IS TAIWAN RIDING AN AMERICAN BUBBLE ECONOMY ?

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I. Introduction

At no time, since the end of the Second World War, has the world faced such pervasive uncertainty about its economic future than it does today. Countries and regions previously thought to be depression-proof have seen a wholesale contraction of their real output and a shocking evaporation of their real wealth. A regional malaise has set in, and by feeding on itself, has served to further erode much needed consumer and investor confidence. Beginning in Thailand in July of 1997, financial turmoil spread throughout Southeast Asia and eventually led to the collapse of the South Korean economy. The subsequent drop in inter-Asian trade, coupled with currency depreciations, capital outflows, portfolio reappraisals, and failures in debt service erased any chance of a Japanese recovery and ensured a devastating recession for Hong Kong. Investors throughout the region seeking to secure the real value of their property, liquidated en masse their domestic holdings and rushed to convert their rapidly shrinking wealth to sturdier US dollar denominated assets. As if this were not enough, the world's only international lender of last resort, the IMF, is now facing a very likely economic, financial, and political breakdown of Russia -- despite having arranged up to $31 billion in financial aid to that country to date.

Amidst this stupendous collapse in business and consumer confidence in Asia, Taiwan's economy has thus far remained relatively tranquil, prompting many observers to wonder what it is that makes Taiwan so different. At the same time, the US economy has equally confounded the experts by continually expanding, with low inflation, low unemployment, and a stock market apparently over-valued by historical standards. Are these two anomalous economies sharing a unique relation which has acted to buoy the Taiwan economy, and as such make Taiwan crucially dependent on the future health of the US economy? If so, what is the nature of this relation and what may we expect in the days to come.

This paper explores the above questions, by first examining to what extent Taiwan's performance has been buttressed by American economic expansion. In so doing, it will be necessary to first ask if the recent US expansion is evidence of a permanent change in America's productive potential, or whether instead it is a bubble phenomenon, with all the attendant dangers it presents.[1] After

1 Clearly the term bubble is being used here to denote a situation where optimistic expectations of consumers and business are the source of the economic expansion, and are destined to be disappointed. As the **Asian Wall Street Journal** in August of 1998 pointed out, "... consumer spending continues to show confounding strength...." with a 6.1% growth rate in the first quarter of 1998 and a 5.8% growth rate in the second quarter. It goes on to write about the potential of a bursting bubble in the following way: " The virtuous cycle that has buoyed the US economy -- in which great expectations are rewarded with good news engendering more great expectations -- would turn into a vicious cycle in which gloom begets more gloom." The Office of Economic Policy in the March 1998 issue of the **Treasury Bulletin** discusses the nature of the surge in consumption in the following way: " The personal saving rate averaged only 3.8% for the year, down from 4.2 percent in 1996 and the lowest since 1939. This low rate may reflect increased net worth associated

establishing the nature of the relation between US and Taiwan economic performances, some effort will be made to judge what we may expect in the future.

The fact that the problems we are discussing are unprecedented renders the value of standard statistical analysis on lengthy time series data relatively moot. This not withstanding, we will at times make use of such data to judge the nature of the US expansion, and to quantify the relation of Taiwan's GDP with US GDP. In fact, many of the major economic changes which are happening now in Asia are undoubtedly related to events of the past ten or fifteen years, rather than to actions taken during the very distant past. This does not mean that there is a complete absence of stable structure on which to base our judgments, nor does it imply that the distant past is entirely

with rising stock prices, reducing the need for households to save out of current income." Regarding US consumer imports as reported in the **Survey of Current Business**, July, 1998, they write that " Consumer goods have increased in each of the last eight quarters, reflecting strength in domestic consumer spending", and that the US current account was in deficit beginning in 1991 and has been worsening ever since. Clearly, the flood of capital flowing into the US because of these deficits is powering the increase in investment and accommodating the drop in saving. Finally, Tom Petruno writing in the **Los Angeles Times** (reprinted in the **China Post,** October 20, 1998, p.15) explains the thinking of those who believe that there has been a substantial structural change for the better in the following way: " The argument of those who wanted looser credit was that the Fed didn't understand the 'new' economy. Fed critics said that intense global competition among goods and service providers, as well as productivity gains generated by the surge in high-tech equipment investment, meant the economy could easily sustain faster growth than in the past without producing higher inflation."

irrelevant. Rather, our choice of methods requires flexible analysis, where parameter and function form estimation, as well as hypothesis testing, are used in a suggestive, rather than decisive, role. There is a great deal of truth in A. Marshall's admonition that economic analysis should not be one long chain of deductive reasoning from a given set of postulates, but should be formed from a tightly linked series of relevant facts.[2] With this in mind, we will choose to argue not from a single, econometric model or similar set of postulates, but rather from a variety of salient indicators.

