

The Economic
Development of the
Republic of China on
Taiwan, 1965–1981

Known for its rugged terrain and the majestic beauty of its mountain ranges, the island of Taiwan is separated from the mainland of China by the Taiwan Strait, eighty miles wide at its narrowest point. Since 1949 it has been the bastion of the Nationalist government of China. Today its 13,803 square miles are home to a population of over 18 million.

The period 1965–1981 was a true turning point for the economic fortunes of this island republic. From a largely agricultural economy plagued by underemployment and economic dualism, Taiwan, in the company of South Korea, has emerged as a model

that inspires other developing nations. How was this economic miracle achieved?

The answer is complex, but must begin with some understanding of Taiwan's peculiar historical development. Colonized by the Chinese for over three centuries, by the late nineteenth century it had become a prosperous agricultural and commercial region within the great Ch'ing empire. In 1895 it passed to imperial Japan, a rich prize for the victor of the first Sino-Japanese War (1894-95). In the next fifty years, the colonial rulers oversaw a "green revolution," promoted public health improvements that reduced the mortality rate by more than one-half, and built a modern infrastructure of finance, transport, and education that facilitated commercialization and rapid export growth.¹ But the spread effects of these developments were limited. Urbanization and industrialization made little headway in what remained a largely agrarian society.

Taiwan reverted to the Republic of China after the defeat of the Japanese in 1945. During the next few years, living standards declined, runaway inflation consumed existing wealth, unemployment worsened, and an invasion from the mainland by the Chinese Communists seemed imminent. But between 1949 and 1953 the Nationalist government was able to reverse these trends with the help of U.S. economic aid. It sold considerable public property to private enterprise and initiated a program of agrarian land reform. As a result, by 1952-53, production and distribution reached pre-war levels.

By 1954 there was cause for both optimism and concern over the economic future of Taiwan. On the one hand, agricultural output had increased and the small manufacturing and services sectors had greatly expanded their productive capacity. On the other hand, the Nationalist government relied upon considerable U.S. economic aid, which provided the country with much-needed raw materials for agricultural and industrial production. Of the US\$1,482 million in aid which would eventually come from the United States by 1968, roughly 75 percent, or US\$1,100.3 million, went to this non-project type of assistance. In addition, the government allocated almost half of its budget to support the large military establishment.

Yet on the whole, the future seemed bright, largely because the

policy of import substitution had so far been successful. Import substitution called for strict controls to overvalue the Taiwan dollar, to ration foreign exchange to preferred importers, and to regulate all foreign trade under quotas and tariffs. It protected fledgling domestic industries from foreign competition. Yet although Taiwan's economic growth indicators in the early 1950s were impressive, there were no tangible signs that economic dualism had begun to disappear. Agriculture still contributed a larger share to GNP than did manufacturing, generated the highest value of exports, and employed at least half of the labor force. The pace of urban growth remained very weak, while the population continued to explode at the rate of 3.5 percent per year.

In the second half of the decade certain warning signs appeared. Between 1955 and 1959 manufacturing and services failed to generate enough new employment to reduce the serious underemployment that existed, domestic demand did not expand rapidly enough to buy goods and services at prices that enabled firms to remain at full capacity and cover costs, and inventories began to rise. The government adamantly refused to reflate the economy through deficit financing lest inflation be rekindled. Instead, it opted for a different course.

In 1958-59 the government initiated new policies that reversed the import substitution strategy, reoriented the economy to the world market, and pegged the national currency, the new Taiwan dollar (NT\$), to a value equivalent to its real international market value. These reforms laid the groundwork for the transformation of Taiwan's economy.

The sections below describe the salient economic characteristics of that transformation, examine the growth mechanism underlying it, and describe government policies and the activities of the private sector that made this economic transformation possible.

The Transformation: 1965-1981

The period 1965-1981 was a crucial turning point in Taiwan's economic history. Resources were reallocated at an accelerated rate from low to higher value-added activities, while the economy was restructured based on the widespread usage of modern technology. Of course, this change had no sharply defined beginning.

In fact, several important economic indicators showed important new trends in the early 1960s. However, for purposes of convenience and comparison, we will refer to the period 1965–1981 as the transformation.

The first indicator of change was an accelerated expansion of real GNP and output per capita. As figure 1 shows, the annual growth rate of real GNP fell sharply in the late 1950s but took an abrupt upturn in the early 1960s and essentially remained at this elevated level throughout the transformation. The growth of real GNP per capita mirrors this trend.

