, Liberia, Libya, the Malagasy Republic, Malawi (former Nyasaland), Mauritania, Niger, Rwanda, Senegal, Sierra Leone, Southern Rhodesia, Togo, Upper Volta, Zambia (former Northern Rhodesia), and Zanzibar. In addition, ten Chinese farming demonstration teams, totaling 123 men, have been sent to African countries, namely, Liberia, Libya, Dahomey, Ivory Coast, Gabon, Rwanda, Senegal, Sierra Leone, Niger, and Cameroun. The principal objective of these teams, composed mainly of young Chinese farmers who work in the fields, is to demonstrate

¹ Council for International Economic Cooperation and Development (CIECD), China, Economic Progress in the Republic of China, Taipei: Government Printing Office, April, 1965, p. 23.

the scientific cultivation of rice and other crops by the introduction of new agricultural techniques and practices, to promote better farm management, and to set a general pattern for the development of thriving rural communities. { The demonstration teams have helped boost crop yields ranging from 4,000 to 6,000 kgs. per hectare, and have succeeded in doubling the yield by harvesting two rice crops a year instead of one. The success of these demonstrations has attracted world-wide attention and requests have been received to dispatch additional teams to Upper Volta, Chad, the Congo (Leopoldville), Togo, and Malawi in Africa, and Saudi Arabia in the Middle East.

In the area of Southeast Asia, three Chinese agricultural missions--the Farmer's Cooperative Association Technical Mission, the Technical Mission on Livestock and Crop Improvement, and the Irrigation Development Mission--have been stationed in Vietnam since 1959 to 1960 to render technical services in virtually every phase of agricultural development. To enhance their contributions through better coordination and more effective supervision, an agreement was signed on July 10, 1964 for the amalgamation of these missions and an enlargement of the total membership from 29 to 86.

In August 1964, a four-man Chinese agricultural team arrived in Pampanga Province in Central Luzon of the Philippines to provide technical services in rice cultivation and agricultural extension.

To assist Malaysia in the development of its sugar industry, a team of five Chinese specialists completed a five-week survey in December 1964 on the selection of suitable sites for cane plantations and the development of a sugar refinery.

In Latin America, a six-member Chinese Agricultural Technical Mission was sent to the Dominican Republic in November 1963 to assist in agricultural development in furtherance of the efforts made by Dr. Chao Lien-fang, a leading Chinese agricultural specialist, who served as an agricultural advisor to the Dominican government for two years until May 1964.

Technical services rendered abroad by Chinese technicians are by no means limited to agriculture. In August 1963, four veterinarians were sent to Ethiopia to initiate a program for the control and eradication of cattle diseases in two provinces in northern Ethiopia. A 67-member Chinese fishing crew aboard two 550-ton tuna clippers arrived in Cameroun in early

1964 on a 18-month assignment to demonstrate deep sea fishing and to train Camerounian fishermen. In 1962, a team of five experts from the Taiwan Sugar Corporation spent five months in the Congo (Leopoldville) to put a sugar mill, which had been shut down for more than a year since the departure of Belgian technicians, back into operation. In preparation for a multi-purpose technical cooperation agreement, feasibility studies have been made in the Malagasy Republic in various fields of activities including distilleries, handicrafts and processing of fishery products.

Since 1962, three Chinese medical teams, composed of 25 doctors and 5 nurses, have been sent to Libya. Among other Chinese experts working in Libya are two meteorologists, seventeen civil engineers and five irrigation experts. Furthermore, preparations have been made for the dispatch of some 30 engineers and surveyors to assist that country in various construction projects.

Besides the Sino-Vietnamese technical cooperation on agriculture, a team of eight electrical engineers have been sent to help establish an extensive power distribution system

in Vietnam. In addition, well over one hundred Chinese technicians are rendering technical services for Vietnam's textile and other industries, mostly through private arrangement.

Chinese specialists, under a technical agreement, have been sent to Singapore to serve as advisors on such projects as the construction of a sugar mill. Also surveys have been made on the feasibility of establishing an aluminum and a pulp and paper industries.

Indeed, during the past decade, the Republic of China has gradually transformed itself from a technical assistance receiver to a technical assistance giver.

Natural resources. Taiwan is an island without a great abundance of natural resources as mentioned earlier. The reserves of principal mineral items vital to develop heavy industries are limited. No iron ore exists. Petroleum is mostly imported from other countries. Only natural gas can be developed for industrial and private use in the near future.