The organization of the paper is as follows. Section 2 considers the past performance of the US economy and investigates whether the current unusually long expansion is due primarily to permanent changes in productivity, earnings, etc., or whether it is largely a transient phenomenon, subject to a sharp reversal in the near future. Section 3 examines the relation of Taiwan's economy to US markets, with a focus upon how events of the past decade have impacted on this relation, and how this relation may have played a role in supporting Taiwan's economy through the Asian crisis. Section 4 entertains other possible reasons for Taiwan's comparative resilience to the recent Asian financial crisis. Section 5 provides the conclusions of the analysis and some thoughts on what may be expected in the future.

II. US Economic Performance

The performance of the US economy over the past seven years has been nothing short of amazing. Real economic growth over the period 1992-1997 has averaged 2.83%, while inflation has been surprisingly low, having averaged 2.3%. At the same time, civilian unemployment

[2] Alfred Marshall was the leading economist of England in the late 19th century, and his ideas have had a profound influence on the subject of economics.

has fallen each year from a rate of 7.5% in 1992 to 4.9% in 1997. The behavior of growth, inflation, and unemployment during the 1990's has forced macroeconomic theorists and central bank analysts to reconsider some of their most cherished beliefs. Principal among these was the notion that there is a relatively stable non-accelerating inflation rate of unemployment, popularly known as the NAIRU. [3]

The evidence from the 1990's indicates that the NAIRU in the US has fallen from its previously stable level of about 5.5%. Its fall explains in part why that such strong growth and falling unemployment have not led to rising rates of inflation. The Council of Economic Advisors has offered two reasons for the decline in the NAIRU.[4] First, the labor force has aged and since unemployment rates for older, seasoned workers are lower, the natural rate of unemployment (i.e., the NAIRU) has also declined with these demographic changes. Second, previous real wage growth in the US was largely dependent on relatively fast growth in past productivity. With the passage of time, as productivity slowed, real wages grew much too quickly, due to a lag in their adjustment. This raised labor costs to firms and elevated the NAIRU to say 5.5%. But, as time passed, wage growth came back in line with the slower productivity growth, and this acted to lower the NAIRU. It is this last adjustment we are now witnessing. The secular change in the NAIRU is used as

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[3] One of the foremost American macroeconomists, Robert J. Gordon, has recently discussed the issue of the changing NAIRU in his article " The Time-Varying NAIRU and Its Implication for Economic Policy", **Journal of Economic Perspectives**, vol. 11 (February 1997), pp. 11-32. His views reflect the mainstream new-Keynesian theorists.

[4] The Council of Economic Advisors to the President have made their views clear in the **Economic Report of the President 1997**. However, they fail to mention that the behavior of the NAIRU may have been redirected from its historical path by falling oil prices and the strengthening of the US dollar, both of which have acted to reduce inflationary pressures – despite the fact that the unemployment rate has fallen so low.

one reason to justify the claim that the US economy is somehow different than it was in the past; and that output gaps, unemployment gaps, and wage gaps based on historical data are no longer valid. It is often asserted that America can now look forward to high and sustainable growth, with low unemployment and low inflation for the foreseeable future. Combined with other arguments such as less regulation, lower tax burdens, successful corporate downsizing, lower fiscal deficits, and the expansion of information technologies, the falling NAIRU has boosted investor confidence in equities, leading to unusually high returns on holding US corporate stock.[5] Such arguments are not easily rejected because they are based upon the assertion of a changed, but nevertheless unseen, economic structure.