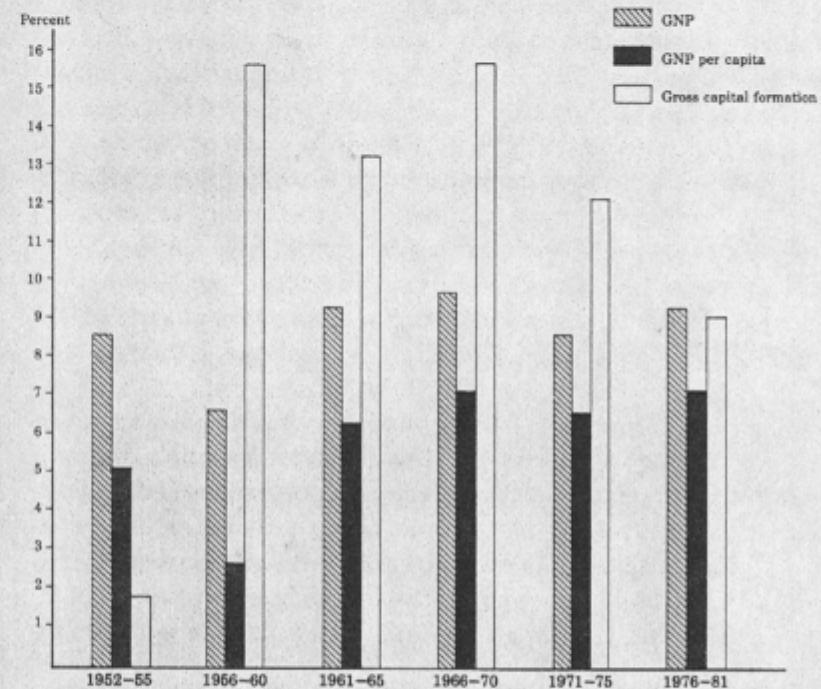
Gross capital formation, a second indicator, rose even earlier than GNP and GNP per capita as shown in figure 1. Much of the capital accumulation of the late 1950s was in the form of excess manufacturing capacity and unplanned inventories. However, during the transformation high rates of growth of capital accumulation were sustained generally without incurring excess capacity.

A sudden rise in the rate of savings complemented the accelerated rate of capital formation. Figure 2 illustrates that the ratio of savings to GNP rose dramatically to a peak of 31.4 percent in 1981—a remarkable feat for a country with a per capita income of only US\$2,500 and that spent close to 10 percent of GNP for defense. Moreover, this represented mostly voluntary savings by firms and households.

In Taiwan, households played a significant role in total capital formation. Household savings supplied from 36.02 percent of total capital formation in 1975 to a high of 47.19 percent in 1977, leveling off to 36.11 percent in 1981. The average savings propensity of households was high, ranging from 11 percent to 24 percent during 1965–1981. This is particularly impressive when compared with household savings in other developed countries. For example, in 1981 the ratio of savings to disposable personal income in the United States was only 6.7 percent, in the United Kingdom 13.5 percent, in West Germany 14.9 percent, and in Japan 19.7 percent.

