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Finland and New Zealand: A Cross-Country Comparison of Economic Performance

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TREASURY WORKING PAPER

00/1

Finland and New Zealand: A Cross-Country Comparison of Economic Performance

Dave Frame

ABSTRACT

The working paper compares and contrasts the macroeconomic performance of the New Zealand and Finnish economies over the entire post-WW2 period. It notes that Finland has gradually overtaken NZ in terms of GDP per capita, productivity performance and export performance. Finland suffered a severe recession in the early 1990s (the deepest affecting any western industrialised economy in the Post WW2 period). Very high growth rates since 1994 in Finland may partly be ascribed to cyclical rebound from this recession, with much of the remainder driven by rapid growth in the telecommunications giant Nokia. Finland also faces some particular policy challenges: high structural unemployment, medium term fiscal pressures from an ageing population and impediments to the growth of small and medium sized enterprises.

The paper shows that differences in economic performance between New Zealand and Finland cannot simply be ascribed to contrasting policy approaches. Cultural and geographical differences, and historical antecedents have also played a role. There may be lessons to learn from Finland's approach to education and R&D policy. The Finnish approach of experimenting with different policy settings and carefully evaluating their effect is also instructive. In most other respects, Finland's economic strategy bears a close resemblance to that of New Zealand.

Disclaimer: The views expressed are those of the author(s) and do not necessarily reflect the views of the New Zealand Treasury. The Treasury takes no responsibility for any errors or omissions in, or for the correctness of, the information contained in these working papers.

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EXECUTIVE SUMMARY

New Zealand and Finland share some common characteristics – both countries are small, open economies, with similar populations, similar land masses and resources, and comparable average incomes. This makes Finland an interesting comparison country for New Zealand, particularly given the fact that, in the years since the Second World War, it has successfully transformed itself from a low-tech, resource-based economy into a high-tech, high value-added economy.

Having started the post-war era well behind New Zealand in terms of average national income, Finland is now ahead. Given the different paths of the two countries and the Finns' considerable success in developing high value-added industries, one of the main focuses of this working paper is to examine the role of government policy in the development of these industries.

However, country comparisons are always difficult. There are significant differences between any two countries and it is difficult to judge which policies from Finland are worth replicating in New Zealand. For example, one significant difference between the two countries is geographic: Finland is well integrated into the wider European economy and, importantly, has European Union membership. The Finns have also proved adept at taking advantage of their proximity to Russia, especially during the Cold War years. New Zealand, on the other hand, is by far the world's most isolated industrialised country.

The comparison certainly provides compelling evidence that an appropriate mix of location, available resources, human capital and policy settings is crucially important – and that adopting Finnish policy without careful thought about the other pre-conditions of success is unlikely to achieve such impressive results. In fact, one of the most striking characteristics of Finnish public policy is the very careful thought given to how it can help different industries and sectors, such as in its agricultural policy (see page 82).

Comparative Performance

Finland started the post-war period considerably behind New Zealand in GDP per capita. However, during the 1950s, 1960s and 1970s its economic performance improved as resources were moved from agriculture into industry and services, unleashing higher productivity growth. Solid growth in Finland (and weaker than average growth in New Zealand) has seen the Finns enjoy higher average incomes than New Zealanders since about 1980.

In the European context, Finland has been an average performer for most of the post-war period, with its GDP per capita matching the European average until 1979.

During the 1980s Finland briefly enjoyed above-average European income levels, but economic difficulties and a major recession brought it back to the

pack with a bump in the early 1990s. This massive recession – the largest to hit any industrialised country since the Great Depression – has dominated Finland's recent past, driven by a bursting asset price bubble and, to a lesser extent, a collapse in trade with the Soviet Union.

Finland's growth since 1994 has averaged around 5% per annum, but mostly because of a cyclical rebound. Growth is expected to soon slide back to a more sustainable level.

In the post-war period before the 1990s' recession, Finland enjoyed greater macroeconomic stability than New Zealand. Output growth was less volatile, which may have encouraged Finnish investment and contributed to rising income levels. (Note that although this working paper has not established the reasons for this less volatile growth, the macroeconomic environment is likely to have played a part. Future research could focus on comparing the relative importance of terms of trade effects and fiscal and monetary policy.)

Different Routes of Economic Diversification

After World War II Finland owed the Soviets substantial reparations, which it paid in metal and engineering products. As a result, it developed a strong manufacturing base in ship-building and engineering. During the same period, New Zealand was doing very well out of feeding a recovering Britain and was slower to diversify. It is likely that these different pressures caused the two countries to produce different sets of goods, seeding different sorts of industries.

Both New Zealand and Finland have since diversified their exports, and New Zealand's story may be the more dramatic. In Finland, the forestry industry and its related offshoots have remained strong, joined by metal and engineering products and an especially notable period of recent growth in the telecommunications sector.

Considerable diversification has occurred in New Zealand since the dismantling of import controls and agricultural subsidies and the introduction of tariff reductions. In 1960 some 92% of New Zealand's exports were of pastoral origin; in 1996 that figure was down to 36%. Although New Zealand has not achieved a growth in GDP per capita to match Finland's, the theme of export diversification is possibly more important in New Zealand than in Finland because of the greater initial homogeneity.

Nokia – an Important Element

The success of Finland's telecommunications giant Nokia explains a substantial share of Finland's overall growth in the 1990s.

Nokia's telecommunications business took off in 1992, had net sales of US$8 billion in 1998 and has enjoyed staggering growth of 25% per annum since 1994. The Finnish Institute of Economics (ETLA) estimates that the electronics equipment industry added 1.5% to annual real GDP growth during 1998 and Nokia alone accounted for 1% of real GDP growth[1]. Nokia's development provides insights into factors that may be responsible for Finland's overall performance.

Nokia's present success dates to its strategic decisions to invest in leading-edge research and development (R&D) in the 1960s and 1970s. The groundwork for telecommunications was laid in the 1960s when the company researched the field of radio transmission in its electronics department. In the late 1970s, mobile phones and telecommunications infrastructure products were developed for both domestic and international customers. Nokia invested in digital technology when it was in its infancy. These decisions, followed by a continuing strong commitment to R&D, allowed Nokia to develop and maintain its competitive edge.

The policy environment was another factor driving the development of an internationally competitive Finnish telecommunications industry:

- Deregulation (competition among telephone system operators and with foreign suppliers of telecommunications equipment to the Finnish market) put pressure on Nokia to continually develop its businesses and products.
- Finnish policy insisted that technical standards meet internationally accepted norms.

The upshot was that Finnish suppliers were ready to service a growing international market, at a time when potential competitors (eg Motorola) were cocooned within domestic regulatory environments and not producing systems compatible with worldwide requirements.

The Education System

The growth of high-technology firms such as Nokia and its affiliates has so far not been hampered by a shortage of the necessary engineering and other technical skills.

The Finns do well in standard international literacy and quantitative competency comparisons. Their education system follows the traditional Northern European model of streaming students into either vocational training schools or upper-

[1] OECD Economic Surveys: Finland, Organisation for Economic Cooperation and Development, Paris, 1999, p20.

secondary schools, which prepare them for university. There is fierce competition for the most popular university courses, allowing universities to maintain high entrance standards.

This study has not assessed Finland's education model in detail, but there may be something to learn from the way it funds and manages its compulsory education sector. However, it should be remembered that educational results are produced by the interaction of family mores, individual attributes and formal training. As in all inter-country comparisons, it is difficult to disentangle the effects of cultural differences (for example, do the Finns place more importance on education excellence than many New Zealand families?) from the performance of the education system.

The Finns are concerned with shortages in graduates with commercial and entrepreneurial skills. They are also concerned that the system is not responsive enough to employer needs and that bottlenecks in the tertiary system are encouraging students to spend too long on courses that are not preparing them well for job opportunities.

R&D and Industry Policy

Nokia's history shows that telecommunications liberalisation early in Finland's history played a significant role in the growth of its high-technology sector. The Finns have also recently reformed other elements of their industry policy, but still believe there is a role for government in industry.

That said, the Finnish Government has slashed state aid to business over the last decade and focused the remaining subsidies on intangible assets such as R&D. It believes that without some government support for these activities Finland will lose valuable spill-over effects.

Much of Finnish industry assistance policy is based on risk-sharing between the Government and businesses. For example, businesses wanting to access government R&D grants must pay at least 50% of the costs. If the project meets appropriate criteria, the Government then contributes a share of the necessary funds. Public spending on R&D did not play a major role in Nokia's development, although the company did forge strong links with university research institutions in the 1960s and 70s and thus indirectly benefited from government spending.

The recent emphasis on risk sharing with private R&D ventures may help Finland to maintain its lead in high-technology developments. The Finnish Government certainly views this policy as an investment for the future. However, it is too early to categorically review its effect.

Policy Evaluation

The Finns seem eager to stand back and evaluate policy so that they can minimise errors, with their approach to R&D an interesting example. A high premium is placed on evaluating the success or otherwise of their policies.

Consensus Building and Social Capital

Consensus building appears to be another feature of Finland's policy – and especially political – landscape. The parties forming the Government regularly represent more than 70% of Finnish voters, which probably enables them to debate policy subtleties in a more sophisticated way than is possible in more adversarial systems. High social capital or trust is likely to be a significant feature.

Social capital, with attributes such as the level of trust and co-operation between individuals and groups in society (including between businesses), is one suggested explanation for the high income levels in Nordic countries. Most measurements of social capital place these countries at the top of international comparisons. It may be that homogeneity, egalitarianism or some other cultural phenomenon drives this more in Scandinavia than in other small countries such as New Zealand.

Higher levels of trust and co-operation may help in the transfer of knowledge between firms in an industry and thus explain the degree of innovation and rapid diffusion of know-how in Nordic countries.

Liberalisaton and Integration

Finland has pursued trade liberalisation since the 1950s and had low levels of protectionism for some time. Finland had a special trading relationship with the Soviet Union and did not gain European Union membership until 1995. However, Finland has always had strong trade relationships with the rest of Europe (through the Nordic Council since 1951, and the European Free Trade Association from 1961)[2], and has been quick to enter newly emerging markets in the Americas and Asia. Finland joined with the other Nordic countries to harmonise domestic regulations in such areas as telecommunications.

Finland's long history of outward orientation and emphasis on harmonising domestic regulations with other countries appears to explain some of its recent export led economic success, especially telecommunications.

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[2] Padma Desai, *Going Global: Transition from Plan to Market in the World Economy*, 1997 Uni/Wider, p274.

Policy Challenges

The future poses some serious policy challenges for the Finnish Government in two areas:

1. An emerging fiscal crisis if current macroeconomic imbalances are not addressed.
2. Signs of a lack of dynamism in the Finnish business sector.

Fiscal pressures

The 1990s recession in Finland has left a legacy of government debt, which has ballooned from 10% of GDP in 1989 to 63% in 1998. As a consequence the Finnish Government has made fiscal consolidation a priority. Expenditure cuts moved the fiscal position from a deficit of 7% of GDP in 1993, to a surplus of 1 ½ per cent in 1998.

However, the structure of government spending in Finland will make it increasingly difficult to balance the budget. Finland has one of the world's most generous pay-as-you-go pension schemes and is also facing more serious demographic pressures than any industrialised country other than Japan and Germany. The costs of paying for its pension system, combined with increasing pressure from the rest of the welfare system, are likely to produce a major fiscal headache over the next decade (unemployment is running at 10% and the Finns are concerned about a developing 'welfare culture').

