

THE TAIWAN ECONOMIC MIRACLE

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If there were a competition to find the country with the strangest economic history in the last 40 years, Taiwan would surely stand a good chance of winning. In 1949, Chiang Kai-Shek led what remained of the Nationalist army, after the Chinese civil war with Mao Tse Tung's communists, to this small island, situated off the south-east corner of China. There, the 'Republic of China', which had previously constituted the 35 provinces of China, was limited in sovereignty to one, while Mao's 'Peoples' Republic' exercised sovereignty over the other 34. For the Republic of China (Taiwan) to be still in existence after 40 years is in itself amazing. For it to have a GDP per head of over 40 times that of the Peoples' Republic, to have foreign-exchange reserves of over \$75 billion (the world's second largest after Japan), and to be the world's 13th largest trading nation is astounding.¹ For the economic growth to have been compatible with an improved distribution of income during every phase of the transition from colonialism to a modern developed economy simply completes the miracle.² It is as though Sinn Fein, anticipating defeat in the War of Independence in 1920, fled to the Blaskets, and now boasted one of the world's top economies, with a GDP per head of £250,000, massive foreign reserves AND a high degree of equality! (This helps one understand how amazing it is that Taiwan hasn't been invaded by the Peoples' Republic, if only because of how infuriating the little island must be!). This amazing transformation is the first reason I was drawn to Taiwan in writing this essay.

The second is because, in many ways, Taiwan has been a liberal economist's dream for the last four decades. There are four reasons for this. (1) Since the Peoples' Republic was avowedly communist, Taiwan was avowedly capitalist and would stay that way. (2) With a well equipped army (comprising some 2% of the population) the country's boundaries were as secure as they would ever be. (3) Also, the country was politically very stable, with really only two rulers up until this year. Chiang Kai-shek, the man who led the rebels in 1949 was a (fairly) benevolent leader until 1975, and his son Chiang Ching-Kuo continued in his footsteps (after a short interim period) until he himself died this January. (4) Since the Yuan (or parliament) maintains that it represents all of China, no elections have been held since 1949. This means none of the wasting of money for political purposes,

or political footballing with economic issues which we have experienced in Ireland have been present in Taiwan (I am not arguing against democracy but just saying that in Taiwan , their 'situation' politically has certainly been economically beneficial - if the leaders had not been benevolent and uncorrupt , as they would not have been had they not kept the dream of a unified China as their uncorrupting goal , then the lack of elections could have brought appalling results) . In other words ; a climate was created , as Friedman talked of when describing the benefits of steady monetary growth " favourable to the effective operation of those basic forces of enterprise , ingenuity , invention , hard work and thrift that are the true springs of economic growth ." ³ Not only was the climate created , but to believe or even pretend that the dream of a unified China is real implies , as *The Economist* says " the discipline that produces economic miracles . " ⁴ Furthermore , Taiwan was blessed with excellent planners . I believe Ireland , another small open economy , could learn an awful lot by studying the economic development of Taiwan , which was planned and executed brilliantly . It has never tried to have too much too soon , but has been restrained , diligent , yet always dynamic . The planning took (and takes) the form of four-year documents , the first of which was for 1953-1957 , and the ninth is currently running , from 1986-1989 .

For the purposes of this paper , I will divide Taiwan's development process into three phases ;

Phase(1) - the 1950's preparations for "take-off" and the import substitution policies .

Phase(2) - the 1960's "take-off" , which continued into the 1970's , with export orientation , the arrival of multinationals , and the successful penetration of foreign markets .

Phase(3) - the 1980's move 'upmarket' , the new science-based industry , and the problems of Taiwan's "affluent society" .

The third phase is obviously the most difficult to discuss since there is no historical perspective , but I shall try to do so , and also tentatively examine possible future directions for Taiwan , in the light of its new political leadership (a Mr. Lee Teng-Hui) , the pressure to raise (further) the value of the Taiwanese dollar , and the pressure to reduce Taiwan's tariff levels . However , I will begin at the beginning ; the place is Taiwan , a small provincial island off China , and the time is the early 1950's .