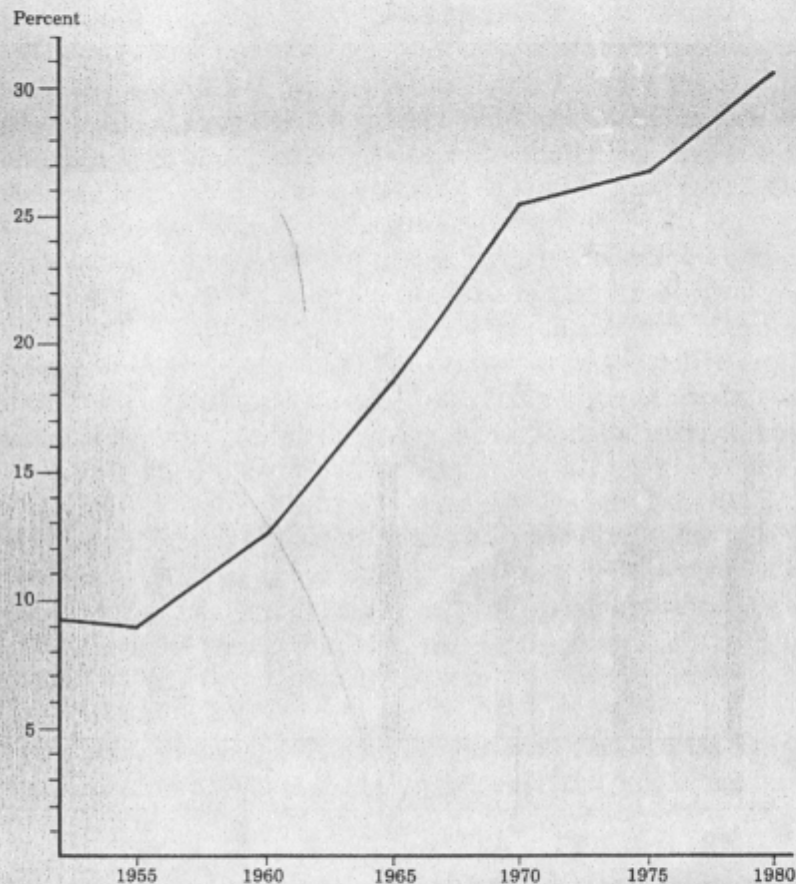
By comparison, from 1975 to 1981, corporate savings supplied between 28.65 percent and 44.46 percent of total capital formation. Because the major form of corporate savings was provisions for fixed capital consumption, net savings were much less important. Provisions for fixed capital consumption contributed from

Figure 1
Annual Growth Rates of Key Economic Indicators, 1952–1981
(1976 Prices)



Source: Council for Economic Planning and Development, Executive Yuan, Republic of China, Directorate-General of the Budget, Accounting, and Statistics, *Taiwan Statistical Data Book 1983*, p. 23.

Figure 2
Savings As a Percentage of GNP, 1952-1981



Source: Council for Economic Planning and Development, Executive Yuan, Republic of China, Directorate-General of the Budget, Accounting, and Statistics, *Taiwan Statistical Data Book 1983*, p. 49. Calculated on the basis of GDP at current prices.