The Finnish tax system does not provide much room for revenue raising as a potential solution to these fiscal pressures. The Finns follow the classic Nordic model of very high income taxes, with a top marginal rate of 65%. Finland's capital taxes are similar to New Zealand's for foreign investors, but impose a higher tax burden on Finnish investors owing to high wealth and gift taxes. Finns are unlikely to want to raise their capital taxes owing to concerns about capital mobility. The alternative would see an increasing tax burden on wage and salary earners, which may not be considered sustainable.

A problem with entrepreneurship?

Finnish authorities express some concern that their history and culture have not supported entrepreneurship. This is because the large-scale industrialisation that has taken place over the past 50 years has often been associated with large, often government, firms. A culture of "going out on your own" does not seem to have developed to the level the Finns would have liked.

They are particularly anxious about the number of small and medium-sized enterprises (SMEs) in Finland – that there are not enough of them and that costs are very high for small businesses (in compliance and in employers' social security contributions[3]). This situation probably arose out of Finland's post-war

[3] Both unemployment and social security are partially funded by employers.

industrial structure, where large firms and a large public sector dominated employment, and unions – representing the interests of workers – sat across the table in negotiations.

The result seems to have been that SMEs were for some time left out of the policy loop, and only in the recent past have Finnish authorities been seeking to make it easier for these firms to do business.

The Finns see SMEs as fundamental to the country's economic performance, so the Ministry for Trade and Industry and the Council for SMEs have been working to help these businesses in start-up, growth and operation by reducing compliance and labour costs, reviewing the implications of the tax code for SMEs and improving financing arrangements for small businesses.

Can Small Countries Aspire to High-technology Leadership?

Could New Zealand follow Finland's example and develop a vibrant, high-technology industrial structure?

On one level, the Finland experience suggests that anything is possible - and that the route New Zealand might take to reach that goal is unpredictable. After all, in liberalising telecommunications in the 1880s, Finnish policy makers could not have predicted the rise of the mobile phone giant Nokia a century later, even though this was an important precondition!

However, interpreting high-tech firms such as Nokia as an exception rather than the rule of Finnish and Nordic experience suggests a different vision for New Zealand's future. It might indicate that New Zealand could prosper through innovative production, processing and marketing of low to medium technology products.

Recent research by a consortium of Nordic academics (Maskell et al) on the economic structure of small, open Nordic economies concludes that small countries are destined to support largely low to medium technology industries. There is evidence that much of the innovation in small countries tends to be process innovation or innovation focused on exploiting niche markets.[4]

Some evidence suggests that New Zealand is following a low to medium technology path. A recent export survey conducted by Infometrics and the Treasury, which focused on innovation, showed that although many products produced in New Zealand for export may not be high-technology, the processes used to produce them often use state-of-the-art, innovative processes.

[4] Maskell et al.

Conclusion

In the end, it is hard to say whether Finland's recent success in high technology– was a fortunate accident, or the product of a different policy and cultural environment. There may be lessons to learn from Finland's approach to education and R&D policy. In particular, the Finnish approach of experimenting with different policy settings, and carefully evaluating their effect is instructive. In most other respects, Finland's economic strategy bears a close resemblance to that of New Zealand. This suggests that differences in economic performance between New Zealand and Finland are driven more strongly by cultural and perhaps geographical features, and historical antecedents, rather than contrasting policy approaches.

He forged the Sampo with skill:
on one side there's a corn mill
on the second a salt mill
a money mill on the third.
And then the new Sampo ground
and the bright-lid rocked;
ground a binful at twilight –
one binful to eat
another it ground to sell
And a third to store at home.

The Kalevala, 10:413-422.

MOTIVATION AND OBJECTIVES

This verse from the Finnish medieval epic poem 'The Kalevala' captures the original motivation for this paper. Like the mythical 'Sampo' Finland's rapid growth in the 1990s conjures up the image of a magical money mill. What generated this apparent success story? Is it consistent with Finland's earlier economic performance or does it represent a significant break with the path?

Finland and New Zealand have much in common. They are both small countries with similar populations, land areas and population distributions.[5] They both have small, open economies and are enthusiastic traders.

This report discusses the experiences of Finland as a small, export-oriented economy that has grown faster than New Zealand since World War II. Finland started the post-war period slightly poorer than the OECD average, and considerably poorer than New Zealand. Since then however, it has steadily improved its position in GDP per capita relative to the OECD average, while New Zealand's performance has been quiescent since the 1970s.

Over this period Finnish growth has generally been solid. However, it was punctuated by something of a roller-coaster ride in the early 1990s when a credit-driven boom and bust cycle, exacerbated by the collapse of bilateral trade arrangements with the Soviet Union, led to a massive recession. This was followed by an impressive export-led recovery which has seen GDP growth average around 5% per annum since 1994.

This recovery has accounted for many of the more spectacular features of Finland's recent economic history. The growth of Nokia Corporation and its affiliates accounts for many of the rest.

The purposes of this report are to:

- examine Finland – as a small, open, export-oriented country on the fringes of Europe – in light of its strong post-war performance
- compare the Finnish experience with that of New Zealand.

However, a word of caution: it is not possible to establish a genuinely counterfactual situation for New Zealand, as we cannot line up a set of 1950s' New Zealands, tweak policy and observe the differences – and that is really the only way to compare policy settings scientifically. As a result the comments and conclusions in this report are necessarily impressionistic. Comparing two countries is fraught with a number of difficulties, and it is impossible to disentangle the fortuitous from the inevitable, or the general from the idiosyncratic.

[5] In both Finland and New Zealand the bulk of the populace live in the most "equatorial" parts of the country.

Having said that, it makes sense to try to glean something from the experience of other countries that face similar challenges to our own. It would be foolish to think that other countries have nothing to teach us, or that economic theory and Aristotelian reflection alone are all we need.

This study focuses on understanding Finland's post-war history and comparing it with New Zealand's, examining the relative performance of the two countries. Industrial policy is of particular interest in this study, as the Finns have adopted – and are enthusiastic about – a quite different approach from that followed by New Zealand.

After a brief introduction to geographic factors, the report compares the growth records of Finland and New Zealand, provides a brief economic history of Finland and discusses changes in productivity in the two countries. Causes of the Finnish recession are presented and discussed, as this provides the backdrop for most recent policy initiatives. Evidence indicates that recent Finnish growth has been cyclical. The report then discusses issues around trade.

A sectoral breakdown is conducted for both countries, in which the theme of export diversification comes through strongly. In Finland much of the 1990s' growth in exports has occurred in high-tech, high value-added sectors, while these sectors have been slower to develop in New Zealand.

The report then moves on to discuss government policy in Finland, with a brief overview of monetary policy, followed by a slightly longer discussion of Finland's fiscal policy. As with New Zealand, superannuation, welfare, health and education are the largest slices of the public cake, and these are generally dealt with briefly, although education is explored a little more deeply because of its relevance to human capital (often cited as a reason for Finnish success).

Labour market and tax issues are dealt with before the report turns to consider the Finnish Government's industrial policy in some depth. Various aspects are highlighted and contrasted with New Zealand's policy settings.

Finally, a discussion and set of conclusions are offered, mindful of the cautions presented earlier in this section.

COMPARING FINLAND AND NEW ZEALAND

Finland has always been a buffer between the competing influences of Protestant Sweden and Orthodox Russia. Even though Finland gained its independence in 1917, its modern history has still been dominated by its Nordic and (until recently) Soviet neighbours. If New Zealand sometimes feels that isolation is its defining geographical characteristic, Finland's has been the opposite – a surfeit of sometimes prying neighbours.

These pressures have continued to affect Finland throughout the 20th century. The Finns are justly proud of their successful resistance against Soviet aggression during the Second World War, although by entering the war as a co-belligerent of the Nazis they found themselves in an awkward position in international affairs: not only did they owe the Soviet Union some US$226 million in war reparations, they came under threat of direct Soviet intervention in the form of military occupation, and indirect intervention in the form of Soviet political agitation.

In 1948 the Finns signed the Treaty of Friendship, Co-operation and Mutual Assistance with the Soviet Union, which provided the basis for Finnish relations with its eastern neighbour throughout the Cold War. This approach gave the English language a new verb – to Finlandize, which the *Shorter Oxford Dictionary* defines as to "induce (a country) to adopt a policy of benevolent neutrality towards the Soviet Union". This policy prevented Finland from joining the European Economic Community or the Council of Europe on the grounds that the Soviet administration considered these organisations antithetical to its interests.

Foreign policy considerations like this have shaped most of Finland's dealings with the rest of the world over the last 50 years. Although culturally and socially Finland has more in common with the Nordic countries to its west, geopolitical considerations have limited its political freedom. It is only since the collapse of the Soviet Union that Finland has been able to consider full membership of the European family.

While Finland welcomed the foreign policy freedom associated with the demise of the communist bloc, the collapse of the Soviet Union occurred at a bad time and was one of the factors triggering Finland's massive economic crisis in the early 1990s – when real GDP contracted by around 13% and unemployment reached 18%. Finland has recovered remarkably well from this recession – one of the worst in an industrialised country this century, including the Great Depression.

Aside from the very different political histories of the two countries, New Zealand and Finland share a lot in common. This is why Finland is, like Ireland, a reasonable country with which to compare New Zealand (see Table 1). The countries have similar populations, geographical areas, resource bases and standards of living. In terms of average income the countries are similar,

although Finland is now slightly ahead. Both countries have export-oriented open economies, although the product mix is quite different.

Given the similarities between the two countries it is worthwhile to examine the Finnish experience and compare it with our own.

However, it is important to note one major difference between the two countries: location. Figures 1 and 2, centred on Helsinki and Wellington, demonstrate this.

The radii of the circles are the same in each case. Within the circle centred on Helsinki there are 39 countries and approximately 300 million non-Finnish people. Within the circle centred on Wellington are Norfolk Island, and a little of New Caledonia.

Figure 1

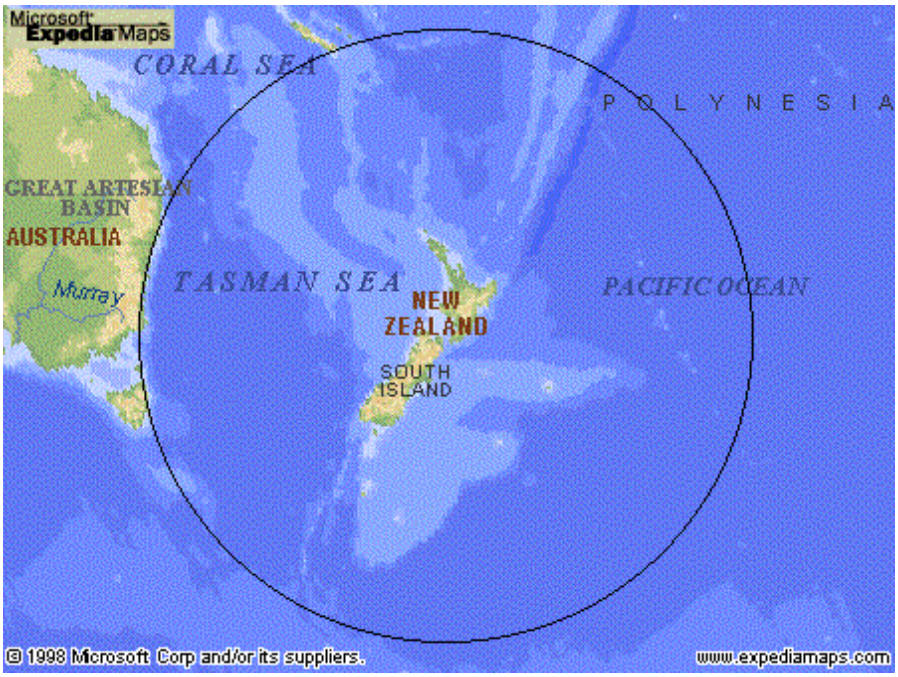


Figure 2

These graphs are obviously a little facetious – if we widen the radii enough, both will contain the same number of people – but they do illustrate the magnitude of our isolation.

