Executive Summary

New Zealand's post-war growth record has been the worst of any country in the Organisation for Economic Co-Operation and Development (OECD). Our per capita income grew just 1.4 per cent per annum throughout the 1950-1985 period, 1.47 percentage points slower than the average for the OECD (excluding Japan).

To provide a basis for examining New Zealand's growth performance, the major international sources of growth have been analysed. Output growth arises from capital accumulation, increases in employment and increases in productivity. It is in the latter area that New Zealand's performance has been particularly weak. Within the OECD, countries which were relatively poor as at 1950 have tended to be the countries which have since grown fastest, by copying the innovations and work practices of richer countries. New Zealand had the "disadvantage" of being a relatively rich country in 1950 and so initially grew more slowly than the poorer OECD countries. However, New Zealand has shown no tendency towards faster growth as it has slipped down the income ladder and is unique in being the only OECD country over the 1950-85 period whose per capita income has fallen as a proportion of the wealthiest country's income.

After taking account of the effect of investment, employment growth and of the catch-up effect, it is estimated that New Zealand's annual growth rate was still 0.66 percentage points lower than in an average OECD country. New Zealand's slow relative productivity growth may partly have been an indirect consequence of the downward trend in the terms of trade, and may also have resulted from the past lack of incentives for firms to innovate or even to emulate foreign practices. In particular, New Zealand's highly protected and relatively uncompetitive markets resulted in almost assured sales for many domestic producers. Many New Zealand producers did not face the same need to increase productivity as did their foreign counterparts; and they were additionally faced with a relatively high inflation environment which was not conducive to productive investment or to the efficient allocation of resources.

A number of the principal factors which have retarded per capita output growth in New Zealand should dissipate over the near future. Population growth has declined relative to the post-war average; inflation is substantially reduced; product and factor markets are more open, particularly to international competition; and New Zealand is now a relatively poor country that can emulate - and has the incentive to emulate - the best overseas production practices and technologies.
Introduction
When Nashiro Amaya - the former head of Japan’s planning agency - was asked by Euromoney to predict the likely shape of the Japanese economy twenty years hence, he felt obliged to confess that, not being God, he really didn’t know. Faced with the same constraint, it is equally difficult to predict the growth pattern of New Zealand over the next twenty years. However, insights into the potential sources of growth can be gained by analysing the determinants of growth in New Zealand and in other developed countries over the post-war period.

This paper demonstrates that New Zealand has had a poor growth record over the entire post-war period. International evidence is presented on the sources of growth and this evidence is used to provide an analysis of the factors responsible for New Zealand’s poor growth record relative to the rest of the OECD. The paper then addresses the extent to which these factors will be operating in the future, and provides reasons to expect that New Zealand’s growth rate will in future be higher than it has been over the past forty years.

New Zealand’s recent poor growth record, associated with restructuring and the implementation of disinflationary policies, has led to greater scrutiny of New Zealand’s longer-term growth performance. This performance has been poor throughout the entire post-war period. In 1950-60 when New Zealand’s income was initially 25 per cent above the OECD average, our growth rate was the third lowest in the OECD. In 1960-73, when our initial income was average, our growth rate was the lowest in the OECD, and in the period 1973-85, when our initial income was 20 per cent below the average, our growth rate was second lowest and only 0.1 percentage points above the lowest.

New Zealand’s per capita income grew just 1.4 per cent per annum throughout the 1950-1985 period, 1.47 percentage points slower than the average for the OECD (excluding Japan). Even notably poor performers such as the United Kingdom and the United States had considerably higher annual per capita growth rates over this period (2.36 per cent and 1.93 per cent respectively). Clearly New Zealand’s poor growth record is not just a recent phenomenon.

Output Growth: International Experience
By definition, output growth comes from two sources. The first is growth in the quantity of factor inputs: capital and labour. The second is growth in total factor productivity: output per unit of input, where inputs include both capital and labour. One method of assessing the relative contributions of these sources of growth is “growth accounting”. This approach is based on neoclassical economic theory which predicts that the contribution of each factor input to growth equals its own growth rate multiplied by its share of national income. Any growth not accounted for by the growth in factor inputs can be attributed to growth in total factor productivity.