22.94 percent in 1975 to a high of 33.38 percent in 1979, and later stabilized at 25.03 percent in 1981. The government's share of the total followed a similar pattern, from 22.84 percent in 1975, increasing to 30.66 percent in 1978, and leveling off to 24.66 percent in 1981.

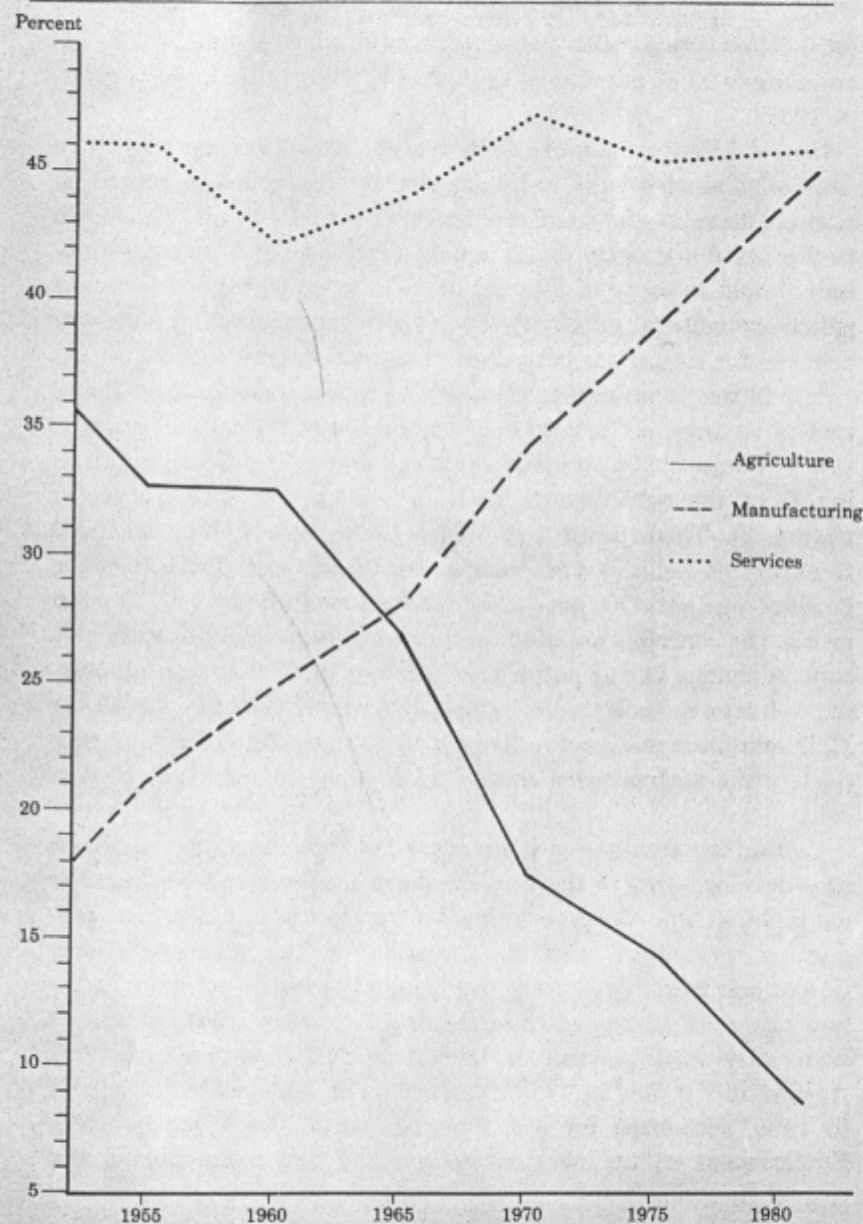
How did Taiwan achieve such a high rate of savings? The two central strategies were to insure positive real rates of return on savings deposits and to offer attractive tax incentives. These will be discussed in greater detail in later sections, but here some mention should be made of a factor quite independent of government policies: a cultural proclivity to save, perhaps reflecting a greater concern for future security than present consumption.