If we do not accept that there has been such a fundamental change in the US economy, then a major correction must occur in the future -- either through rising rates of inflation or through a severe recession. The Federal Reserve, balancing the risks involved in both of these possible scenarios, chose at first to take a middle course, favoring neither preemptive policies to combat inflation nor policies to avoid recession.[6] But, by doing so, the Fed implicitly confirmed the notion of

[5] An interesting comparison of the real returns on stocks, bonds, and T-Bills is contained in Siegel and Thaler's 1997 article " The Equity Premium Puzzle ". These authors found that the real rate of return on US equities covering a period from 1802 to 1996 was about 6.9%, while that on bonds was about 3.4%. Given this long historical average, the current US stock market has been producing rates of return far in excess of this -- although bonds seem to be yielding very close to their historical average. This is one more reason to believe that stocks are probably over-valued, and that investors are too optimistic.

[6] The Federal Reserve's discussion of monetary policy and the condition of the domestic and foreign economy is contained in the September 1998 **Federal Reserve Bulletin**, pp. 735-742. It is interesting to note that the Fed is seemingly aware of the tenuous nature of consumer and investor confidence. It points out that " To a considerable extent, investors seem to be expecting that low inflation and stronger productivity growth will allow the extraordinary growth of profits to be extended into the distant future." We should note that in fact there is little evidence that American profits have grown extraordinarily or that productivity growth has been strong, except for some sectors of the economy.

some that there was a fundamental change in the economy's structure, and thus no pro-active policy was necessary. The Fed's inaction, to a certain extent, rationalized some investors beliefs that equities were not overvalued relative to current trends in the growth of earnings, while silencing critics who claimed that inflation or recession were inevitable. Naturally, both the Administration and the Congress self-servingly view the changes to the US economy as largely permanent. It should be noted that the financial crisis of 1997 and subsequent drop in US exports to Asia, along with corrections to the US stock market, have now reduced the likelihood of inflation which the Fed had been cautiously gauging. In effect, the crisis made an interest rate hike unnecessary and even undesirable. The Fed has recently taken some initiative by cutting the federal funds rate, due largely to the apparent slowdown in the US economy. It has clearly become worried of a potential US recession. Alternatively, if the economy's structure has significantly changed for the better and is not simply a long expanding bubble phenomenon, the risk of such a recession is much lower. This makes the determination of whether a true structural change has occurred a matter of the greatest importance. And unfortunately, there is no way of making this determination with any degree of confidence.

In judging the likelihood that the US economy has experienced a significant and permanent change in its structure, we can consider several different indicators. These include productivity growth, growth in earnings, changes in the functional distribution of income, growth in information related fixed investment, as well as changes in consumer credit, mortgages, and bank loans. Each of these provide some insight into the problem, although none of them offers an unambiguous answer as to whether the current expansion will continue unabated. Table 1 shows the average growth in labor productivity and real compensation per hour in the non-farm business sector for selected periods.

TABLE 1: US Growth in Productivity and Wages

Period	Productivity Non-Farm Business Sector	Real Compensation Per Hour Non-Farm Business Sector
1960's	2.83%	2.56%
1970's	1.88%	1.20%
1980's	1.02%	0.15%
1990-1995	0.90%	0.40%

Note: The above figures represent arithmetic averages of annual growth rates for each year within each period.

Source: **Economic Report of the President 1997**

Clearly, there is no indication that overall productivity growth has made a comeback. If anything, the data confirm a general worsening trend. Moreover, productivity growth rates for both 1994 and 1995 are less than half the average for the 1990's. These statistics do little to inspire confidence in the notion that America has entered a new era of steadily increasing prosperity. Growth in real wages has slowed also, but the 1980's show much slower growth due mainly to the severe recession at the beginning of the period. There is simply nothing astounding about the 1990's when we view developments in productivity and wage growth.

