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# 2008

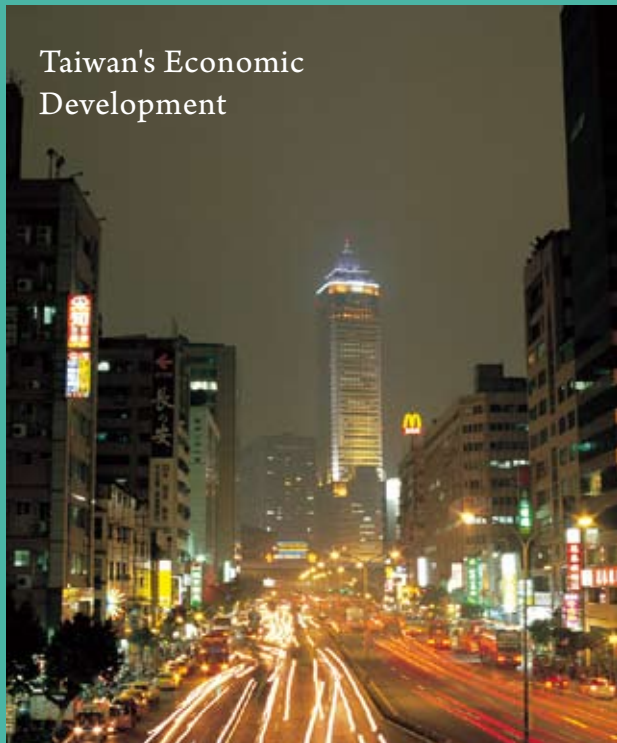
## Economic Development R.O.C. (Taiwan)



COUNCIL FOR ECONOMIC PLANNING  
AND DEVELOPMENT EXECUTIVE YUAN,  
R.O.C. (TAIWAN)

**2008** Economic Development  
R.O.C. (Taiwan)

# 2008 Economic Development R.O.C. (Taiwan)



## Taiwan's Economic Development

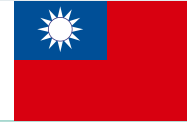
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## Taiwan's Economic Development Performance

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## Geographic Features and Natural Resources

Strategically located in the middle of a chain of islands stretching from Japan in the north to the Philippines in the south, and only 160 kilometers off the southeastern coast of the Chinese mainland, the island of Taiwan is a natural gateway to East Asia. Taiwan occupies an area of only 36,006 square kilometers, roughly equal to the size of the Netherlands. At



mid-2007, its population stood at 22.8 million.

With 634 persons per square kilometer, Taiwan is one of the most densely populated areas in the world.

Three-quarters of the land is mountainous, with a spine-like ridge of steep mountains extending from north to south. About 60% of the land is forested, but forest resources are minimally exploited because of limited accessibility and environmental concerns. Even though only one-quarter of the land is arable, the subtropical climate permits multi-cropping of rice and growing of fruit and vegetables all year round. However, agricultural production accounted for only 1.5% of gross domestic product (GDP) in 2007.

Although Taiwan does have deposits of coal,








limestone, marble, dolomite, and natural gas, it is not richly endowed by nature. Indeed, more than 90% of its energy needs are met by imports, and its rapid industrialization also has relied heavily on imports of raw materials. However, Taiwan has an ample supply of human resources, of which it has made highly effective use.

# Taiwan's Economic Development Course

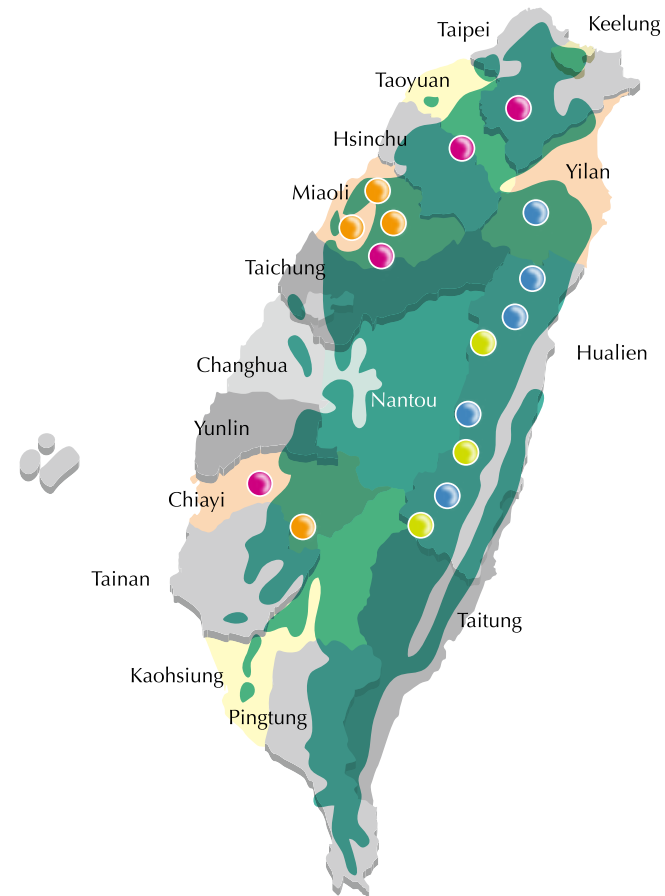
## POPULATION & NATURAL RESOURCES (2008)

TOTAL AREA	36,006	Km <sup>2</sup>
TOTAL POPULATION (mid-year)	22,829*	1,000 Persons
POPULATION DENSITY	634*	Persons/Km <sup>2</sup>

## RESERVES

 COAL	103	Million M.T.
 NATURAL GAS	7	Billion M <sup>3</sup>
 MARBLE	297	Billion M.T.
 DOLOMITE	110	Million M.T.
 FOREST	357	Million M <sup>3</sup>

Note: \* refers to 2007 figures.



## Economic Development Success

Occupying an area roughly the same size as the Netherlands and with only four-thousandths of the global population, Taiwan over the past fifty-some years has achieved a remarkable record of rapid economic growth, stable prices and equitable income distribution, thanks to the joint endeavors of its people and government matched by well tailored economic development strategies. This has come to be known around the world as the “Taiwan experience.” Between 1952 and 2007, Taiwan's per capita income rose from US\$197 to US\$16,855; its GDP increased from US\$1.682 billion to just under US\$385 billion, the world's 24th highest; and its foreign trade expanded from US\$303 million to US\$465.9 billion, ranking 17th in the world.

In the course of its development over the past half century, Taiwan has successfully transformed from an agricultural society to a key player in the global ICT industry. In 2007, Taiwan was a global top-three supplier of 26 industrial products and the world's number one supplier of 10, namely foundry services, mask ROM, IC packaging, IC testing, large-size TFT-LCD panels, TN/STN LCD panels, electrodeposited copper foil, optical discs, ABS resin, and electric wheelchairs & mobility scooters. In its May 2005 cover story entitled “Why Taiwan Matters,” BusinessWeek magazine highlighted Taiwan's vital role in the global technological supply chain, with the headline pronouncement that “The global economy couldn't function without it.”

The economic power proudly attained by Taiwan is also demonstrated in its outward foreign direct investment (FDI). As of June 2008, Taiwanese FDI in Southeast Asia amounted to more than US\$63 billion, with Taiwan ranking as one of the top three sources of investment in Vietnam, Malaysia, and Thailand. And as of October 2008, Taiwanese investment in mainland China added up to somewhere in the region of US\$74 billion. According to UNCTAD's World Investment Report 2008, the accumulated stock of outward FDI from Taiwan reached US\$158.36 billion at the end of 2007, up 24.7 percent year on year. Ranking 17th in the world and 3rd in Asia behind only Japan and Hong Kong, Taiwan has become one of East Asia's main providers of FDI, with its economic tentacles reaching worldwide.

## Taiwan's Economic Development Course

At the end of 2007,  
the accumulated stock of  
outward FDI from Taiwan:

up **24.7%**

**17<sup>th</sup>** in the world

**3<sup>rd</sup>** in Asia

Sources: Directorate-General of Budget, Accounting and Statistics (DGBAS), Executive Yuan, ROC; Ministry of Economic Affairs (MOEA), Industrial Technology Information Service (ITIS) Program.

### Taiwan's Main Economic Indicators : Comparison of 1952 and 2007

	1952	2007	Average Annual Growth Rate (%)
Population (million persons)	8.54	22.83	1.8
GDP (US\$ millions, at current prices)	1,682	384,768	10.4
GDP (NT\$ billions, at constant prices)	215	13,082	7.8 (Economic growth rate)
Per capita GDP (US\$)	197	16,855	8.4
Agriculture's share of GDP (%)	32.2	1.5	—
Industry's share of GDP (%)	19.7	27.5	—
Services' share of GDP (%)	48.1	71.0	—
Exports (US\$ millions)	116	246,677	15.0
Imports (US\$ millions)	187	219,252	13.7
Foreign exchange reserves (US\$ billions)	10	270,311	—

### Products of which Taiwan was the World's Largest Supplier in 2007

Products (Excluding Offshore Production)	Taiwan's Global Market Share (%)
Mask ROM	92.9
Optical discs	68
Foundry services	66.6
IC testing	63
Large-size TFT-LCD panels	46.4
IC packaging	44.4
ED copper foil	38.3
TN/STN-LCD panels	36.9
Electric wheelchairs & mobility scooters	31.7
ABS resins	20



## Strategies of Economic Development

A very important factor behind Taiwan's economic success has been pragmatic and flexible government policies - especially the promotion of social and political stability and the adoption of an outward-looking development strategy. And whenever new problems have arisen, timely, market-friendly policy initiatives have been undertaken to cope with them. Taiwan's economic development can be divided into six stages:

### **The 1950s: in Pursuit of Stability and Self-sufficiency**

In the 1950s, top priority was given to economic stabilization and food production. The major tasks were to effectively utilize U.S. economic aid for development, and to make use of tariffs and import controls in fostering the development of domestic industry. A land reform program was introduced to encourage food production, stabilize food prices, and promote social stability. At the same time, the development of labor-intensive import-substituting industries was encouraged in order to lessen dependence on imports and the need for foreign exchange.

### **The 1960s: Expanding Exports of Light Industry**

In the 1960s, emphasis was placed on promoting labor-intensive and export-oriented industries to take advantage of low-cost labor and tap the potential of markets beyond Taiwan. Toward that end, the government introduced reforms in foreign exchange administration and taxation, enacted the Statute for the Encouragement of Investment, and in 1966 established Taiwan's first export-processing zone. Amid buoyant recovery of the world economy, Taiwan's exports increased rapidly, becoming the locomotive of its economic growth.