In addition to an acceleration of the rate of growth of GNP and rate of savings, a third distinctive feature of the transformation was a change in the composition of net domestic product originating from the agricultural, manufacturing, and services sector (figure 3). Throughout the 1950s agriculture (which includes forestry and fishing) contributed over 30 percent of net domestic product, and services accounted for well over 40 percent. Though rising, the contribution of manufacturing remained below 25 percent. A change in this pattern occurred in 1965 when manufacturing's share overtook that of agriculture which continued to fall. By 1981 manufacturing accounted for 45 percent of net domestic product, while agriculture's share had dropped to less than 10 percent.

Behind the changes in these economic indicators lay important new developments in the way the populace lived and worked. For example, as the relative shares contributed to net domestic product by agriculture and manufacturing shifted, a huge reallocation of manpower took place (figure 4). The manufacturing sector had absorbed 42.4 percent of the labor force by 1981, compared with only 22.3 percent in 1965 and 16.9 percent in 1953. Agriculture, which had employed over half of the work force prior to 1965, accounted for less than one-third of all jobs by 1981. Employment in the services sector had also risen during the transformation.

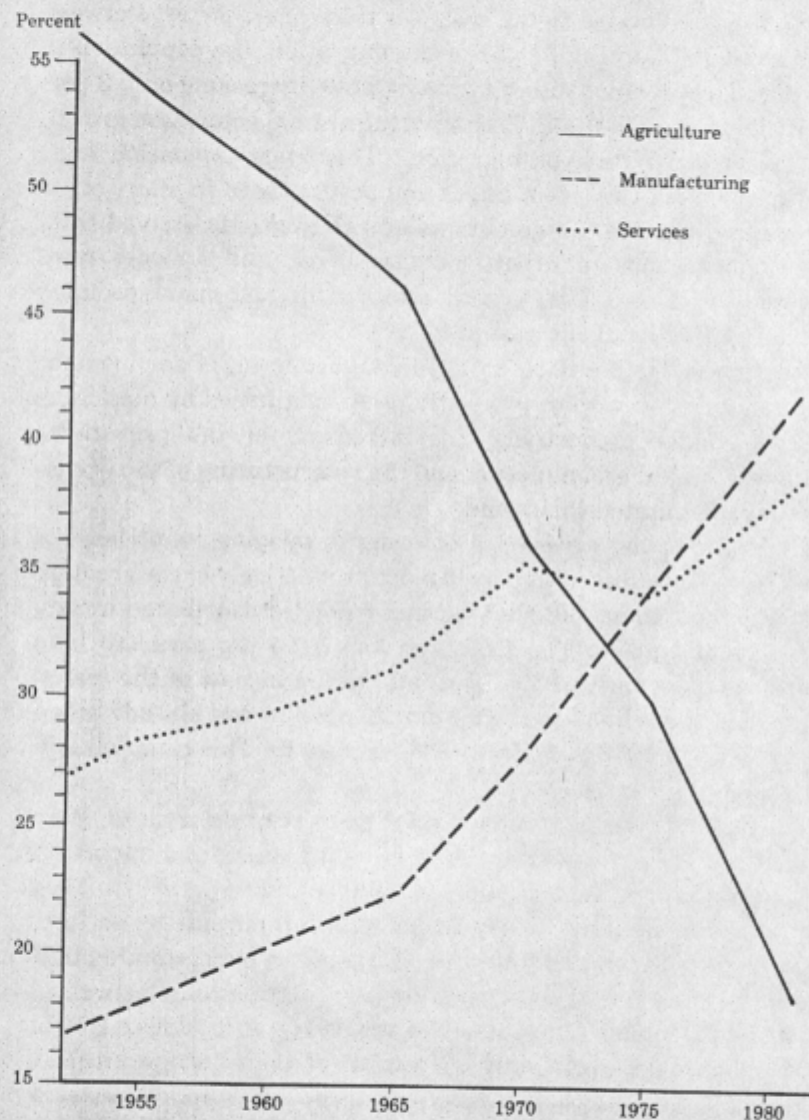
Rapid urbanization accompanied industrialization. For decades the countryside had harbored a large reservoir of chronically underemployed labor. Although between 1965 and 1981 many of

Figure 3
Contributions to Net Domestic Product
By Economic Sectors, 1952-1981



Source: Council for Economic Planning and Development, Executive Yuan, Republic of China, Directorate-General of the Budget, Accounting, and Statistics, *Taiwan Statistical Data Book 1983*, p. 33. Calculated at 1976 prices.

Figure 4
Distribution of Manpower By Economic Sectors, 1952-1981



Source: Council for Economic Planning and Development, Executive Yuan, Republic of China, Directorate-General of Budget, Accounting, and Statistics, *Taiwan Statistical Data Book 1983*, p. 16.

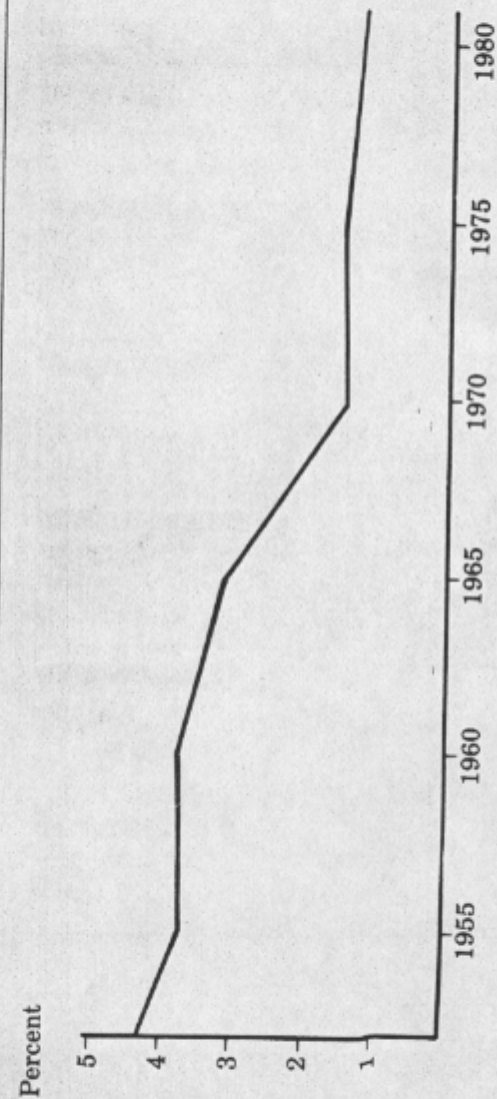
these workers found jobs in rural industries, most migrated to the cities. In 1950 roughly four-fifths of the population resided in villages and small towns of less than several thousand people; in 1981 the comparable figure was less than one-quarter. Between 1964 and 1973, at the height of the migration, the population in the five largest cities rose 48 percent while increasing only 3 percent elsewhere.² In the 1970s half of the annual population growth in Taipei came from immigration.³ This huge population shift never produced the urban blight and poverty seen in many other developing nations. As quickly as new immigrants arrived from the country, jobs in urban manufacturing and services were created for them in the private sector. Unemployment declined steadily throughout the period (figure 5).