	Finland		New Zealand	
Area[6]	338,145		269,057	
1950 population[7]	4,009,000		1,914,000	
1995 population[8]	5,117,000		3,681,500	
Major urban areas[9]	Helsinki	539,000	Auckland	1,057,100
	Espoo	200,834	Wellington	345,500
	Tampere	188,726	Christchurch	337,200
	Vataa	171,297	Hamilton	164,600
	Turku	168,772	Napier-Hastings	115,700
	Oulu	113,567	Dunedin	112,800

Table 1

[6] National Geographic Atlas.
[7] Penn World Tables.
[8] Statistics Finland, Statistics New Zealand.
[9] Statistics Finland, Statistics New Zealand.

FINLAND AND NEW ZEALAND SINCE WORLD WAR II

Output

Gross Domestic Product

At the end of the Second World War the economies of Finland and New Zealand headed on somewhat divergent paths. While New Zealand sought to feed an ailing post-war Britain (as well as itself), Finland set about repairing its infrastructure, which had been damaged by three separate conflicts throughout the war. In addition, Finland owed US$226 million in reparations to the Soviet Union[10], most of which it paid in finished product exports from its metal and engineering industries. Although the foundations of these industries had been established before the war, the reparation process helped them develop and take their place alongside the traditionally powerful forestry industry.

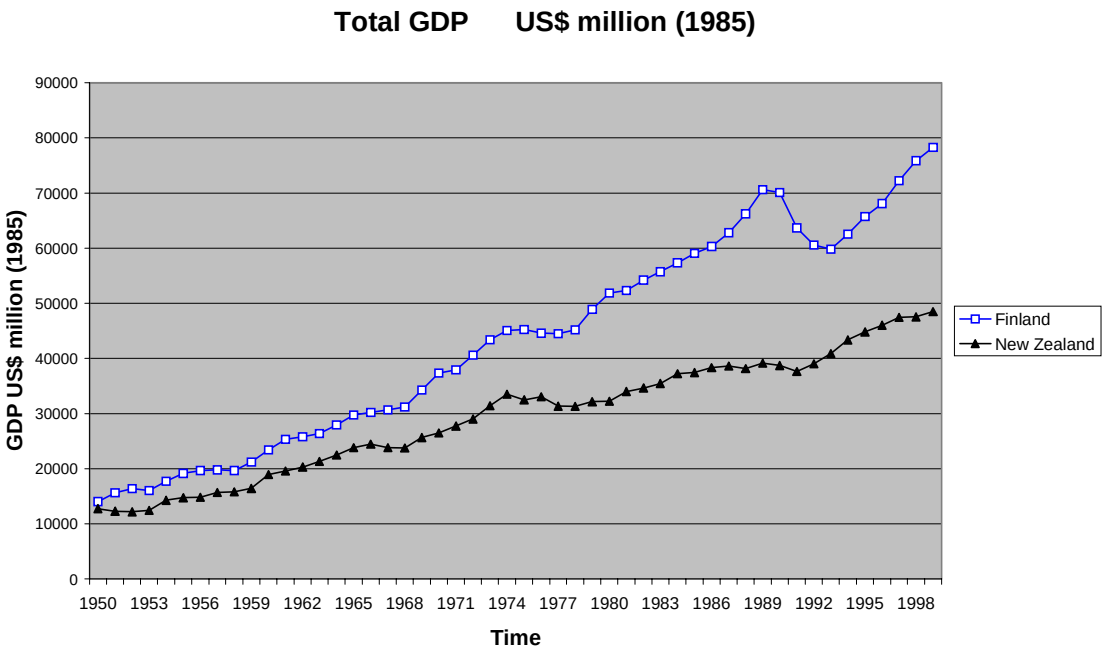


Figure 3 Source: OECD, Penn World Tables

The already strong forestry industry focused on Western Europe, while the nascent shipbuilding and engineering industries sold to the East via five-year bilateral trade agreements in which metal products, textiles and clothing were exchanged with the Soviet Union for oil.

World market prices for oil affected the volume of Finnish exports, and declining oil prices in the 1980s were the first warning of the fragility of Finland's trade with its eastern neighbour. Although this system of trade ultimately collapsed at the beginning of the 1990s, there is evidence that it was a profitable

[10] Finland is the only European country to have repaid its war reparations.

arrangement for Finland – that the prices it obtained for its goods were a little higher than it would have received had it sold them to the West. In addition, a guaranteed Soviet market meant that Finnish exporters could shift production to this market when other countries suffered recessions in the 1980s, and to some extent this helped smooth Finland's economic trajectory.

New Zealand, by contrast, experienced weaker, more volatile growth through the 1970s and 1980s, with a prolonged period of weak growth from 1987 into the early 1990s. Solid growth reappeared in the mid-1990s but declined towards the end of the decade because of the Asian crisis.

GDP Growth

Figure 4 and Table 2 show annual growth rates for Finland and New Zealand, which are then averaged over longer time periods. It can be seen that – generally – New Zealand's growth has been more volatile than Finland's, about a lower mean.

Since 1961 New Zealand has grown at an average rate of 2.5%, while Finland has grown at around 3.4%. Most of New Zealand's growth occurred between 1961 and 1974 (with an average of 4.2%); since 1975 it has averaged only 1.5%.[11]

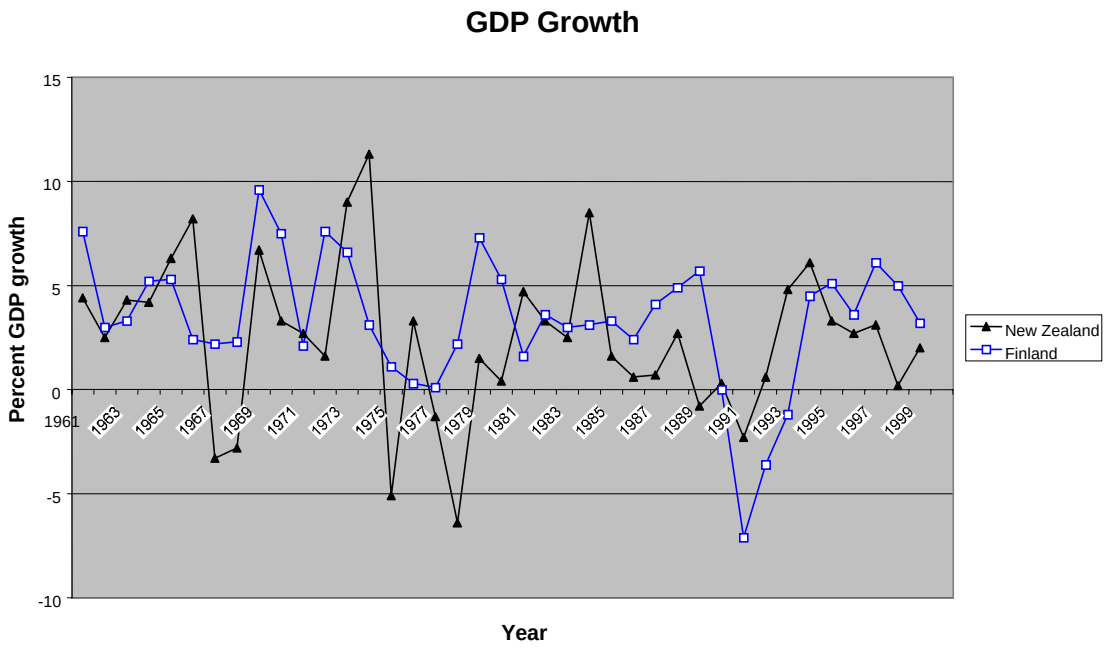


Figure 4 Source: OECD

5 Presenting the situation in this way may make things seem a little more extreme than they really were – 1974 was a high water mark for New Zealand, so choosing it as an end-point exaggerates the story a little.

Finland achieved moderate growth in the 1960s and strong growth in the early 1970s, before succumbing to the general malaise in the late 1970s. However, its experience in the late 1970s was not as bad as that of many countries – this is because the bilateral trade deals with the Soviet Union supplied Finland with oil that was not subject to many of the price fluctuations associated with oil from OPEC during this period.

Finland posted a growth rate of 3.5% during the 1980s – accelerated towards the end of the decade by a credit-driven boom – before the combination of a credit crunch and the collapse of the Soviet Union plunged the economy into recession in the early 1990s. Subsequent growth has been strong, although much of it has been a bounce-back phenomenon.

Figure 5 shows the annual growth rates for GDP per capita. This is slightly different from Figure 4 as population growth is incorporated in the economy's annual performance.

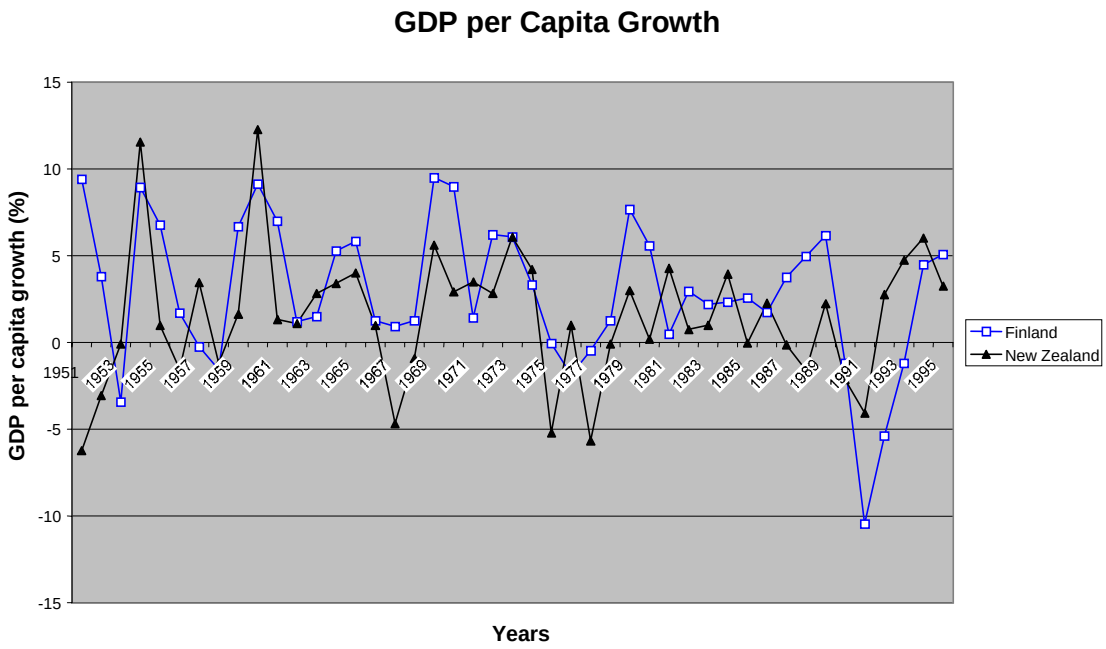


Figure 5 Source OECD, Penn World Tables

Annual growth rates for Finland and New Zealand are provided in Appendix 1, while Tables 2 and 3 below show average growth rates for the two countries for periods since 1960. Since 1975 the only period when New Zealand's growth has been higher than Finland's for any extended period was during the early 1990s.