Efficient political and economic system. A strong and efficient government and a sound profit-seeking economic system

are vital to the economic development of a nation. The former should be capable of maintaining a political stability and initiating the economic development programs. The latter is the generating force for developing the enterprises as well as the accumulative economic growth in the whole society. During the past decade, the Chinese Government in Taiwan has proved to be strong enough to maintain a stable social order and capable of carrying out successfully a series of economic development plans.

III. ECONOMIC GROWTH OF TAIWAN

During the past decade, Taiwan's productive output has experienced a steady rate of growth. Between 1952 and 1964, agricultural output rose by 97.6 per cent, and industrial output by 322.4 per cent. The average annual rates of growth for agricultural and industrial production were 5.9 per cent and 12.9 per cent respectively. As the growth rate of industrial production has consistently outstripped that of agricultural production, there has been a relative change in the composition of net domestic product. In 1952, agriculture accounted for 35 per cent of net domestic product and industry for 23 per cent, whereas in 1964 industry constituted 33 per

cent and agriculture 26 per cent.²

In the twelve years from 1953 to 1964, Taiwan's real national income (in 1963 prices) increased by 104 per cent (see Table XVII, Chapter V). Per capita income increased by 42.9 per cent (see Table XVIII, Chapter V).

III. COMPARISON OF ECONOMIC GROWTH RATES WITH OTHER COUNTRIES

In order to further understand the situation of the economic growth of Taiwan, an attempt is made to compare the statistics with the records of growth of other countries, comparison with rates of growth for the same period as well as with the past comparable records of developed countries.

Comparison with rates of growth of other countries for the same period. In Table XXXI, certain countries have been selected, which are believed to be representative. Among those selected, three are from Asia, four from Europe, and one from America, Canada. The three Asian countries consist of one

²Ibid., p. 2.

TABLE XXXI
ECONOMIC GROWTH INDICATORS
FOR DIFFERENT COUNTRIES
1953 - 1958

(At constant prices as
indicated in the source data)

Countries	Annual Increase in Percentage					
	GNP	National Income	Per Capita Income	National Consumption	Gross Capital Formation	Net Savings
China (Taiwan only)	7.3	7.1	3.5	8.8	6.5	1.4
Japan	9.4	9.2	7.9	9.3	9.3	9.8
India	---	2.4	1.0	---	---	---
Ceylon	2.2	1.5	-1.0	3.2	2.0	---
Holland	5.4	6.5	5.2	4.6	10.3	9.5
West Germany	6.9	7.3	6.1	6.7	7.9	11.4*
Italy	5.7	5.8	5.2	4.3	8.0	18.4
United Kingdom	2.0	1.7	-0.03	2.4	0.2	-2.8
Canada	2.9	2.6	-0.2	3.7	2.2	-2.5

Sources: National Accounts Statistics published by the DGBAS, the Republic of China, and the Yearbook of National Accounts Statistics, 1959, published by United Nations.

*Average of 1953-57.

advanced, Japan; one underdeveloped with large territory and population, India; and one underdeveloped of small size, Ceylon. The four European countries are: the United Kingdom, an advanced country; West Germany, a country rebuilt from the rubbles of war; Holland, comparable to Taiwan in land area and population; and Italy, a relatively less advanced country with large area and abundant resources. Because of limitations of data, comparisons will be made only for the period from 1953 through 1958.

In terms of national income, Japan's rate of growth of 9.2 per cent tops the list, followed by West Germany's 7.3 per cent. Taiwan's rate of 7.1 per cent ranks third. However, in terms of per capita income, which is by far the most significant indicator of a country's economic achievement and its living standard, Taiwan's growth rate of 3.5 per cent is far below Japan's 7.9 per cent, West Germany's 6.1 per cent, and Holland's and Italy's 5.2 per cent. This is the result of the current population explosion in Taiwan.

While the percentage gap is large in comparison with these other countries, the gap in absolute amount is much

larger. In other words, the economic growth of Taiwan actually lags far behind that of the advanced countries.

The rates of capital formation and of savings are other indicators of economic development. In Table XXXII the same countries have been selected as before except for India which is deleted because of incomplete data.

In terms of the ratio of gross capital formation to disposable income, Taiwan's 15.7 per cent ranks the second lowest next to that of Ceylon. Japan's 28.3 per cent again tops the list. Canada, West Germany, Holland, and Italy are all above 20 per cent. The rate of net savings reaches 23.6 per cent in Japan, 22.6 per cent in West Germany, 24.6 per cent in Holland, 13.9 per cent in Canada, 13.3 per cent in Italy, and 10.3 per cent in the United Kingdom. In Taiwan, this rate is 6.2 per cent.