In the early 1950's , the Taiwan economy was in an awful state . The current value of GNP per capita was only \$48 ie. less than half that of the world's economy in 1987 . ⁵ The economy had just experienced severe hyperinflation ; prices rose at an annual five-fold rate in 1946-1948 , and then accelerated to about a thirty-

fold increase in the first half of 1949.⁶ The savings rate was under 5% of National Income and even the most basic infrastructure was nonexistent. On top of this, almost all of the land was held by a small portion of the population. The starting point for development was very low therefore, and the 1950's, which for our purpose really runs from 1949 to 1962, was basically a time of preparation for the "take-off" which followed.

This preparation comprised of three policies - Price stabilisation, Land reform and the setting in place of some basic infrastructure.

Given the massive inflation rates of the late 1940's, the most urgently needed action, more vital than any other, was price stabilisation. Stabilisation policies were implemented by various measures. (1) The old Taiwan currency was devalued at a rate of 40,000 to 1, and the value of the New Taiwan dollar (NT\$) was linked with that of the US dollar at the rate of NT\$5 = US\$1. The currency was backed 100% by gold, silver and foreign exchange. Various other monetary reforms were also made. However, a large government deficit meant this rate left the NT\$ very much overvalued in practice, and reduced the effectiveness of monetary reforms. (2) Preferential interest-rate savings deposits were introduced in 1950. These gave high interest-rates on deposits, of 7% per month, which, if compounded, would amount to 125% per year. As Kuo has pointed out "Although the interest rate was actually still below the inflation rate in 1950, the setting of such a high interest rate required intelligence and diligence on the part of the government."⁷ This scheme was very effective, and when the interest rate was (gradually) reduced to 2% per month by 1952, 44% of the money supply was in such deposits. (3) A great effort was made to achieve a balanced budget to eliminate economic instability, and the budget was in surplus every year (albeit with the help of US aid). Sound fiscal policies were implemented with a firm determination.

Land reform restructured the whole agricultural industry, boosted productivity, and allowed for the influx to industrial work of many farmers after 1962. Land reform was carried out in Taiwan, Kuo tells us, in three stages⁸; (1) Rent reduction took place in 1949. It legally limited the amount of farm rent on private tenanted land to 37.5% of the harvest. Before the implementation of this programme, tenant farmers in Taiwan had to pay a land rent amounting to more than 50% of the total harvest. (2) The sale of public land to tenant farmers was successfully implemented in 1953 to 156,000 tenant families, at a price fixed at 2.5 times the annual crop price. (3) A limit was set to individual land holdings, with dispossessed large farmers reimbursed with government bonds and stocks. The area

transferred from landlords to tenants through the "Land to the Tiller" programme amounted to 71% of the total area of public and private tenanted land. The fact that this took place without social unrest was due both to the fact that the reformers had political control in the country, and also to their determination that nobody should lose out in the reforms.

The third policy, the setting in place of basic infrastructure, was limited by the lack of funds available in the 1950's. The average ratio of net domestic savings to national income from 1951 to 1959 was only 5%, and from 1960 to 1962 had grown only slightly to 8%. Domestic savings are but one source of investment and Taiwan also received U.S. aid during this time. This aid which partly as already mentioned, went to financing government deficits, helped to bring the ratio of net domestic investment to national income to over 10% for each year in the 1950s. This investment went to infrastructural programmes such as electricity, transportation and communications but also into private sector projects such as mining and manufacturing. These policies, designed to strengthen the domestic economy were combined with an overall government policy of reducing the sizeable trade deficit by import substitution. First, import restrictions and high tariffs drove up the price ratio of imports to exports appreciably in the 1950s. For example, the relative price of textiles, a major import, to rice, the primary export rose from 2:1 to 5:1, allowing the textile industry room to grow rapidly. Secondly, the exchange rate was used to encourage import substitution, and the use of exchange settlement certificates (ESCs) meant the government could allow in important inputs at a cheap price but place a high price on unwanted imports. The import substitution policies did work to some extent but the basic deficits remained into the 1960s. In 1952 the shares of exports and imports in GNP were 8.6% and 14.8% respectively. In 1961, they were 11.2% and 18.5% respectively.⁹ However, about 1958 (as in Ireland) the limited domestic market and urgently needed foreign exchange called for a fundamental policy change in favour of export promotion and outward oriented policies.

