

An Evaluation of Taiwan's Economic Performance after 2000

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Summary

Since the change of government in 2000, the Taiwan economy has remained in the doldrums. It posted the first and only negative growth in five decades in 2001. The economy shrank by 1.9 percent in that year. One cause of the economic downturn is the decline in domestic investment and foreign trade. Another is what is known as the China factor. Taiwan has become increasingly reliant on China for economic growth. The Democratic Progressive government seems reluctant to face this reality.

One of the most serious problems the banking industry is facing is a mountain of non-performing loans. Low interest rates have failed to stimulate investment and consumption. The government has failed to carry out financial reforms.

Unemployment has soared. Joblessness has remained high among low-skilled workers as well as their elderly and female counterparts. The job creation projects the government is sponsoring are stopgap measures. No lasting jobs have been created.

It is recommended:

That a consistent economy policy be laid down to encourage domestic and foreign direct investment in Taiwan;

That action be taken to open up to China and improve relations across the Taiwan Strait;

That the problem of non-performing loans be solved as soon as possible and the current low-interest banking policy modified;

That the efficiency of the administration be improved to attract investment;

That action be taken to restore confidence of domestic and foreign investors; and

That the productivity of the labor force be raised to help solve the problem of unemployment.

I. Introduction

The Taiwan economy before 2000 was marked by high growth, low inflation, negligent unemployment, and a fairly equitable distribution of income. There were drastic changes after 2000. Taiwan posted the worst economic performance in 2001. Gross domestic product (GDP) shrunk – by 1.91 percent – in 2001 for the first time in fifty years. Unemployment hit a record high 4.52 percent. GDP bounced back to 2.41 percent in 2002 owing largely to a brief worldwide economic recovery and increased exports to China, albeit joblessness was even higher at 5.18 percent.

Why has Taiwan's economy experienced such drastic changes during the past three years? Is it due mainly to the global economic recession as the government claims? Or has it resulted from inconsistent government policies incompetently enforced? Or is it a concomitant consequence of a change in Taiwan's economic structure? Or can it be explained – like in the case of many social and cultural changes – as a mixture of diverse contributing factors?

This article analyzes Taiwan's economic performance before and after 2000. Under study are its macroeconomic performance, financial situation, investment sector, and labor market. In the analysis of the macroeconomic performance, GDP growth and the contribution of GDP component sectors are examined. Also discussed are the foreign and China factors because of their importance to Taiwan's export-oriented economy. The study of the financial situation focuses on two important issues: non-performing loans (NPLs) and quickly accumulated foreign exchange reserves. In the investment sector, efforts are made to examine the reasons why Taiwan's fixed capital formation rate has remained so low after 2000. The issue of unemployment is dealt with in the study of the labor market situation. The performance of government economic policies after 2000 and their impact on the economy are assessed in the conclusion. Recommendations for improvement are offered.

II. Macroeconomic Performance

1. GDP Growth

One drastic change in the Taiwan economy after 2000 was a drop in GDP growth. Before 2000, GDP grew around 5 percent per year.¹ As a matter of fact, GDP grew 7.94 percent in the first quarter of 2000. It started falling quickly in the third quarter. Subsequently in 2001, Taiwan posted the first and only negative GDP growth rate of minus 1.91 percent in fifty years. GDP growth bounced back to 2.41 percent in 2002.

Why did Taiwan's economy decline so quickly and what are factors contributing to the recovery? The changes in the contribution by the major GDP components provide some clues. (See Table 1.) Final consumption accounts for about 60 percent of Taiwan's GDP. The growth rate of final consumption in the last quarter of 2000 dropped to 2.5 percent, compared with 5.32 percent in the second quarter of the same year. The lowest growth rate of final consumption was posted in the third quarter of 2001 at 0.66 percent. Owing to financial stringencies, government spending has shown negative growth since 1999. This trend has continued after 2000, making the bad economic situation even worse.

In the first three quarters of 2000, the growth rate of fixed capital formation was quite high, but it quickly dropped from 15.54 percent in the third quarter to 2.46 percent in the next. The situation was even worse in 2001 in that the annual growth rate of fixed capital formation was minus 18.17 percent. There are two reasons why domestic investment dropped so drastically. One reason is that most Taiwanese businessmen did not have enough confidence in the Democratic Progressive government inaugurated in 2000. The other is what has come to be known as the

¹ The growth rate (4.47%) dropped in 1998 owing to the aftermath of the Asian financial crisis. In fact, the 4.47 percent growth was not bad at all, compared with other Asian countries except China in 1998.

