

The Growth Experience of Japan – What Lessons to Draw?

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1. Introduction

The Japanese economy experienced very rapid growth in the 1960s, but this growth significantly decelerated in the early 1970s. It is generally accepted that the growth potential underwent a ‘kink’, though the reason for this is still actively debated. Then, the economy showed a real growth rate of around 5 per cent on average for about 20 years. In the 1990s, however, the economy has been quite sluggish, and concerns are voiced whether Japan’s growth potential has undergone another downward kink.

Much research has been done to explain the rapid economic growth of the 1960s, but the more recent experience raises some pertinent questions which should have relevance to Asian and other developing countries:

- To what extent did the rapid growth of the 1960s more than reflect increased factor inputs?
- To what extent did it reflect a once-and-for-all resource shift out of agriculture, which cannot be repeated?
- Is there evidence that industrial policy helped growth at the macro level?
- To what extent does the recent slowdown support the view that Japan has hit the technological frontier, i.e. no more room for ‘copying’ advanced technology?
- What are the lessons from Japan’s track record, both for its own future and for other countries?

These are onerous questions, and this paper does not claim to offer definite answers to them. Rather, it tries to offer some insights based on the sectoral analyses of labour and capital inputs, together with the movements in output prices and returns on capital. While the techniques used are crude, they nonetheless seem to suggest some interesting points which have important implications as we look ahead. The summary and tentative conclusions of the findings are as follows:

- The relative shrinking of the primary sector did contribute substantially to the gain in overall productivity, or total-factor productivity (TFP), in the 1960s. What is striking in this episode is that the return on capital in the primary sector was kept high by the price-support system, and capital inputs in that sector grew almost in line with those in the overall economy. This resulted in huge losses in productivity in that sector, implying that capital was used quite inefficiently and would probably have been used more efficiently elsewhere.

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- The growth in the capital inputs of the manufacturing sector was somewhat faster than those in the overall economy in the 1960s, but not thereafter. It is not as though industrial policy allocated significantly more capital to manufacturing relative to other sectors. Rather, intense domestic competition kept manufacturing output prices stable, and the return on capital in this sector was always relatively low. Taken together with the first point above, it is doubtful whether the broad industrial policy (which includes agricultural policy) significantly contributed to growth even in the 1960s.
- The overall growth rate was halved in the early 1970s and remained fairly stable until the late 1980s. This reflected foremost the reduced pace of capital accumulation, and the fact that overall productivity was growing at a pace similar to that in the first half of the 1960s. While the data here do not explain the reduced pace of capital accumulation, demand factors might have been at work behind the slowdown.
- There was a distinct change in agricultural price policy. The price deflator in that sector rose less in the sub-periods 1976-80, 1981-85 and 1986-90 than the overall output deflator, and drastically reduced the return on capital. This curtailed investment in agriculture. Furthermore, what took place was much less inefficient. As a result, the negative contribution from agriculture was much smaller, while the positive contribution from the resource shift between sectors was also smaller.
- The gain in TFP in the manufacturing sector has been smaller since the early 1970s than in the 1960s, but there has been no declining trend, at least up to the late 1980s. There is no strong evidence to suggest a technological ceiling. The return on capital in this sector has also been stable since the early 1970s, again except recently.
- The tertiary sector seems to have always offered higher returns on capital than the manufacturing sector, as their output prices rose faster. The gain in TFP has been significantly less, on the other hand, as labour inputs have grown persistently faster than in other sectors. Considering the facts that this sector has been much less subject to international competition, and more subject to regulation than manufacturing, there seems to be a wide room for more efficient use of resources.
- The early part of 1990s is hard to interpret, as this sub-period only covers recession years. But the findings above suggest no supply factors that might severely inhibit growth in the medium term. Provided that demand management policies succeed in not suppressing R&D, and that deregulation results in more efficient resource use in the tertiary sector, the growth potential for Japan does not seem so bleak.

2. Factor Inputs and Total-Factor Productivity

The approach adopted in this paper is to try to understand the performance of the overall economy by looking at the growth in TFP of three major sectors. Developments in individual sectors are then analysed in the next section in terms of output price deflators and returns on capital.