Thus, judging by these two ratios, both of which have a decisive effect on economic growth, Taiwan is again far behind most countries, especially Japan and West Germany.

Comparison with the past comparable records of developed Countries. Admittedly the data for the following comparison

(see Table XXXIII) are inadequate, but still they are of some significance. Among the countries listed, the United Kingdom is the oldest developed country. Its real per capita income grew at an annual rate of 2.9 per cent between 1860 and 1938. Prior to 1860, we have reason to believe that the rate of growth was much greater, because the industrial revolution took place during 1760-1830. France has always been noted for its slow economic growth. Between 1850 and 1938, its rate of growth was only 1.5 per cent a year. Japan, on the other hand, deserves special attention. For a long period of 60 years between 1878-82 and 1938-42, it was able to maintain an annual rate of growth of 7.1 per cent. However, it is estimated that the "take-off" of Japan's economy, to use Rostow's term, occurred sometime between 1878 and 1900. During this period the annual rate of growth of real per capita income was only 4.5 per cent. Taiwan's average rate of growth of 4.2 per cent between 1952 and 1960 is comparable to that of United States' 4.8 per cent (1869-1938) and Japan's 4.5 per cent.

The rate of economic growth is directly related to the ratio of net domestic capital formation to national income on

TABLE XXXIII
 AVERAGE ANNUAL GROWTH RATE OF
 REAL PER CAPITA INCOME FOR
 SELECTED COUNTRIES IN DIFFERENT PERIODS

Country	Period	Compound Annual Rate of Growth (%)
Sweden	1861-1938	8.5
Japan	1878/82-1938/42	7.1
United States	1869-1938	4.8
United Kingdom	1860-1938	2.9
France	1850-1938	1.5
China (Taiwan only)	1952-1960	4.2

Sources: For China (Taiwan only), based on publications of DGBAS; and for other countries, based on N. S. Buchanan and H. S. Ellis, Approaches to Economic Development, the Twentieth Century Fund, 1955, pp. 214-215.

one hand and to the rate of population increase on the other. In Table XXXIV, the ratios for a number of countries in comparable periods of development are given. For Taiwan, the ratio is 14.4 per cent which compares favorably with that of other countries. The rate, however, would be 6.3 per cent if capital from external source (i.e., U. S. aid, foreign and overseas Chinese investments) were excluded.

It may be concluded that the growth rate of Taiwan's economy has in recent years exceeded that of the less developed countries and has come close to that of certain advanced or developed countries.

IV. THE STAGE OF ECONOMIC GROWTH OF TAIWAN *V*

As mentioned above, Taiwan has progressed, despite its limited natural resources, from the stage of a completely underdeveloped nation to a point where it is compared favorably with some of the more advanced countries.

In the opinion of Professor ^{Dr} W. W. Rostow, the sweep of modern history may be envisaged as a set of "stages of growth" and all societies can be placed within one of five

TABLE XXXIV
RATIOS OF NET DOMESTIC CAPITAL FORMATION
TO NATIONAL INCOME FOR
SELECTED COUNTRIES IN DIFFERENT PERIODS

Country	Period	Ratio (%)
United States	1896-1908	13.8
	1909-1948	8.3
United Kingdom	1870-1879	8.7
	1904-1913	7.6
Sweden	1861-1870	3.8
	1921-1930	11.9
Canada	1901-1910	19.4
	1926-1930	12.4
France	1853-1878	8.5
	1903-1911	5.6
Denmark	1870-1909	9.7
	1947-1952	9.7
China (Taiwan only)	1952-1959	14.4

Sources: For China (Taiwan only), based on publications of DGBAS; for other countries, based on National Bureau of Economic Research, Capital Formation and Economic Growth, Princeton University Press, 1955, pp. 62-64.

economic stages: "the traditional society, the preconditions for take-off, the take-off, the drive to maturity, and the age of high mass-consumption."³ While Rostow's thesis is open to argument, his classification of economic growth into five stages does afford a convenient yardstick for measuring the stage of economic development of Taiwan.

To a developing economy such as Taiwan, the most important stage is obviously the third or take-off stage. Rostow compares the transformation from a backward economy to a modernized economy with the take-off of a plane. In the development of a backward economy, taking off is the most difficult and the most critical task. Once the economy successfully takes off, it will generate automatic forces to enable it to drive to "maturity" and to reach ultimately the stage of "high mass-consumption."