Basic growth accounts for the United Kingdom, New Zealand, the United States, Netherlands, France, Germany and Japan are presented in graph 1. These estimates reveal that the growth of factor inputs account for two-thirds of observed growth in New Zealand but less than one half in the other countries.
Capital accumulation made a significant positive contribution to the growth rate of each country but did not account for much of the difference between the various countries, except in the case of Japan. Even then, while Japan's growth of capital stock (8.5% per cent) was over two and a half times that of New Zealand (3.2% per cent) it was only responsible for 1.25 of the 4.36 percentage points by which Japan's growth exceeded New Zealand's. Excluding Japan from the comparison, New Zealand's annual contribution to growth from capital accumulation was only slightly (0.15 percentage points) below the average for the five other countries.

Changes in the quantity of labour made small or negative contributions to the growth rate in the European countries but made large positive contributions for New Zealand, the United States and Japan with most of this difference due to population growth. Across the OECD, the post-war evidence is that higher than average population growth has been associated with a higher than average absolute growth rate, but also with a lower than average per capita growth rate. This is reflected in the New Zealand experience. Over the period 1950-1980, New Zealand's average annual rate of population growth was 1.67 per cent, one percentage point higher than the OECD average. Cross-country studies have found, after accounting for the influence of other factors, that countries with a 1 per cent faster than average population growth rate have tended to have annual per capita growth rates up to 0.5 per cent lower than average. In New Zealand, the relatively high population growth rate was accompanied by a roughly average rate of capital accumulation: consequently, in line with international experience, per capita growth of capital stock and output were relatively low.

Graph 1: Sources of GDP Growth 1950-84
(Annual Average Percentage Point Contribution to Growth Rate)

Source: Calculated from Maddison (1987) and Philpott & Nana (1986).

In all countries, the single largest contributor to growth was total factor productivity. This item is also predominantly responsible for determining the differences in growth rates between countries. It is in this area that New Zealand’s performance has been markedly worse than other countries. The basic message from these growth accounts is that, while some of New Zealand’s poor growth performance is due to high population growth relative to the growth rate of capital, most of the deficiency is due to slow growth of total factor productivity.

The single greatest influence on a country’s rate of productivity growth relative to other countries appears to have been its initial level of per capita income relative to the wealthiest country. This phenomenon can be observed in graph 2, which graphs the Gross Domestic Product (GDP) of a number of countries as a proportion of United States GDP. Countries with the fastest growth in the OECD have tended to be those with lower initial per capita income. For instance each of Canada, Spain and the OECD average have grown faster than the United States (and so their per capita GDP levels have increased relative to the United States), but a poor country, such as Spain, has grown faster than a rich country, such as Canada (and, of course, Japan, which was initially poorer than Spain, has grown faster still). This behaviour reflects the fact that it is easier for a less highly developed country to improve its productivity by importing technology and emulating the high productivity practices of the leading countries than it is for the leaders to increase their productivity further.

A study by Dowrick and Nguyen found that the relative level of initial per capita income alone accounted for 50 per cent of the variation in growth rates amongst

Graph 2: Relative Per Capita GDP Levels 1950–1988
(Summers and Heston Data, USA=100)
OECD countries over 1950-85. They also found this factor to have been important throughout the period and so was not merely a manifestation of post-war reconstruction. This catch-up effect largely accounted for the faster than average growth of Greece, Italy, Portugal and Spain. Conversely, some of the richer countries which have grown substantially slower than the OECD average are seen to be average performers once account is taken of the catch-up effect. This is particularly true of the USA, Canada and Australia.

This raises the question of whether a similar interpretation can be offered for New Zealand's slow growth performance given that it had one of the highest per capita incomes in the world after the second world war. The answer is clearly no. As outlined previously, there has been no tendency for New Zealand's relative growth performance to improve as our relative income has fallen. New Zealand is the only OECD country whose per capita income has actually fallen as a proportion of the leader's per capita income over this period. This aberrant behaviour is clear in graph 2. New Zealand's income was 1.25 times the OECD average in 1950 and had converged to the average by 1960. But since then - and contrary to the convergence experience of other countries - New Zealand has continued to fall behind, reaching 0.84 of the average in 1973 and 0.75 in 1985.

The Dowrick and Nguyen estimates can be used to analyse New Zealand's growth rate relative to other OECD countries, taking into account the effects on each country's growth rate of employment and capital growth and of the catch-up effect. After taking these effects into account, Dowrick and Nguyen find that 0.66 percentage points of the shortfall in New Zealand's annual growth rate remains unexplained. That is, an average OECD country with New Zealand's initial income, investment and employment growth could have expected to have grown 0.66 percentage points per annum faster than New Zealand actually grew, which would have given it a 27 percent higher GDP than New Zealand had by 1985.