Table 2: Average GDP Growth (%)

Years	New Zealand	Finland
1961-69	3.4	4.5
1970-74	5.6	5.4
1975-80	-1.3	2.7
1981-89	2.6	3.5
1990-93	1.9	-1.5
1994-98	2.3	5.0

Considering the post-war period as a whole (Table 3), Finland has grown faster than New Zealand by a comfortable margin.

Table 3: GDP Growth 1962-1998

Statistical properties	New Zealand	Finland
Average	2.46	3.37
Variance	14.3	10.2

GDP per capita

Figure 6 forms one of the prime focuses of this report. In 1950 New Zealand was clearly a long way above the OECD average[12] in terms of national income, with Finland slightly below average. New Zealand continued to enjoy higher than average national income throughout the 1950s, 1960s and early 1970s, coming back to the pack with a bump in the mid-1970s.

Since 1974, New Zealand's performance has been considerably weaker than most – it was not until 1984 that New Zealand managed to beat its 1974 per capita income level in real terms. Since then, growth has continued to be weak – between 1972 and 1992 its per capita income hovered between US$10,000[13] and US$11,500. Over the same period, the average OECD income improved from US$8,860 to US$12,190, an increase of around 38%.

[12] This is not strictly an average over the entire OECD. Countries that have joined the OECD in the 1990s have been excluded from this comparison.
[13] 1985 US dollars.

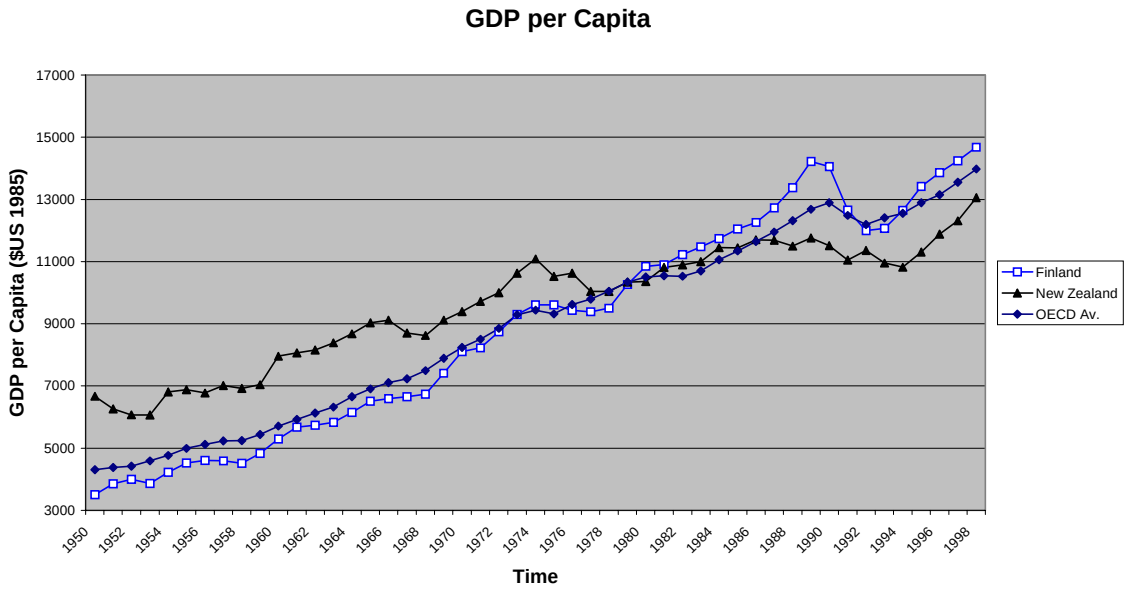


Figure 6 Source: OECD, Penn World Tables

Finland, although a little behind the average in terms of per capita income in the 1950s and 1960s, had by 1970 basically closed the gap. Although the Finns tended to oscillate around the OECD mean through the 1970s, their income accelerated in the 1980s and by 1989 had moved about as far above the OECD average as New Zealand's was below it.

However, Finland's bubble burst in 1990 and its dramatic effects can be seen at the extreme right of Figure 6. The Finnish economy has since picked up and the Finns are now again above the OECD mean in national per capita income.

In the European context, Finland has been an average performer for most of the post-war period and its GDP per capita matched the European average until 1979. Finland briefly enjoyed above-average European income levels during the 1980s before economic difficulties and the recession brought it back to the pack with a bump in the early 1990s.

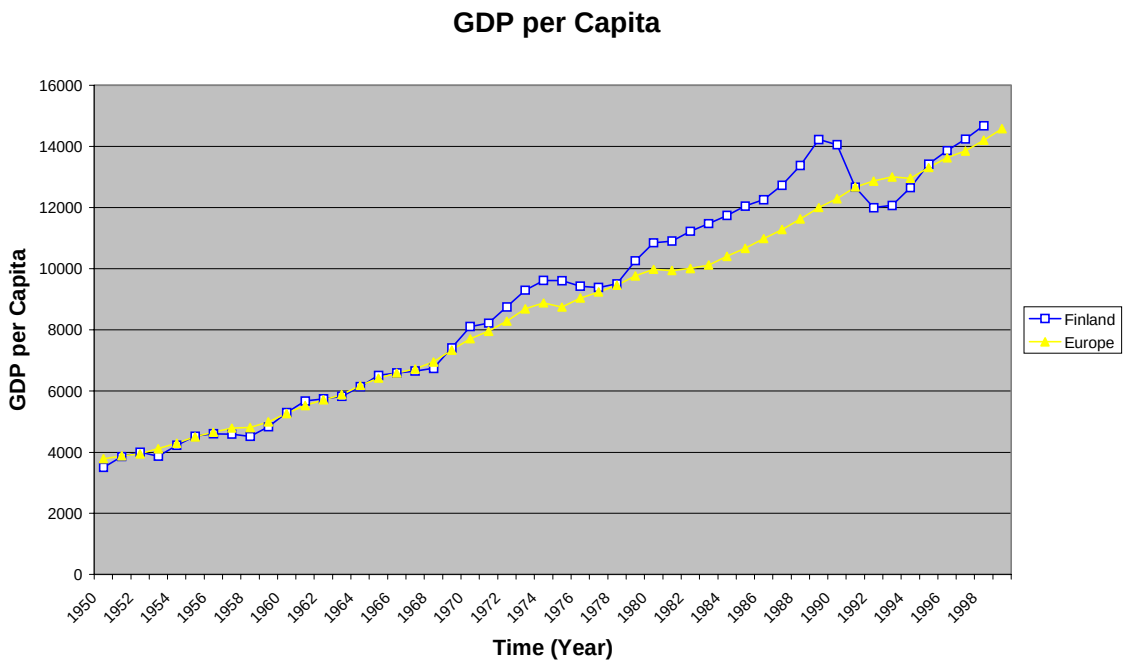


Figure 7 Source: OECD, Penn World Tables

However, if we restrict our attention to the three large Nordic countries (Sweden, Norway and Denmark) we see (Figure 8) that Finland has generally been poorer than its immediate neighbours. However, there has not been a great closing of this gap, so the catch-up story is not entirely convincing.

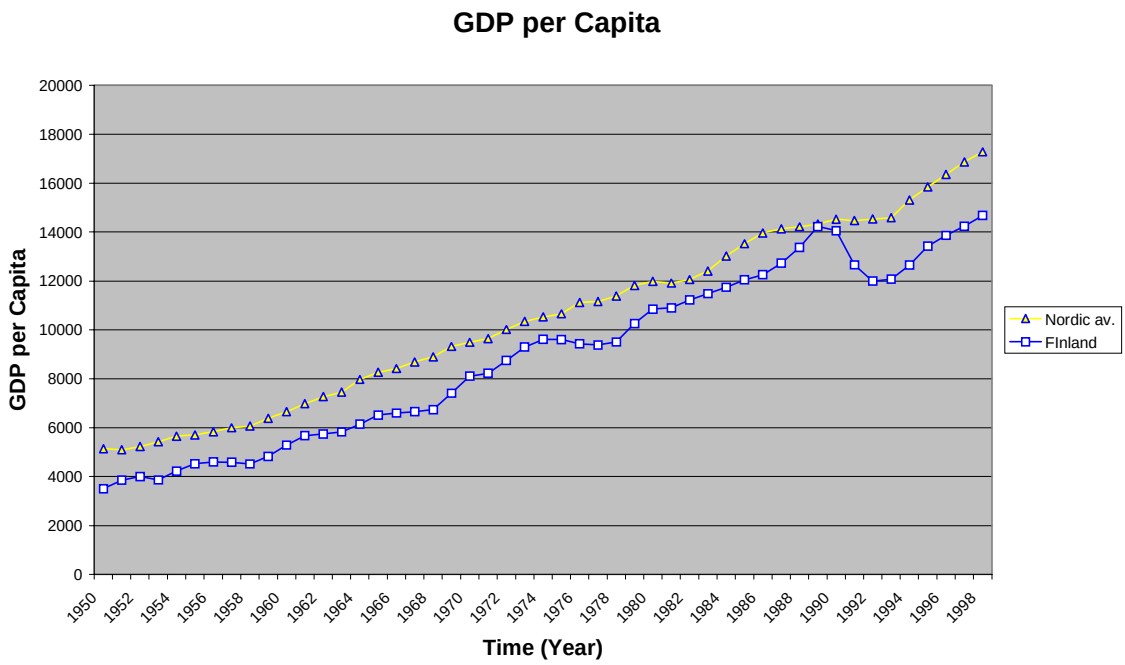


Figure 8 Source: OECD, Penn World Tables

Population

New Zealand's population has grown much faster than Finland's since the war. New Zealand's 1990 population was 1.92 times its 1950 population, while the corresponding ratio for Finland is 1.27.

This has implications for the relative economic performances of the two countries. Since GDP per capita is a common measure of economic welfare, New Zealand's comparatively rapid population growth means that the denominator of this variable has been growing faster than Finland's denominator. This means that New Zealand has to achieve greater net growth rates than Finland if it is to maintain parity in terms of GDP per capita.

Additionally, if this growth is the result of a higher birth rate (as opposed to higher levels of immigration) the age profile will differ between the two countries, with New Zealand's being more heavily weighted towards younger people. This may give rise to systematic income differences between the two countries because younger people usually earn less than older people.

This is consistent with the situation in New Zealand and Finland. Annual net migration to New Zealand has averaged around 5000 since the turn of the century, and for the post-war period accounts for only a small fraction of the 1.6% per annum growth in New Zealand's population. Most of the population growth in New Zealand is owing to high birth rates, and this may mean that GDP per capita is a measure that will systematically favour a country with a

population distribution such as Finland's over one with a population distribution like New Zealand's.