The period since 1961 is broken down into seven successive five-year periods (except the last one, 1991-93), and the average rates of growth of real value-added are first shown, A. The contributions of labour, B, and capital, C, are then calculated by multiplying the average rates of increase in man-hours worked and real capital stock by

the share of labour in national income in the first year of the period (α) and $(1-\alpha)$, respectively.¹ TFP is derived as $A-B-C$. No adjustments are made for capital utilisation, for which there are no macro data. Nor are the possibilities of ‘hidden unemployment’ in firms taken into account. But these factors are considered when interpreting the data.

The method used here to calculate TFP is a simple one, and works along much more sophisticated lines have been done on the overall Japanese economy. They show fairly wide divergence, and are reviewed by, for example, Hamada, Kuroda and Horiuchi (1987) together with their own estimates. For the purpose of this paper, which is to see sectoral and time-period *differences* in TFP growth, the simple method is probably sufficient.

2.1 The Overall Economy

Table 1 summarises the results for the overall economy. It is clear that the growth performance in the 1960s was much better, but omitting the 1990s which is a period of protracted sluggishness (and will be discussed separately), a number of things stand out:

- Labour inputs have been growing at a fairly steady pace except in 1971-75, which includes the adjustment period after the first oil crisis.
- The contribution of capital inputs accounted for about three-quarters of growth in the 1960s, but the contribution of gains in TFP was also large, particularly in 1966-70. (The ‘technological progress’ in this sub-period probably is exaggerated in this calculation, since the longest post-war boom took place in this sub-period and resource utilisation ratio was quite high. There were probably also economies of scale.)
- The rate of growth of capital inputs shows a distinct kink after 1976-80. TFP decreased in 1971-75, presumably reflecting the need for energy saving, but it since showed rates of increase comparable to 1961-65 until the late 1980s.

Table 1: Estimation of TFP, Total Economy
(Per cent per annum)

| | Value added A | Labour input B | Capital input C | TFP A-B-C |
|---------|------------------|-------------------|--------------------|--------------|
| 1961-65 | 8.6 | 0.4 (0.9) | 6.7 (11.8) | 1.5 |
| 1966-70 | 11.8 | 0.7 (1.1) | 7.0 (13.4) | 4.1 |
| 1971-75 | 5.0 | -0.6 (-1.3) | 5.8 (10.9) | -0.2 |
| 1976-80 | 4.9 | 0.7 (1.3) | 2.7 (6.6) | 1.5 |
| 1981-85 | 4.2 | 0.4 (0.8) | 2.5 (6.2) | 1.2 |
| 1986-90 | 5.2 | 0.7 (1.1) | 2.6 (6.6) | 1.9 |
| 1991-93 | 1.0 | -0.7 (-1.2) | 2.4 (6.3) | -0.7 |

1. For this calculation, I assumed constant returns. There probably have been scale economies, though, and this possibility is mentioned when interpreting the data.

The kink in Japan's growth rate in the early 1970s is well known. But these findings suggest that it is mostly because of the reduced capital inputs and not stagnant productivity. This is different from the common notion, and is consistent with the view of Yoshikawa (1995), who emphasises demand rather than supply factors as the source of the kink. Yoshikawa stresses the number of household formation as the key factor, but the undervaluation of the yen in the late 1960s probably was another cause. Without going into the demand-supply debate, we proceed to sectoral developments to see the supply-side reasons.

2.2 The Primary Sector

Table 2 summarises the results for the primary sector (mostly agriculture). The growth rate of real output fluctuated, probably reflecting crops. As regards factor inputs, three things stand out:

- The labour inputs have shown a fairly steady decline, and the pace has *not* decelerated significantly. The wide-scale exodus of people from agricultural areas, which took place in the 1960s, had subsided by the 1970s, so this probably reflects reduced hours spent in agriculture. Many firms built factories in rural areas, and the mechanisation of agriculture made it possible for people there to work part-time both as farmer and factory worker.
- The rate of increase in capital inputs in the primary sector was quite high up to the 1970s, exceeding that in the overall economy in two sub-periods. Since the early 1980s, however, the rate has been significantly lower than in other sectors.
- Capital inputs in agriculture seem to have been very inefficient. They enabled people to leave agriculture, but did not increase real output significantly. TFP showed huge minuses up to the 1970s.² The situation improved in the 1980s, when the rate of increase in capital inputs decelerated but not the growth rate of real output.