The question is whether Taiwan still remains in the "transitional" stage, or the stage of the "preconditions for take-off," or whether it has entered the "take-off" period;

³W. W. Rostow, The Stages of Economic Growth, Cambridge, the University Press, 1960, p. 4.

and if it is in the "take-off" stage, can it successfully make the transition to a developed economy? Some nations have failed in thier attempt to take off such as Indonesia.

In answering this question, it is necessary to summarize briefly Rostow's broad definition of the conditions for transtion and take-off:

A. The "transition." This is the stage when the pre-conditions for take-off are created. A predominantly agricultural society must shift to a predominance for industry, communications, trade and services. Education is subsequently reformed and made accessible to all in order to meet the requirements of modern economic activities. There also emerge new types of entrepreneurs and enterprisers, men willing to mobilize savings, to assume risks, and to seek profits. The market for agricultural products, handicrafts, and imported consumer goods expands rapidly, so does the basic social overhead capital (especially transport) for facilitating the flow of raw materials and finished products.⁴

⁴Ibid., p. 18-20.

During this stage, three decisive sectors must first be transformed technically:

1. Agriculture and extractive industries. These provide working capital needed for modernization, supply food to the rising urban population, provide an expanded market for the developing industries, provide an important base of taxation, and supply long-term credit to the developing modern sectors.

2. Exports. In the early stages of industrialization, the demand for imports will increase very rapidly. This can only be met by developing the nation's natural resources and processing them for export.

3. Social overhead investment. This includes vast amounts of investment in transport, education, electric power, etc.

In order to make the above transformation possible, the society needs a many-sided change--social, psychological, and political. It must produce a new leading business and industrial elite to replace the old land-based elite for building a modernized industrial society.

During the transitional period, the government plays a key role. It must channel the local talent, energy and resources into the domestic tasks of modernization; it must be capable of organizing the nation so that comprehensive commercial markets develop; it must create and maintain a tax and fiscal system which diverts resource into the creation of the necessary social and human capital; it has an inescapable responsibility for ensuring that public facilities and social capital required for take-off are built; and it must bring about the most important precondition for take-off, namely, the establishment of an effective modern government.

B. The "take-off." This is a rather short stage of development, usually lasting two to three decades. During this period, economic and social development becomes an automatic and self-sustained process, and the economy develops at a normal rate of growth.

Three conditions, as described by Rostow, must be fulfilled in order to achieve a successful take-off:⁵

⁵Ibid., p. 39.

1. a rise in the rate of productive investment from 5 percent or less to over 10 percent of national income (or net national product);

2. the development of one or more substantial manufacturing sectors, with a high rate of growth;

3. the existence or quick emergence of a political, social and institutional framework which exploits the impulses to expansion in the modern sector and the potential external economy effects of the take-off and gives to growth an on-going character.

The third condition implies that this framework should have the capacity to mobilize capital from domestic sources and to raise the marginal rate of savings (i.e., an increasing proportion of incremental income going to saving). The internal supply of finance for the "take-off" usually comes from two sources: (a) from shifts in the control over income flows. For example, the state taxes away the income of landlords and uses it for economic development, or the more enterprising former landlords may invest directly in commerce and industry. (b) From the ploughing back of profits into particular rapidly expanding sectors. However, as a precondition for take-off, the demand for capital may be more decisive than the supply of capital. Here external sources of capital are imperative. In the case of Taiwan, the United States has been a major sources of the necessary external capital.

The take-off is often initiated by some leading sector or sectors, which grow very rapidly and set in motion the various expansionary forces of the economy. There is no way to determine what the leading sectors will be. Historically, it was cotton textiles for Britain, timber for Sweden, meat and dairy products for Denmark, and silk for Japan.

In light of Professor Rostow's theory, it seems reasonably clear that the economic development of Taiwan has passed the stage of "transition" and has entered the "take-off" stage.

Summary

CHAPTER VIII

CONCLUSION

I. PROBLEMS OF FUTURE ECONOMIC

DEVELOPMENT OF TAIWAN

The economic development of Taiwan has entered the stage of "take-off." The problems involved are as follows:

A. Need of substantial manufacturing sectors. In pushing economic development through the stage of "take-off," there must be one or more rapidly growing sectors which can profitably utilize capital. (These sectors should be substantial enough to stimulate the emergence and expansion of other sectors and produce external influences to facilitate the growth sectors.) Taiwan has several large manufacturing industries, such as sugar, cement, and textiles, but none of them seems to be substantial enough to lead the "take-off."

B. Pressure of population. The rate of population increase in Taiwan is about 3.36 per cent which is considered too high to slow down appreciably the economic development on this small island. If this situation continues for long, the increasing pressure of population can be expected to serve as

a drag on future economic growth and development.