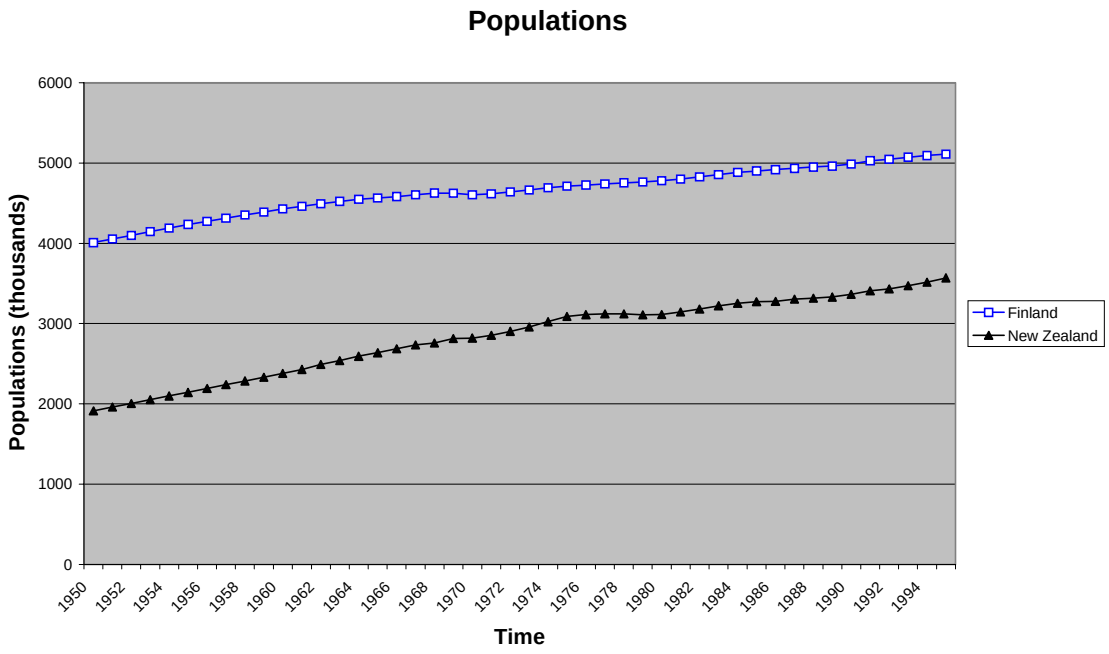


Figure 9 Source: OECD, Penn World Tables

Productivity

Macroeconomic data from 88 countries are compared in Bosworth et al (1995). Although the paper focuses on comparing the growth rates of different parts of the world (East Asia, industrialised countries, Africa, etc), it tabulates the growth rates of the individual countries, including Finland and New Zealand.

The methodology employed a combination of growth accounting and regression analysis. The study found that increases in total factor productivity had been remarkably small in industrialised countries and that the accumulation of capital – physical and human – had contributed most of the observed growth. Bosworth et al de-composed the growth records of these countries into four contributory factors:

1. Output per worker
2. Physical capital
3. Education
4. Factor productivity.

According to Bosworth et al, Finland and New Zealand have the following annual percentages of change in these factors:

Finland	Output/worker	Physical capital	Education	Factor productivity
1960-70	4.7	1.6	0.5	2.5
1970-80	2.6	1.0	0.9	0.7
1980-86	2.1	0.7	-0.2	1.6
1986-92	2.4	1.4	-0.2	1.2

Table 4 Source: Bosworth et al.

New Zealand	Output/worker	Physical capital	Education	Factor productivity
1960-70	1.2	0.5	0.1	0.6
1970-80	0.6	0.6	1.2	-1.2
1980-86	1.7	0.6	-0.1	1.3
1986-92	1.3	1.0	-0.1	0.4

Table 5 Source: Bosworth, et al.

The growth in output per worker in Finland is higher than New Zealand in every period considered, as are factor productivity and physical capital.

The OECD Economic Outlook gives annual percentage changes in total factor productivity (TFP) for the periods 1960-73, 1973-79 and 1979-97 (see Table 6).

Period	**Quantity**	**Finland**	**New Zealand**	**Small Country Average**
1960-73	Total factor prod.	4.0	1.3	2.8
1960-73	Labour prod.	5.0	2.1	1.1
1960-73	Capital prod.	1.4	0.6	1.3
1973-79	Total factor prod.	1.9	-1.5	5.0
1973-79	Labour prod.	3.2	-1.1	3.1
1973-79	Capital prod.	-1.6	-1.9	-2.8
1979-97	Total factor prod.	2.6	1.0	1.3
1979-97	Labour prod.	3.5	1.3	2.6
1979-97	Capital prod.	0.2	0.8	-1.2

Table 6 Source: OECD Economic Outlook (June 1998)

These values are a little different from those in Bosworth et al, but they show similar relative trends: Finland's TFP has been higher than the industrialised small country (in this case OECD) average throughout the period considered, and New Zealand has a worse than average record. Because this data finishes in 1997, it captures the Finnish recession and recovery. Again Finland outperforms both New Zealand and the industrialised small country average.

In the last period considered, Finland's average annual change in TFP is only bettered by Korea and Ireland. These three countries have experienced the

same basic TFP story for the same basic reasons: the creative replacement of old, low-tech modes of production by new, high-tech modes of production has essentially changed the industry structure in each of these countries.

Recent History

Finland achieved a solid growth rate between the mid-1970s and late 1980s, averaging 3.2% per annum in 1976-89. However, the dominant feature of the Finnish economic landscape of the last two decades is the recession in the early 1990s.

Causes of Recession

This recession had several causes, both domestic and external:

- Financial liberalisation in the mid-1980s created a set of incentives for people to become heavily indebted (for example, Finns faced negative real interest rates on housing through tax incentives and low bank lending rates).
- The collapse of bilateral trade with the Soviet Union at the start of the 1990s exacerbated the emerging Finnish crisis: exports to this region dried up, precipitating a dramatic rise in unemployment.
- Following this shock from the East, Finland's growth rate plummeted – bottoming out at more than -7% – with output decreasing by around 13% between 1989 and 1993. Domestic demand contracted substantially in response, imports plummeted and the Markka (the Finnish currency) fell by around 30% between 1989 and 1993.

Domestic Considerations

Financial liberalisation, especially the deregulation of the banking sector, created a credit-driven consumption and investment boom and an associated asset price bubble.

In spite of some increase in the average household real disposable income, private investment and consumption responded quickly to the economic slump, contracting by over 4% in 1991. House prices fell sharply, leading to substantial contraction in the construction industry (one of the hardest hit throughout the recession). Gross residential construction declined by 7% in 1990 and 22% in 1991. This decline arose from the need for financial consolidation owing to the high level of household indebtedness.

Business investment also decreased during the recession. The number of firms operating at full capacity dropped and stocks of finished goods were at their highest levels for almost a decade. A sharp decline in corporate saving reduced the availability of internal finance.

Corporate leverage had risen to historically high levels following financial deregulation: the ratio of gross corporate debt to GDP tripled between 1986 and the early 1990s. High real interest rates (approximately 10%) also added to the stress on corporate earnings.

These factors combined with falling demand and increased spare capacity to seriously constrict the corporate sector.

Collapse of Eastern Trade

Finland's bilateral trade arrangements with the Soviet Union came to an end at the end of 1990.

The system was based on five-year agreements with quotas balancing imports and exports. Imports consisted primarily of oil, purchased by Neste, Finland's state-owned oil company. Exports, coming from a range of private firms, were more varied.

The linking of exports to the oil price meant that the bilateral agreement acted as an automatic stabiliser, partly shielding the Finnish economy against oil shocks. Finland also seemed to price its exports under these agreements slightly more highly than it would have been able to on the international market.

The collapse had both demand and supply aspects:

- *Demand* – the rapid deterioration of the Soviet economy suddenly reduced demand for (perhaps slightly over-priced) Finnish goods. In addition, the collapse of the bilateral trade agreements allowed Soviet importers to use the revenue from exports to Finland to purchase goods from other countries.
- *Supply* – Finnish exporters became reluctant to export to the Soviet Union on the grounds that the end of the trade agreements increased their risk by removing Soviet state guarantees.

With the Soviet market offering weak profit opportunities and increased risk, Finnish exporters began to look elsewhere for markets. However, traditionally strong markets such as Britain and Sweden were also experiencing recessions, although the unification of Germany did offer some opportunities.

So while other markets were stagnant, trade to the East deteriorated significantly (by some 65%), and the total decline in manufacturing exports in 1991 amounted to more than 8%.

The textile industry was the heaviest hit, with few new opportunities presenting themselves and a large reduction in trade to the Soviet East leading to a decline of around 30% in 1991.

Over-capacity and cyclical weaknesses also hurt the forestry and engineering industries, the export shares of which fell by around 10% and 7% respectively.

The chemical and food industries, however, were relative success stories. Despite weaknesses in Western markets Finnish exports expanded even before the devaluation of the Markka and subsequent export-led recovery.

Year	**Timeline of the Finnish Recession**
1986	• Bank lending rates deregulated. Financial deregulation begins.
1987	• Financial deregulation combined with preferential tax treatment of housing fuels a credit boom that lasts until the end of the decade. This boom is built on high levels of household and corporate indebtedness.
1989	• Asset price bubble bursts towards the end of the year. • Soviet economy deteriorates as political crisis deepens.
1990	• Bilateral trade agreements with the Soviet Union – in place since 1948 – collapse. • Finnish exports to USSR decline by 65%, leading to an 8% decline in total exports. • Soviet Union disintegrates politically. • Finnish economy goes into recession.
1991	• Western European markets in recession. • Unemployment doubles from 3.5% to 7%. • Finnish output contracts by 7.1%.
1992	• Currency depreciation of 12% over 1991-92. • Markka floated in September 1992, generating a devaluation of 8%.
1993	• The peak of the recession. • Unemployment peaks at 19%. • Finnish output has contracted by 13% on the 1990 level – the largest recession in an industrialised country since the 1930s.
1994	• Following strong export growth, Finnish output begins to expand by the end of the year.

Table 7

Trade

Finland and New Zealand have traditionally exported and imported similar proportions of their economies.

In 1960 New Zealand exported 22.0% of GDP[14], while Finland exported 22.5%. Even by 1985 New Zealand and Finland were virtually level-pegging in the export share of their economies – New Zealand exported 30.8% of GDP while

[14] Historical Statistics, OECD, 1997.

Finland exported 29.6%. Since then New Zealand's ratio has hovered around 30%, while exports in Finland have boomed – since the recession – to nearer 40%.

Finnish exports and imports have grown at a faster rate than New Zealand's. Since 1961 New Zealand imports and exports have grown at an average annual rate of 7.3% and 7.0% respectively, compared with Finland's 9.0% and 10.0%.