Table 1 GDP Growth Rate and Its Components

Unit: %

	GDP	Final Consumption	Government Spending	Fixed Capital Formation	Goods and Service Exports	Goods and Service Imports	Changes of Inventory
1998	4.47	6.52	4.12	8.01	2.41	6.34	3.02
I	5.67	7.76	6.73	17.75	4.72	11.99	-27.02
II	5.24	6.23	10.98	8.33	6.33	9.72	-10.95
III	4.15	5.83	-5.52	9.59	3.38	4.34	-46.9
IV	3.36	6.25	4.15	0.66	-3.82	0.57	655.23
1999	5.42	5.37	-6.49	1.78	11.9	4.41	-59.97
I	4.15	4.44	-0.87	-0.49	10.41	0.40	-
II	6.41	6.57	-4.23	2.51	12.29	4.44	-35.33
III	4.67	5.56	-5.24	-0.96	7.13	3.80	99.14
IV	6.43	5.05	-15.26	5.13	17.55	8.61	4.77
2000	5.86	4.93	0.55	8.61	17.55	14.53	-
I	7.94	7.54	-9.98	9.47	14.22	11.66	-39.36
II	5.10	5.32	-12.76	8.54	19.05	19.44	77.60
III	6.73	4.25	13.81	15.54	23.60	20.74	-
IV	3.82	2.50	15.20	2.46	13.58	6.88	-
2001	-1.91	1.37	-1.95	-18.17	-8.17	-13.50	85.58
I	0.91	1.92	-7.15	-8.06	1.16	-4.57	58.92
II	-2.35	0.98	-0.96	-10.15	-7.94	-13.82	-
III	-4.21	0.66	-1.01	-27.30	-18.29	-21.76	-62.93
IV	-1.87	1.89	0.70	-23.88	-6.49	-12.64	-30.56
2002	2.41	2.54	-2.89	2.79	3.81	6.95	-
I	0.33	1.52	-2.97	-5.09	0.91	3.72	-93.93
II	0.96	2.46	-3.79	-3.22	1.36	3.90	-
III	3.75	3.13	-1.61	7.25	9.99	12.88	-
IV	4.53	3.09	-3.23	11.76	3.54	7.71	-

Source: Department of International Trade, Ministry of Economic Affairs, Executive Yuan, Quarterly Review of International Trade Forecasting, various issues.

Forth Nuclear Power Plant dispute in August 2000.

Foreign trade shrunk after 2000. Exports grew 17.55 percent and imports, 14.53 percent in 2000. In 2001, however, exports posted a negative growth of minus 8.17 percent. Imports shrunk further, with an annual growth rate of minus 13.5 percent. Taiwan used to be proud of its export-oriented trade policies. Foreign trade, indeed, is the engine of economic growth. It is therefore very unusual to see a negative growth in foreign trade.

2. Foreign and China Factors

Taiwan is a typical small open economy, where foreign direct investment (FDI) plays a crucial contributing role. What has happened to that FDI factor after 2000? Table 2 provides a clear answer. In fact, foreign and oversea Chinese investment in Taiwan peaked in 2000 at US\$7.61 billion, sliding down quickly to US\$5.13 billion in 2001 and further to US\$3.31 billion in 2002. The two consecutive yearly drops – 32.59 percent and 35.4 percent respectively – indicate that foreign businessmen and overseas Chinese investors, like their Taiwanese counterparts, did not have much confidence in the new government.

The world economy slowed down at the end of 2000. For instance, GDP growth in the United States dropped from 5.7 percent in the third quarter of 2000 to 1.3 percent in the fourth. (See Table 2.) Its annual growth rate decreased from 4.1 percent 2000 to 1.2 percent in 2001. The situation was almost the same for the world as a whole. The global GDP growth rate dropped from 3.4 percent in 2000 to 0.8 percent in 2001. The quick world economic downturn is the key reason why Taiwan's exports dwindled in 2001.

While the world economy was in a slump in 2001, China continued to import heavily from Taiwan. Trade across the Taiwan Strait increased fast during the previous three years. For example, Taiwan's exports to China grew 33.23 percent in 1998, 203.93 percent in 1999 and 66.25 percent in 2000. Even in 2001, a poor

year, the exports grew 12.52 percent. The mean growth rate for the first three quarters of 2002 was 76.69 percent. The fast growing China market is the key factor contributing to the expansion of Taiwan's global export trade in 2002.² Without the China market, Taiwan's economy could not bounce back so quickly.

There are two reasons why Taiwan's exports to China have increased so fast. One simple reason is that the Chinese economy has been growing very quickly during the past ten years, creating a huge demand for imported goods and services. The other reason is that Taiwan businessmen have invested heavily in China. (See Table 2.)³ Their firms on the Chinese mainland have bought large quantities of raw materials, parts, and semi-finished products from Taiwan, creating a huge trade deficit for the People's Republic of China.

III. Financial Sector

1. Money Supply and Interest Rates

As Taiwan's economy slowed down after 2000, so did its growth of money supply. The annual growth rate of M1B dropped from 13.15 percent in 1999 to 3.23 percent in 2000 and further to 5.00 percent in 2001. The growth rate of M2 dropped similarly. (See Table 3.) When money supply decreases, interest rates are supposed to increase to reflect the tight money market. However, the fact is that the one-year interest rate in Taiwan was dropping sharply, especially at the beginning of 2001. There are several reasons why the interest rates did not increase while money supply failed to grow. One reason is that demand for money

² Taiwan's exports to China and Hong Kong accounted for 30.70 percent of its global total in 2002. China replaced the United States as Taiwan's largest export market in that year.

³ According to the Investment Commission of the Ministry of Economic Affairs, Taiwan had approved 24,146 cases of investment in China with a combined capitalization at US\$19.89 billion as of the end of 2001. China's official data show there were 50,838 such cases with a total contracted capital of US\$54.73 billion, of which US\$29.14 billion had been paid in.