# Taiwan's Economic Development Course

## The 1970s: Developing Basic and Heavy Industries

By the end of the 1960s, rapid export expansion had stimulated strong domestic demand for machinery, equipment, and intermediate materials on the one hand, and led to a substantial improvement in the production structure on the other. Meanwhile, management had become more sophisticated and industrial technology more advanced. The time had come to encourage a gradual shift to basic and heavy industries. This was accomplished by promoting the production of domestic substitutes for imported intermediates and the development of capital-intensive industries. This strategy enabled Taiwan to effectively reduce its reliance on foreign suppliers of essential intermediate products and to upgrade its industrial structure.

## The 1980s: Economic Liberalization and Technology-Intensive Development

In the early 1980s the economy began to reap the benefits of trade-promotion policies, and an increasing surplus was recorded in foreign trade. Against this background, the government adopted economic liberalization and internationalization as new guiding principles for Taiwan's further development, and endeavored to bring market forces into full play. At the same time, Taiwan began to tap its ample capital resources to develop such capital- and technology-intensive industries as electronics, information, and machinery.

## The 1990s: Coping with Change and Setting New Priorities

As the 1990s began, Taiwan turned to the task of strengthening its infrastructure. Toward this end, a Six-Year National Development Plan was introduced in 1991. In 1994, the government assigned top priority to the implementation of the Twelve Major Construction Projects, covering transportation, culture and education, improvement of living standards, water resources development, and environmental protection. A Comprehensive Physical Development Plan was initiated with a view to rationalizing land use, improving the investment climate, and upgrading the quality of life. In January 1997, a Plan for National Development into the Next Century (1997-2000) was introduced. Aimed at accelerating Taiwan's transformation into a modern

## Strategies of Economic Development *(continued)*

industrialized society, this plan was centered on the achievement of three goals: strengthening national competitiveness, improving the quality of life, and promoting sustainable development. At the same time, as an overture to the emergence of a mature economy, efforts were begun to develop Taiwan into an Asia-Pacific Regional Operations Center (APROC).

In 1998, to remove Taiwan from the shadow of the Asian financial crisis as quickly as possible, the government launched a Domestic Demand Stimulus Plan. And in February 1999, it began to implement a package-style program to strengthen Taiwan's economic fundamentals.

### **The 2000s: Industrial Renovation and Global Linkage**

Since entering the 21st century, Taiwan has faced a new situation of international competition marked by the rise of the BRIC and other emerging countries and the rapid progression of globalization. It has responded by accelerating the transformation and upgrading of its industries, and having formally become a member of the WTO on January 1, 2002, has been gradually establishing the international alignment of its economic and trade systems, and repositioning the core competitive advantages of the Taiwan economy.

In 2000, the government unveiled a new vision for pursuing knowledge-based, sustainable and just economic development, involving all-out investment in human resources, R&D innovation, logistics channels and the living environment, and vigorous promotion of the so-called “two trillion and twin star” industries of semiconductors, image display, biotechnology, and digital content, with a view to raising the innovative capabilities of domestic industry and enhancing the people's quality of life.

## Taiwan's Economic Development Course

Since the new administration took office in 2008, it has vigorously promoted public investment, industrial renovation and global linkage, with the aim of carving out new competitive advantages for Taiwan's economy. On the public investment front, the government has launched the i-Taiwan 12 Projects, which are designed to create a top-tier industrial development environment by, for example, promoting the development of high-tech industrial clusters, industrial innovation corridors, and an “intelligent Taiwan.” For industrial renovation, the government is

targeting the expansion of investment in R&D, and the active development of cultural and creative, green energy, intelligent living, biopharmaceutical, and other such emerging industries, as means of driving a new leap upward for Taiwan's industry. And in regard to global linkage, the government is substantially loosening economic and financial regulation, laying the groundwork for enhancement of cross-strait and global logistics capabilities, and bringing national economic and trade systems into line with the world, to boost Taiwan's economic vitality.



## Strategies of Economic Development *(continued)*

1950s



### **In Pursuit of Stability and Self-sufficiency**

- Introducing economic planning in 1953, after the completion of postwar rehabilitation
- Implementing a land-reform program, stimulating agricultural production, and promoting economic stability
- Developing labor-intensive import-substituting industries to reduce the trade deficit

1960s



### **Expanding Exports of Light Industry**

- Encouraging saving, investment, and exports
- Introducing new agricultural products
- Establishing export-oriented industries and export-processing zones

1970s



### **Developing Basic and Heavy Industries**

- Improving infrastructural facilities and eliminating transport bottlenecks
- Establishing intermediate-goods industries
- Developing basic and heavy industries

# Taiwan's Economic Development Course

1980s



## **Economic Liberalization and Technology-intensive Development**

- Restructuring industrial production and expanding R&D spending
- Pursuing economic liberalization and internationalization
- Expanding domestic demand to improve the trade imbalance

1990s



## **Coping with Change and Setting New Priorities**

- Speeding up public investment (promoting the BOT scheme) and improving the investment climate
- Speeding up deregulation to strengthen national competitiveness
- Enforcing pollution controls and rationalizing land use to promote sustainable development
- Encouraging more-balanced economic and social development to improve the quality of life
- Developing Taiwan into an Asia-Pacific Regional Operations Center

2000s



## **Industrial Renovation and Global Linkage**

- Developing a knowledge-based economy, and providing a clean and self-renewing natural environment
- Fostering the development of an affluent and compassionate civil society
- Promoting the spread of e-commerce and developing a complete range of supply-chain services to speed Taiwan's emergence as a major international procurement and logistics base
- Enhancing economic and trade ties with mainland China
- Actively implementing the i-Taiwan 12 Projects

## Economic Growth

From 1952 to 2007, Taiwan achieved an average annual economic growth rate of 7.9%, one of the world's fastest economic growth records in modern history.

**-1950s:** After World War II, Taiwan actively set to work on post-war reconstruction. The government adopted a policy of “promoting agriculture to foster industry and utilizing industry to develop agriculture,” carrying out land reform to boost agricultural production and fostering labor-intensive light industries to lay a basis for industrial development. These strategies helped spur the rapid take-off of Taiwan's economy, with the economic growth rate averaging 8.4% per annum during this period.

**-1960s:** With solid foundations for industrial development already in place, the government turned its focus to developing export industries, and in 1966 set up Taiwan's first export-processing zone, pursuing a policy of export expansion as a means of spurring economic growth. During this period, the average annual economic growth rate reached 9.2%.

**-1970s:** Despite the impact of the two oil crises, which pulled down the economic growth rates in 1974 and 1979 to 1.38% and 8.44% respectively, the government put great energy into developing heavy and chemical industries and expanding infrastructure investment. These efforts enabled the economy to maintain a robust rate of expansion, with the economic growth rate averaging 10.3% during this period.

**-1980s:** The government took active steps to loosen controls and protection in the economy, carrying out policies for the liberalization of finance and trade and the privatization of state-owned enterprises. And with the establishment of the first science-based industrial park in 1980, industry entered a trend of gradual development toward science and technology orientation. During this period, Taiwan's economy grew 8.2% annually.



# Taiwan's Economic Development Performance

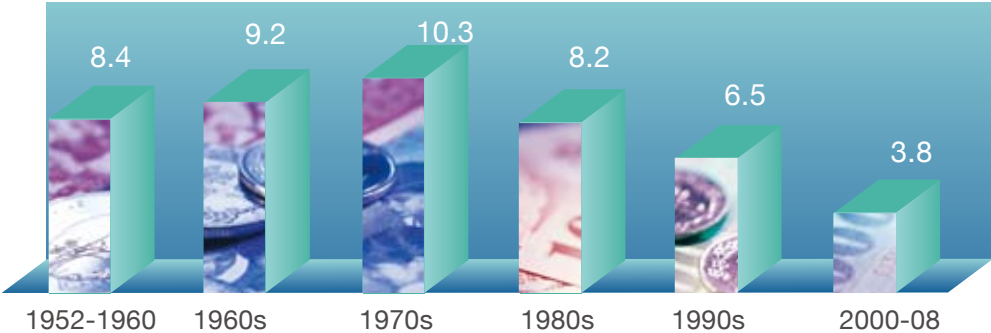
**-1990s:** As Taiwan's economy advanced steadily into the mature stage of development, per capita GNP broke above the US\$10,000 level in 1992. To satisfy the people's expectation for improving quality of life, the government set about an active program of investment in mass transit, freeway and expressway, environmental protection, and other such public construction projects, while striving to enhance the fundamental constitution of the economy. During this period, despite the impact of the Asian financial storm, Taiwan's economy still grew 6.5% annually.

**-Since 2000:** Despite having to contend successively with the bursting of the dot-com bubble, the 911 terrorist attacks, the SARS epidemic, and the US financial crisis,

continuous restructuring of industry toward a knowledge-based economy has enabled Taiwan to achieve an average economic growth rate of 3.8% from 2000 through 2008.

## Economic Growth

Annual rate of increase (%)





## Price Change

Taiwan is one of the few countries to place equal emphasis on both high economic growth and price stability. Except for during the two international oil crises in the 1970s, Taiwan's price fluctuations have been kept at a moderate level since the 1960s.

From the 1960s to the 1980s, the consumer price index (CPI) and the wholesale price index (WPI) recorded average annual rises of 6.4% and 4.6%, respectively. During the two energy crises (1973~74 and 1979~80), the CPI and WPI increased at average annual rates of 21.1% and 24.7%, respectively. Excluding these two oil-shock periods, the average annual increases of the two indexes were only 4.1% and 1.5%, respectively, marking Taiwan out as one of the world's most price-stable countries.

In the 1990s, prices remained stable thanks to the active liberalization and internationalization of Taiwan's economy plus the entry of China and other low labor-cost countries into the global production system, which enabled production costs to be kept down. During this decade, Taiwan's CPI and WPI rose by only 2.9% and 0.3%, respectively, per annum.

From 2000 to 2006, the WPI rose at an average annual rate of 2.3% due to the impact of increasing international commodity prices. But with the popping of the global IT industry bubble in 2000 causing consumer prices to fall for three consecutive years from 2001 to 2003, the CPI rose only 0.8% per annum during this period.