The year 1962 is generally accepted as the year the economy "took off". This is using Rostow's famous classification, where he defines a take-off as requiring all three of the following related conditions (1) a rise in the rate of productive investment from say 5% or less to over 10% of national income; (2) The development of one or more substantial manufacturing sectors with a high rate of growth; (3) the existence or quick emergence of a political, social and institutional framework which exploits the impulses to

expansion in the modern sector and the potential external economy effects of the take off and gives the growth an ongoing character¹⁰.As we shall see,Taiwan satisfied these conditions admirably in the 1960s and 1970s.

We have already said that the ratio of net domestic investment to national income was above 10% each year in the 1950s,but that this was due to the contribution of U.S. aid.Considering this aid was terminated in 1965,and considering the importance of a structure which subsequently permits a high rate of savings to finance investment,the condition for the "take-off" is bound to be the domestic saving ability.In this respect,Taiwan's ratio of net domestic saving to national income rose from 7.6% in 1962 to 13.4% in 1963 to 16.3% in 1964 and has never looked back.In 1967 it broke 20% and in 1973 reached a massive 35%¹¹.In short,Taiwan has been able to finance its investment by domestic savings since 1964,and in certain specific periods(1971-73 and 1976-79),because of great trade surpluses,domestic savings even outweighed investments.That is,part of domestic savings was not utilised within the country.This very high savings(and therefore investment) ratio came mainly from the private sector,however the government savings ratio was also high,and accounted for about 1/3 of total investment between 1962 and 1979.This was especially important for the construction of infrastructure and heavier industries,such as transportation,nuclear power generation and steel in the 1970s.

Private foreign investment was also important,but not crucial,amounting to under 6% of the gross investment in manufacturing in 1962-1969 period although differing as a percentage of total investment from sector to sector.The chemical,electrical machinery and textile industries,for example absorbed over 2/3 of foreign investment in the 1960s.In the 1970s(where figures are available for approved as opposed to actual foreign investment)the proportion of total investment from abroad increased to about 8%,again concentrated on the modern sector with about 1/2 going into electrical machinery industry and about 1/4 into chemicals.Of course,the contribution of foreign investment was not only financial but extended to better technical knowledge and opportunities to import supplies and increase exports.However the Taiwan miracle was mainly a home produced one and although there was aid pre 1965 and foreign investment after the bulk of the growth was the product of Taiwan's own people and money.

It was based on the development of several substantial manufacturing sectors.These in turn developed due to the excellent climate which was created for investment.In 1961,a "nineteen point economic and financial reform" was introduced

and the the "Statute for the encouragement of investment" was enacted pursuant to these measures. This had the following implications (i) a productive enterprise was exempted from income tax for a period of five consecutive years (ii) the maximum rate of income tax including all forms of surtax, payable by a productive enterprise thereafter would not exceed 18% (iii) profits reinvested were not taxable (iv) the exchange rate was stabilised and procedures governing settlement of foreign exchange earned by exporters were improved. Add to these highly attractive incentives, the very low wages demanded by the labour force and the absence of almost all strictures regarding pollution and environmental care, and the background is in place for a manufacturing expansion.

Between 1950 and 1980, the number of factories in Taiwan increased from 5,623 to 62,474¹². This phenomenal increase was concentrated in several industries. In the early 1960s, the boom area was food processing, as an extension of agriculture and food processing comprised over 70% of manufactures exports. The industry was also boosted at this time by the protection barriers on imports allowing for expansion on the domestic market. The infant textile industries began to grow up and it was now their turn to expand greatly, with exports growing from under 10% of total exports to almost 30% by the mid 1970s, dropping back to 25% in 1980. This expansion, which ensured that the "Made in Taiwan" label reached all parts of the world, allowed Taiwan to reach full employment in 1971. But a country (even one which had grown by over 8% a year in the 1960s), as the *Economist* says "can only get so far with sweat shops, zeal and the ability to copy"¹³. In the 1970s Taiwan moved into modern industry, and its most rapid expansion in production and exports took place in electronics. By 1980 it accounted for slightly over 1/4 of Taiwan's manufactured exports. The final growth industry over the period comprises a group of firms that can be lumped together by the description "those who took advantage of the lax pollution controls". Plastics, chemicals, petroleum refining, pesticides, leather, tanning firms etc. all started up and Formosa plastics, a local company founded in the mid 1950s is now the world's largest producer of PVC.