Table 2 Foreign Factor

Unit: US\$ billion

	Foreign and Overseas Chinese Investment in Taiwan	Taiwan Investment in Foreign Countries and China	Taiwan Investment in China	Growth Rate of Taiwan's Exports to China (%)	Growth Rate of Taiwan's Imports from China (%)	GDP Growth Rate of USA (%)	World GDP Growth Rate (%)
1998	3.74	5.33	2.03	33.23	4.99	4.3	2.5
I	0.64	1.42	0.76	27.99	17.94	6.1	-
II	0.96	1.27	0.45	7.99	12.72	2.2	-
III	1.01	1.65	0.46	51.85	1.69	4.1	-
IV	1.13	9.89	0.37	43.03	-8.42	6.7	-
1999	4.23	4.52	1.25	203.93	10.12	4.1	2.3
I	0.70	0.86	0.21	170.34	0.47	3.1	-
II	0.86	1.24	0.27	259.66	-0.79	1.7	-
III	1.00	1.36	0.36	193.60	11.24	4.7	-
IV	1.58	1.06	0.42	196.68	29.72	8.3	-
2000	7.61	7.68	2.61	66.25	37.49	4.1	3.4
I	1.51	2.02	0.73	93.52	33.43	2.3	-
II	2.09	0.98	0.37	66.24	59.75	5.7	-
III	1.99	1.86	0.68	85.37	41.46	1.3	-
IV	2.02	2.83	0.82	37.48	19.55	1.9	-
2001	5.13	7.17	2.78	12.52	-5.16	1.2	0.8
I	1.18	2.00	0.43	28.55	2.65	1.3	-
II	1.62	1.89	0.93	13.73	-11.48	0.3	-
III	1.21	1.52	0.76	-2.47	-12.71	-1.3	-
IV	1.12	1.77	0.66	15.87	2.43	1.4	-
2002	3.31	-	-	-	-	2.1	1.0
I	0.76	1.51	0.57	52.73	12.44	3.6	-
II	0.73	1.55	0.97	93.26	32.95	3.9	-
III	0.78	-	-	136.82	51.29	0.3	-
IV	1.04	-	-	-	-	6.1	-

Source: Mainland Affairs Council, Executive Yuan, *Cross-Strait Economic Statistics Monthly*, various issues

Table 3 Money Supply and Interest Rates

Unit: %

	M1B Growth Rate	M2 Growth Rate	CPI Growth Rate	Primary Rate	One-Year Time Deposit Interest Rate
1998	1.94	9.82	2.13	7.87	5.40
I	6.70	5.02	0.30	8.10	6.50
II	-5.95	-0.48	1.66	8.10	6.55
III	-0.56	1.74	0.44	8.08	6.55
IV	2.16	3.28	3.91	7.92	5.90
1999	13.15	6.65	0.13	7.84	5.00
I	7.84	3.14	2.08	7.84	5.05
II	-0.30	0.87	0.50	7.84	5.00
III	3.68	1.49	1.14	7.84	5.00
IV	1.51	1.01	-0.90	7.84	5.00
2000	3.23	6.74	1.66	7.94	5.00
I	13.47	4.76	0.93	7.84	5.00
II	-4.10	-0.37	1.58	7.84	5.00
III	-2.27	0.81	0.29	7.84	5.00
IV	-2.92	1.44	2.26	7.94	5.00
2001	5.00	5.16	-1.69	7.60	2.45
I	5.36	3.91	-1.02	7.85	4.80
II	-5.12	-0.62	-0.21	7.81	4.05
III	1.56	1.65	0.44	7.79	3.60
IV	3.42	0.18	-1.14	7.60	2.45
2002	15.23	2.86	0.08	7.31	1.85
I	16.23	3.19	1.41	7.54	2.30
II	-1.06	-0.64	-0.26	7.54	2.35
III	0.10	0.13	-0.28	7.44	2.10
IV	0.09	0.19	-0.55	7.31	1.85

Source: <http://www.moea.gov.tw> and Taiwan Economic Journal Data Base, <http://61.30.108.163/webtej/index.htm>

dropped as domestic investment shriveled. Another reason is that the government lowered the interest rates to stimulate domestic investment and consumption (and to discourage savings). Still another is the tumbling interest rates in most major countries of the world.

One thing worthy of note is that the low interest rates seem to have neither stimulated domestic investment at all nor much encouraged domestic consumption. John Maynard Keynes once said: "The businessmen's investment behavior is an animal spirit." They respect their "animal spirit." Whether they invest is determined mainly by their expectations for the future. The interest rates are a factor in the cost of investment they have to consider, but it is usually not a very crucial one. On the other hand, the effect of low interest rates on domestic consumption will be nil if the economy is very poor. In fact, people of Taiwan have seen their assets, both in stocks and real estate, shrinking fast. The negative wealth effect on consumption is so strong that a turnaround is hard to come about as a result of the reduction in the interest rates.⁴

Inflation was negligible as an aftermath of slow money supply growth. In fact, there was a deflation in 2001, with the general price level falling 1.69 percent. Inflation was only 0.08 percent in 2002, during three quarters of which a deflation was noted.

2. NPLs and Foreign Exchange Reserves

One serious problem Taiwan is facing is that of non-performing loans (NPLs). As shown in Table 4, the ratio of NPLs to its total bank deposit started increasing before 2000, but only slowly. However, the NPL ratio soared after the third quarter of 2000. That ratio was 7.13 percent in 2001 and expected to rise in 2002.