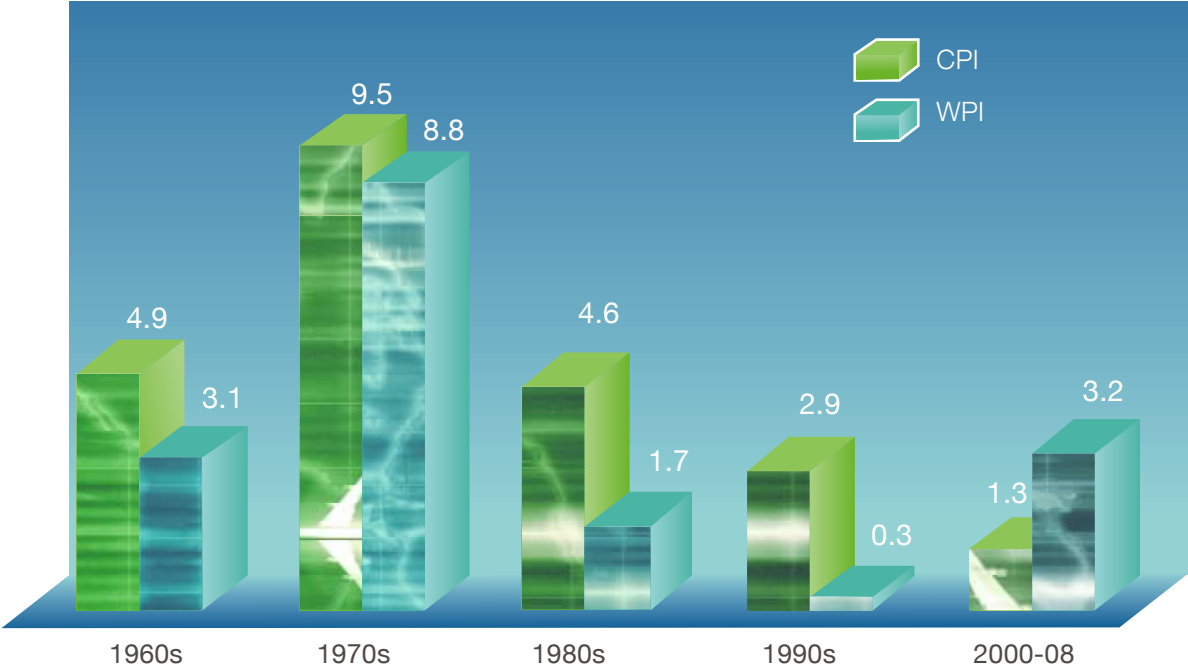


From the second half of 2007 to July 2008, despite the rapid rise of international crude oil and raw material prices, the government's various active measures to stabilize domestic prices successfully achieved their goal, with the CPI rising only 1.8% in 2007 and 3.64% in 2008, the lowest level of price volatility among the four Asian dragons.

# Taiwan's Economic Development Performance

## Change in Price Indexes

Annual rate of increase (%)



## Income Distribution

Thanks to its rapid economic growth, Taiwan's per capita GDP has soared from US\$197 in 1952 to US\$17,536 in 2008. A particular distinction of Taiwan's racing growth is that it has been achieved with equal emphasis on fair income distribution. Currently, Taiwan has one of the fairest spreads of income distribution of any country in the world. In 2007, the gap between the highest and lowest quintiles of income was just 5.98, far lower than the United



States' 11.4 (2006), the United Kingdom's 7.78 (2005), and Japan's 6.39.

From the 1950s to the 1970s, while per capita GDP shot up from US\$197 in 1952 to US\$2,394 in 1980, the implementation of land reform, compulsory education, tax reform, and other such policies ensured that income distribution continued to improve, with the gap between the top and bottom quintiles of income falling from 5.33 in 1964 to 4.17 in 1980.

From the 1980s to the 1990s, changes in economic growth and the industrial structure were reflected in a gradual widening of the income gap, though it still largely stayed at around 5.3 through the 1990s.

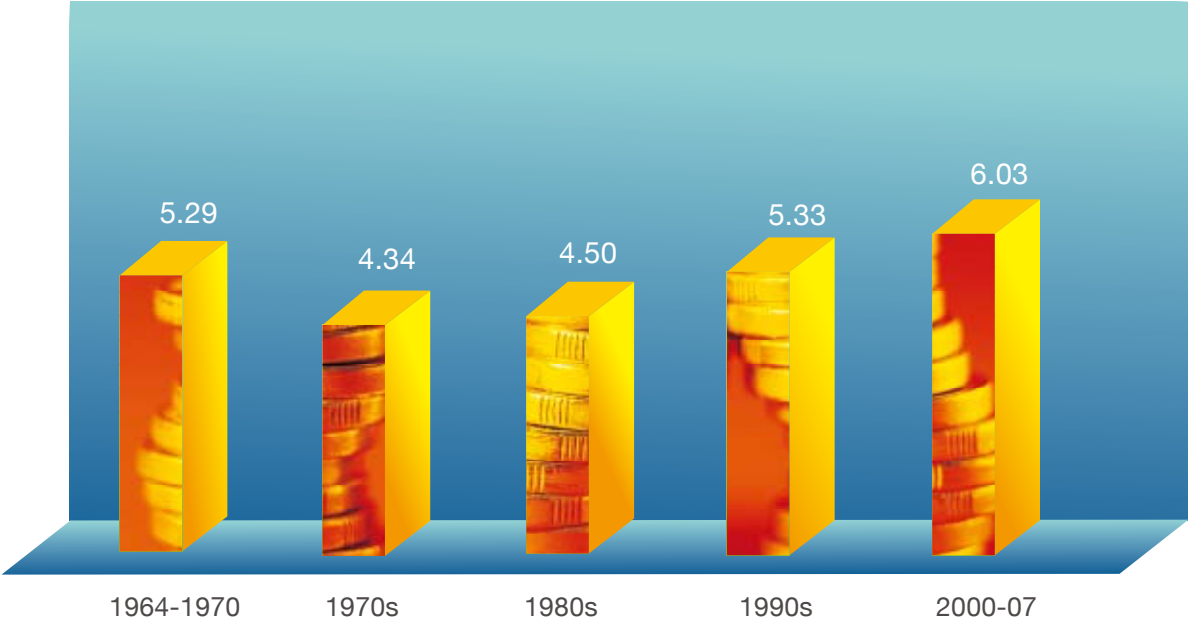


After 2000, the booming development of Taiwan's high-tech industries and the offshore migration of many labor-intensive industries caused a deterioration of income distribution, with the top-to-bottom-quintile income gap rising to 6.39 in 2001. But thereafter, the government's timely adoption of various social welfare measures helped bring it back down to 5.98 in 2007.

# Taiwan's Economic Development Performance

## Income Distribution

(Ratio of income share of highest 20% to that of lowest 20%)



## Production Structure

Over the past 60 years, Taiwan has completed in a remarkably short timespan a process that took advanced industrial countries one to two centuries to achieve, undergoing swift transformation from a post-war agricultural economy to a knowledge economy led by high-tech and specialized service industries.

Agriculture was the prime mover of Taiwan's economic growth in the early stage. In 1952, the agricultural sector generated 56.1% of Taiwan's employment, and 32.1% of its GDP. After the government adopted a policy of "promoting agriculture to foster industry and utilizing industry to develop agriculture," the industrial sector developed rapidly and agriculture's relative importance in the economy dwindled year by year. In 2007, the

agricultural sector accounted for only 5.3% of Taiwan's employment and 1.5% of GDP.

The rapid industrialization of the economy is a main hallmark of the Taiwan experience. In the early 1950s, Taiwan's industry was limited mainly to the primary processing of agricultural and forest products. In the 1960s, the government began to set up export processing zones, utilizing low-cost labor and policy incentives to attract foreign capital and technology, and thereby spurring the speedy emergence of textile, umbrella, shoe and other labor-intensive light industries. In the 1970s, the government implemented the Ten Major Development Projects to lay a basis for the petrochemical, steel, shipbuilding and other heavy industries.

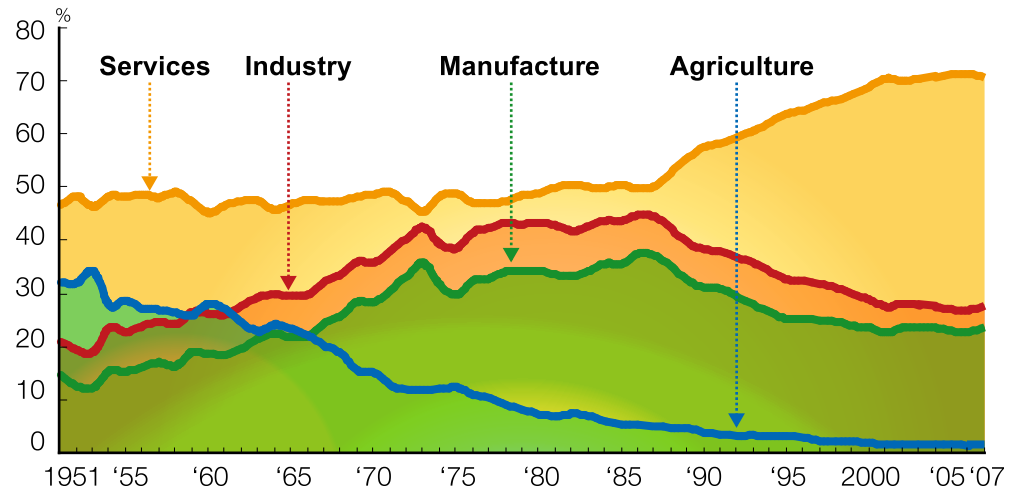
Since the 1980s, Taiwan's manufacturing industry has seen a speedy transformation toward high-tech orientation, with its ICT industry gaining global renown. In 2007, the semiconductor industry recorded output of NT\$1.55 trillion, holding a 69.2% share of the global market for foundry services, and ranking number one in the world in IC packaging; while the flat-panel display industry notched up output of NT\$1.64 trillion, leapfrogging its South Korean rival into top spot in the world with a global market share of 39.2%.

Since the mid-1980s, rising national living standards have spurred the booming development of Taiwan's service sector, which accounted for 70.7% of GDP in 2007.

## Taiwan's Economic Development Performance

To speed up service industry upgrading, the government has been taking measures to boost R&D and innovation, enhance the fostering and recruitment of talent, loosen regulatory controls, strengthen inter-industry alliances, and so on, as means of building a first-grade operating environment for service industries. At the same time, it has been bolstering promotion of the tourism, medical care, logistics, cultural and creative, energy-saving, and other high-potential service industries, to raise the competitiveness of Taiwan's service enterprises and create more employment opportunities.

**Gross Domestic Product by Sector**



Source: DGBAS, Statistical Abstract of National Income, Taiwan Area, R.O.C., May 2008.