The destination of Taiwan's evolved with its manufacturing sector. The food processing of the early 1960s meant Japan was the major export destination, taking 29% of all exports as opposed to the U.S. taking 21%. However by 1979 the growth in modern industry meant that only 14% of exports went to Japan, while 35% went to the U.S. and over 8% now went to Europe¹⁴. These trends as we shall see later have caused one of Taiwan's main problems

of the 1980s—a large trade surplus with the U.S. and a huge dependence on the U.S. to buy what Taiwan is producing.

The massive expansion in exports was, of course, almost unique among world economies, but it had a few parallels, all geographically nearby. For example in the period 1965-69 when Taiwan's exports grew by 40.8% per year (on average), Japan's grew by 29.1% per year, Korea's by 46.3% and Hong Kong's by 24.4%. Kuo does a fascinating study of the different causes of export expansion in these countries¹⁵. First, she gives the basic causes of export expansion in any country as (i) increases in world trade (ii) changes in the commodity structure of world trade (iii) changes in the area distribution of world trade (iv) increases in competitiveness of a country's exports. She then draws up a table showing the contribution of each of these factors to these countries' export growth for the period 1965-69.

| Item | Taiwan | Japan | Korea | Hong Kong |
|-------|--------|-------|-------|-----------|
| (i) | 30.6 | 51.7 | 26.2 | 50.2 |
| (ii) | -6.5 | 9.6 | -2.7 | 5.4 |
| (iii) | 3.2 | -22.5 | -1.5 | -4.4 |
| (iv) | 72.7 | 61.5 | 78.0 | 48.9 |

(Source: Shirley Kuo; *The Taiwan economy in transition*, p. 177)

Although Kuo does not go into detail on these figures, it is seen that the main factor contributing to the export expansion of these four countries in this period was their increase in competitiveness in the world market (the increase in the value of world trade was also very significant for Japan, probably due to their being more "upmarket" at that stage than the others). This increase in competitiveness may have come from various factors. The important ones were increases in productivity, advancement in quality and sales of new products, all at wage rates which were low by international standards.

However the impression that Taiwan between 1961 and 1980 consisted of millions of poor workers being kept poor to maintain competitiveness is totally false. It is an incredible sight to see a country advertising "increased opportunities for Taiwan's 180 trade partners round the globe... Taiwan's new buying power is rich for tapping... the knock of opportunity is loud and clear"²². In fact the country made considerable advances in narrowing the income gap in the midst of rapid economic growth. Simon Kuznets' famous study had said that this was almost impossible for a developing country, but in two studies (that of Professors Chenery and Ahluwalia and that of Fei, Ranig and Kuo) Taiwan is identified as one country where inequality has narrowed with development. In the 1950s, Taiwan's family distribution of income¹⁶ was not very different from the unfavourable levels present in most LDCs in

their early years of transition. The following table shows how the distribution of national income changed as it grew:

| Income share of | 1964 | '66 | '68 | '70 | '72 | '74 | '76 | '78 |
|-----------------|------|------|------|------|------|------|------|------|
| Lowest 20% | 7.7 | 7.9 | 7.8 | 8.4 | 8.6 | 8.8 | 8.9 | 8.9 |
| 2nd lowest 20% | 12.6 | 12.4 | 12.2 | 13.3 | 13.2 | 13.5 | 13.6 | 13.7 |
| Middle 20% | 16.6 | 16.2 | 16.3 | 17.1 | 17.1 | 17.0 | 17.5 | 17.5 |
| 2nd richest 20% | 22.0 | 22.0 | 22.3 | 22.5 | 22.5 | 22.1 | 22.7 | 22.7 |
| Richest 20% | 41.1 | 41.5 | 41.4 | 38.7 | 38.6 | 38.6 | 37.3 | 37.2 |