⁴ Taiwan's current situation resembles that in Japan after 1991 when its economic bubble burst. Japan has since been trying to cope with a serious economic downturn.

Two fundamental factors contribute to the serious NPL problem. One factor emerged in 1991 when thirteen new private banks were established. There were no private banks in Taiwan before that year. As so many new banks entered the market, competition for securing borrowers, good or risky, has grown increasingly keen. As a result, banks have accumulated more and more bad loans. The other factor is the depleted real estate market. The housing prices peaked at the beginning of the 1990s, and then the market started a gradual decline, for the real estate bubble did not burst outright. During the past decade, the market has remained in recession, saddled with a huge number of vacant housing units.⁵ The NPL ratio continued to climb as bad mortgage loans piled up.

The New Taiwan (NT) dollar started to lose its value as the economy turned sluggish. In the second quarter of 2000, the exchange rate was NT\$30.813 to US\$1. Then it went down quickly to NT\$33.046 per US\$1. Depreciation was due chiefly to political instability following the Fourth Nuclear Power Plant dispute in the third quarter of 2000. There was an exodus of domestic and foreign capital out of Taiwan; and the foreign exchange reserves fell from US\$113 billion to US\$108.2 billion at the end of 2000 in the process.⁶ Moreover, the Taiwan currency has kept depreciating after 2000. The currency lost ground, with its rate of exchange against the American dollar falling by 12.82 percent from 30.813 in the second quarter of 2000 to 34.761 at the end of 2002. The NT dollar continued to depreciate, albeit the foreign

⁵ According to the Population Census held at the end of 2000, there are 1.23 million of vacant houses in Taiwan and the vacancy rate of Taiwan as a whole is 17.6%.

⁶ The dispute over the Fourth Nuclear Power Plant started in the third quarter of 2000 and has had a significant impact on Taiwan's economy in almost all sectors. For instance, domestic and foreign investment dropped dramatically after the dispute. Capital moved out Taiwan, depleting the foreign exchange reserves and touching off the depreciation of the NT dollar. The TAIEX index dropped from 7942.79 points to 5525 at the end of 2000.

exchange reserves started increasing again after 2001. Why? The answer lies in the fact that the government

has kept the NT dollar cheap to help make exports competitive in the international market.

Table 4 Major Financial Indicators

	NPL Ratio for Domestic Banks (%)	TAIEX Index	Foreign Exchange Rate (NT\$/US\$)	Foreign Exchange Reserves (US\$ billion)
1998	4.24	7840.30	33.340	90.3
I	4.16	8807.57	32.100	84.0
II	4.00	8226.35	33.989	84.4
III	4.35	7218.46	34.843	83.7
IV	4.47	7108.83	32.429	88.1
1999	5.11	7187.52	32.325	106.2
I	5.10	5920.05	33.055	92.6
II	5.12	7504.58	32.729	95.7
III	5.20	7655.87	31.843	100.1
IV	5.02	7669.57	31.672	103.5
2000	5.36	8007.84	31.421	106.7
I	5.18	9891.21	30.754	113.6
II	5.20	8672.36	30.813	113.1
III	5.53	7942.79	31.070	113.0
IV	5.53	5525.00	33.046	108.2
2001	7.13	4961.57	33.839	122.2
I	6.10	5875.69	32.343	110.1
II	6.72	5157.19	33.965	110.6
III	8.10	4495.41	34.582	113.1
IV	7.78	4317.99	34.466	121.2
2002	-	5243.46	34.578	159.1
I	8.38	5747.76	35.112	125.0
II	7.81	5708.80	34.190	139.8
III	7.46	4841.69	34.247	156.4
IV	-	4675.60	34.761	159.1

Source: See Table 3.

One has to take note that the foreign exchange reserves have increased fast in the past two years. Table 4 shows that the foreign exchange reserves grew from US\$113.1 billion in the third quarter of 2001 to US\$159.1 at the end of 2002. A large trade surplus contributed to the sudden and speedy increase, for which the excessive intervention by the government in the foreign exchange market must be equally, if not more, responsible. Quickly accumulated foreign exchange reserves could cause money supply to increase sharply and loosen the credit market.

IV. Investment Sector

1. Growth in Infrastructure Investment

Infrastructure investment is regarded as governmental gross fixed capital formation (GGFCF). The GGFCF posted a negative growth for three years in a row from 2000 through 2002 in Taiwan. It marked the first drop in growth in five decades. The GGFCF (at 1996 constant price) decreased from NT\$509.3 billion in 1999 to NT\$485.5 billion in 2000 and further to NT\$462.4 billion in 2001. The growth rate was minus 4.66 percent in 2000, minus 4.77 in 2001 and minus 10.07 in 2002. (See Table 1 for the downward trend.) The downward spiral looks more alarming in light of the drop in 2002. The GGFCF growth rate was minus 8.29 percent in the first quarter of 2002, minus 8.89 percent in the second, minus 9.38 percent in the third and minus 12.95 percent in the fourth. There were no signs of a turnaround.

Taiwan has been in recession for years. While private consumption and private investment have remained weak, the latter posted a dramatic drop of 29.2 percent in 2001. (See Table 5.) Taiwan desperately needs government investment to improve the economy. The negative GGFCF growth dampened

the economy instead of stimulating it.