With respect to growth in real earnings, Table 2 presents a very mixed picture. Growth within each period displayed extreme fluctuation, especially for manufacturing. Smoothing this growth to a constant rate over each period revealed that real earnings in the financial sector experienced extremely high growth in the 1990's. Both retail and

TABLE 2: US Growth Rates for Real Earnings in Selected Sectors

Period	Financial	Retail	Manufacturing	Electronics
1960's	0.66%	4.46%	1.06%	0.76%
1970's	3.14%	-2.66%	2.04%	1.84%
1980's	-1.5%	2.30%	-3.30%	0.30%
1990-1995	15.8%	7.00%	0.90%	16.4%

Note: The growth rates above are neither arithmetic nor geometric averages of the individual years within the period. Rather they are constructed as the constant geometric growth rate needed to reach the end of period's annual level from the previous period's last annual level. Nominal figures are deflated by subtracting out growth in the Consumer Price Index-Unadjusted.

Source: **Economic Report of the President 1997**

manufacturing sectors were slightly above and below their long run growth rates, respectively. However, within manufacturing, we see the glimmer of a possible structural change in the form of explosive growth in real earnings for electronics. Clearly, US manufacturing is being heavily supported by this sector. But, as we have seen, overall productivity growth has not been forcefully promoted by the surge in electronics.

Table 3 shows changes in the functional distribution of income for some selected years. There is little to indicate that a structural shift has occurred which is favorable to business and growth. The percentage of income classified as profit has ostensibly risen in recent times. But, again these percentages are no higher than that found in the 1970's, and are so fraught with measurement error that it is hard to draw any clear conclusion from them. Certainly no major trend is obvious from the data. Moreover, the relatively low percentage going to profit in 1985 and 1990 is due in part to the recessionary condition of the economy at those times.

Table 3: Functional Distribution of Income -- Selected Years

Year	Wages	Rent	Interest	Profit
1970	81%	3%	6%	10%
1975	81%	2%	6%	11%
1980	81%	2%	9%	8%
1985	79%	2%	10%	9%
1990	80%	1%	10%	9%
1995	80%	2%	7%	11%

Note: Author's calculations with proprietors income proportionally distributed among all four categories.

Source: **Economic Report of the President 1997**

One major source of expansionary change that seems apparent in the US data is the tremendous growth in consumer credit, home mortgages, and bank loans in the 1990's. Table 4 shows clearly the explosive growth in both consumer credit, home mortgages, and bank loans from 1987 to 1997. Even factoring in the recovery from the recession of 1990-1991, these figures appear way out of line with what the normal course of business and spending expansion would require. Instead, what they point to is a supremely confident public, bolstered by its steadily rising wealth, low interest rates, and rising job security. Unfortunately, there is no reason to believe that these sentiments are grounded in fact, nor is there any reason to believe that such views will continue to prevail in the future. Expectations have the pernicious effect of sometimes being self-fulfilling, for better or worse. The unreasonable strength of consumer and business borrowing provides yet another indicator of an economy caught in the grips of a bubble -- that is, one highly dependent on tenuous confidence and optimistic expectations.

Table 4: US Credit Market -- New Borrowing

unit: billions USD

Year	Consumer Credit	Home Mortgages	Bank Loans
1987	33.2	247.6	10.8
1988	58.8	229.3	33.9
1989	44.5	235.2	27.8
1990	16.1	226.3	0.4
1991	-13.7	173.6	-40.9
1992	5.0	187.6	-13.7
1993	60.7	156.2	6.4
1994	124.9	178.5	75.2
1995	138.9	174.5	102.3
1996	88.8	264.9	66.2
1997	52.5	268.8	101.5

Source: **Economic Report of the President 1997 Federal Reserve Bulletin 1998 (various issues)**

Growth in real fixed investment in the US has been some what more subdued, but recent data shows that such spending has been expanding rapidly. Average growth in the 1970's was about 40%, and was about 10% in the 1980's, and again 10% in the period 1990-1995. However, when we consider the percentage of fixed investment made with respect to computers and peripherals, we find that this figure jumped from less than 0.4% in 1980 to an impressive 13% in 1996.[7]

[7] These statistics are taken from the **Economic Report of the President 1997**

This statistic shows just how profoundly computers have affected business investment in the US. Moreover, this figure does not include business expenditure on software, but reflects equipment purchases (including imports) by business only. Nevertheless, as we have seen, overall growth in American productivity has not shown any improvement, despite such investments.