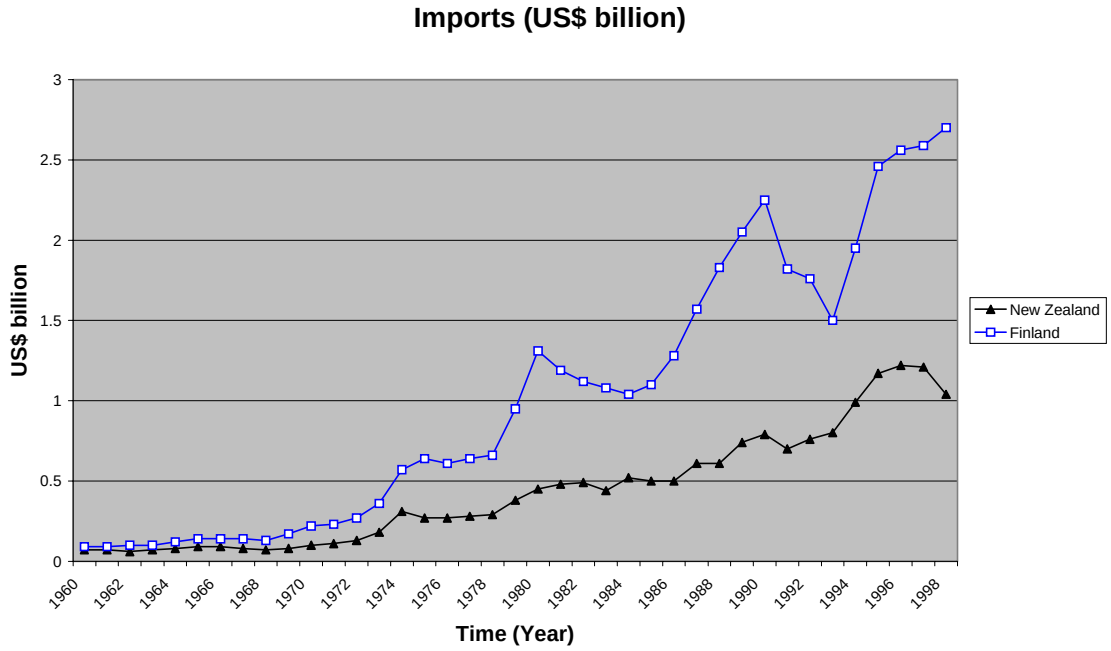


Figure 10 Source: OECD

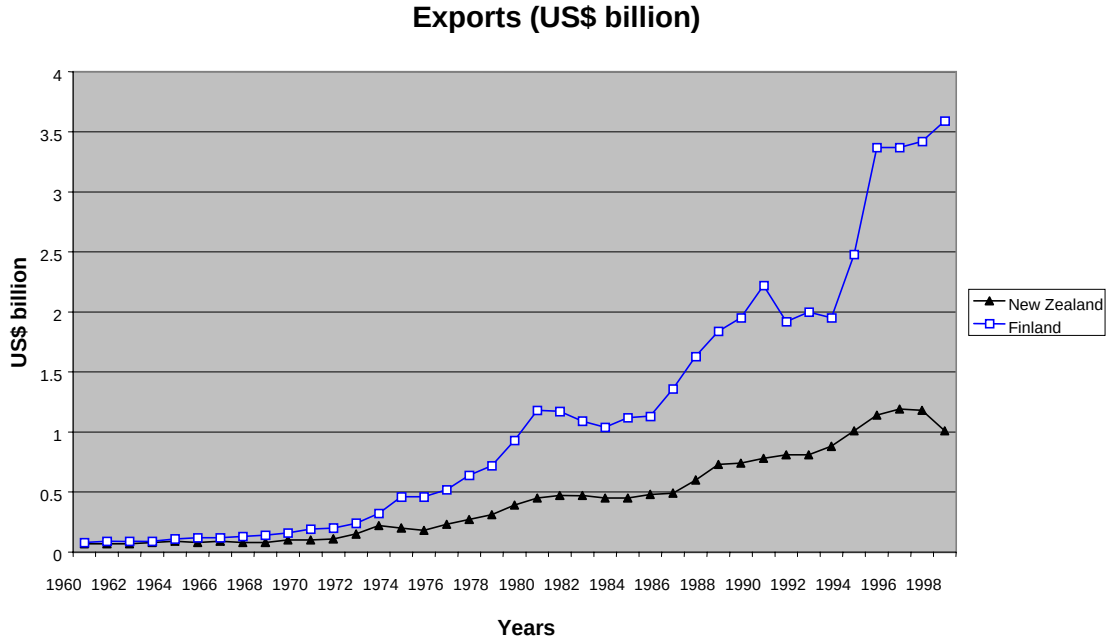


Figure 11 Source: OECD

The actual volumes of imports for Finland and New Zealand are plotted in Figure 10, with exports in Figure 11. New Zealand's performance since the Asian crisis shows up at the far right of these graphs, finishing on a weaker note than Finland. (Of course, if the series had ended in 1995, the outlook would have looked worse for Finland and better for New Zealand.)

The difference in trade data is presented in another way in Figures 12 and 13, where natural logs of trade are presented for the same period (1961-98). In addition to a vertical separation, there is a difference in slope, which attests to the consistently faster growth rate of Finnish exports and imports.

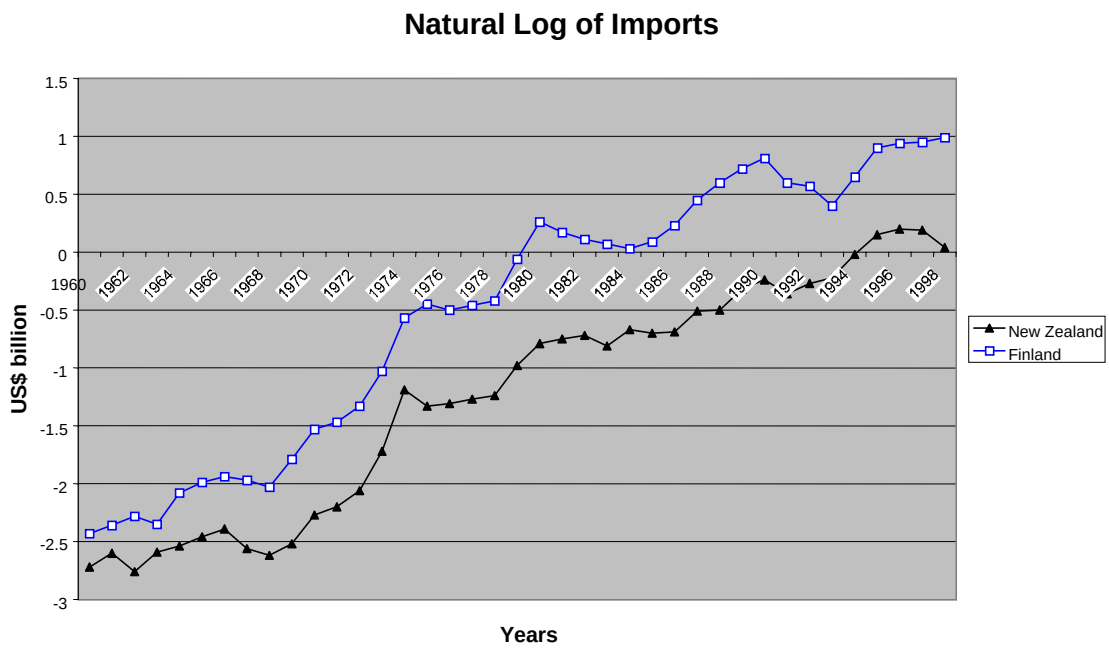


Figure 12 Source: OECD

This can be seen in a variety of ways. The lines can be seen as separated by a vertical step, corresponding to a time-invariant wedge in the coefficient of the exponential export (or import) function. Alternatively, the lines could correspond to an enduring temporal wedge, with New Zealand being on essentially the same track as Finland, with a 5-10 year delay.

The second interpretation is encouraged to some extent by Brian Easton's discussion in *In Stormy Seas*, in which he sees New Zealand as having transformed itself from a quasi-Argentine economy to a quasi-Finnish economy[15], in that despite the differences in average annual change in exports and imports (the slope of the logarithmic series) New Zealand has diversified its exports dramatically over the last two decades. In 1958[16] pastoral products accounted for 93.3% of New Zealand's exports. In 1996[17] the pastoral share of exports was down to 36%. In Finland, wood and paper accounted for around

[15] In Stormy Seas, p9-10.
[16] Source: New Zealand Yearbook 1960.
[17] Source; Statistics New Zealand Monthly Merchandise Trade data.

69% of exports in 1960[18]. Although this share has declined as other industries have grown, the higher initial homogeneity of exports in New Zealand is likely to mean that export diversification has played a greater role in New Zealand than in Finland. Clearly, it takes time to build expertise in new fields and this process of "getting up to speed" in new export industries may account for a part of New Zealand's post-war economic story.

New Zealand's exports were about as "diversified" (in the sense of the share of commodities in total exports) in the late 1970s as Finnish exports in 1960. Although only an impressionistic statistic, this supports the view that New Zealand is following a quasi-Finnish path, with a time-lag of around 15 years.

However, this view obscures several salient features of both countries' post-war trade stories:

- Finland's liberalisation of trade arrangements in the 1960s and 1970s, and New Zealand's slower moves towards doing this.
- The shock to Finland's trade at the end of the Soviet era and the shock to New Zealand's trade by Britain's accession to the European Community.

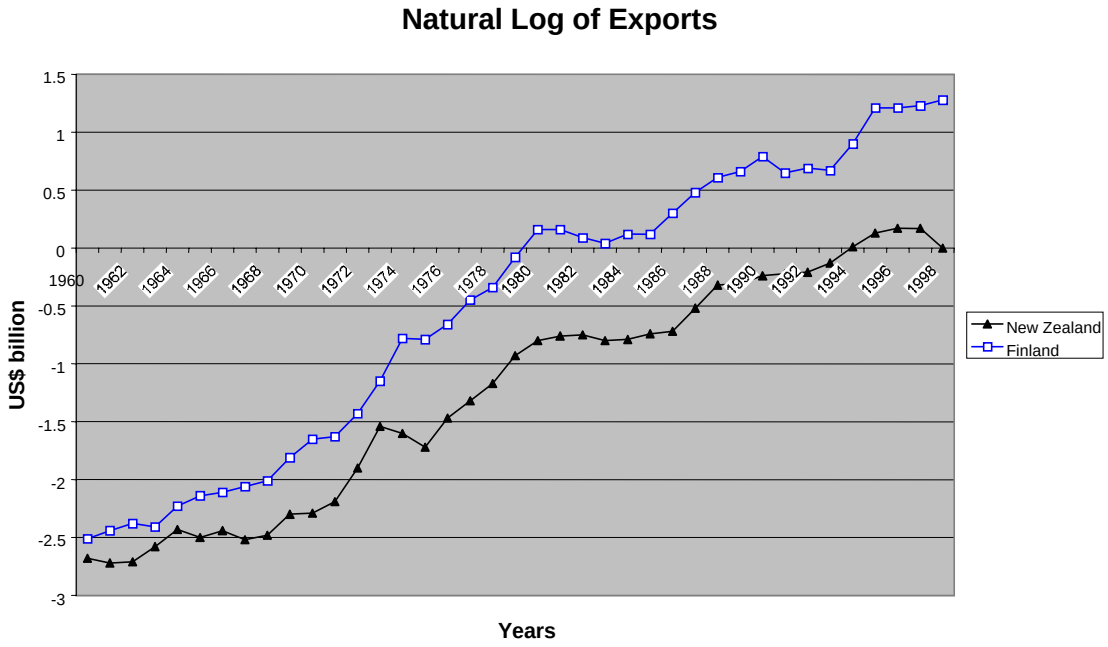


Figure 13 Source: OECD

The wedge between Finland's and New Zealand's trade stories is widening in exports faster than in imports. In the aggregate series, the shock of the early 1990s appears greater in Finland's import sector than it does in exports, with imports dropping from about US$2.5 billion in 1990 to about US$1.5 billion in 1993-94. The drop in export values was approximately half this magnitude, although the "bounce-back" has been in the order of US$1.5 billion.