C. Shortage of entrepreneurs and human capital. The entrepreneur is vital to economic development and may be even more important than supplying the man-made capital. So far almost all the agricultural reform in Taiwan has been initiated and programmed by the government. Currently, the government is still carrying the entrepreneurial role. However, the emergence of a private entrepreneurial class evolves slowly and it cannot be created over night.

X D. Burden of military spending. There are six hundred thousand troops on Taiwan. The expense of maintaining such large military organization is enormous. If the expense could be reduced by 50 per cent and that amount put into economic development, it would be greatly beneficial to Taiwan's economy.

II. PROSPECTS OF FUTURE ECONOMIC DEVELOPMENT OF TAIWAN

Colin Clark has said that the more developed a country is, the less its population is engaged in agriculture and extractive industries and the smaller is this share in national

income.¹ By evaluating the records of the period from 1952 to 1964 in Taiwan's economy, the growth rate of industrial production has consistently outstripped that of agricultural production as mentioned earlier. In 1952, agriculture accounted for 35 per cent of net domestic product and industry for 23 per cent, whereas in 1964 industry constituted 33 per cent and agriculture 26 per cent. This shift in economic structure of Taiwan indicates the rapid industrial development during the past decade.

In addition, Taiwan has a well-developed agriculture, a well-organized transportation net work, fairly large manufacturing industries, widespread education and good social order. All these are important elements for economic development. The prospects for future economic development of Taiwan are very favorable. The important step is to complete successfully the "take-off." In order to achieve this, four things must be done:

A. Concentrate investment on a few export industries

¹Colin Clark, The Conditions of Economic Progress, third edition, London, McMillan Company, 1957, p. 175.

as leaders in the "take-off." Two or three promising industries such as cement, textiles and sugar should be chosen and devoted to export trade. Thus, some of them may become the leading sectors substantial enough to stimulate the development of other sectors as well as to impart a forward momentum to the growth of the entire economy.

B. Prevent excessive consumption and non-productive investment. Economic development is financed by both external and domestic capital. As far as the domestic capital is concerned, the two major sources are the ploughing back of profits by business and governmental enterprises and the diverting of economic resources to productive uses by preventing excessive consumption and non-productive investment. This will depend upon the monetary and fiscal policies of the Chinese Government, especially tax measures, by which more income can be channeled into productive uses.

C. Establish a long range development program for heavy industries. For the present, the need for heavy industries becomes more urgent than ever. The steel industry should be ranked first. Without an integrated steel industry, it would

be futile to talk about industrialization. Next it is necessary to develop a complete petro-chemical industry. True, these heavy industries cannot be built over night. But, it is high time a long range program for developing heavy industries be drawn up now.

D. Reduce the rate of population increase. The government must make every effort to slower down the rate of population increase. Two measures seem appropriate. First, a comprehensive and nation-wide birth control program should be immediately instituted. Secondly, the government should adopt a policy to encourage emigration to help reduce the population pressure. A slower rate of population increase will have a favorable effect on the rate of growth and development of Taiwan as well as the standard of living of its people.

III. SUMMARY

The strategy of economic development adopted by the Chinese Government on Taiwan has been for the coordinated growth of agriculture and industry. In a predominantly agricultural economy, the improvement of agriculture seems to be an effective way to improve the life of a nation in which

the population is largely employed in farming. This would also spell social stability which is essential for economic progress. In addition, the increase of agricultural production would in turn stimulate industrial development, particularly with respect to agricultural processing industries; while, on the other hand, the growth of fertilizer, agro-chemical and farm machinery industries would help raise agricultural productivity.

For the purpose of increasing agricultural production and raising the living standard of farmers, the Chinese Government implemented the land reform by peaceful and orderly means. In the promotion of industry, emphasis has been on evolutionary development. Thus, in order of time, first came the utilities and light industries supplying the Chinese people with absolute necessities; then industries for more sophisticated manufacturing to meet new and varied demands; and lastly, industries engaged in more advanced lines. However, no attempt has yet been made at creation of heavy industries.