The rise in GNP reflected not only higher levels of employment but also gains in worker productivity. As confirmed by numerous studies, factor productivity has increased for the past three decades. Capital accumulation and the restructuring of the economy have facilitated this trend.

Contrary to the experience of many developing countries, not only were more people employed more productively in the creation of national income, but that income was also distributed among them more equally. The first step had been the agrarian land reforms of the early 1950s. The ratio of the income of the top 20 percent of households to the bottom 20 percent had already fallen from 20.47 in 1953 to 11.56 in 1961 (figure 6). This ratio fell still further to 4.17 in 1980.

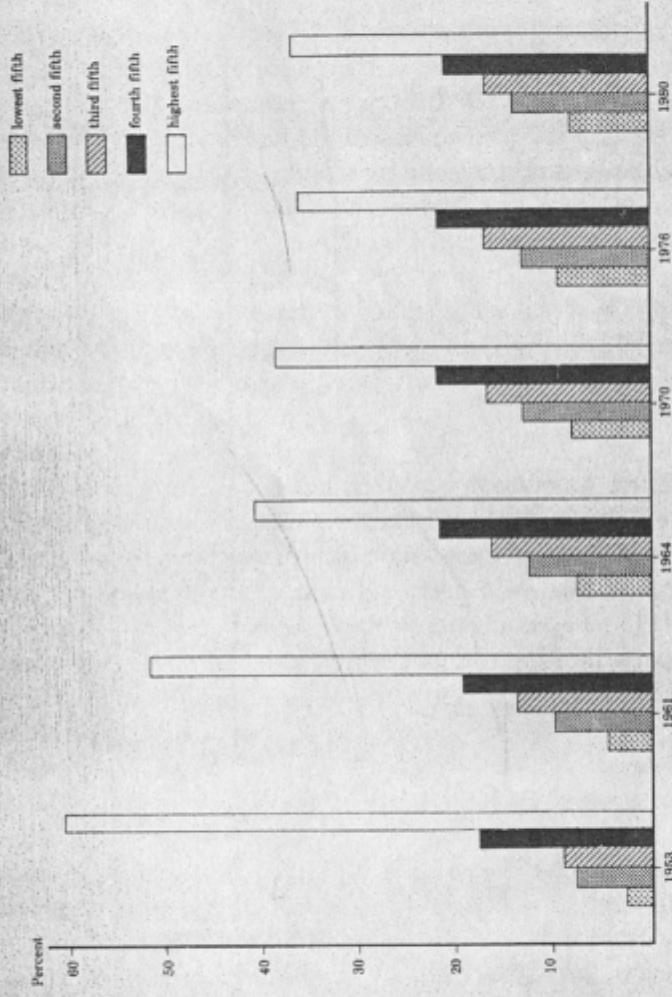
As incomes rose, both consumption and savings increased. More will be said of savings later, but a few interesting and important points regarding consumption should be noted here. In 1964 households still spent nearly 60 percent of their outlays on food, beverages, and tobacco (table 1). This pattern approximated that for developing countries of very low per capita income as well as that for Mainland China itself in the 1920s and 1930s.⁴ But in 1981 households spent only 39 percent of their outlays on food, beverage, and tobacco, bringing Taiwanese consumption patterns more in line with those of other developed industrial nations. At the same time, households found they expended more for rent, fuel, and power, and could afford more for education and recreation.

Figure 5
Unemployment, 1952-1981



Source: Directorate-General of Budget, Accounting, and Statistics, Executive Yuan, Republic of China, *Quarterly National Economic Trends, Taiwan Area, The Republic of China 24*, February 1984.

Figure 6
Income Distribution Among Households Divided Into Five Groups of Equal Size, 1953-1980



Sources: 1953: Kowie Chang, "An Estimate of Taiwan Personal Income Distributed in 1953," *Journal of Social Science* 7 (1956), p. 260. 1961: Kowie Chang, "Report on Pilot Study of Personal Income and Consumption in Taiwan," (prepared under the sponsorship of a Working Group of National Income Statistics, Directorate-General of Budget, Accounting, and Statistics, Executive Yuan) p. 23, Table A. 1964-81: Directorate-General of Budget, Accounting, and Statistics, Republic of China, *Taiwan Statistical Data Book* 1983, p. 54.