[18] Source: Finnish Foreign Trade Statistics.

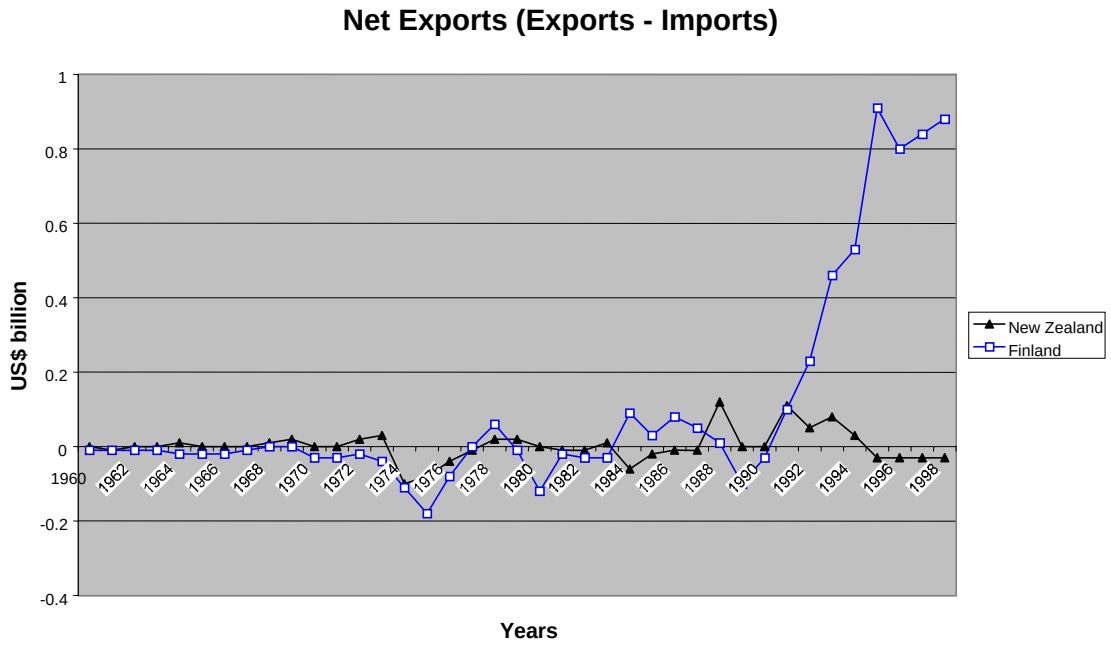


Figure 14 Source: OECD

This has led to an interesting shift in Finland's net export position. Whereas New Zealand has remained near zero in net export terms, the early 1990s recession precipitated what appears to be an enduring change in Finland's trading profile. This can be seen in the net exports figure, in which the Finnish track departs from "near zero" during the early 1990s, accelerates until around the end of 1993 and then stays approximately constant at around US$0.8 billion.

Exports by Region

Since the Second World War, the bulk of Finland's trade has been with countries that now comprise the European Union.

In fact, in spite of Finland's placatory policies towards the Soviet Union and its allies, Finland's share of trade with Western Europe has actually dropped since the end of the Cold War. This is largely the result of Finland's expansion into other markets; Figure 15 shows that Finland's exports to other industrialised countries have grown about three-fold since 1970.

The former Soviet Union consumed a large proportion of Finland's exports (21% in 1980), and Finland lost a lot of this market when the Union collapsed. Exports to Russia still comprise around 8% of all its exports, but this is significantly down on Cold War figures. However, exports to other former members of the Soviet Union have grown. In particular Finland has been developing an interesting and fertile relationship with Estonia, its nearest Baltic neighbour.

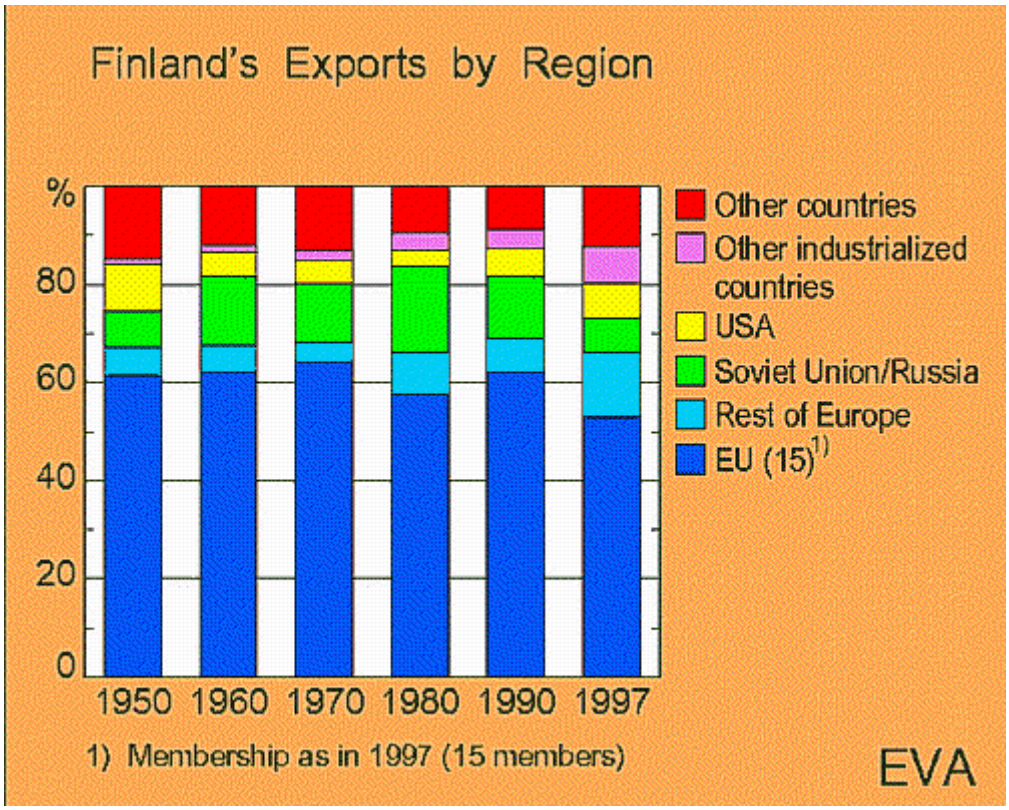


Figure 15 Source: Economic Survey, Ministry of Finance, Finland.

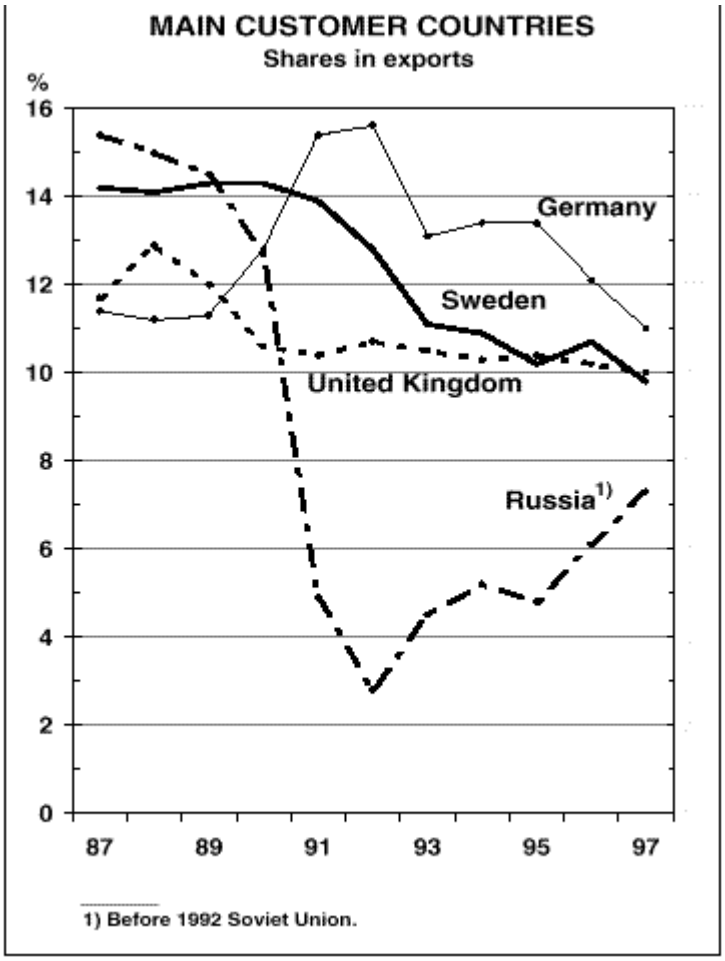


Figure 16 Source: Economic Survey, Ministry of Finance, Finland.

Figure 16 shows a more resolved picture of the destination of Finnish exports, and plots the annual changes in the export shares of Finland's top four export destinations for the last 10 years.

The rapid collapse – and subsequent mild recovery – of eastern trade is the most dramatic feature, but also evident is the gradual diminution of trade with Britain, Germany and Sweden. This is the result of increased trade with North America and, especially, Asia through the period of very high growth in that region before 1997. Export prospects to this region have weakened and Finnish exports are not expected to increase at the same fast rate – 11% per annum[19] – as since 1994.

[19] Economic Survey 1998, Finnish Ministry of Finance.

Composition of Export Industries

Finland's exports by industry in the period since the Second World War tell an interesting story. Over this period the metals and engineering industry has increased its share of the export sector enormously – an approximately five-fold expansion in 37 years. Consequently, the shares of the other export industries have contracted in relative terms, with the exception of the chemical industry – another high-technology sector.

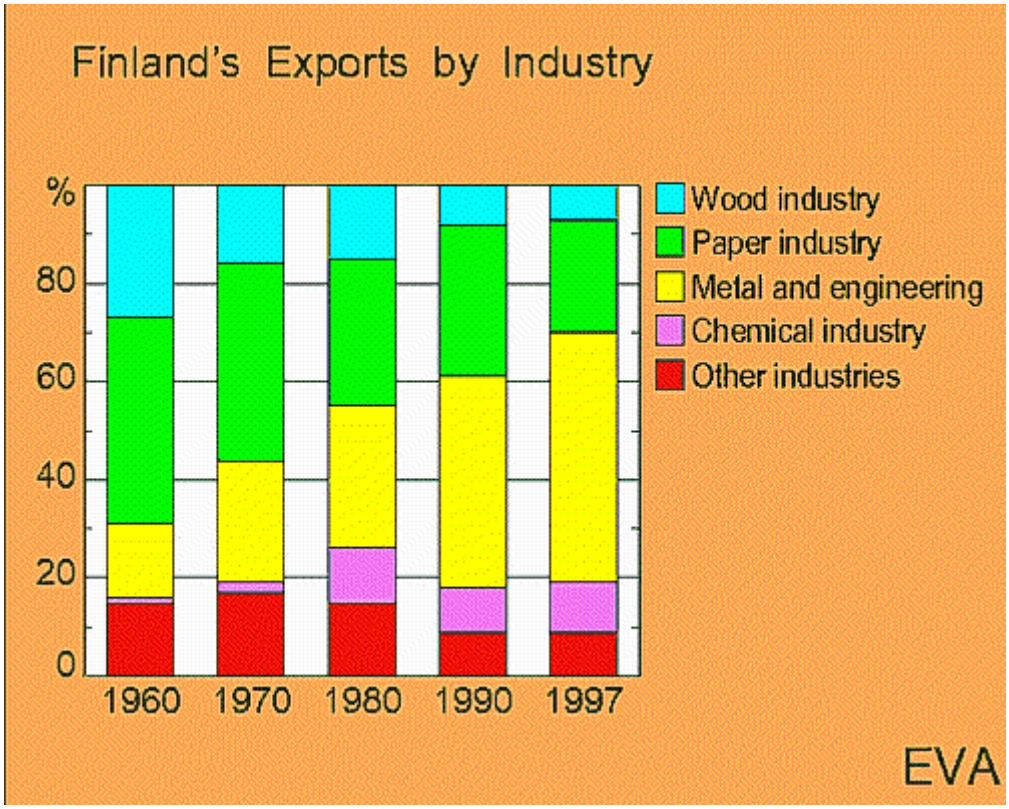


Figure 17 Source: Economic Survey, Ministry of Finance, Finland.