Table 2: Estimation of TFP, Primary Sector
(Per cent per annum)

| | Value added A | Labour input B | Capital input C | TFP A-B-C |
|---------|------------------|-------------------|--------------------|--------------|
| 1961-65 | 0.3 | -0.4 (-3.9) | 6.8 (7.6) | -6.0 |
| 1966-70 | -2.2 | 0.1 (0.9) | 10.6 (12.1) | -12.9 |
| 1971-75 | 2.6 | -1.1 (-6.2) | 9.1 (11.0) | -5.4 |
| 1976-80 | -2.1 | -0.4 (-2.1) | 6.6 (8.3) | -8.3 |
| 1981-85 | 2.3 | -0.6 (-2.2) | 3.4 (4.7) | -0.5 |
| 1986-90 | 0.4 | -0.7 (-2.4) | 2.7 (3.8) | -1.6 |
| 1991-93 | -3.3 | -1.5 (-5.4) | 2.4 (3.3) | -4.3 |

2. It might seem natural that TFP showed minuses because land is ignored in this calculation. Considering the fact that the negative gain in TFP almost disappeared in the 1980s, however, the conclusion that capital inputs up to the 1970s were inefficient would stand.

2.3 Manufacturing Sector

There is a popular notion (often supported by certain Japanese bureaucrats) that the government helped the manufacturing sector to grow. That it was the case until the 1950s is rarely debated, but efforts at directing resources into this sector were gradually discontinued. According to Table 3, capital inputs in this sector grew significantly higher than in other sectors only in 1961-65. Since the 1971-75 sub-period, moreover, capital inputs into this sector persistently lagged those into the tertiary sector.

Regarding TFP, it showed a huge gain in 1966-70 when output showed an annual average rate of growth of 14 per cent. It then stagnated but showed a rebound in 1986-90. The figures for both 1966-70 and 1986-90 probably overstate the gain in TFP, though, because the operating ratio was quite high in these periods with the longest and the second-longest post-war booms. In any case, the deceleration in the pace of output growth is attributable more to slower growth in factor inputs than to smaller gains in TFP. While this by itself does not answer the question of whether Japan now faces a technological ceiling, my own interpretation is that it is not a serious constraint, at least as yet. For one, there probably do exist economies of scale, which are assumed away in this calculation, and which are working less now because of the slower demand growth. Second, trade in technology, as seen in royalties payments, shows a very steady increase in the export/import ratio, from 0.13 in 1970 to 0.54 in 1993.

Table 3: Estimation of TFP, Secondary Sector
(Per cent per annum)

| | Value added A | Labour input B | Capital input C | TFP A-B-C |
|---------|------------------|-------------------|--------------------|--------------|
| 1961-65 | 12.2 | 1.6 (3.0) | 6.9 (14.9) | 3.7 |
| 1966-70 | 14.0 | 0.7 (1.1) | 5.9 (14.7) | 7.5 |
| 1971-75 | 4.6 | -0.7 (-1.3) | 4.8 (10.3) | 0.5 |
| 1976-80 | 5.0 | 0.9 (1.4) | 1.6 (5.0) | 2.4 |
| 1981-85 | 4.1 | 0.2 (0.3) | 1.9 (5.7) | 2.0 |
| 1986-90 | 6.1 | 0.5 (0.7) | 2.1 (6.3) | 3.5 |
| 1991-93 | 0.8 | -0.6 (-1.0) | 2.3 (6.4) | -0.9 |

2.4 Tertiary Sector

Table 4 shows that the tertiary sector has been attracting more of both labour and capital relative to other sectors (except capital in the 1960s). Although this sector also shows a kink in the pace of capital accumulation since the late 1970s, it is less sharp than in other sectors. TFP showed fairly large gains in the 1960s, but it grew only marginally in the 1980s.