In summary, we are led to conclude that there is little evidence to support the notion that America has a "New Economy". Its dazzling performance has led some economists to refer to the US as the "Cinderella economy" and an "oasis of prosperity".[8] The reality is more mundane. The current expansion is largely due to growth in US electronics -- a phenomenon driven by heavy consumer spending and strong business investment. Both of which are contingent on volatile psychological factors.

III. Taiwan's Relation to the US Economy

As we have seen in the previous section, there are a number of indicators showing an American economy whose unusually strong and stable growth is highly dependent on rather fragile confidence and expectations. Such confidence is largely built upon the premise that there has been a substantial change for the better in the structure of the US economy -- a premise which we have drawn into question. Taiwan has similarly shown remarkably strong and stable growth, despite the ongoing Asian financial crisis. Has the extraordinarily long US expansion acted to especially shield Taiwan from the crisis? If so, what are the reasons for this? These are the questions addressed in this section.

Taiwan's economic relations with the US extend back to the mid-

[8] See Gordon, **Macroeconomics**, 7th edition, page 579.

1950's. In addition to providing developmental aid until the mid-1960's, the US supported Taiwan's growth through free and open markets, allowing extensive division of its labor and specialization of its industry. The US figured prominently in Taiwan's stages of development from agriculture, to textiles, to plastics and steel, through to electronics and information processing equipment and components. Beginning in the late 1980's, after a substantial appreciation in the NT dollar, Taiwan firms began moving some production facilities offshore; particularly to Mainland China and Southeast Asia. Thus, while it appeared that Taiwan was heavily dependent on inter-Asian trade, exports were still essentially moving to the US. Naturally, when the Asian financial crisis occurred, mainland China's relatively stable external surplus with the US ultimately supported the Taiwan economy, despite the general shrinkage in inter-Asian trade. However, this close dependence means that any future US recession would no doubt wreak havoc on Taiwan's economy.

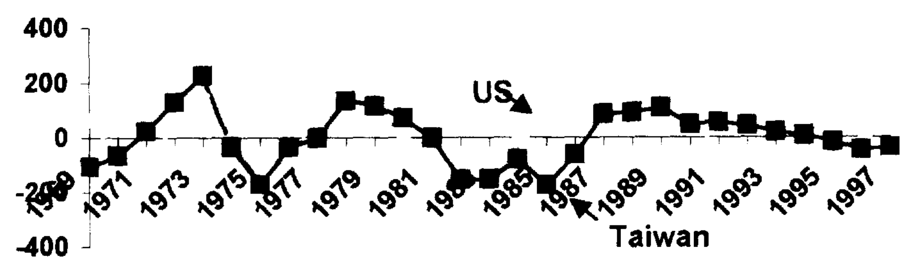
In addition to the above historical linkage between Taiwan and the US, extraordinary growth in computer related investment and sales in the US, as indicated in section II, has likewise forged an important connection between the two countries. A significant portion of Taiwan's economy is now devoted to producing chips, components, and computers for sale in the US market. A second layer service industry has arisen to supply this computer related industry.[9]

An important statistical indicator of the close economic relation between Taiwan and the US is the fact that their output fluctuations

[9] According to the book **Taiwan Business** for 1994 (page 80), electronics are one of the top three exports of Taiwan. There are 4500 manufacturers of electronic products in Taiwan with the majority of exports going to three areas (1) display and electronic tubes, (2) semiconductors, and (3) printed circuit boards. In addition there has recently been a strong drive to promote exports of consumer oriented electronic products.

(about quadratic, deterministic trends) are highly correlated. This means that when output falls below or rises above trend in the US, Taiwan's real GDP similarly experiences such behavior. Using annual data from 1968-1997, the correlation coefficient was found to be as high as 0.67. If we consider the simple correlation between growth rates of real GDP, the correlation remains high at about 0.65. Naturally, correlation measures only the association (not causality) between two variables. However, the analysis still provides a useful indication of the strength of the relation between the two countries. Figure 1 shows a plot of the deviations (standardized and multiplied by 100) of the logarithm of real GDP for Taiwan and the US

FIGURE 1: Standardized Deviations from Trend--
--- US and Taiwan Real GDP



Data Source: **Economic Report of the President 1997 Taiwan Statistical Data Book 1998**

from their deterministic quadratic trends. It is immediately obvious that Taiwan's economy tracks the US economy quite closely. Prior to 1983, the relation was astonishingly close -- however, after 1983 the relation drifts apart somewhat. Despite this drift, the fall in growth in Taiwan would surely have been more severe without expansion in the

US economy.