The government has tried to improve the situation. A series of economic development projects were launched after 2001. They included former Premier Chang Chun-hsiung's "8100: Taiwan Commencement" and Premier Yu Shyi-kun's "Challenge 2008: National Development Plan." However, the negative GGFCF growth has impeded the implementation of these projects.

In the meantime, a number of major investment projects have lagged behind schedule. Among them are those for Keelung River flood control, a main sewerage system, water main replacement and construction, an eastern Taiwan coastal highway, relocation of Hungmao fishing village and improvement of garbage disposal in cities and counties.

There occurred not long ago, after five years' delay, a change of contractors for a BOT (build-operate-transfer) project to link Chiang-Kai-shek International Airport and Sungshan Airport with a rapid transit system.

2. Causes of Negative Growth in Infrastructure Investment

Budgetary misallocations are one main cause of delay in the implementation of major investment projects. The outlay for economic development accounted for 15.6 percent of the central government budget for 1999. The share declined to 14.8 percent in 2000, while social security spending increased. The latter's share jumped from 16.4 percent to 18.9 percent.

Another cause is the crowding-out effect. Investment was increased to implement projects featured in the two major government economic

Table 5 Growth (1998-2003) in Gross Fixed Capital Formation at 1996 Constant Price

Unit: %

	General Government	Public Enterprises	Private Sector	FDI
1998	0.09	4.41	11.80	-
I	0.23	-0.84	31.63	-
II	-1.28	-5.06	17.65	-
III	1.07	1.15	13.48	-
IV	0.78	27.77	-2.19	-
1999	3.64	13.28	-0.68	13.18
I	5.49	0.46	-3.04	8.70
II	7.38	22.04	-3.95	-10.29
III	-0.42	24.29	-3.88	8.72
IV	1.26	7.83	5.90	39.59
2000	-4.66	-3.47	15.74	79.79
I	-6.59	-3.02	18.90	115.27
II	-19.18	-28.51	33.76	143.20
III	8.44	-4.23	20.52	81.88
IV	3.83	26.76	-1.28	28.07
2001	-4.77	4.05	-29.17	-32.59
I	-10.89	-21.44	-5.93	-21.55
II	-7.80	-8.74	-20.55	-22.52
III	-3.58	-0.32	-41.99	-39.48
IV	1.98	31.81	-40.31	-44.45
2002	-10.07	2.99	-0.34	-35.37
I	-8.29	-6.02	-17.53	-35.97
II	-8.89	5.43	-5.75	-54.85
III	-9.38	10.33	16.83	-34.90
IV	-12.95	1.91	8.53	-7.13
2003	-3.95	-4.18	6.51	-
I	-4.49	-4.02	3.76	-
II	-5.19	-4.04	4.99	-
III	-2.23	-4.36	8.07	-
IV	-3.94	-4.22	8.71	-

Source: DGBAS, Executive Yuan, *Quarterly National Economic Trends*, 2002.10.

development plans. Owing to budget constraints, however, the government had to crowd out projects not included in the two plans. The overall government capital outlay was not increased.

Still another is a time lag in decision-making. The government failed to recognize in time the onset of the economic recession following the Fourth Nuclear Power Plant dispute in October 2000. The additional outlay for governmental fixed capital formation was proposed too late. Take Premier Chang's "8100: Taiwan Commencement" for instance. Since an additional budget for it was proposed in the middle of Fiscal Year 2000, there was not enough time to complete duly many of its projects. Premier Yu launched his "Challenge 2008: National Development Plan" in May 2001. It calls for a total outlay of NT\$2 trillion. No obvious budgetary changes are in sight in the coming seven years. According to a forecast made by Directorate General of Budget, Accounting and Statistics (DGBAS) of the Executive Yuan, the GGFCF will post another negative growth: i.e., minus 3.95 percent in 2003. The Yu plan does not seem to fare any better than its predecessor.

Yet another cause is a shortage of matching funds the local governments have to raise. Local governments are required to put up a 30 percent matching fund for most investment projects. However, many of them cannot meet that requirement for lack of sufficient tax revenues.

Last but not least, low GGFCF efficiency causes negative growth in infrastructure investment. The GGFCF was 81 percent efficient in 2000. It was not exceptionally low but still left much room for improvement. In addition to the time lag in the government decision-making and a shortage of local matching funds, the factors militating against GGFCF

efficiency include: difficulty in land acquisition, delay in planning, delay due to administrative practices such as licensing application, pipeline removal and delay in start-up and final verification, delay in open tenders, problems in construction, and protests by the people affected.

All five aforesaid causes, cited often to explain the delay in infrastructure investment in the past, have turned more pressing in recent years as a result of the enforcement of the Government Purchase Law. It is unanimously agreed that the rigorous enforcement of this stringent law interferes with efficient government purchases and prevents public functionaries concerned from making responsive administrative decisions to get the necessary work done on time.