(Source: Fei, Ranis and Kuo, pp34-35)

This increased equality is emphasised all the more by looking at the following table. It shows that real family income showed a considerable increase in all income brackets. However, the rate of increase was far greater for those in the poorest income brackets and smallest for those in the richest income brackets.

| Families | Rate of increase between 1964-79(%) |
|-----------------|-------------------------------------|
| Lowest 20% | 231.0 |
| 2nd poorest 20% | 223.0 |
| Middle 20% | 213.0 |
| 2nd richest 20% | 208.0 |
| Richest 20% | 181.0 |

(Source: Fei, Ranis, Kuo p.38)

Without going into detail, I will quote the conclusion of Kuo¹⁷; "the specific characteristic of the Taiwan economy was a more equitable income distribution amidst rapid industrialisation and urbanization. The narrowing inequality within the nonfarm group was the most influential causing the reduction in nationwide income inequality. The rapid absorption of the labour force contributed substantially to the rise in relative incomes of the lower income families, both urban and rural. Industrialisation and urbanization have brought in their wake significant welfare benefits; higher per family income, higher employment rate, higher productivity and a higher standard of living."

That the Taiwan economy has "taken off" cannot be doubted, but just before I turn to Taiwan in the 1980s, I will look at how the different sectors of the economy have fared through the years. In 1952, agriculture's share of GDP was 32%, industry's share 22% and services accounts for 48%. By 1980 this had changed to about 10% for agriculture, 45% for industry and 45% for services. The changes in shares of employment have been even more dramatic. In

1952, agriculture comprised 55% of the labour force, industry 18% and services 27%. By 1980 these figures were 18%, 42% and 40% respectively¹⁸. These changes reflect the "modernisation" process which took place in the 1950s and 60s in Taiwan.

So what then of Taiwan in the 1980s, and indeed the future? The era of low wages has long passed, due to the achievement of full employment in 1971. The average textile worker's wage of \$2.37 per hour puts Taiwan way above the LDC norm (nearby Thailand's \$0.58 per hour for example). Newcomers in the international market are accelerating their exports of cheap labour products. Taiwan has recognised that the only way to increase its competitiveness in the future is through advancement in technology and the industrial structure so as to produce and export higher value added and more sophisticated products which utilise more skilled labour. Therefore the 1980s have seen an attempt to move from labour intensive light industries to skill intensive heavier industries. As ever, the planners are in control, and this structural change of the economy has been pursued in several directions;

(1) In 1978 work began on the "Twelve New Development Projects" to give Taiwan the infrastructure necessary for its move to an industrial market economy. The 1980s have seen a mass rapid transit and underground railway system developed for Taipei, the construction of a fourth nuclear power station, more motorways, new reservoirs and such an intense program in general that *The Economist* has spoken of Taiwan "sinking from the weight of its own infrastructure"¹⁹.

(2) 71 industrial estates are now in operation and another 8 are under construction. These include a massive "science based industrial park" near Taipei designed to foster areas where scientific and technological investment will bring a commercial payoff. This park, established in 1981, now boasts 70 companies, many being to the forefront of the world hi-tech industry.

(3) The labour force is more educated than ever before and a lot of money has been spent in this area. The proportion of the population with degrees has risen to 12% from 4% in 1968 and the proportion finishing second level is now 22% (as against 10% in 1968)²⁰. Not only have the numbers increased, the quality of education has also been improved and vocational schools have been better equipped and their co-ordination with industry actively planned and implemented.

(4) Once again the country is busily creating the right "investment climate", and five year tax exemptions, offers of venture capital from the state, low interest loans etc. all are

being used to attract hi-tech firms. With a highly educated workforce, Taiwan will once again be the cheap labour (in its field) destination.

(5) Attempts are currently being made to turn the Taipei stockmarket into a sophisticated world market. The idea is to channel Taiwan's huge savings into the most profitable investments possible, and also to provide equity for the hi-tech sector. Recent laws have granted permission for foreign brokerages to open a branch in Taiwan and to deal directly on the stockmarket.