Table 1
Changing Household Expenditures in Taiwan, 1964-1981
(Percent)

	1964	1968	1970	1972	1974	1976	1978	1979	1980	1981
Food, beverage, and tobacco	59.70	51.75	52.46	47.81	49.40	46.38	42.93	41.03	40.35	39.44
Clothing and footwear	6.30	5.84	5.79	6.47	6.15	6.83	6.66	7.41	7.03	6.80
Rent, fuel, and power	17.20	19.01	18.19	20.78	20.71	21.45	22.64	22.91	23.65	24.13
Family furniture & equipment	3.40	4.66	3.96	3.95	3.79	3.87	4.13	4.64	4.57	4.58
Medical care & health expenses	5.30	5.54	5.95	3.89	3.92	4.61	4.74	4.62	4.20	4.50
Transport & communications	2.00	2.70	3.00	3.53	3.99	4.99	5.67	6.12	6.68	6.89
Education & recreation	1.20	1.65	2.66	7.06	6.06	6.38	7.50	7.63	8.18	8.30
Others	4.90	8.85	7.99	6.51	5.98	5.49	5.43	5.64	5.34	5.36
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Council for Economic Planning and Development, Executive Yuan, Republic of China, Report on the Survey of Personal Income Distribution in Taiwan Area, *Taiwan Statistical Data Book* 1983, p. 54, Table 3-16.

Table 2
Food Intake and Nutrition Per Capita Per Day

Year	Energy (kcal.)	Protein (gm.)	Vitamin A (I.U.)	Vitamin D (mg.)	Vitamin C (mg.)
1952	2078.2	49.0	4310.4	0.47	91.3
1956	2262.0	53.9	4356.3	0.50	90.4
1960	2390.0	57.1	4548.7	0.54	95.2
1965	2410.6	61.2	3728.6	0.58	79.6
1970	2661.7	72.2	4261.5	0.74	93.7
1975	2721.7	74.7	4695.8	0.80	116.1
1981	2728.6	75.3	6408.0	0.90	128.8

Source: Council for Economic Planning and Development, Executive Yuan, Republic of China, Council for Agricultural Planning and Development, *Taiwan Statistical Data Book 1983*, p. 269, Table 14-6.

By any measure, the quality of life had improved immensely. Consumption of protein and vitamins in the diet rose (table 2) as better-quality vegetables and fruits and more pork, fish, chicken, duck, and even beef found their way into the pantries and onto the tables of more Taiwanese families. Private clinics and physicians as well as public health services increased in quantity and quality. Better diet and medical care led to a vast improvement in the overall health of the population.

Thus the Republic of China on Taiwan had experienced a true transformation. GNP in absolute terms and on a per capita basis had risen; sustained capital formation had been achieved; the nation had become industrialized and urbanized; unemployment had fallen while productivity had risen; income distribution had become more equal; and the population had more discretionary income and enjoyed an improved health status. This was a miracle indeed for an economy and society that a few decades earlier had been beset with underemployment and uncontrolled inflation. How had Taiwan achieved this remarkable turnaround?

Achieving the Transformation

New economic policies initiated in the very late 1950s liberalized Taiwan's economy, re-deployed resources to higher value-added

Table 3
**The Contribution of Exports to Output Growth
 in Taiwan's Economy
 (Percent)**

Period	Output expansion due to domestic expansion	Output expansion due to export expansion	Output expansion due to import substitution
1965-61	61.6	22.5	7.7
1961-66	63.2	35.0	0.5
1966-71	51.4	45.9	5.7
1971-76	34.7	67.7	-2.4

Source: Kuo, Shirley W., *The Taiwan Economy in Transition* (Boulder, Colorado: Westview Press, 1983), p. 149, Table 7.6.

manufacturing and services, and redirected much of that output to the international market. These policies encouraged private enterprise to establish more factories and service establishments, increase output and employment, and direct more of that output to overseas markets. These forces, then, produced a remarkable concatenation of economic activities unprecedented in Taiwan's economic history: rising market demand, primarily of foreign origin; and rapid producer response to supply more to the expanding market. Let us examine these trends in demand and supply in more detail.