2.5 Relative Sectorial Weights and Overall Productivity

Table 5 breaks down the gain in overall TFP into the contribution from each sector and the contribution of the change in relative weights. The change in relative weights of sectors did contribute substantially to the total gain in the 1960s, whereas it contributed

Table 4: Estimation of TFP, Tertiary Sector

(Per cent per annum)

| | Value added A | Labour input B | Capital input C | TFP A-B-C |
|---------|------------------|-------------------|--------------------|--------------|
| 1961-65 | 8.6 | 1.5 (3.3) | 5.9 (10.6) | 1.2 |
| 1966-70 | 12.6 | 0.6 (1.2) | 6.8 (12.5) | 5.2 |
| 1971-75 | 5.5 | 0.5 (1.1) | 6.3 (11.6) | -1.3 |
| 1976-80 | 5.6 | 1.3 (2.3) | 3.3 (7.5) | 1.0 |
| 1981-85 | 4.3 | 1.1 (1.9) | 3.2 (7.1) | 0.1 |
| 1986-90 | 4.8 | 1.2 (2.1) | 3.3 (7.7) | 0.3 |
| 1991-93 | 1.5 | -0.4 (-0.6) | 2.7 (6.9) | -0.8 |

Table 5: Decomposition of TFP Growth Rate

(Per cent)

| | Annual growth rate of TFP | Explained by: | | | Change in relative weights of sector |
|---------|---------------------------------|--|--|---|--|
| | | Growth rate of TFP in primary sector | Growth rate of TFP in secondary sector | Growth rate of TFP in tertiary sector | |
| 1961-65 | 1.5 | -1.0 | 1.2 | 0.6 | 0.7 |
| 1966-70 | 4.1 | -1.4 | 2.6 | 2.1 | 0.9 |
| 1971-75 | -0.2 | -0.3 | 0.2 | -0.7 | 0.6 |
| 1976-80 | 1.5 | -0.4 | 1.0 | 0.6 | 0.4 |
| 1981-85 | 1.2 | 0.0 | 0.8 | 0.1 | 0.3 |
| 1986-90 | 1.9 | -0.1 | 1.4 | 0.2 | 0.4 |
| 1991-93 | -0.7 | -0.1 | -0.4 | -0.4 | 0.2 |

much less in later periods. At the same time, the negative contribution of the primary sector narrowed to about zero in the 1980s, more than offsetting the smaller gains arising from the change in weights. The relative shrinking of agriculture contributed much to the high growth in the 1960s, but the inefficiency there was a big drag. In the 1980s, the decline in the relative share of agriculture contributed much less, but the negative contribution of its inefficiency stopped being a drag.

3. Output Prices and Relative Profitability

Table 6 shows rates of increase in output price deflators and wages together with returns on capital stock (profits/capital stock)³ for the overall economy as well as for each sector. Some striking observations can be made.

3. In the absence of the data on marginal profitability, I used the average return. Since land is excluded from 'capital stock', the figures overstate the true profitability of investment. Also, part of the profits accrued to the firms run by individuals might be more like wages, so the figures for earlier periods in particular tend to exaggerate the picture.

Table 6: Price, Wage and Return on Capital

| | p Annual growth rate, per cent | w Annual growth rate, per cent | r Annual level, per cent |
|-------------------------|--|--|----------------------------------|
| <i>Total</i> | | | |
| 1961-65 | 6.36 | 12.84 | 36.15 |
| 1966-70 | 5.28 | 13.88 | 39.87 |
| 1971-75 | 9.20 | 17.75 | 32.03 |
| 1976-80 | 4.90 | 8.39 | 23.20 |
| 1981-85 | 1.83 | 3.83 | 19.59 |
| 1986-90 | 0.99 | 4.06 | 19.15 |
| 1991-93 | 1.37 | 2.22 | 15.71 |
| <i>Primary sector</i> | | | |
| 1961-65 | 8.65 | 16.70 | 43.21 |
| 1966-70 | 9.26 | 21.39 | 37.82 |
| 1971-75 | 10.05 | 13.26 | 24.18 |
| 1976-80 | 3.89 | 5.70 | 14.50 |
| 1981-85 | 0.64 | 1.88 | 8.61 |
| 1986-90 | 0.33 | 2.25 | 7.17 |
| 1991-93 | 1.59 | 1.69 | 6.37 |
| <i>Secondary sector</i> | | | |
| 1961-65 | 2.84 | 12.33 | 30.57 |
| 1966-70 | 4.56 | 14.01 | 33.28 |
| 1971-75 | 8.03 | 17.63 | 27.06 |
| 1976-80 | 4.33 | 8.57 | 18.51 |
| 1981-85 | 1.02 | 4.37 | 16.00 |
| 1986-90 | 0.56 | 4.57 | 17.07 |
| 1991-93 | 0.70 | 2.25 | 14.53 |
| <i>Tertiary sector</i> | | | |
| 1961-65 | 8.15 | 12.59 | 38.81 |
| 1966-70 | 5.04 | 13.16 | 47.50 |
| 1971-75 | 10.28 | 18.14 | 40.36 |
| 1976-80 | 5.56 | 8.38 | 31.13 |
| 1981-85 | 2.53 | 3.46 | 26.70 |
| 1986-90 | 1.34 | 3.68 | 24.57 |
| 1991-93 | 1.81 | 2.17 | 19.11 |