3. Policy Suggestions for Investment

The following suggestions are made to promote government infrastructure investment. It is recommended:

That the government budget outlay for capital spending at all levels be increased;

That the matching funds from local governments be waived or reduced;

That the BOT and BOO (Build-Operate-Own) promotion scheme be improved to encourage the private sector to participate in infrastructure investment, such encouragement including the removal of constraints on insurance companies to invest in BOT and BOO projects;

That clarification be made as to what constitute a "responsive decision" to "illegally benefit the others" in the Government Purchase Law, such clarification including the conduct of training courses to inculcate government as well as private sector procurement

personnel in the technical details of the said law;

That enforcement priority be given projects for which detailed planning, land acquisition and budget allocation have been completed so as to increase short-term domestic demand;

That the budget for infrastructure maintenance and operation costs be increased;

That the relevant laws and regulations, such as the Public Construction Law and the Law Governing Civil Engineers, be enacted and/or amended;

That the Land Development Plan and Township Development Plan be consolidated into the National Development Plan; and

That a new set of regulations governing the punishment and encouragement of public functionaries responsible for infrastructure investment be adopted and enforced.

In order to stimulate the economy, the Executive Yuan has proposed to spend NT\$20 billion to give government jobs to unemployed workers and another NT\$50 billion for county-level infrastructure investment.

This project is highly controversial, because basically it can only temporarily mitigate unemployment and the economic downturn. It must be considered a waste and resource misallocation from a long-term economic growth point of view. An alternative to the NT\$70 billion project should be considered. A shortage of local matching funds, as mentioned above, is one of the major causes for the negative growth in infrastructure investment. Why not spend the NT\$70 billion to make up for that shortage? Waiver of the matching fund requirement and/or reduction in the ratio of the match for selective

infrastructure investment projects will have a multiple effect on the economy. If the matching fund accounts for 25 percent of the cost of an average infrastructure investment, the NT\$70 billion will generate an effective infrastructure investment totaling NT\$280 billion.⁷ If it is fully carried out in one year, through the linkage effect of the inter-industry input-output relation, the NT\$280 billion infrastructure investment will produce a total output of NT\$573 billion with another NT\$219 billion in value added (GDP) for the whole economy. (See Table 6.) It means that GDP growth will be increased by 1.76 percent. As to its employment effect, 309,000 new jobs will be created. (See Table 6.) The unemployment rate, which stays at 5.17 percent now, will go down to 2.33 percent. That is a 55 percent reduction. Furthermore, by promoting infrastructure investment, this scheme will benefit long-term economic growth.

Finally, it is interesting to compare the alternative plan with the NT\$20 billion government project to hire unemployed workers. The latter, according to a government estimate, will create 75,000 new jobs for one year. Conversely, if the NT\$20 billion is used to waive the matching fund requirement and/or reduction in the ratio of the match, it will generate 81,500 jobs plus a NT\$48.6 billion increase in GDP.

V. Labor Market Situation

1. Industrial Structure Transformation and Employment

An analysis of government statistical data reveals that unemployment in Taiwan in recent years is:

- a. Due chiefly to the closure of business concerns, factories in particular, and business shrinkage;

⁷ NT\$280 billion = NT\$70 billion / 0.25. The assumption of 25 percent is made by the DGBAS.

Table 6 Effect of Waiver of Local Government Infrastructure Investment Matching Funds on Taiwan Economy

	NT\$70 Billion			NT\$50 Billion		
	Total Output (NT\$ million)	Value Added (NT\$ million)	Employment (person)	Total Output (NT\$ million)	Value Added (NT\$ million)	Employment (person)
Agriculture	134	95	202	96	68	144
Mining	24,411	16,163	27,069	17,437	11,545	19,335
Manufacturing	153,950	44,903	45,614	109,965	32,074	32,582
Food	73	17	22	52	12	15
Beverage & Tobacco	29	9	6	21	7	4
Textiles	357	91	153	255	65	110
Clothes & Wearing Apparel	62	19	47	45	14	34
Leather & Leather Products	33	8	15	24	6	11
Wood & Bamboo Products	2,257	667	1,350	1,612	476	964
Furniture Products	6	3	5	4	2	4
Paper & Printing	4,079	1,480	2,209	2,913	1,057	1,578
Chemical & Plastic	9,310	2,446	2,817	6,650	1,747	2,012
Rubber Products	626	216	348	447	154	249
Oil Refinery	16,843	5,860	1,292	12,031	4,186	923
Non-Metallic Mineral	51,703	18,014	19,275	36,930	12,867	13,768
Basic Metal	44,265	8,883	7,075	31,618	6,345	5,053
Metal Products	10,860	3,520	6,279	7,757	2,514	4,485
Machinery & Equipment	4,045	1,259	1,914	2,890	900	1,367
Elect, Mach. & Electronics	7,949	1,947	2,300	5,678	1,391	1,643
Transport Equipment	1,113	362	335	795	258	239
Miscellaneous	339	102	172	242	73	123
Water, Elect. & Gas	8,164	4,026	1,107	5,831	2,876	791
Construction	281,030	83,542	148,458	200,736	59,673	106,041
Transport. & Comm.	47,873	32,435	50,029	34,195	23,168	35,735
Services	57,402	37,946	36,503	41,001	27,104	26,074
Whole Economy	572,966	219,110	308,982	409,261	156,507	220,702

Source: This study.

- b. Increasing for persons with senior high/vocational school education or below;
- c. Rising among persons aged from 15 to 24 and from 45 to 64, dramatically in particular among those in the former age bracket;
- d. Higher among male workers than their female counterparts; and
- e. Lasting longer in terms of jobless weeks without regard to their status either as new job seekers or experienced ones.