## Trade

Surrounded by the sea, Taiwan has continuously sought outward development opportunities, seeking to expand trade links with other countries as a main driving force of its economic growth. Since the 1960s, with the government actively implementing export-oriented policies, external trade has grown rapidly. In 2007, Taiwan's total trade amounted to US\$466.0 billion (US\$246.7 billion in exports and US\$219.3 billion in imports), the 17th highest of countries and territories worldwide.

During the early 1960s, Taiwan's exports consisted mainly of processed agricultural products. As the country's level of industrialization has continued to rise, the share of industrial goods in exports has risen to 99%. Within this category, exports of heavy

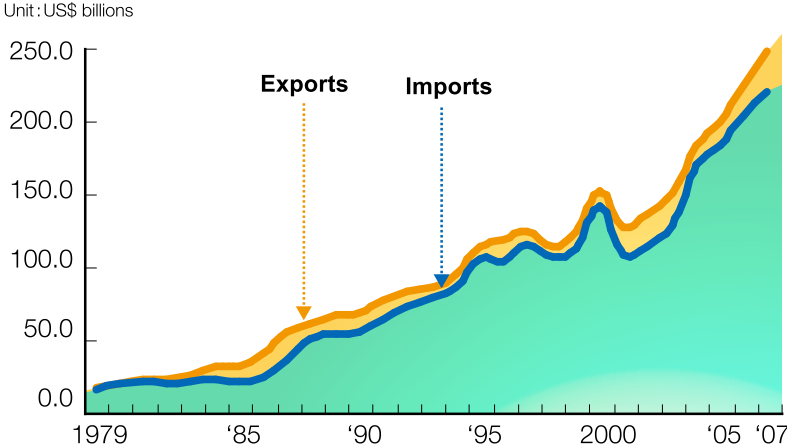
industrial goods have climbed from 32.3% of total exports in 1981 to 82.8% in 2007, with the share of electronic and IT related products increasing from 13.7% to 32.0% over the same period. On the import side, owing to Taiwan's lack of natural resources, agricultural and industrial raw materials have long made up the bulk of imports, accounting for 76.5% of total imports in 2007, followed by capital goods and consumer goods with shares of 16.2% and 7.3%, respectively.

The rapid progress of globalization and the global positioning of Taiwanese businesses have markedly changed the relative status of Taiwan's trading partners. On the export side, the United States had long been Taiwan's largest export market, but as cross-strait

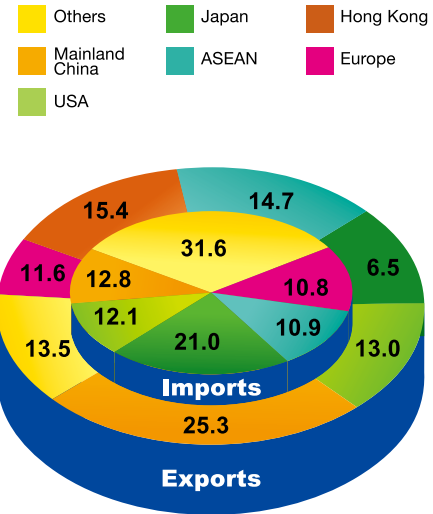
economic and trade relations have grown steadily closer, mainland China and Hong Kong have already supplanted the U.S. as Taiwan's primary export partners, receiving 25.3% and 15.4% of Taiwan's exports, respectively, in 2007 (with exports to Hong Kong mainly destined for re-export to the mainland). On the import side, up to 1984, Taiwan's complementary industrial links with the U.S. and Japan meant that these two countries always provided more than half of Taiwan's imports; but as of 2007, their combined share had fallen to just 33.1%, while the shares from mainland China and ASEAN countries had increased from 2.2% and 10.3% to 12.8% and 10.9%, respectively.

# Taiwan's Economic Development Performance

## Exports and Imports



## Trading Partners in 2007





## Saving and Investment

In the 1960s and 1970s, Taiwan's economic development displayed an economic virtuous cycle of “high saving rate – high investment rate – high economic growth.” In the 1960s, the government started vigorously encouraging people to save money with a view to accelerating capital formation, while providing tax breaks to encourage investment and raise economic growth potential. Taiwan's saving and investment rates rose from less than 20% in the early 1960s to an average of 30.9% and 29.4%, respectively, in the 1970s.

In the early 1980s, with investment willingness in the private sector sagging after the second energy crisis and public investment sharply reduced, excess saving climbed continuously, peaking at 20.9% of GDP in 1986. To correct

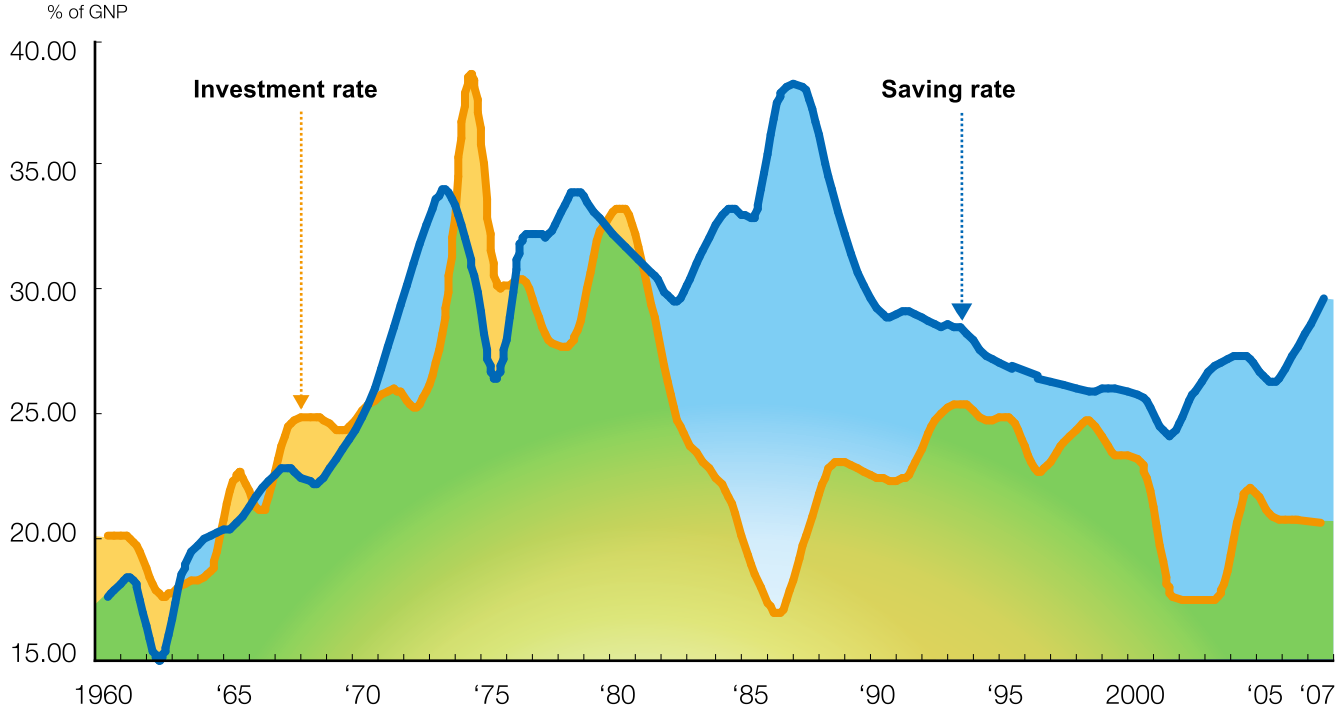
the imbalance in the economy, the government actively pursued a policy of economic liberalization. The sharp appreciation of the NT dollar and the steady reduction of import tariffs spurred rapid growth in private consumption, with the saving rate falling from its peak of 38.0% to an average of 27.4% in the 1990s. At the same time, with the government also actively implementing the Six-Year National Development Plan to expand public investment, the investment rate climbed back up from its low of 17.1% to an average of 24.0% in the 1990s. As a result, the excess saving rate fell to around 3.5%.

After the turn of the century, investment willingness was dampened by the effects of the bursting global dot-com bubble, the

911 terrorist attacks, and the spread of the SARS epidemic, with the investment rate at one stage falling below 18%. But with the government taking vigorous action to improve the investment environment and expand public investment, the investment rate rose back above 21.2% in 2008. Looking forward, with cross-strait relations continuously improving, and the government vigorously promoting deregulation, investment and construction as the three main props of a drive to establish Taiwan as an Asia-Pacific asset management and fund-raising center and a global innovation hub, Taiwan should become increasingly attractive to investment from around the world, which should help keep the investment rate moving upward.

# Taiwan's Economic Development Performance

## Saving and Investment



## Infrastructural Development

The continuous augmentation of infrastructure has been key to maintaining the growth of Taiwan's economy. In 1973, the government launched the Ten Major Development Projects, a set of national infrastructure projects for railway electrification, freeway, international airport, steel plant, and nuclear power plant construction, and other such works to drive forward the transformational development of Taiwan's economy. This was followed in 1978 by the Twelve Development Projects, which encompassed not only physical infrastructure for such purposes as developing heavy and chemical industries, but also basic social, welfare and cultural infrastructure.