Continued

Table 6: Price, Wage and Return on Capital (*Continued*)

| | p Annual growth rate, per cent | w Annual growth rate, per cent | r Annual level, per cent |
|--|--|--|----------------------------------|
| <i>Wholesale and retail trade</i> | | | |
| 1961-65 | 0.90 | 14.06 | 45.59 |
| 1966-70 | 2.73 | 13.51 | 60.30 |
| 1971-75 | 8.77 | 17.08 | 48.14 |
| 1976-80 | 1.76 | 8.30 | 30.37 |
| 1981-85 | 0.68 | 3.36 | 22.54 |
| 1986-90 | -0.27 | 4.20 | 16.61 |
| 1991-93 | 0.08 | 2.98 | 11.50 |
| <i>Services</i> | | | |
| 1961-65 | 13.31 | 12.70 | 73.48 |
| 1966-70 | 7.37 | 15.82 | 94.97 |
| 1971-75 | 14.51 | 20.65 | 72.37 |
| 1976-80 | 6.75 | 9.99 | 46.26 |
| 1981-85 | 4.33 | 3.13 | 33.80 |
| 1986-90 | 3.41 | 3.74 | 29.94 |
| 1991-93 | 3.20 | 1.94 | 19.03 |
| <i>Other industries in tertiary sector</i> | | | |
| 1961-65 | 7.00 | 10.66 | 30.34 |
| 1966-70 | 4.94 | 13.37 | 34.47 |
| 1971-75 | 8.88 | 18.19 | 30.45 |
| 1976-80 | 7.04 | 7.99 | 27.75 |
| 1981-85 | 2.75 | 4.75 | 26.48 |
| 1986-90 | 0.97 | 3.61 | 25.79 |
| 1991-93 | 1.88 | 2.59 | 22.22 |

Note: Where p is the output price, w is the nominal wage and the return on capita, r , is defined as operating surplus divided by capital stock.

3.1 Primary Sector

Output prices in the primary sector rose faster than in the other two sectors up to the 1960s, but they rose less in each of the three sub-periods 1976-80, 1981-85, 1986-90. This owes to a clear reversal in the agricultural policy, both in terms of rice price policy and import policy for other products.

Since wages increased faster in this sector in the 1960s, but less thereafter than in other sectors, it was the price developments that seem to have been the major determinant of returns on capital stock. In 1961-65, the primary sector was the most profitable sector of all, and although profitability rapidly dwindled thereafter, it was still almost as profitable

in 1971-75 to invest in agriculture as in manufacturing (assuming that land was not bought). This explains why large-scale capital investments took place in agriculture up to the first half of 1970s. What should be noted is that these investments made sense in nominal terms – that is, they yielded good profits but were quite inefficient in real terms. They saved labour somewhat but not very much, and TFP declined conspicuously. Whatever the merits of agricultural policy in terms of achieving social equity and mitigating the pain of economic transition, it caused a sizeable allocative inefficiency without which the growth would have been even faster. In the 1980s, in contrast, output prices were quite stable and, although wages rose least rapidly in this sector, returns on capital came down sharply. Consequently, capital inputs grew much less fast. In terms of labour saving, however, they were much more efficient than in the 1960s, and TFP suffered much less.

3.2 Manufacturing Sector

Output prices in this sector rose persistently less than in the other two sectors up to the first half of 1970s. Thereafter, they rose somewhat faster than agricultural prices, but have been fairly stable. This means that capital inputs in this sector had to be of a type which increased productivity in *real* terms. While it cannot be said, strictly speaking, that investments which are aimed at increasing nominal productivity necessarily fail to increase real productivity, it is plausible that it was the case (see section below).