These five salient features induce the conclusion that Taiwan is now facing a problem of structural unemployment. Male workers in the two age brackets whose formal education does not go beyond senior high/vocational school should deserve more attention when the government makes labor policies. Nevertheless, due to industrial structure transformation, employment opportunities for male labor seem unpromising.

Service industries became the major sources of employment in Taiwan in 1988. Taiwan has grown into a service economy. (See Table 7.)

Table 7 Employment by Industries

Unit: %

Years	Total	Agriculture, Forestry, Fishing and Animal Husbandry	Industry	Service
1987	100	15.28	42.76	41.59
1988	100	13.73	42.47	43.80
-	-	-	-	-
1995	100	10.55	38.74	50.71
1996	100	10.12	37.49	52.39
1997	100	9.57	38.17	52.26
1998	100	8.85	37.92	53.23
1999	100	8.30	37.20	54.50
2000	100	7.80	37.20	55.00
2001	100	7.52	36.00	56.48

Source: http://www.dgbas.gov.tw/dgbas03/bs8/news/four_4.htm

Table 8 Employment by Industries in 2001

Units: 1,000 persons and %

Industries	Male		Female	
	Persons	%	Persons	%
Total	5553	100	3830	100
Agriculture, Forestry, Fishing and Animal Husbandry	512	9.22	196	5.12
Mining & Quarrying	8	0.14	2	0.05
Manufacturing	1592	28.67	995	25.98
Electricity, Gas & Water	30	0.54	5	0.13
Construction	666	11.99	79	2.06
Trade & Eating-Drinking Places	1105	19.90	1060	27.68
Transport, Storage & Communication	382	6.88	104	2.72
Finance & Insurance	180	3.24	230	6.01
Business Services	198	3.57	142	3.71
Social, Personal and Related Community Services	670	12.07	900	23.50
Public Administration	209	3.76	118	3.08

Source: See Table 7.

Since service industries are mostly labor-intensive and most of the transactions done on a person-to-person interaction basis, female labor has been massively employed. As shown by Table 8, female labor surpasses male labor in service industries. As a result, the expansion of trade and service industries would give female labor more job opportunities. However, as the figures in Table 9 show, men outnumber women as legislators, government administrators, business executives and managers. There is no doubt that the so-called hierarchical segregation between male and female labor still exists. In other words, even though job opportunities for female labor look promising, a large number of women are still engaged in occupations requiring a lower skill level with lower pay. Occupational stratification seems to be a major obstacle for female workers in the labor market.

In the service economy, lack of job opportunities has been a serious problem facing male labor, while a shortage of work requiring a higher skill level with higher pay proves to be of great disadvantage to female labor. However, given the deficiency of job opportunities in the current labor market, male labor would undoubtedly be more disadvantaged than female labor. In addition, since male labor would have more difficulty in finding work in trade and service industries, government policies aimed at expanding job opportunities in the service sector might not be a proper medicine to cure the unemployment problem for male labor.

Many women are employed as workers of atypical employment relationship. For instance, part-time work accounts for less than 7 percent of total employment, but female part-time workers outnumber

Table 9 Employment by Jobs in 2001

Unit: 1,000 persons and %

	Male		Female	
	Persons	%	Persons	%
Total	5553	100	3830	100
Legislators, Government Administrators, Business Executives & Managers	346	6.23	60	1.57
Professionals	312	5.62	303	7.91
Technicians & Associate Professionals	959	17.27	656	17.13
Clerks	234	4.21	792	20.68
Service Workers & Shop & Market Salespersons	788	14.19	957	24.99
Agriculture, Forestry, Fishing and Animal Husbandry Workers	505	9.09	191	4.99
Manufacturing & Related Workers, Plant & Machine Operators & Laborers	2410	43.4	871	22.74

Source: See Table 7.

their male counterparts. Workers of atypical employment relationship usually have less chance of promotion, smaller salary and fringe benefits, and fewer education and training opportunities. In the service economy, therefore, female labor deserves more attention and assistance.

With the expansion of service industries, men would face more difficulty in finding work, while female workers would take more responsibility for supporting their families. However, hierarchical segregation and engagement as workers of atypical employment relationship would become main obstacles to female labor. The government should consider how to assist female labor in solving these problems. Perhaps, equal rights in employment may be legislated to help female workers acquire promotion and training opportunities. Furthermore, government assistance in child and elderly care would also be beneficial to

female labor.

2. Unemployment Structure

More attention should be paid, in addition to the protection of female labor, the problem of unemployment the young workers (15 to 24 years old) are facing. Unemployment among the workers in this age group was over 5 percent in 1995 and has exceeded 10 percent since 2001. (See Table 10.) This problem is indeed serious.

The youth are the hope of a nation; and the problem of unemployment should not continue to beset young workers. It is urgently necessary to find an answer to the question of how to assist the young workers in developing their career. They will avail themselves of every opportunity – if it is given – to develop their labor career. Once unemployed at the starting-point of their career, young workers might be

faced with problems of long-term unemployment or underemployment. Previous research finds lack of training is the main obstacle to young labor employment. More effort is needed to provide young labor with job training opportunities.

structure has caused structural unemployment in Taiwan, with young and female workers seriously affected. How to provide substantial assistance to them should be a major concern of the government.