Under the policy of developing agriculture and industry, the achievement has been remarkable. For the period from 1952

to 1964, index numbers of agricultural and industrial production, with 1952 as the base year, rose to 197.6 and 422.4 in 1964 respectively. For the same period, indices of agricultural and industrial productivity, with 1952 as the base year, increased to 176.1 and 261.7.² Indices of real wages, with 1952 as the base year, rose to 176.5 in 1964.³

In the economic development of Taiwan, the Chinese Government has undertaken the responsibility of over-all development planning and implementation. To accelerate industrial growth, inflow of foreign capital and know-how have been vigorously encouraged, as well as the development of export industries. Exports of industrial products increased from US\$4 million in 1952 to US\$184 million in 1964, an increase of about 46 times. As to imports, capital goods imports rose from US\$27 million in 1952 to US\$102 million in 1964 and raw materials imports from US\$153 million to US\$264 million (see Tables VII and VIII). The balance of foreign trade of Taiwan was changed from a deficit of US\$8.7 million in 1952 to a surplus of US\$52 million in 1964.

²CIECD, Taiwan Statistical Data Book, Taipei: Government Printing Office, 1965, pp. 23 and 43.

³Ibid., p. 1.

One final word. In the past fifteen years, Taiwan has accomplished considerable economic development and growth. Its rate of economic growth is higher than that of any other underdeveloped country although lower than that of the more advanced and developed countries. Hopefully, the economy stands poised for a "take-off" to a higher level of sustained growth. Of course, much remains to be done, but the achievements of the Chinese Government on Taiwan can serve as a pattern of growth for other underdeveloped countries.

BIBLIOGRAPHY

A. BOOKS

- W. W. Rostow. The Stages of Economic Growth. Cambridge: The University Press, 1960.
- Colin Clark. The Conditions of Economic Progress. London: Macmillan & Company, Ltd., 1957.
- N. S. Buchanan and H. S. Ellis. Approaches to Economic Development. The Twentieth Century Fund, 1955.
- Chen Cheng. Land Reform in Taiwan. Taipei: China Publishing Company, 1961.
- Han Lih-wu. Taiwan Today. Taipei: Hwa Kuo Publishing Company, 1964.
- Chen Yung-fu. Money, Banking and Foreign Exchange of Taiwan. Taipei: Chin Hwa Publishing Company, 1954.
- K. Y. Yin. Economic Development in Taiwan, 1950-60. Taipei: Council for United States Aid, July, 1961.
- T. P. Chen. Fisheries of Taiwan. Taipei: Joint Commission on Rural Reconstruction, July, 1960.
- K. T. Li. The Growth of Private Industry in Free China. Taipei: Council for United States Aid, 1960.

B. PUBLICATIONS OF THE GOVERNMENT
AND OTHER ORGANIZATIONS

- U. S. Department of Commerce. Investment in Taiwan. Washington: Government Printing Office. 1959.
- _____. Living Conditions in Taiwan. Washington: Government Printing Office. 1959.
- _____. Economic Developments in Taiwan, 1954. Washington: Government Printing Office. 1955.

U. S. Department of Commerce. Economic Developments in Taiwan, 1955. Washington: Government Printing Office. 1956.

_____. Economic Developments in Taiwan, 1956. Washington: Government Printing Office. 1957.

Bureau of Accounting and Statistics, Provincial Government of Taiwan, the Republic of China. Taiwan Statistical Abstract, No. 19. Taipei: Government Printing Office. 1961.

Directorate-General of Budgets, Accounts & Statistics, Executive Yuan, the Republic of China. Statistical Abstract of the Republic of China, 1960. Taipei: Government Printing Office. 1961.

_____. Statistical Abstract of the Republic of China, 1963. Taipei: Government Printing Office. 1964.

_____. Statistical Abstract of the Republic of China, 1964. Taipei: Government Printing Office. 1965.

Economic Research Center, Council for United States Aid, Executive Yuan, the Republic of China. Taiwan Statistical Data Book. Taipei: Government Printing Office. June, 1961.

_____. A Review of the Economic Situation of Taiwan in the First Half of 1961. Taipei: Government Printing Office. December, 1961.

Foreign Exchange & Trade Control Commission, Executive Yuan, the Republic of China. Foreign Exchange and Trade Handbook. Taipei: Government Printing Office. 1961.

_____. Foreign Trade Development of the Republic of China in Recent Years. Taipei: Government Printing Office. 1965.

Council for International Economic Cooperation and Development, Executive Yuan, the Republic of China. Taiwan Statistical Data Book, 1965. Taipei: Government Printing Office. 1965.

Council for International Economic Cooperation and Development, Executive Yuan, the Republic of China. Annual Report on Taiwan's Economy, 1964. Taipei: Government Printing Office. 1965.

Joint Commission on Rural Reconstruction, the Republic of China. General Agricultural Statistics of Taiwan. Taipei: Government Printing Office. December, 1962.