In an effort to study this relation in greater detail, 135 observations on quarterly real GDP data for the US and Taiwan, encompassing the period from 1963 to 1997, were analyzed in the following way. Both countries' GDP measures were converted to natural logarithms and a fourth-difference was taken to transform them to annual growth rates for each quarter. The resulting data for the US was then subtracted away from the data on Taiwan. An ARIMA statistical model was then fit to this transformed data, and it was found that a restricted AR(4) model was quite adequate to explain the data. The basic results of this estimation is contained in Table 5. Note that the adjusted R^2 statistic was as high as 0.52 and that all estimated coefficients were statistically significant at the 1% level. In addition, there was no apparent autocorrelation in the residuals following the estimation. What this ARIMA model is really saying is that over the past 35 years, roughly half of the variation in Taiwan's annual growth, **as calculated each quarter**, can be explained by current US growth and past differences in the two countries growth rates. An impulse response function can be computed from the AR(4) model given in Table 5. It is easy to see that any shock giving rise to a greater disparity between the two growth rates (such as a sudden drop in US growth) is subsequently eliminated within 3 years. The

Table 5: ARIMA Analysis of Taiwan and US Real GDP Growth Quarterly Data 1963:4 - 1997:2

Model: $y_t = \phi_o + \phi_1 y_{t-1} + \phi_4 y_{t-4} + \varepsilon_t$

$$y_t = x_t - z_t$$

$$x_t = \ln(GDP_t^{Taiwan}) - \ln(GDP_{t-4}^{Taiwan})$$

$$z_t = \ln(GDP_t^{US}) - \ln(GDP_{t-4}^{US})$$

$R^2 = 0.52$

Parameter	Estimate	Standard Error	t-Statistic	P Value
ϕ_1	0.752179	0.061421	12.2464	0.001
ϕ_4	-0.188653	0.061780	-3.05362	0.002
ϕ_o	0.023045	0.004385	5.25554	0.001

Data Source: **Gordon, R. Macroeconomics Quarterly National Economic Trends (various issues)**

results of Table 5 agree well with that of Figure 1 above, but go further by showing how that changes in US growth have immediate and strong effects on the ROC economy.

Still another important linkage between Taiwan and the US is its holding of foreign exchange reserves, which was built up during the 1980's largely through substantial trade surpluses with the US. Although there has been a diversification of these reserves, the majority of reserves are held as US dollar denominated assets. The secular fall in US interest rates, in particular long term rates, have resulted in appreciation of these assets. This has afforded the Central Bank of China (CBC) some leeway in using the reserves to stabilize the exchange rate and offset adverse capital outflows. The recent fall in the yen and the increase in uncertainty surrounding Japanese assets has motivated the CBC to convert some of their Japanese assets into US assets, once more increasing the dependence of Taiwan on US economic performance. That is, the basic earnings capacity of these reserves will be largely governed by how quickly American income grows, and by the degree of stability which the NT dollar enjoys in the future.

Still another channel of interaction between the economies of Taiwan and the US is through their equity markets, especially those companies related to electronics and information processing. Movements in NASDAQ have come to be seen as a close indicator of future short term movements in the TAIEX because of the heavy concentration of transactions in the electronic sector. Falling prices for such US equities are seen as directly raising the cost of capital for US companies who buy Taiwan components; such as integrated circuits, motherboards, monitors, peripherals, etc. Changes in the value of US equities are also known to have wealth effects on consumer durable purchases, including computers and peripherals. Thus, changes in the US equity market have an additional effect on all Taiwan electronic and information processing companies.

From the discussion above, we see that Taiwan continues to enjoy a close relation with the US, and thus its future health is heavily tied to the current American expansion. A recession in the US could prove disastrous to Taiwan. As such, the authorities need to be especially observant of future US economic performance, and maintain appropriate policies to help offset the loss in demand should such a recession occur.