It is clear that a transformation of industrial

Table 10 Unemployment : by Sex and Age

	Total	Male	Female	15-24 Years of Age	25-44 Years of Age	45-64 Years of Age	Unit : %
1998	2.68	2.93	2.33	7.32	2.26	1.44	
I	2.42	-	-	-	-	-	
II	2.45	-	-	-	-	-	
III	2.99	-	-	-	-	-	
IV	2.90	-	-	-	-	-	
1999	2.92	3.23	2.46	6.87	2.55	1.64	
I	2.78	-	-	-	-	-	
II	2.84	-	-	-	-	-	
III	3.14	-	-	-	-	-	
IV	2.95	-	-	-	-	-	
2000	2.98	3.36	2.44	7.36	2.64	1.75	
I	2.83	-	-	-	-	-	
II	2.80	-	-	-	-	-	
III	3.11	-	-	-	-	-	
IV	3.23	-	-	-	-	-	
2001	4.52	5.16	3.71	10.44	4.17	2.92	
I	3.65	4.17	2.88	8.21	3.28	2.44	
II	4.22	4.86	3.28	9.38	3.89	2.76	
III	5.11	5.63	4.37	12.22	4.63	3.07	
IV	5.28	5.96	4.28	11.85	4.85	3.38	
2002	5.18	5.91	4.10	11.91	4.73	3.37	
I	5.14	5.97	3.93	11.11	4.75	3.53	
II	5.04	5.87	3.84	11.25	4.69	3.30	
III	5.30	5.98	4.32	13.23	4.73	3.26	
IV	5.25	5.81	4.29	12.01	4.77	3.40	

Source: Council for Labor Affairs, Executive Yuan, Yearbook of Labor Statistics, various issues.

Unemployment among elder workers (aged between 45 and 64 years) has also increased in the past few years. Table 10 shows that such unemployment increased from 1.44 percent in 1998 to 3.37 percent in 2002. One major cause is the restructuring of industry. Since they generally are less skilled and have a lower education level, elder workers are finding it more difficult to adapt to the structural change in industry. There will be more and more unemployed elder workers as industry continues to shift to high technology.

VI. Conclusion

1. Policy Evaluation

Taiwan has been trapped in an increasingly serious economic downturn since the third quarter of 2000. After a careful examination of Taiwan's economic performance in different sectors reveals that changes in the global economy, poor economic policy, and inconsistent policy enforcement have all contributed to Taiwan's economic quandary.

Taiwan experienced the first and only negative GDP growth (minus 1.9 percent) in fifty years in 2001. A sharp decrease in exports and domestic investment, among others, is the main reason for Taiwan's record-low economic growth. At the same time, China has evolved as a key player in Taiwan's export market. However, the Democratic Progressive government seems to ignore China's role for political reasons.

In the financial sector, the high NPL ratio is still the crucial problem the government has to face. On the other hand, it seems that the low interest rate policy does not work well as a means to stimulate domestic investment. As private investment fell sharply, the government slowed down public investment. That indicates the lack of experience on the part of the new government to cope with fiscal problems.

The labor market is in bad shape.

Unemployment has hit an all-time high. Joblessness has remained high even after GDP growth has bounced back a little. Apparently, Taiwan has yet to complete its economic restructuring. As the economy keeps tilting towards technology-intensive and service industries, the demand for unskilled labor will decrease even further. In the meantime, the problem of unemployment among elder workers will become worse. Creation of temporary jobs, which may ease unemployment in the short run, will not help in the long run because the economic restructuring will continue for many years to come.

2. Policy Implications

The new government lacks experience in administration. However, there are many things it can and should do. The economy would be in much better shape, if the new government did things right, even though it was inconsistent in enforcing its policies. Here are some policy suggestions that may help improve the economy.

First of all, a consistent policy is crucial to reducing investment risk. Presumably, a change of ruling parties is a matter of course in democratic Taiwan. The party in power has to learn how to respect the major economic decisions made by its predecessor. The Fourth Nuclear Power Plant dispute tells what damage an inconsistent policy could do to the economy.

Secondly, the foreign and China factors should never be belittled. As China has become an increasingly more important market, Taiwan should be more active in dealing with the Chinese mainland. The government should liberalize economic relations with China and let Taiwanese businessmen gain comparative advantages on both sides of the Taiwan Strait. Liberalization and internationalization are policies that have guided Taiwan's economic development in the past. Let them guide the conduct of economic relations between Taiwan and China.

Thirdly, the government should do more to reduce NPLs as soon and as much as possible. The NPL problem has remained very serious. The low interest rate policy has proved a failure. As the interest rates are so low as to loom as a liquidity trap, what the government should do is to shift focus to fiscal policy from monetary policy.

Fourthly, a major policy goal should be to stimulate investment, both domestic and foreign. Increased government efficiency is vital to the growth of public investment. To attract both domestic and foreign investment, the government should rebuild investor confidence in its credibility and performance.

Its policies should be consistent and clear. It should continue improving the climate of investment.

Finally, the government should pay more attention to the upgrading of labor skill in every field of work. Unemployment is mainly a problem arising from Taiwan's economic restructuring. It is presumably very difficult to reduce joblessness. Most of the current labor policies aim at temporary solution of the problem. Structural changes in the economy should be taken into account in formulating policies to provide a solution in the long run.