While it is still too early to say whether these measures have been successful they appear to be moving Taiwan relatively smoothly into an "industrial market economy" category. The average GDP growth per head between 1980 and 1986 was 6.8% and last year's trade surplus was the largest ever. Taiwan is certainly confident it can make the transition—the Council for Economic Planning and Development forecast a GDP per head of \$13,400 (in current terms) by the end of the century, and the new president Mr. Lee Teng Hui has said he wants the figure to be \$17,000.

However, while the future seems very bright there are two large problems Taiwan must deal with in the next fifteen years. Both are problems associated with its success. The first problem is the huge trade surplus. When combined with the fact 44% of Taiwan's exports go to the U.S., it makes for bad international relations and means that U.S. demands for a revaluing of the NT\$ over the last few years must be treated very seriously. In fact in the last three years the exchange rate has appreciated from about NT\$40=\$1 to about NT\$26 to \$1. However this has not really affected the surplus because profits have simply been cut on exports and Taiwan buys very little from the U.S. anyway. This indicates that further recalculations will probably be necessary and Taiwan will obviously be trying to minimize damage to its competitiveness. The U.S. pressure has also reduced the tariff levels, many of which were an overhang from the 1960s. The average tariff rate in real terms is now about 4% but is much higher in specific areas (e.g. the 55% tariff on imported cars). If Taiwan is not to have action taken against it by the U.S. and others (GATT etc.) it will have to reduce these tariffs and its trade surplus fairly rapidly.

Taiwan's second problem is pollution. The lack of environmental control measures which helped the boom of the 1960s and 1970s now means that Taiwan's area is now officially considered harmful to health for 17% of the year and the country has the highest rate of hepatitis B in the world. Taiwan has become an affluent as well as an affluent society. A solution to this problem

is very difficult to find. Most of the polluters are small firms who could not afford to change their chimney stacks. While the government has set up an "Environmental Protection Administration" last year, many doctors are predicting a horrifying increase in cancer rates over the next 20 years. In 1988 Taiwan has decided it is time to give development aid. It is to start by giving about 0.4% of GNP for the next five years²². In many ways, this is an indication that Taiwan is ending the development process. This process has not fallen neatly into any one category: aid was needed, import substitution policies used but export orientation was the dominant policy. The lesson to be learned is that no one strategy is suitable and that long term planning and a willingness to make sacrifices is required. In a sense, Taiwan is a shining example to other LDCs, in many ways it is a testament to how hard it is to achieve growth. So many conditions were right in Taiwan that may not be right elsewhere. However, what must please Taiwan most is that with 2% of the population of China it is 40% of the national income. Taiwan has rejected out of hand a "one country, two systems" approach. The dream of the Republic of China encompassing the 35 provinces again is still alive and this patriotism will probably fuel Taiwan's economic miracle into the 21st century.

Footnotes.

1. Taken from various "Economists" who cull the statistics from their own sources and national statistics. The excellent World Bank development report does not give any statistics, presumably because Taiwan will not join any organisation which recognises China. However the same report does give statistics on other nonmember countries e.g. the USSR so unless the Taiwan govt. has called for their statistics to be excluded I am at a loss to know why they are excluded.
2. The Economist, 5-11 March 1988; A survey of Taiwan p. 1
3. Ranis and Kuo, The Taiwan success story, p. 143
4. in "The role of monetary policy", AER, LVIII, no. 1
5. As footnote 2
6. The Taiwan economy in transition, Shirley Yuo, 1983, p. 2
7. *ibid.*, p. 289
8. *ibid.*, p. 27
9. *ibid.*, p. 137
10. Rostow, The stages of economic growth, 1960, p. 39
11. Fei, Ranis and Kuo, *op. cit.* p. 10

13. *ibid*, p.9
14. Yuo, *op. cit.* p.140
15. *ibid*, ch.8
16. Fei, Ranis and Kuo use family income as their measure of equality.
17. Yuo, *op. cit.* p.133
18. *The Economist*, *op. cit.*, p.9
19. *ibid.*, p.13
20. Kuo, *op. cit.* p.324
21. *The Economist*, Feb27-Mar4, p.46
22. *ibid.*, Mar5-11, 1988, Taiwan survey
23. *ibid.*, Feb27-Mar 4, p.46