IV. Alternative Reasons for Taiwan's Resilience to the Crisis

There are numerous other reasons why that Taiwan has thus far remained significantly resilient to the Asian financial crisis, and we would be remiss if we did not point these out. We may list these factors briefly as follows:

(1) The NT dollar does not trade internationally.

(2) Taiwan maintains binding capital controls.

(3) Taiwan has substantial foreign exchange reserves relative to their exchange needs.

(4) Taiwan has little foreign debt.

(5) Taiwan business is dominated by small scale, flexible enterprises.

The first of these factors means simply that the NT dollar does not trade in any appreciable amounts on foreign markets. In a trivial sense this can be seen from the fact that for most destinations Taiwan tourists cannot convert their NT dollars to domestic currency while outside the country. In a more formal sense, foreign banks cannot buy and sell NT dollars except through their branch banks in Taiwan. Factor (1) above is only possible if there are capital controls. If worldwide investors could freely open, close, and transfer NT dollar accounts, then the NT dollar would truly be internationalized. For example, an individual investor or company in New York could purchase NT dollars, with little or no restrictions on the disposition of this money, through his or her New York bank, which in turn would have an account in a Taiwan bank. While such transactions are not now possible, it is true that a Taiwan investor can hold a foreign currency account in Taiwan. It is this asymmetry and thus isolation which factor (1) implies.

The capital controls mentioned in factor (2) have been gradually loosened over the years. The Taiwan stock market is open to foreign investment, but there are still restrictions on the percentage of ownership of companies (25% of outstanding shares in 1996). In order for foreign institutional investors to purchase stock on the Taiwan stock market, application must be made to and approval given by the competent authority -- in particular the Investment Commission of the Ministry of Economic Affairs. As of December 1996, there was a ceiling of US$600 million on the amount any qualified foreign institutional investors could invest in Taiwan. There are numerous other regulations covering foreign exchange remittances, as well as investments in equity, bonds, and other assets.[10]

As factor (3) states Taiwan has an abundance of foreign exchange reserves. The figure in 1996 was US$61 billion (not including gold, International Financial Statistics, 1996) and US$ 83.6 billion in 1998 (no doubt including gold, The Economist, Oct. 24, 1998, p.126). The sheer enormity of these reserves have discouraged speculative attacks against the currency by foreign and domestic funds. It should be noted that if gold is valued at its historical cost by the Central Bank of China on its balance sheet, then reserves of US$84 billion are probably overstated. The 1996 figure is more meaningful in this sense. Nevertheless, these reserves are substantial and have helped Taiwan maintain its equilibrium throughout the crisis.

Factor (4) above is best demonstrated by noting that Taiwan has been a net lender to the rest of the world from 1979, except for the year 1980.[11] Indeed, foreign debt owed by the ROC government is a mere $74 million (all of which is to Saudi Arabia).[12] Private outstanding

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[10] The Central Bank of China provided some information on the changes in capital controls in its **Annual Report of the CBC 1996**, and these are mentioned in the paper. Such changes occur frequently in Taiwan, since there are numerous regulations being scrutinized for possible liberalization.

[11] The data referred to here is taken from **Key Indicators of Developing Asian and Pacific Countries, 1997**.

[12] The ROC debt to Saudi Arabia in the past exceeded US$1 billion and was clearly taken out to recycle petrodollars during the period of the 1970's. The maturities on the Saudi bonds ran to 15 years, and the last of these bond issuances will mature in the late 1990's.

indebtedness to foreigners is probably under US$20 billion, which is paltry compared with the fact that Taiwan **annually** lends foreigners something like US$10 billion.

Finally, factor (5) points out that Taiwan has numerous small to medium sized enterprises, which are diversified and are very flexible in their operations. The term "small and medium enterprise" is not an abstraction. There is a precise, legal definition of such business organizations in Taiwan depending on their capital, revenue, and employment. There are probably a million such firms in Taiwan, many involved in the service sector, although there is also a large number involved in manufacturing. These small firms clearly cannot raise funds on international markets. Such firms serve a local clientele, for the most part. The Asian crisis has taken its toll on some of these, but in general the bulk of these firms have not been severely affected as yet.[13]