In the 1980s, as Taiwan's national income rose rapidly, the government turned its focus to enhancing national living quality. This

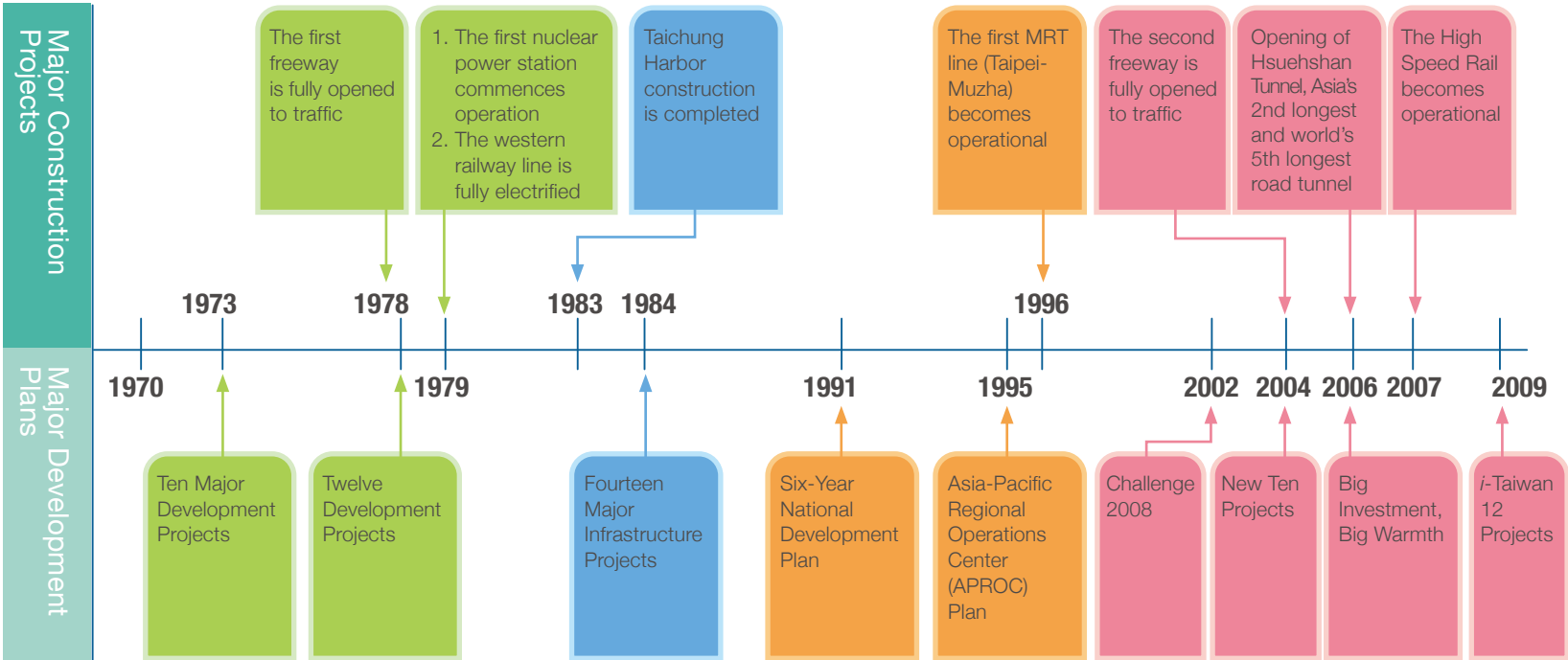
formed the main theme of the Fourteen Major Infrastructure Projects launched in 1984, the components of which included not just purely economic projects such as installing modern telecom infrastructure and building an MRT system in Taipei, but also social infrastructure for such purposes as providing health care and treating urban garbage. In 1991, the Six-Year National Development Plan was inaugurated to substantially expand power, aviation, environmental protection, medical care, and other public construction. To alleviate its fiscal burden, in 1994 the government announced the Statute for Encouragement of Private Participation in Transportation Infrastructure Projects, which provided incentives for private participation in public infrastructure projects, and under which the Taiwan High Speed Rail (THSR) was constructed in BOT

(build-operate-transfer) mode. In 2004, the government launched the New Ten Projects for investment in cultural, sci-tech and other such infrastructure with a bearing on public welfare and national competitiveness.

With 2008 being marked by a massive improvement in cross-strait relations, the government set its sights on grasping the commercial opportunities stemming from cross-strait reconciliation by drawing up the *i-Taiwan* 12 projects for commencement in 2009. Allotted an 8-year budget of NT\$3.99 billion, they consist of 12 transport, industry, environmental protection and ecology related infrastructure projects, collectively aimed at driving a new wave of growth for Taiwan's economy.

# Taiwan's Economic Development Performance

## Taiwan's Major Infrastructure Development Projects



## Inward and Outward Foreign Direct Investment

Foreign direct investment (FDI) plays an important role in the process of Taiwan's economic development. And the transfer of technology and broadening of markets that accompany such investment have made a vital contribution to the industrialization of the Taiwan economy. According to the balance of payments, the development of Taiwan's inward FDI can be roughly divided into three stages:

**Growing period (1958 to 1988):** Taiwan's inward FDI broke US\$100 million in 1978 and climbed to US\$960 million in 1988, averaging US\$130 million annually during this period.

**Strengthening period (1989 to 2000):** After breaking above US\$1 billion in 1989, inward FDI grew strongly under the spurring effect

of industrial upgrading and the formation of electronics industry clusters, to reach an all-time high of US\$4.93 billion in 2000 at an average annual growth rate of 14.5%.

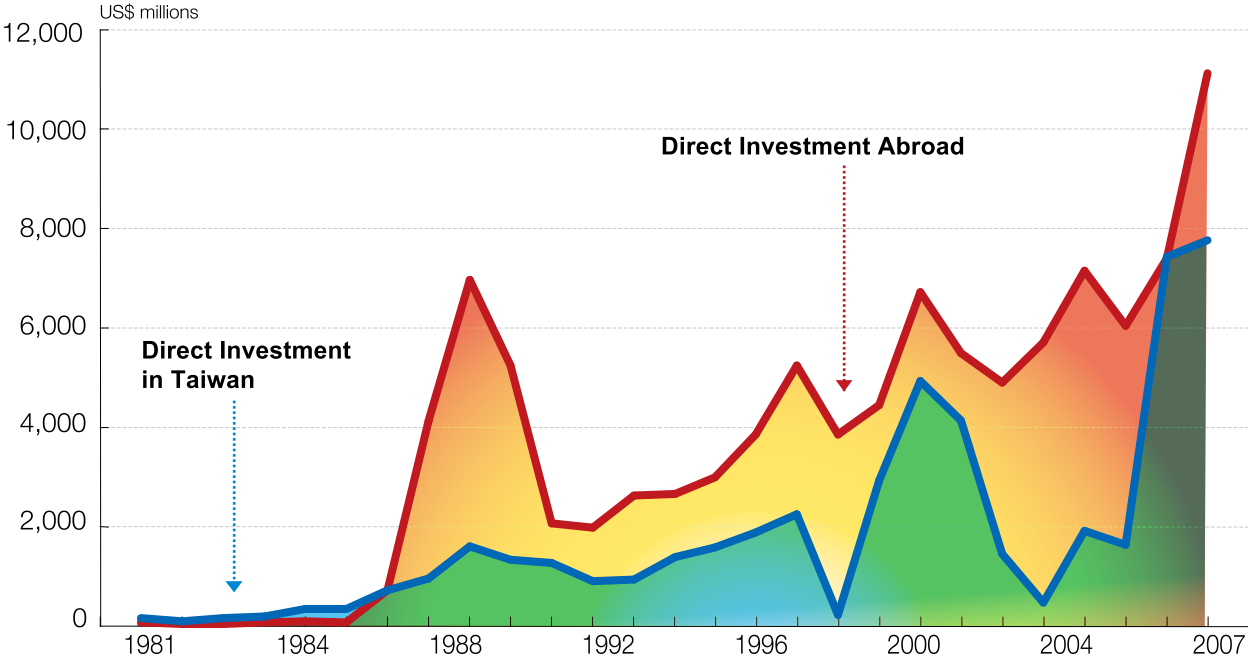
**Adjustment period (2001 to 2007):** In the wake of the bursting of the global IT industry bubble, inward FDI plunged from US\$4.11 billion in 2001 to US\$0.45 billion in 2003. But more recently, with Taiwan's R&D capabilities gaining recognition from transnational enterprises, many top-tier international firms, including IBM and Intel, have expanded their R&D centers in Taiwan. Inward FDI jumped to US\$7.42 billion in 2006, a 3.57-fold increase over the preceding year. In 2007, boosted by the upsurge in cross-border M&A activity and private equity fund investment in

Taiwan, inward FDI climbed to a historic high of US\$7.77 billion.

In respect of outward FDI, since the late 1980s, Taiwan's burgeoning economic might and the rapid progression of its liberalization and internationalization have transformed it from a capital recipient into one of Asia's main outward investors, with its outward FDI surpassing its inward FDI to turn it into a net exporter of capital. In 1989, Taiwan's outward FDI peaked at US\$7 billion, with the net capital outflow reaching US\$5.35 billion. From 1981 to 2007, the cumulative outflow of FDI from Taiwan amounted to US\$101.37 billion.

# Taiwan's Economic Development Performance

## Inward and Outward Foreign Direct Investment



Sources: The Central Bank of China, R.O.C.

## Monetary and Financial Development

In the course of Taiwan's economic development, the financial system has played a vital role as a bridge between savings and investment. However, as the politico-economic environment has changed, the functions of the financial system have also undergone a major transformation. Before the 1980s, the government attached primary importance to the stability of the financial system, and hence imposed a multitude of financial controls. But after the 1980s, as Taiwan entered a mature phase of economic development, the government shifted its focus to financial efficiency, actively pursuing financial liberalization and internationalization, with successive implementation of the following financial reforms:

**Banking sector opening:** The Banking Act was

amended in 1989 to allow applications for the establishment of new banks. Thereafter, the number of banks in Taiwan grew from 24 in 1990 to a high of 53 in 2000 before diminishing to 39 at the end of 2007. With the opening of the money market to the establishment of new private-sector intermediaries in 1995, the number of bills finance companies jumped from 3 to 10, and stood at 12 in 2007.

**Interest rate liberalization:** Prior to 1989, bank interest rates were decided by the government. The implementation of interest rate liberalization in 1989 greatly enhanced the efficiency of fund utilization.

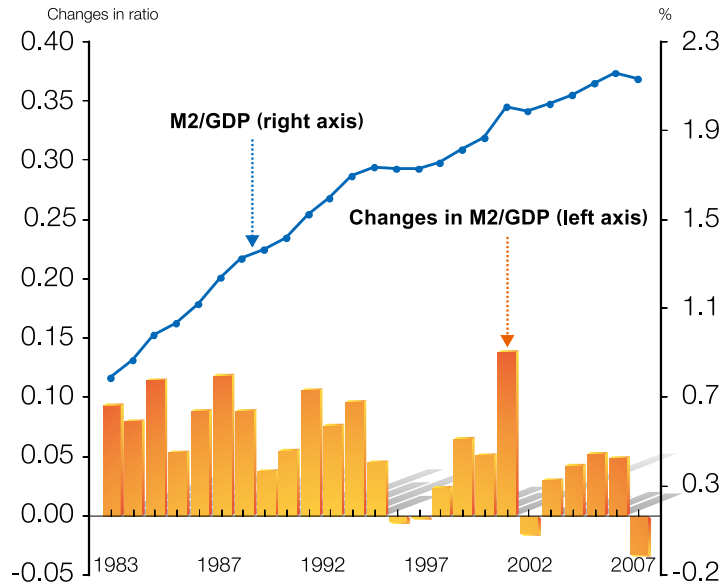
**Foreign exchange liberalization:** In 1978, the foreign exchange rate system was changed to the floating exchange rate system; and in

1989, the central foreign exchange rate system centered on the U.S. dollar was abolished and the foreign exchange rate was decided by market demand and supply.