Regarding returns on capital stock, there is a clear kink after the 1960s, but they have been remarkably stable since the early 1970s. Again disregarding the most recent sub-period 1991-93, no secular downward trend in profitability is observed.

3.3 Tertiary Sector

Output prices in this sector rose faster than in the manufacturing sector, but less fast than in the primary sector during the 1960s. Thereafter, output prices have been increasing persistently faster than in other sectors. With the real output growing nearly as fast as in the manufacturing sector, the nominal output of this sector grew much faster than in the other two sectors. This is natural given that services are a 'luxury'. Returns on capital stock do have a kink as in manufacturing, but the level is still significantly higher than in other sectors. Thus, capital outlays in this sector grew faster than in manufacturing since 1976-80. They were not of the labour-saving type, however, and gains in total productivity have been only marginal.

Further research needs to be done to determine whether it is inherently more difficult to raise productivity in the tertiary sector. Hair cuts are often cited to support such an argument. It seems likely, however, that there is still a large room for productivity gains in the tertiary sector. For one, TFP did show a sizeable increase at one point, an increase of 5.2 per cent per year in 1966-70. Second, output prices in this sector tended to rise because of the relative lack of competition, both because many of their outputs are 'non-tradeable' and because there are many regulations which limit entries and operations. With output prices rising, there was a room to make 'easy profit', and there was not much incentive to increase productivity in real terms. Table 7 breaks down the tertiary sector into three sub-sectors: wholesale and retail trade, services, and others. These show some

Table 7: Estimation of TFP, Sub-Sectors

(Per cent per annum)

| | Value added A | Labour input B | Capital input C | TFP A-B-C |
|-----------------------------------|------------------|-------------------|--------------------|--------------|
| <i>Wholesale and retail trade</i> | | | | |
| 1961-65 | 16.5 | 1.3 | 4.0 | 11.2 |
| 1966-70 | 17.1 | 1.4 | 6.6 | 9.2 |
| 1971-75 | 6.5 | 0.2 | 6.8 | -0.6 |
| 1976-80 | 9.0 | 0.9 | 3.2 | 4.9 |
| 1981-85 | 2.4 | 0.2 | 1.3 | 0.8 |
| 1986-90 | 5.2 | 0.4 | 1.6 | 3.2 |
| 1991-93 | 2.2 | -1.8 | 1.0 | 3.0 |
| <i>Services</i> | | | | |
| 1961-65 | 2.7 | 0.9 | 6.2 | -4.4 |
| 1966-70 | 14.0 | 3.0 | 9.1 | 2.0 |
| 1971-75 | 3.1 | 0.7 | 8.4 | -6.0 |
| 1976-80 | 4.5 | 2.0 | 4.9 | -2.4 |
| 1981-85 | 6.0 | 2.4 | 4.6 | -1.0 |
| 1986-90 | 4.2 | 2.2 | 5.3 | -3.3 |
| 1991-93 | 1.0 | 0.4 | 3.5 | -2.9 |
| <i>Other tertiary industries</i> | | | | |
| 1961-65 | 10.1 | 2.6 | 6.6 | 0.9 |
| 1966-70 | 9.9 | 0.7 | 6.5 | 2.7 |
| 1971-75 | 6.3 | 0.6 | 5.7 | 0.0 |
| 1976-80 | 4.3 | 0.9 | 2.9 | 0.5 |
| 1981-85 | 4.5 | 0.7 | 3.8 | 0.1 |
| 1986-90 | 5.0 | 0.9 | 3.4 | 0.8 |
| 1991-93 | 1.1 | -0.2 | 3.3 | -2.0 |

interesting facts. First, wholesale and retail trade showed a large gain in TFP in the 1960s, probably reflecting the economy of scale. (Real output grew markedly, and large-scale supermarkets started to spread.) This sub-sector is still doing well in recent periods, even in 1991-93 when output grew only marginally. What is remarkable is that the price deflator has been quite stable since the beginning of the 1980s, so that capital investment there had to, and did, raise *real* productivity.

In contrast, the price deflator of services almost always rose faster than in other sectors, and sometimes even faster than wages. No wonder investment grew rapidly, but so did labour inputs, and TFP persistently showed losses.