_____. Rural Progress in Taiwan. Taipei: Government Printing Office. December, 1960.

Ministry of Economic Affairs, the Republic of China. Fisheries of Taiwan. Taipei: Government Printing Office. 1958.

_____. Paper Industry in Taiwan. Taipei: Government Printing Office. 1958.

_____. Aluminum Industry in Taiwan. Taipei: Government Printing Office. 1958.

_____. Cement Industry in Taiwan. Taipei: Government Printing Office. 1958.

_____. The Sugar Industry in Taiwan. Taipei: Government Printing Office. 1958.

_____. Selected Light Industries of Taiwan. Taipei: Government Printing Office. 1958.

_____. Taiwan's Third Four-Year Economic Development Plan. Taipei: Government Office. 1961.

_____. The Economy of Taiwan. Taipei: Government Printing Office. 1958.

_____. Mining Industry in Taiwan. Taipei: Government Printing Office. 1958.

_____. The Fertilizer Industry in Taiwan. Taipei: Government Printing Office. 1958.

Ministry of Economic Affairs, the Republic of China. Textile-Taiwan's Industry. Taipei: Government Printing Office. 1961.

_____. Power in Taiwan. Taipei: Government Printing Office. 1958.

Taiwan Forestry Bureau, Provincial Government of Taiwan, the Republic of China. Forestry of Taiwan. Taipei: Government Printing Office. 1960.

Department of Information, Taiwan Provincial Government, the Republic of China. Farm Mechanization Extension Project in Taiwan. Taipei: Government Printing Office. 1961.

Shihmen Development Commission, the Republic of China. Annual Statistics of Shihmen Reservoir. Taipei: Government Printing Office. 1957.

Industrial Planning & Coordination Group, Ministry of Economic Affairs. A Review of Taiwan's Second Four-Year Economic Development Plan. Taipei: Government Printing Office. April, 1961.

_____. The Industrial & Mining Program under Taiwan's Third Four-Year Plan. Taipei: Government Printing Office. December, 1961.

Agricultural Planning & Coordination Group, Ministry of Economic Affairs, the Republic of China. The Agricultural Program under Taiwan's Third Four-Year Plan. Taipei: Government Printing Office. December, 1961.

Committee for Economic Development, U. S. A. Economic Growth in the United States, Its Past and Future. Washington: Government Printing Office. February, 1958.

United Nations. Yearbook of National Accounts Statistics, 1959. New York: 1960.

Chinese Institute of Engineers. Engineering Progress in Taiwan, 1946-1961. Taipei: Kwan Yuan Publishing Company. 1961.

The Central Bank of China. The Central Bank of China Annual Report, 1962. Taipei: The Central Bank of China Printing Office. 1963.

_____. The Central Bank of China Annual Report, 1963. Taipei: The Central Bank of China Printing Office. 1964.

_____. The Central Bank of China Annual Report, 1964. Taipei: The Central Bank of China Printing Office. 1965.

Bank of Taiwan, Provincial Government of Taiwan, the Republic of China. 1961 Annual Report. Taipei: Bank of Taiwan. 1962.

Government Information Office, the Republic of China. China Yearbook 1951-1952. Taipei: China Publishing Co. 1952.

_____. China Yearbook 1952-1953. Taipei: China Publishing Co. 1953.

_____. China Yearbook 1953-1954. Taipei: China Publishing Co. 1954.

_____. China Yearbook 1954-1955. Taipei: China Publishing Co. 1955.

_____. China Yearbook 1955-1956. Taipei: China Publishing Co. 1956.

_____. China Yearbook 1956-1957. Taipei: China Publishing Co. 1957.

_____. China Yearbook 1957-1958. Taipei: China Publishing Co. 1958.

_____. China Yearbook 1958-1959. Taipei: China Publishing Co. 1959.

_____. China Yearbook 1959-1960. Taipei: China Publishing Co. 1960.

_____. China Yearbook 1960-1961. Taipei: China Publishing Co. 1961.

Government Information Office, the Republic of China. China Yearbook 1961-1962. Taipei: China Publishing Co. 1962.

_____. China Yearbook 1962-1963. Taipei: China Publishing Co. 1963.

_____. China Yearbook 1963-1964. Taipei: China Publishing Co. 1964.

C. PERIODICALS

T. Y. Wang. "The Trend of Economic Development in Taiwan," Industry of Free China, Vol. IV, No. 1, July, 1955, pp. 4-7.

K. T. Li. "Characteristics and Trend of Industrial Development in Taiwan," Industry of Free China, Vol. VII, No. 6, June, 1957, pp. 2-10.