One potential contributory factor to New Zealand's poor post-war growth performance is New Zealand's relatively high inflation over the period compared with historical and international norms. There are a number of channels through which high inflation may impact on the level of economic activity and also on the rate of economic growth. These channels include a possible reduction in the rate of return on investment and a possible reduction in savings due to distortions caused by interaction between inflation and the tax system. Inflation, particularly variable inflation, is also likely to have hindered the allocation of resources and so have reduced productivity. A number of empirical studies have established a correlation (although not necessarily causation) between high (and/or variable) inflation and low growth but, even so, the evidence is that inflation is not as important a determinant of growth as the catch-up effect.

Another potential factor in New Zealand's poor performance was the downward post-war trend in the terms of trade, representing declining world demand for New Zealand's production. This trend is seen in graph 3. The 1929-1989 average terms of trade stood at 89.4 (with 1957 = 100). By comparison, the averages for the 1950-60, 1961-73 and 1974-85 periods were, respectively, 104.3, 97.2 and 80.2. At first glance, the relatively high terms of trade in the first two periods makes it questionable whether the terms of trade have had an effect on growth, since in both periods New Zealand had low relative growth rates but had historically high terms of trade.
However, in each of the three periods the average terms of trade over the second half of the period was approximately 10 per cent below the average of the first half of the period. Thus, while the terms of trade were initially high in 1950, there has been a downward trend throughout each of the three periods considered.

A terms of trade decline, for instance through an export price decline, has no direct impact on the measured growth rate of GDP since there is no direct effect on the volume of production (either in the export sector or elsewhere). However, the real purchasing power of the country in terms of imported goods declines and this process can have an indirect effect in lowering domestic production. For instance, if export prices decline, the profitability of the export sector will be reduced since returns will fall relative to costs of imported inputs unless domestic costs (principally unit labour costs) fall sufficiently to restore profitability. In general, domestic costs will not fall sufficiently quickly to restore the sector’s profitability, and hence investment and production in the export sector will tend to fall subsequent to a terms of trade decline.

One response to this situation is that new investment and production opportunities could open up in other areas, especially if domestic costs fall in response to the terms of trade change. This process would tend to offset the negative growth effects over time, although to the extent that resource reallocation takes time there could be a temporary growth slowdown. Another potential response is that government could subsidise the industries most affected by the terms of trade decline in order to alleviate the downturn in profitability in those industries. While cushioning the directly affected sectors, this process is likely to have adverse effects elsewhere as government shifts resources from other sectors (for example, through higher taxes) to the directly

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affected industries. Hence growth in other sectors will tend to be reduced. Whatever the Government's reaction, therefore, a temporary growth slowdown can be expected to emerge following a terms of trade decline.

Most studies which have examined international growth performance have not placed much emphasis on the link between terms of trade changes and growth. However, those that have done so have generally not found them to be a major influence in most countries. Nevertheless, there is some empirical evidence for New Zealand that the terms of trade decline has impacted negatively on the growth rate. Grimes (1989) found that between 1961 and 1987, a 9 per cent cumulative decline in the terms of trade was associated with an approximate 1 per cent cumulative decline in output in New Zealand. Hence the 40 per cent terms of trade decline between 1950 and 1985 is estimated to have reduced GDP by approximately 4.4 per cent per annum by the end of the period. This reduction is equivalent to a reduction in the growth rate of 0.13 per cent per annum. After taking account of this estimate of the terms of trade effect, 0.53 percentage points of the shortfall in New Zealand's annual growth rate still remains unexplained.

In sum, while some of New Zealand's relatively poor growth performance can be explained by its high population growth relative to investment, most of the shortfall is due to poor productivity growth. Moreover, even after taking the catch-up and terms of trade effects into account almost half of this productivity shortfall cannot be directly accounted for.

Sources of Productivity Growth

There is no generally accepted theory of the determinants of productivity growth. The economics literature identifies many factors which influence productivity growth, and those considered most likely to be responsible for New Zealand's poor performance are outlined below.