These examples are circumstantial evidence, but they seem to support the thesis that competition tends to encourage investment which raises *real* productivity; either through efficiency or the economy of scale, this tends to raise TFP.

4. Industrial Policy

The findings so far tend to cast doubts about the effects of industrial policy broadly defined. Agricultural price support system was a clear failure: it drew much more capital to agriculture than was desirable⁴ and capital was used very inefficiently there. The policy was reversed in the late 1970s, and the primary sector stopped to be a large negative factor for overall growth.

In the tertiary sector, which is much more regulated than the secondary sector, output prices also rose faster, and this tended to encourage investment. It seems to have yielded handsome returns in nominal terms, which was all that mattered to the investors, but did not raise *real* productivity. While the faster rise in prices reflected other factors than regulations, e.g. a faster rise in the demand for services, services being 'non-tradeable', etc., regulations which curtailed new entry were definitely a factor. Recent declines in long-distance phone charges and air fares, to name only a few examples, show that there is wide room for more competition and new business opportunities by deregulation.

In the manufacturing sector which supposedly was the target of industrial policy narrowly defined, capital inputs did grow faster in the 1960s than in other sectors. Whether it was the direct result of policy is open to question, however. It seems more the case that corporate managers saw huge potential markets as well as the room for the economy of scale to operate, and invested vigorously. It may be noted in this connection that the famous 'Income Doubling Plan' of 1961 was nothing more than a set of forecasts. Nonetheless, it probably had the effect of raising the corporate managers' expectations regarding the future growth of the markets. In any case, the government did not even make manufactured products more expensive relative to agricultural products. Another important point is that the government did not stifle competition, and this seems to have encouraged investment which raised *real* productivity.⁵

All in all, the government's contribution to the rapid economic growth of the 1960s seems to be exaggerated in the popular notion. Often ignored is its negative contribution through its wrong agricultural policy. If supporting farmers was a worthy goal, it should have been done by direct income support, which would not have skewed resource allocation as much as the actual policy of price support did. In the tertiary sector, too, Government regulations seem to have induced investments that did not raise real productivity, although one needs more evidence to be certain on this. Vestal (1994) wrote that there actually was no 'Japan type' industrial policy in Japan, and what actually took place contained a large element which hindered growth by protecting inefficient sectors. The findings in this paper support him.

5. The Recent Period and the Lessons

As noted before, the most recent period 1991-93 only covers recession years, and the picture is quite different. The rate of growth of real output was only 1 per cent, and TFP

4. This is not to say that the price policy was the only source of inefficiency.

5. There are some exceptions regarding 'infant industries'. Some important sectors were shielded from international competition until the 1960s, while domestic competition was fierce. This probably did help these industries to attain certain scales where they became viable and internationally competitive.

turned into the biggest ever minus. It is of course too early to say whether Japan's growth potential has undergone another kink, but a number of factors suggest that this sub-period is somewhat special, and that it should be possible to recover a fairly high growth potential.

First, the data for factor inputs for this period significantly overstate actual inputs. There was much labour hoarding, or 'hidden unemployment', as firms tried to refrain from firing workers. On the side of capital inputs, too, there was much more excess capacity. In manufacturing, for which data are available, the average operating ratio was 91.1 in this period, as compared with 95.1 in 1986-90. Thus, TFP, which is calculated as the residual, would be much understated.

Second, a major reason for the sluggishness in this period, and since, is the increase in imports, particularly from Asian countries. In the short-run, of course, they represent a leak from aggregate demand, but there are no reasons, at least theoretically, that competition from imports should lower Japan's growth potential. Rather, by inducing better allocation of resources, it *should* raise the potential.

On the other hand, there is a *danger* that Japan's growth potential might become lower. If the present stagnation continues for much longer, it may lead firms to revise their future expectations downward, which would mean less capital inputs including R&D. This would harm productivity gains, too. Also, a more efficient allocation of resources presupposes that capital and labour are free to move into areas where they can be most profitably employed. There are still many regulations, especially in the tertiary sector, and efforts to dismantle them are facing stiff resistance.

To conclude, it is important to lead the economy out of the present sluggishness, before firms become permanently bearish. It is equally important to dismantle the regulations which long outlived their usefulness. If efforts on these fronts are successful, there seem to be no data up to the late 1980s that suggest a bleak future for Japan.

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