K. Y. Yin. "A Restrospect on 'Adverse Trend in Taiwan's Industrial Development'," Industry of Free China, Vol. XI, No. 5, May, 1959, pp. 2-10.

_____. "If the Rate of Population Growth Had Been 1.5 Percent," Industry of Free China, Vol. XI, No. 4, April, 1959, pp. 2-10.

Epoch Publicity Agency. Free China, Vol. I, 1963, Taipei: China Color Printing Company, Inc., 1964.

Luther Gulick. "The Problems of Regional Planning," Industry of Free China, Vol. XVII, No. 1, January, 1962, pp. 2-12.

K. Y. Yin. "Economic Development in Taiwan," Industry of Free China, Vol. XVII, No. 1, January, 1962, pp. 13-30.

_____. "Economic Development in Taiwan (continued)," Industry of Free China, Vol. XVII, No. 2, February, 1962, pp. 11-29.

"Taiwan Economic Statistics," Industry of Free China, Vol. XVII, No. 1, January, 1962, pp. 58-61.

- "Taiwan Economic Statistics," Industry of Free China, Vol. XVII, No. 2, February, 1962, pp. 60-89.
- "Taiwan's Pharmaceutical Industry," Industry of Free China, Vol. XXII, No. 1, July, 1964, pp. 8-25.
- W. W. Gardner. "Economic Development," Industry of Free China, Vol. XXII, No. 2, August, 1964, pp. 2-11.
- Christopher L. Salter. "Development of Taiwan's East Frontier," Industry of Free China, Vol. XXII, No. 2, August, 1964, pp. 22-39.
- K. T. Li. "Economic Development Planning," Industry of Free China, Vol. XXII, No. 3, September, 1964, pp. 2-15.
- "Annual Report on Taiwan's Economy, 1963," Industry of Free China, Vol. XXII, No. 4, October, 1964, pp. 25-52.
- "Annual Report on Taiwan's Economy, 1963 (continued)," Industry of Free China, Vol. XXII, No. 5, November, 1964, pp. 2-33.
- Kowei Chang. "The Measurement of Employment and Unemployment in Taiwan," Industry of Free China, Vol. XXII, No. 5, November, 1964, pp. 34-56.
- _____. "The Measurement of Employment and Unemployment in Taiwan (continued)," Industry of Free China, Vol. XXII, No. 6, December, 1964, pp. 27-50.
- S. C. Hsieh and T. H. Lee. "The Effect of Population Pressure and Seasonal Labor Surplus on the Pattern and Intensity of Agriculture in Taiwan," Industry of Free China, Vol. XXIII, No. 1, January, 1965, pp. 2-19.
- Gerald H. Huffman. "Agriculture in the United States and the Republic of China," Industry of Free China, Vol. XXIII, No. 2, February, 1965, pp. 2-7.
- "Development of the Taiwan Economy in 1964," Industry of Free China, Vol. XXIII, No. 2, February, 1965, pp. 8-17.

Tsui Young-chi. "A Preliminary Assessment of the Impact of Agrarian Reform on Taiwan's Agricultural Economy," Industry of Free China, Vol. XXIII, No. 2, February, 1965, pp. 18-37.

Third Division, Council for International Economic Cooperation and Development. "Economic Progress in the Republic of China," Industry of Free China, Vol. XXIII, No. 3, March, 1965, pp. 2-17.

"Taiwan Economic Statistics," Industry of Free China, Vol. XXIII, No. 3, March, 1965, pp. 66-103.

K. T. Li. "Current Economic Situation and Policy," Industry of Free China, Vol. XXIII, No. 4, April, 1965, pp. 2-7.

Yen-tien Chang. "Land Reform and Its Impact on Economic and Social Progress in Taiwan," Industry of Free China, Vol. XXIII, No. 4, April, 1965, pp. 14-42.

C. K. Yen. "The Trend of Our Economic Development," Industry of Free China, Vol. XXIII, No. 5, May, 1965, pp. 2-6.

Third Division, Council for International Economic Cooperation and Development. "Annual Report on Taiwan's Economy, 1964," Industry of Free China, Vol. XXIV, No. 2, August, 1965, pp. 23-52.

_____. "Annual Report on Taiwan's Economy, 1964 (continued)," Industry of Free China, Vol. XXIV, No. 3, September, 1965, pp. 32-54.

"Taiwan Economic Statistics," Industry of Free China, Vol. XXIV, No. 2, August, 1965, pp. 55-165.

"Taiwan Economic Statistics," Industry of Free China, Vol. XXIV, No. 3, September, 1965, pp. 57-165.