The world market produced the major source of new demand. Taiwan's export growth represented that new supply response to a broadly expanding international market. In 1952 and 1960 exports in constant price terms still accounted only for 9 and 10 percent, respectively, of GNP. In 1965, however, exports already had risen to 17 percent; in 1970 exports accounted for 29 percent; and by 1981 exports had risen to an incredible 53 percent of GNP.⁵ Exports had risen far more rapidly during the transformation phase than in the preceding period.

More complex economic analysis confirms this simple finding. A recent input-output analysis showed that the export growth after 1965 had accounted for an increasing share of the economy's total output growth (table 3). By the mid-1970s roughly two-thirds of the economy's output growth came from the expansion of exports.

What category of exports played such a critical role in the rapid

spurt of export growth? When exports are divided into agricultural, processed agricultural, and industrial products, we observe that in 1965 industrial products made up less than half of the total value of exports (46 percent) but rose to 78 percent in 1970 and continued to climb, reaching 92 percent by 1981.⁶ In other words, the huge expansion of exports was largely fueled by the accelerated growth of manufacturing that was taking place.

Why had exports expanded so rapidly? The reasons owe much to the new financial incentives for manufacturers that originated in the reform of the foreign exchange system and the sweeping liberalization of trade controls between 1958 and 1966. These reforms simply had made it enormously profitable for suppliers of manufactured goods to sell abroad rather than at home. Taiwan producers rushed to enter the export market. During the 1960s and 1970s the demand for manufactured goods in Japan and the West rapidly expanded. The demand is highly income-elastic. Therefore, for every one percent rise in per capita income in Japan and the West, there was an even larger percentage increase in demand for Taiwan's manufactured goods. Because so many Taiwanese goods were inexpensive and their quality was improving, demand accelerated. Between 1965 and 1981 Taiwan's manufactured exports to the United States rose from US\$95 million to US\$8,100 million as the United States soon became its leading foreign market. In 1965 Taiwan's most important buyer, Japan, was taking 30 percent of all exports, compared to 21 percent from the United States. But by 1981 their roles had reversed: the United States purchased 36 percent of Taiwan's exports and Japan took only 11 percent.⁷

In employment, the textile industries led the way in growth, followed by basic metal products, chemicals and plastics, and food processing. Moreover, manufacturing firms increased their capital investment so that the capital input rose more rapidly than the labor input: between 1966 and 1971 total capital assets nearly tripled (NT\$87 billion to NT\$238 billion), but employment only roughly doubled. Finally, in spite of the fact that more industries substituted capital for labor, wages rose in the 1960s, so that the share of labor income in value added rose more rapidly than the share of capital during this same period. This development also contributed to greater income equality.

What kind of manufacturing firms did entrepreneurs create between 1961 and 1971? For the nine categories of manufacturing industries, there were a total of 44,054 establishments in 1971. Of this total 68 percent were small-scale firms employing fewer than twenty workers, with another 23 percent of medium size employing up to fifty workers. The distinctive feature of rapid manufacturing development after 1961, then, was the tremendous growth of small and medium-sized firms. Small firms, in particular, predominated in the manufacturing of textiles, apparel, leather goods, wood and bamboo products, basic metals, metal products, machinery equipment, and miscellaneous industrial products. More large firms could be found in the industries producing food, beverage, tobacco, paper, printing, chemicals, and nonmetallic mineral products.

Although urban manufacturing growth outpaced that of the countryside, a great many of these small and medium-sized firms took root near villages and small towns. Rural employment in manufacturing rose quickly during the transformation: 13.5 percent for 1966-71 and 12.1 percent for 1971-76, as compared to 16.9 and 8 percent, respectively, for urban manufacturing employment. The fact that rural manufacturing employment grew more rapidly than urban manufacturing employment in the 1970s is most impressive. In rural manufacturing, establishments producing rubber products, leather and fur, electronics and their equipment, and metal products led the way in having the highest growth rates for employment.

The economic impact of expanding rural employment was considerable. Nonfarm income for rural households greatly increased, rising from 79 percent of household income in 1966 to 89 percent in 1976. Of this nonfarm income earned by rural households, industrial employment generated about 60 percent in 1966 and 66 percent in 1976.

Meanwhile, family farms were gradually purchasing more machinery and equipment that in turn allowed more labor to be released from farming. But as Taiwan farms became more capital-intensive and their productivity rose, their demand for labor also increased during planting and harvesting periods, so that agriculture also generated more employment during the transformation phase. More machines extended multiple cropping