Recent work by Porter (1990) has built on the long recognised insight that competition has positive dynamic effects. Competition provides both an incentive for continued improvement in performance and a mechanism through which poor performance is eliminated. The level of competition in an industry or country is likely to be positively associated with dynamic efficiency, innovation and productivity growth. In particular, Porter stresses that fast growing economies such as Japan and Italy have highly competitive domestic markets that force firms continually to improve their productivity and product quality. Although no formal measures of competition are available, it is generally accepted that the post-war New Zealand economy has not been noted for the cut and thrust of its competition.

Product and factor market rigidities often have a negative influence on productivity growth by reducing producers' ability to make productivity improving strategies. New Zealand has traditionally had a high level of such rigidities, arising particularly from large scale regulation and intervention by government in product and factor markets, and from the influence of special interest groups. Related to this environment is the phenomenon of unproductive "rent-seeking". A climate in which government selectively assists certain firms or industries is one that encourages firms to divert resources from productive uses into unproductive, but profitable, activities by changing government policies to suit the lobbyist, evading policies, or seeking the
rents and revenue they generate. As well as having high static costs, this behaviour is likely to impose dynamic costs by diverting entrepreneurial talent from productive innovation.

Post-war New Zealand has been characterised by a high degree of border protection and insulation from the world economy. This environment has reduced competitive forces within the domestic market with a likely consequent negative effect on productivity growth. Further, given that the single greatest influence on international differences in productivity growth is the "catch-up" effect, the extent to which New Zealand was insulated from the world economy probably retarded its productivity growth by insulating it from productivity improving developments overseas.

Outlook for New Zealand

The previous discussion has suggested that a number of factors have played a part in retarding the growth of per capita income in New Zealand: high population growth relative to investment, relatively high initial income, declining terms of trade, high inflation, product and factor market rigidities and an inward orientation of the economy with its associated effect on competition, rent-seeking and technical progress. There is reason to believe that the negative influence of these factors will be considerably lessened in the coming decade.

With regard to population growth, New Zealand's annual population growth rate in the 1990s is forecast to be around 0.75 per cent, just 0.42 per cent above the OECD average (compared to 1 per cent above the average in the period 1950-1980). Given the association between high population growth and low per capita output growth, it can be expected that the negative influence of this factor on New Zealand's relative per capita growth rate will diminish over the next decade. There is also reason to expect demographic factors will have a positive effect on savings (and investment) as the baby boom cohorts reach the high-income, high-saving years of middle age.

New Zealand's per capita income relative to the leading countries is considerably lower now than it was in the 1950s. This presents considerable opportunities to increase productivity by importing technology and imitating successful practices from overseas. This process, which tended to be stifled in the past, can now occur more efficiently because the domestic economy is less insulated from the rest of the world than hitherto. In particular, the potential for foreign competition and foreign ownership - which are both positively related to technology transfer - has been increased in recent years.

Since the early 1980s, New Zealand has undergone an extensive process of regulatory reform which has reduced product and factor market rigidities and increased domestic, as well as foreign, competition. An important part of these reforms is the liberalisation of the foreign trade regime, which has increased competition and reduced rent seeking activities. The reforms are also expected to increase productivity growth by stimulating the drive for innovation within individual firms as well as stimulating the need for competitors to keep up with best practice. There is as yet little hard data available about the effects on productivity of these reforms, although anecdotal evidence suggests that they have encouraged firms to adopt a wide variety of productivity improving strategies.
Conclusion

New Zealand’s per capita income grew at less than half the rate of the OECD average (excluding Japan) over the 1950-85 period. The chief contributor to this slow relative growth rate was New Zealand’s poor productivity performance which is likely to have resulted, at least partly, from the controlled and relatively non-competitive nature of the post-war New Zealand economy.

The key to growth, and especially to per capita growth, is to increase total factor productivity. Recent domestic and border protection reforms have increased competition, so stimulating the need for firms to seek productivity growth, and have removed a number of the impediments to improving productivity. In order to stimulate long-term growth in real incomes, it is important that remaining institutional and legal impediments which stifle the ability of entrepreneurs to institute productivity improvements are removed.

Now that New Zealand is a relatively poor OECD country, it can take advantage of the growth potential arising from the catch-up effect. In order to do so, it is important that the New Zealand economy increases its outward orientation by reducing trade barriers and by encouraging (or at least not discouraging) the importation of overseas technologies, if necessary through increased foreign ownership of domestic industry. The ability for firms to copy international best practice production techniques using modern technologies within a competitive, non-inflationary environment appears to be the key to enabling rapid growth within New Zealand that could equal, or surpass, the OECD average during the 1990s.

References