Taiwan's financial reforms spurred booming development of the financial industry, with financial services' share of GDP rising from 6.0% in 1982 to 10.0% in 2007. Moreover, although the Asian financial storm of 1997 delivered a heavy shock to Taiwan's financial system, causing the non-performing loan (NPL) ratio of domestic banks to climb to a peak of 7.48% in 2001, the government's active measures to improve the fundamental constitution of the banking sector helped slash the NPL ratio to just 1.84% in 2007.

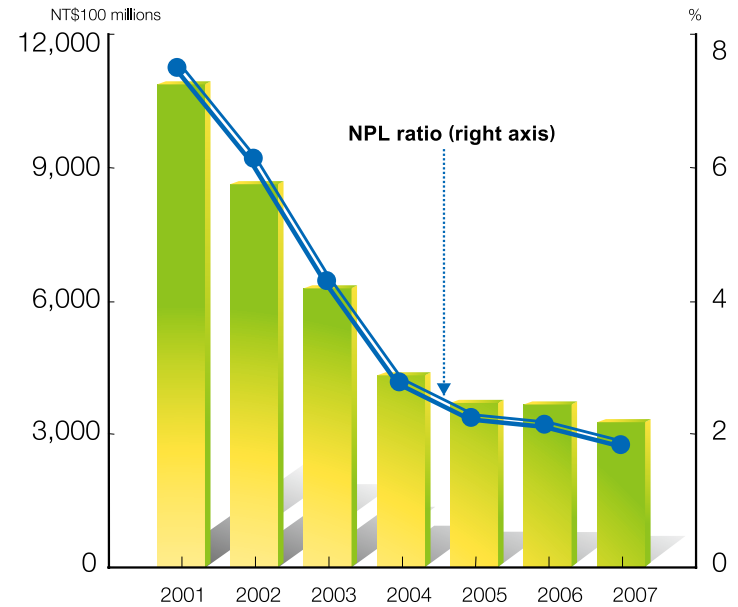
# Taiwan's Economic Development Performance

## The Ratio of M2/GDP and Its Changes



Note: M2 adopts averages of daily figures.  
Source: The Central Bank of China, R.O.C.

## Changes in the Amount and Ratio of Domestic Banks' NPLs



Source: The Financial Supervisory Commission, Executive Yuan.



## Public Finance

Taiwan's public sector long enjoyed a surplus in its current account large enough to cover capital-account expenditures. However, in 1991, as the government launched a new series of major infrastructure projects and significantly expanded social welfare programs, fiscal outlays began to rise rapidly. In FY 1992 and FY 1993, government spending accounted for 30% of GNP. And with the increase in public expenditures outpacing growth in revenue, the central government's debt-to-



GDP ratio climbed from 10.8% in FY 1992 to 16.7% in FY 1997.

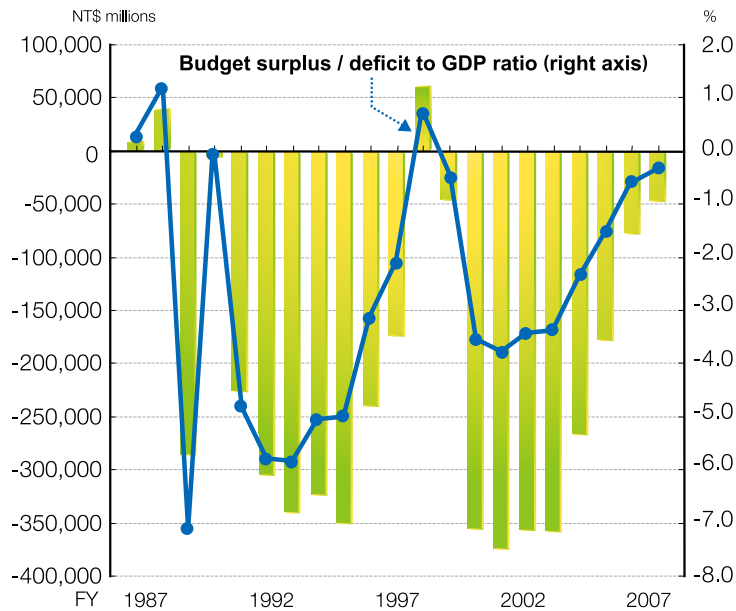
In response to this situation, the government in June 1996 introduced a package of fiscal reforms designed to reduce the imbalance between revenues and outlays and to lay the groundwork for a more rational system of taxation and expenditure, which enabled reduction of the central government's debt-

to-GDP ratio to 13.9% in FY 1999. And with a big jump in the growth of tax receipts, the government recorded a budgetary surplus of NT\$60.9 billion in FY 1998, the first surplus in ten years.

Subsequently, the budget slipped back into deficit, due mainly to sluggish or declining revenue growth and a dramatic increase in social welfare spending, including the cost of recovering from the severe earthquake that struck Taiwan on September 21, 1999. Having reached as high as NT\$374.9 billion in FY 2001, the fiscal deficit began to fall again in FY 2002 as revenues increased and expenditure was brought under control, with the deficit-to-GDP ratio decreasing from 3.8% in FY 2001 to 0.37% in FY 2007.

# Taiwan's Economic Development Performance

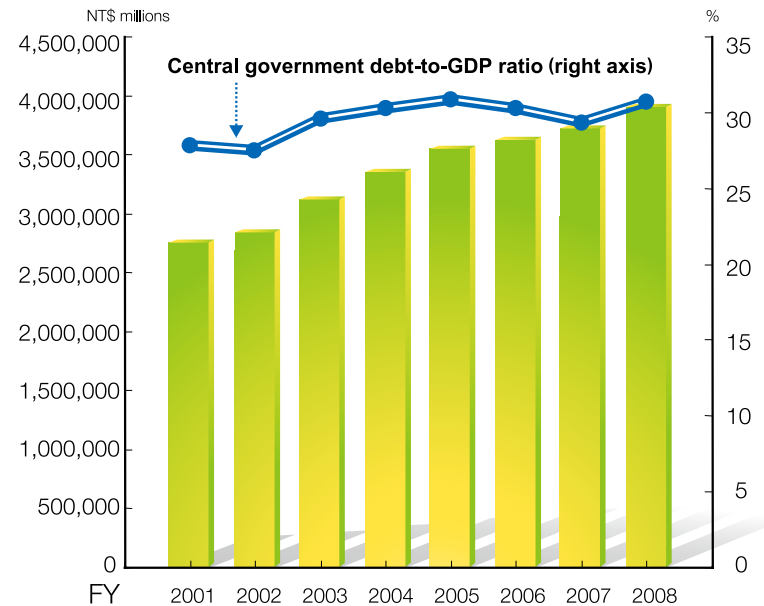
## Budget Surplus / Deficit



Notes: 1. Net budget revenue excludes revenue from government bond issuance and borrowing, and surplus from previous fiscal years; net budget expenditure excludes debt principal repayments.  
 2. Before 2000, the fiscal year begins July 1 of preceding year and ends June 30. FY 2000 extends from July 1, 1999 to Dec. 31, 2000. Subsequent fiscal years follow the calendar year (from Jan. 1 to Dec. 31).

Source: The Ministry of Finance, R.O.C.

## Central Government Debt



Notes: 1. Outstanding debt excludes foreign debt.  
 2. The figures for FY 2001 to FY 2007 are those of audited final accounts, and the figure for FY 2008 is that of legally prescribed final accounts.

Source: The National Treasury Agency, Ministry of Finance, R.O.C.

## Labor Force and Employment

Because of a high birth rate prior to the early 1980s, Taiwan's working-age population expanded steadily, from 66.7% of the total population in 1990 to 72.2% in 2007. But at the same time, largely because of a desire by young people to extend their education, the labor force participation rate fell steadily from its peak of 60.9% in 1987 to 57.2% in 2001, though it subsequently climbed back up to a ten-year high of 58.3% in 2007.

Over the last ten years, total employment has increased 1.2% annually. Unemployment remained between 1.5% and 2.0% of the labor force until 1995. However, from the second half of 1995, owing to short-term slack in the economy and labor-market rigidity, unemployment turned upward. A higher level of structural unemployment, resulting from the

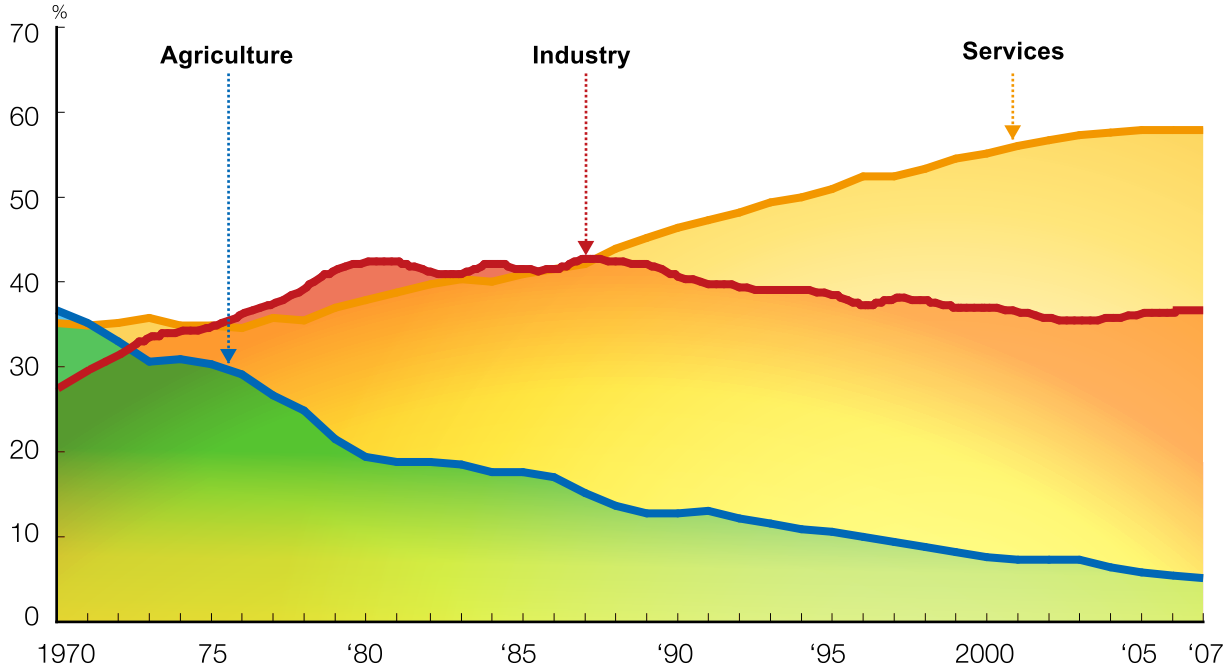


ongoing transformation of Taiwan's domestic economic structure and exacerbated after 2001 by sluggish world economic growth, contributed to the rise in joblessness. The unemployment rate reached 2.6% in 1996, jumped to 4.57% in 2001, and rose again to 5.17% in 2002. Since then, thanks to the government's implementation of a series of employment promotion measures, the rate has trended steadily downward, dipping to 3.91% in 2007.