Each of these five factors have served to keep Taiwan relatively isolated from the recent financial storm. However, on closer inspection, one might conjecture that Taiwan's foreign relations have contributed to the emergence of some of these factors. It is somewhat ironic that mainland China's policy of isolating Taiwan internationally has acted to insulate Taiwan from the current Asian financial turmoil, and thus has worked to Taiwan's favor. The loss of diplomatic recognition with America has forced the US government to focus its attention more on economic relations with Taiwan. Furthermore, Taiwan might not have accumulated such vast reserves if it had been a member of the IMF -- something staunchly opposed by mainland China. Indeed, prior to July 1997, most economists in Taiwan argued that its seemingly excessive

[13] A full discussion (in Chinese) of Medium and Small Enterprises in Taiwan is contained in the book -- **White Paper on Small and Medium Enterprises** published by the Ministry of Economic Affairs.

foreign exchange reserves were a strategic tool needed to counter the threat of destabilization by mainland China. Fear of possible manipulation by mainland China has often worked to make the monetary authorities in Taiwan wary of fully embracing free and open financial markets, including internationalizing the NT dollar and borrowing on foreign markets. Many large scale firms in Taiwan remain in government hands and are subject to direct legislative oversight. It is not likely that these firms (or even private concerns for that matter) would seek overseas funds (through equity or debt issuance) if such funds were thought to originate in Beijing. These assertions are all the more forceful when one considers the degree of control (direct and indirect) exerted by the conservative minds of the KMT over important sectors of the Taiwan economy.

Mainland China's policy of isolating Taiwan has forced Taiwan to seek constant support from the US -- politically, militarily, and economically -- so as to counterbalance its loss in international status. Taiwan has consistently favored the US in trade and financial negotiations, with the result of concentrating its economic dependence on North America. While such dependence has certainly contributed to Taiwan's well-being during the early and mid-1990's, it remains to be seen whether these policies remain satisfactory at the close of the 90's.

The recent Asian crisis has caused Taiwan's government to reassess its "Go South" policy, and as one might have expected, redirect efforts to stimulate outbound investment to the US and Europe.[14] This call has been taken up by Taiwan industry. in particular by the computer, plastics, and shipping sectors. Clearly, this move will

[14] The Southeast Asian financial debacle has clearly caused some embarrassment for the Executive Yuan which strongly urged Taiwan companies to invest in Southeast Asia as an alternative to investing in mainland China -- which ironically was considered too risky. For more on this subject, see the **China News,** October 6. 1998. p.7.

only make Taiwan even more dependent on the future state of the US economy. A significant downturn in the US economy could prove disastrous for such plans.

V. Conclusions and Outlook

The US economy has enjoyed its longest expansion in post war history. It is currently enjoying low inflation, low unemployment, and stable economic growth, despite the turn of events in Asia. While this expansion appears to have been fueled by rising consumer and business confidence, there are some that claim America has enter a new era of prosperity. They feel the US economy is one which has experienced a dramatic structural change for the better. Unfortunately, this claim is difficult to substantiate.

The analysis contained in this paper indicates that there has not been a substantial change in the structure of the US economy. Growth in information processing and electronics has clearly driven the recent expansion, but there are no signs that overall productivity or earnings in manufacturing have changed for the better. More importantly, the chance for recession has recently increased, depending as it does on the fragile optimism of consumers and business. Such a recession could prove disastrous for the Taiwan economy.

Taiwan has been able to weather much of the recent Asian financial storm by utilizing the surge in consumer and business optimism in the US. The extraordinary rise in computer related investment spending in the US, coupled with Taiwan's early commitment to this industry, has helped to shield Taiwan from the worst of the crisis. Unfortunately, there is no reason to expect US economic expansion to continue unabated. There is a true risk that the US economy will falter in the next year or so, and thus undermine an important source of demand for Taiwan products. The authorities in

Taiwan cannot rely on American assurances that their economy has enjoyed a significant and lasting change for the better. They must look to hedge the possibility of a severe downturn in US economic activity. As in 1990-1991, the Taiwan government should consider policies to stimulate aggregate demand -- including tax cuts and increased public investment. Efforts should also be made to further diversify Taiwan's direction of trade, away from the US and Hong Kong, and more towards Europe. By doing so, Taiwan may be able to continue its economic performance, which has thus far been so noteworthy.

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