As Taiwan has developed from an agricultural into an industrial economy, dramatic changes have taken place in its employment structure. Agricultural employment, for example, fell from 36.7% of total employment in 1970 to 5.3% in 2007, while employment in industry rose from 28.0% to a peak of 42.8% in 1987, before declining to 36.8% in 2007. Meanwhile, the service sector has increased its share of total employment from 35.3% to 57.9%, and promises to be the major provider of new job opportunities for years to come.

# Taiwan's Economic Development Performance

## Employment Structure (%)



Sources: 1. DGBAS, *Retrospective Estimation and Adjustment of Taiwan Area Manpower Data:1951-1983*, Oct. 1984.  
2. DGBAS, *Monthly Bulletin of Manpower Statistics, Taiwan Area, R.O.C.*, March 2008.

## Education

With its lack of natural resources, the continuous upgrading of manpower quality has been key to maintaining Taiwan's economic growth. In the 1950s, compulsory education in Taiwan was limited to just six years of primary schooling. In 1968, Taiwan began to implement a nine-year national education system, complemented by vigorous efforts to augment classes and schools, enhance teacher training, and raise school attendance rates. In 1982, a nine-year compulsory education system was formally established under the Compulsory School Attendance Act, which helped reduce the illiteracy rate from around 10% in 1980 to just 2.4% in 2007. With the coming of the digital age, the promotion of digital learning has also become a key focus of Taiwan's education policy. In 2007, 79.4% of

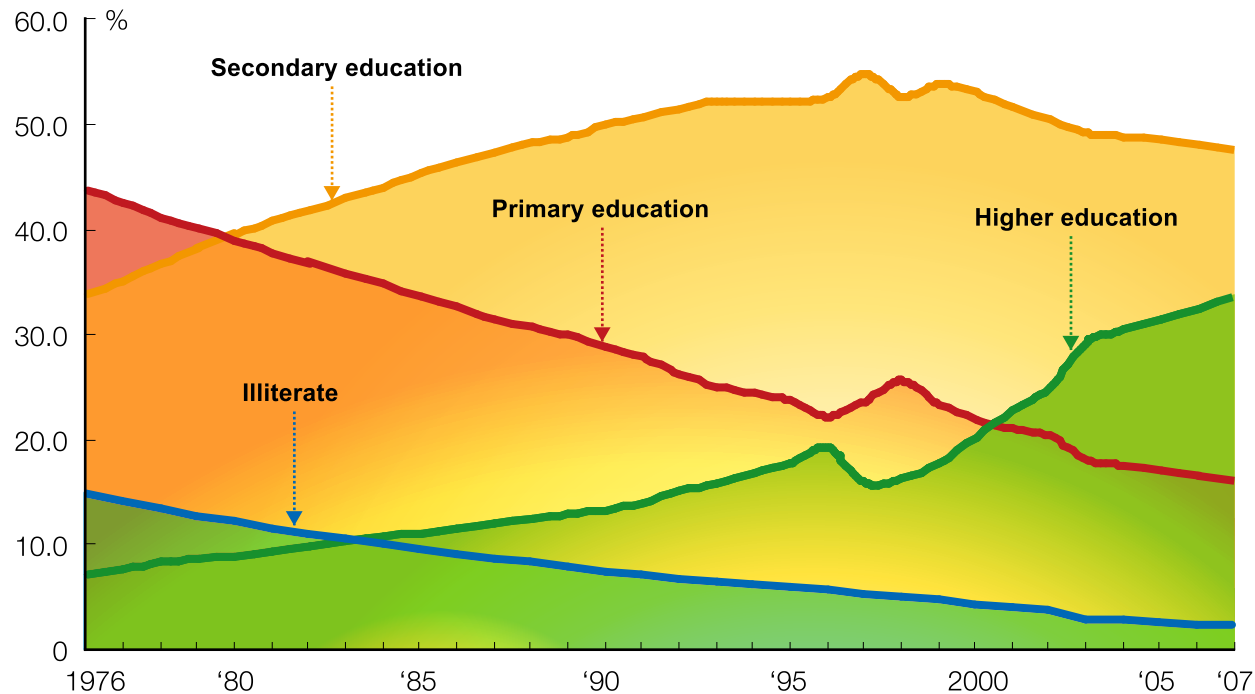
Taiwan's households possessed a computer, and the Internet connection rate stood at 71.3%.

Education policy in Taiwan has focused not only on providing education to all but also on upgrading the quality of education. After the liberalization of university establishment commenced in 1996, the number of universities increased from 67 to 149 in 2007. Meanwhile, the population aged 15 or older with a college or university degree rose from 19.3% to 33.9%. Those with a higher education now outnumber those with only a primary-level education, reflecting the success of efforts to upgrade Taiwan's human resources.

Thanks to high educational standards and equal educational opportunity, Taiwan has accumulated an impressive stock of human capital and developed a significant capacity for research and development (R&D). To ensure the continuous upgrading of human resources, Taiwan's most precious asset, the government has made plans to enhance the cultivation of high-quality technical talent domestically while recruiting top-flight scientists and technicians from abroad. It will also promote the learning of English in order to provide a more-cosmopolitan living environment. At the same time, it will encourage the habit of lifelong learning by completely integrating its education system with the Internet, fostering the emergence of a computer-literate, world-conscious, and innovative e-generation.

## Taiwan's Economic Development Performance

### Population Aged 15 and Over by Level of Education



Note: Primary education includes primary school and "self-taught" education outside the formal school system; secondary education includes high school, vocational school, and the first three years of five-year junior college; and higher education includes university and the senior two years of junior college.

Source: Ministry of Education, R.O.C.

## Science and Technology

Science and technology (S&T) development in Taiwan may be divided into two stages: a labor-intensive stage from 1952 to 1985, and a technology-intensive stage after 1985. During the earlier period, Taiwan significantly enhanced the international competitiveness of its light industries by introducing production, managerial, and marketing know-how from abroad and by achieving better use of labor and capital. The later stage has been marked by strong government support for applied technological development and by the promotion of technology-intensive industries. Thanks to a concerted effort by the government, research institutions, and the business community, Taiwan's progress in S&T development includes the following milestones since 1985:

**Total R&D spending** rose from only 1.03% of GDP in 1985 to 2.58% in 2006. Moreover, the private sector overtook the public sector in R&D spending for the first time in 1993, and,



since then, private-sector R&D expenditures have grown much more rapidly than those of the public sector. In addition, the number of research personnel per 1,000 population rose

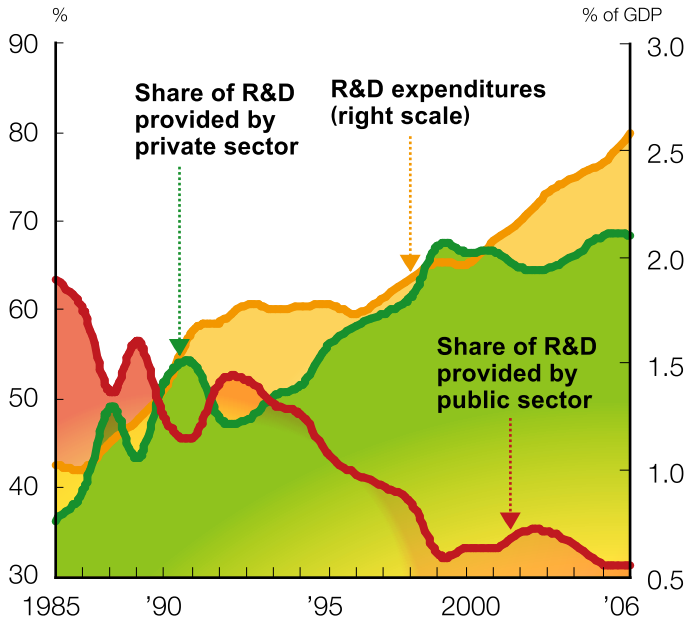
from 1.3 in 1985 to 4.2 in 2006. Meanwhile, Taiwan's world ranking rose from 36th to 17th in the Science Citation Index and from 26th to 11th in the Engineering Index.

**In 2007**, Taiwan's three biggest science parks (the Hsinchu, Central Taiwan, and Southern Taiwan Science Parks) had combined business turnover of nearly NT\$2 trillion, up 13.4% year on year, with 90.96% of that turnover recorded by firms in the integrated circuit and optoelectronics industries.

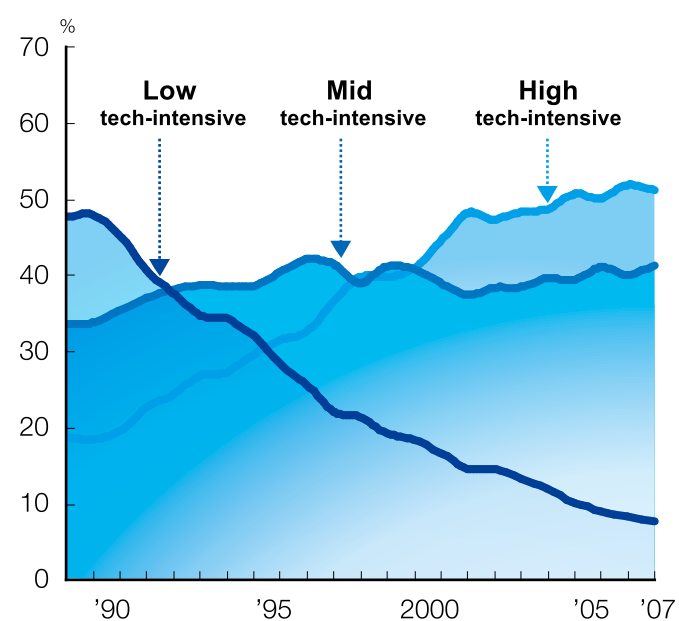
**From 1985 to 2007**, high-tech-intensive products increased their share of total exports from 18.8% to 51.1%.

# Taiwan's Economic Development Performance

## R&D Expenditures



## Composition of Export Products



Sources: 1. National Science Council, Executive Yuan, R.O.C., *Indicators of Science and Technology, R.O.C.*, 2007.  
 2. Ministry of Finance, R.O.C., *Monthly Statistics of Exports and Imports, Taiwan Area, R.O.C.*, April 2008.



## Social Security

In recent years, amid sweeping social, economic, and political transformation, the people of Taiwan have looked to the government to ensure the provision of basic needs. In response, the government has not only enacted new social security legislation, but worked on improving the quality and efficiency of existing social services. These efforts are reflected by a steady rise in public spending on social security, from 10.0% of total government



outlays in FY 1970 to 28.9% (social welfare, 16.3%; pension & survivors' benefits, 8.7%; and community development & environmental protection, 3.9%) in FY 2006.

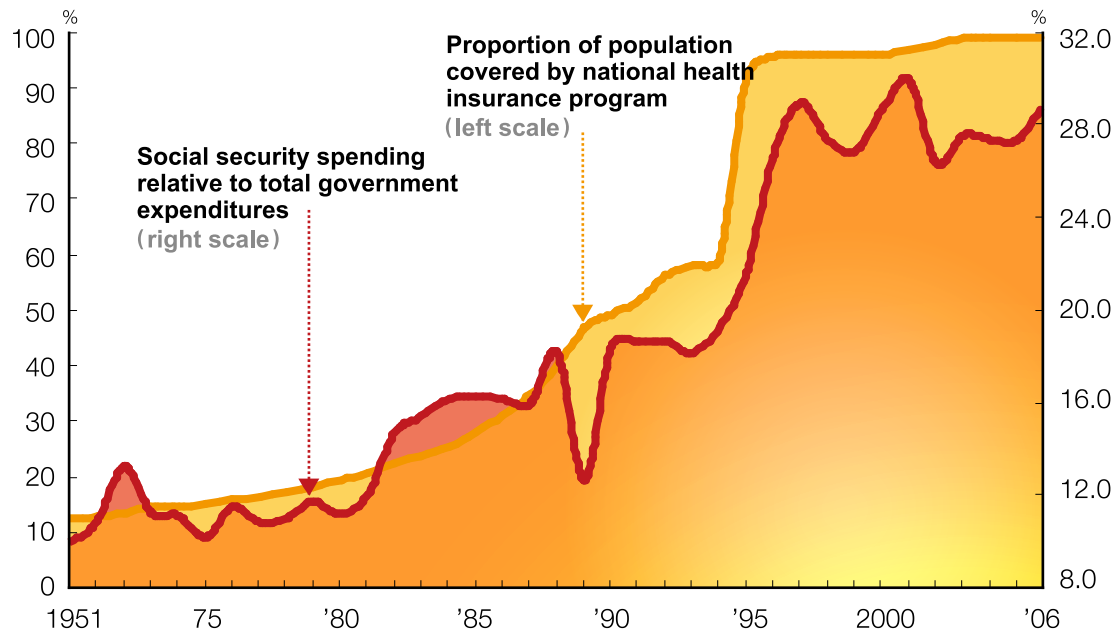
The government has been moving forward step by step to strengthen Taiwan's social safety net. In March 1995, it introduced national health insurance, which now covers almost the entire population; and in January 1999, an unemployment insurance scheme was inaugurated. Labor rights received further protection from the enactment of the Employment Insurance Law in May 2002 and the Labor Pension Act in June 2004. In 2008, the government actively implemented a series of measures to promote employment, aiming to increase job opportunities and



relieve unemployment by providing wage subsidies, strengthening job training, raising the success rate of job-matching, and other measures. Alongside the official launch of a national pension system in October 2008, the government has continued to carry out root-and-branch reform of the national health insurance and labor insurance systems, and the planning of a long-term care insurance system, to make Taiwan's social security net sounder and more complete.

# Taiwan's Economic Development Performance

## Social Security



Note: Debt repayments are excluded from government expenditures.

Sources: 1. Ministry of Finance, R.O.C. 2. Bureau of National Health Insurance, R.O.C.

## Major Themes of Taiwan's Economic Development Plans 1953-2012

Plan	1st Medium-Term Plan 1953-1956	2nd Medium-Term Plan 1957-1960	3rd Medium-Term Plan 1961-1964	4th Medium-Term Plan 1965-1968	5th Medium-Term Plan 1969-1972
Theme	<ol style="list-style-type: none"> <li>1. Step up agricultural and industrial production</li> <li>2. Promote economic stability</li> <li>3. Improve the balance-of-payments position</li> </ol>	<ol style="list-style-type: none"> <li>1. Expand agricultural production</li> <li>2. Accelerate industrial and mining development</li> <li>3. Stimulate export expansion</li> <li>4. Create job opportunities</li> <li>5. Improve the balance-of-payments position</li> </ol>	<ol style="list-style-type: none"> <li>1. Maintain economic stability</li> <li>2. Speed up economic growth</li> <li>3. Expand industrial base</li> <li>4. Upgrade investment environment</li> </ol>	<ol style="list-style-type: none"> <li>1. Foster economic modernization</li> <li>2. Maintain economic stability</li> <li>3. Stimulate the development of high-level industries</li> </ol>	<ol style="list-style-type: none"> <li>1. Maintain price stability</li> <li>2. Promote export expansion</li> <li>3. Intensify infrastructural development</li> <li>4. Upgrade industrial structure</li> <li>5. Push forward with agricultural modernization</li> </ol>

## Taiwan's Economic Development Performance

Plan	6th Medium-Term Plan 1973-1975	7th Medium-Term Plan* 1976-1981	8th Medium-Term Plan 1982-1985	9th Medium-Term Plan 1986-1989	10th Medium-Term Plan 1990-1993
Theme	<ol style="list-style-type: none"> <li>1. Accelerate industrial modernization</li> <li>2. Expand infrastructural development</li> <li>3. Enhance manpower quality</li> <li>4. Encourage export expansion</li> <li>5. Stabilize prices</li> </ol>	<ol style="list-style-type: none"> <li>1. Raise energy efficiency</li> <li>2. Improve industrial structure</li> <li>3. Strengthen manpower cultivation</li> <li>4. Promote balanced economic and social development</li> <li>5. Complete the Ten Major Development Projects</li> </ol>	<ol style="list-style-type: none"> <li>1. Maintain reasonable price stability</li> <li>2. Continue economic growth</li> <li>3. Harmonize industrial development</li> <li>4. Provide adequate job opportunities</li> <li>5. Promote more-equitable income distribution</li> <li>6. Balance regional development</li> <li>7. Harmonize social life</li> </ol>	<ol style="list-style-type: none"> <li>1. Promote trade liberalization</li> <li>2. Expand public investment</li> <li>3. Strengthen the fiscal and monetary system</li> <li>4. Speed up the modernization of services</li> <li>5. Actively develop key technologies</li> <li>6. Strengthen the control of environmental pollution</li> </ol>	<ol style="list-style-type: none"> <li>1. Basic Policy: <ul style="list-style-type: none"> <li>-Increase public expenditures</li> <li>-Improve laws and regulations, and pursue economic liberalization</li> </ul> </li> <li>2. Development emphases: <ul style="list-style-type: none"> <li>-Improve investment environment</li> <li>-Develop transportation infrastructure</li> <li>-Strengthen environmental protection</li> <li>-Augment social welfare</li> </ul> </li> </ol>

★ Plan revised for last 3 years (1979-1981).

## Major Themes of Taiwan's Economic Development Plans 1953-2012 *(continued)*

Plan	Six-Year National Development Plan 1991-1996	Plan for National Development into the Next Century 1997-2000	Plan for National Development in the New Century 2001-2004	Second-Term Plan for National Development in the New Century 2005-2008	Third-Term Plan for National Development in the New Century 2009-2012
Theme	<p>1. General goals:</p> <ul style="list-style-type: none"> <li>-Rebuild social and economic order</li> <li>-Pursue balanced all-round development</li> </ul> <p>2. Policy goals:</p> <ul style="list-style-type: none"> <li>-Raise national income</li> <li>-Bolster industrial potential</li> <li>-Promote balanced regional development</li> <li>-Improve the quality of life</li> </ul>	<p>General goals:</p> <ul style="list-style-type: none"> <li>-Enhance national modernization</li> <li>-Sharpen national competitiveness</li> <li>-Improve the national quality of life</li> <li>-Promote sustainable development</li> </ul>	<p>General goals:</p> <ul style="list-style-type: none"> <li>-Develop a knowledge-based economy</li> <li>-Provide a sustainable environment</li> <li>-Foster a fair and just society</li> </ul>	<p>General goals:</p> <ul style="list-style-type: none"> <li>-Reduce the production gap</li> <li>-Reduce the sustainability gap</li> <li>-Reduce the national welfare gap</li> </ul>	<p>General goals:</p> <ul style="list-style-type: none"> <li>-Speed up reconstruction and deregulation, to augment the economy's added value</li> <li>-Create mutual trust and caring, to augment the value of social capital</li> <li>-Promote energy saving and carbon reduction, to augment the sustainable value of the environment</li> </ul>

# Taiwan's Economic Development Performance

## Future Development Prospects

From a trading outpost in the 17th century, Taiwan has today been transformed into a major player in the global economy, and a key innovator in information technology. To keep up with the globalizing world of the 21st century, we will pursue a strategy of “deregulation and reconstruction,” with a three-faceted emphasis on public investment, industrial renovation and global linkage, to build Taiwan into an advanced country marked by its vigor and innovation.

On the public investment side, in the next eight years we will carry out the i-Taiwan 12 Projects, which include building a fast and convenient islandwide transportation network, redeveloping Kaohsiung port and city, promoting the development of new high-tech industrial clusters in the central region, creating

the Taoyuan international air city, building an intelligent Taiwan, developing industrial innovation corridors, regenerating urban and industrial districts, revitalizing farm villages, restoring coastlands, carrying out afforestation, undertaking flood prevention and water management works, and expanding the sewer system throughout Taiwan, with the goals of providing an excellent investment and living environment.

On the industrial renovation side, we will attach balanced weight to industrial innovation, emerging industries and policy loosening, taking active steps to develop key service industries such as finance, tourism, medical care and logistics, so that they can become main engines of job creation. We will guide manufacturing industry's development toward

higher value added and lower carbon emission, and speed up agriculture's technologization and enterprisation. And we will promote the development of cultural and creative, energy saving and carbon reduction, intelligent life, biopharmaceutical, and other emerging industries.

On the global linkage side, we will comprehensively pare regulation, to create fairer and more efficient market mechanisms; and at the same time, we will pursue the adjustment of cross-strait economic and trade dynamics, so that Taiwan is able to build close and beneficial linkages around the world, and grasp business opportunities in markets both across the Taiwan Strait and worldwide.

**2008**

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