The rapid rise of metals and engineering can be seen more clearly in Figure 18. The vast majority of the industry's increase has occurred since 1991, but this growth is not expected to be sustainable – demand is expected to decline as markets mature, and output capacity within Finland is expected to reach its limits in the next couple of years, with further expansion likely to happen overseas. A large part of this growth is due to the Nokia Corporation (see page 44).

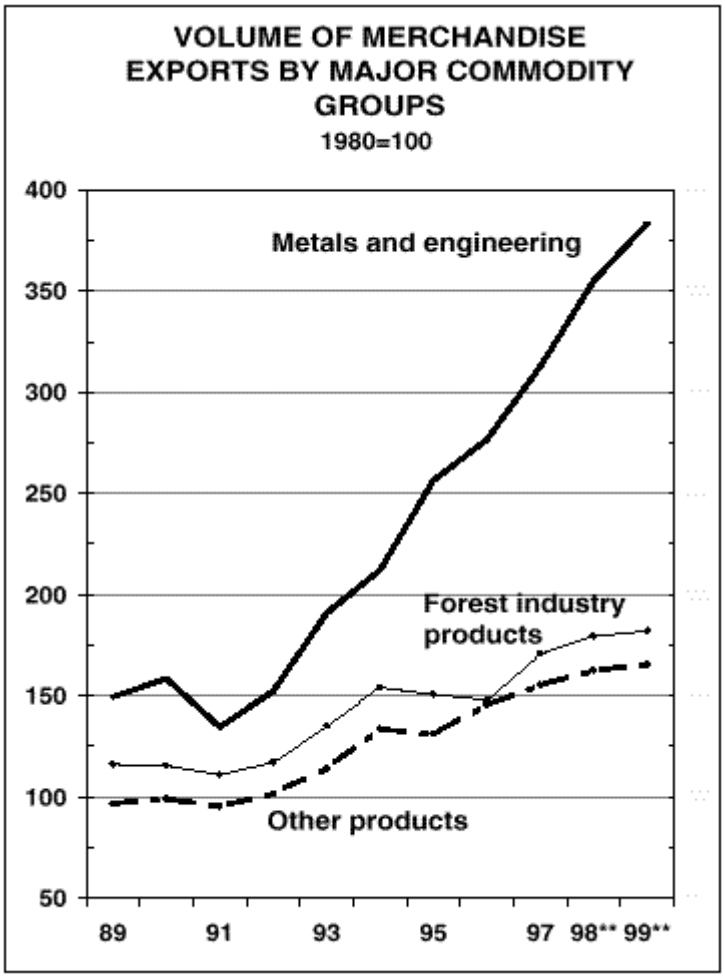


Figure 18 Source: Economic Survey, Ministry of Finance, Finland

Table 8 shows export data for Finland's recent past (covering the recovery period). The metal and engineering sector – specifically the sector in which value is added to basic metals – now forms the majority share of Finnish exports, with the traditional mainstay, forestry, now second. This reflects Finland's successful diversification away from resource-based exports into high-technology, value-added exports.

	share, %	change in volume, %					change in price, %				
Forest industry	30.7	-2	-2	15 1/2	5	1 1/2	14 1/2	-6	-1	1 1/2	0
wood industry	7.2	-2	0	9	1	0	-3	-6	12	-2	- 1/2
paper industry, printing and publishing	23.5	-2	-2	18	6	2	21	-6	-5	3	0
Metal and engineering industry	50.9	21	8	13	13 1/2	8	1/2	4	2 1/2	1/2	1/2
basic metal industries	7.6	-5	15	7	6	4	15	-12	5	-1	-1
metal product and machinery industries	43.3	29	6	14	15	9	-4	8	2	1/2	1/2
Others	18.4	-2	11	7	4 1/2	2	3	6	2 1/2	-2	1
agriculture and forestry	1.2	-21	-6	17	-10	-8	-8	41	-22	-15	-5
food, drink and tobacco industries	2.6	-12	20	9	3	3	5	5	5	1	2
textile, clothing and leather product industries	2.0	-7	10	12	6	3	8	1	-2	1	1
chemical industry	9.9	-5	13	6	6	3	6	3	7	-2	1
Exports of goods[1)]	100.0	7.3	5.6	12.7	9.0	5.0	6.4	0.2	1.3	0.5	0.5
Exports of goods and services[1)]		8.2	6.2	12.8	8.7	4.7	5.0	-0.5	0.3	0.8	0.7

1) Export prices of goods in 1995-1997 according to the National Board of Customs. All other prices in 1995-1997 according to Statistics Finland.

Table 8 Source: Economic Survey, Ministry of Finance, Finland

Finland as a Gateway

Although Finland lost a large share of its trade with the Soviet Union in 1990, it has begun to rebuild trade with its eastern neighbours, particularly through productive links with Estonia. The Estonian and Finnish languages are members of the Uralic family and this has helped diminish communication barriers.

Finland's relationship with Estonia allows Finnish firms access to a reasonably skilled workforce with low labour costs. As a result, some firms have been locating production facilities in Estonia, which has a beneficial spill-over for Estonia in building skill capability and drawing Estonia into the international market economy.

Another aspect of the gateway trade is re-exports. Finland now exports tropical fruit to Russia; a reflection of its experience in trading with other market economies, which means it has been able to adapt quickly to meet Russian demand for a variety of goods. Finnish firms hope to consolidate their gateway role as Russia develops over the next decades.

Current Account

Finland currently runs a current account surplus of around 5% per annum. The accrual of surpluses has been helped by falls in import prices and by the Finnish enthusiasm for investing overseas. Direct investment in foreign companies has risen dramatically since the recession and is currently around 22 billion Markka (NZ$6.7 billion). Foreign investment in Finnish firms has also risen in the last decade, and is now around 8 billion Markka (NZ$2.4 billion).

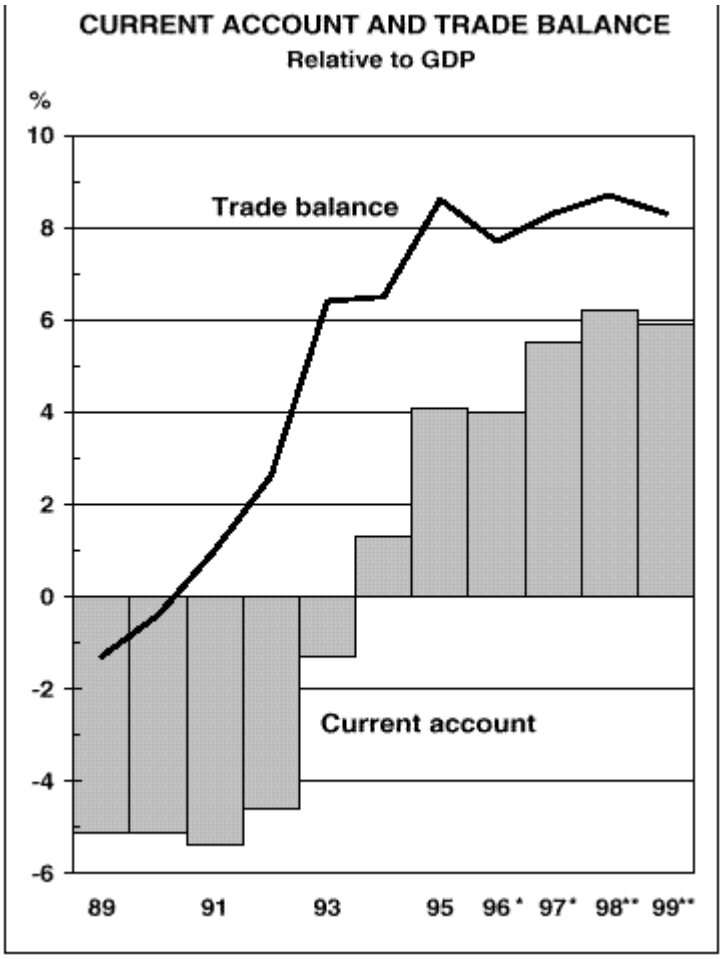


Figure 19 Source: Economic Survey, Ministry of Finance, Finland.

Sectoral Breakdown

Output

Table 9 shows the decline in primary production in Finland since the war, a phenomenon which has occurred to greater or lesser extents throughout the industrialised world. A similarly ubiquitous phenomenon can be seen in the growth of service industries, which increased from 34% to 60% of economic output in Finland between 1950 and 1995. Industry and construction have remained reasonably constant throughout the post-war period after an immediate post-war expansion (owing to reparations and repairs to the Finnish infrastructure).

Main Components of Total Output, Finland					
	1950	1960	1970	1980	1995
Primary production	26	18	12	10	4.6
Industry and construction	40	38	40	39	35.6
Services	34	44	48	51	59.8
Total	**100**	**100**	**100**	**100**	**100**

Table 9 Source: National Accounts, Statistics Finland

New Zealand's experience has been different. In the years between the end of the Second World War and Britain's entry into the European Community in 1973, New Zealand had a large, guaranteed market for its produce. This meant that New Zealand continued to rely heavily on its primary produce, as it had done for most of its history.

Only since the 1970s has New Zealand faced pressures to diversify its produce and seek new markets. There is some suggestion that the economic policies pursued in the 1970s and early 1980s retarded the development of diverse, internationally competitive industries, and it has only been in the last 15 years that New Zealand has begun to really compete in non-agricultural global markets.

Adjustment in the wake of Britain's accession to the European Community is often given as a reason for New Zealand's sluggish performance over the last 15 years – it takes time to learn the new skills and management techniques appropriate to international free trade.

Main Components of Total Output, New Zealand					
	1952	1960	1970	1980	1995
Primary production		22.5	20.7	15.5	10.7
Industry and construction		31.8	34.8	32.0	32.2
Services		45.7	44.5	52.5	57.1
Total	**100**	**100**	**100**	**100**	**100**

Table 10 Source: New Zealand Yearbooks

To some extent the different experiences of Finland and New Zealand have meant they have embarked on different trajectories. While Finland was pushed into industry and manufacturing by its post-war situation, New Zealand was encouraged into further reliance on commodity production.

These different forces have driven the economies in slightly different directions, although these differences are perhaps masked by the broad classification of economic "sectors"; much of Finland's recent growth has been in the high-technology service sector – particularly in telecommunications and electronics – while these sectors have not (yet) grown as vigorously in New Zealand.

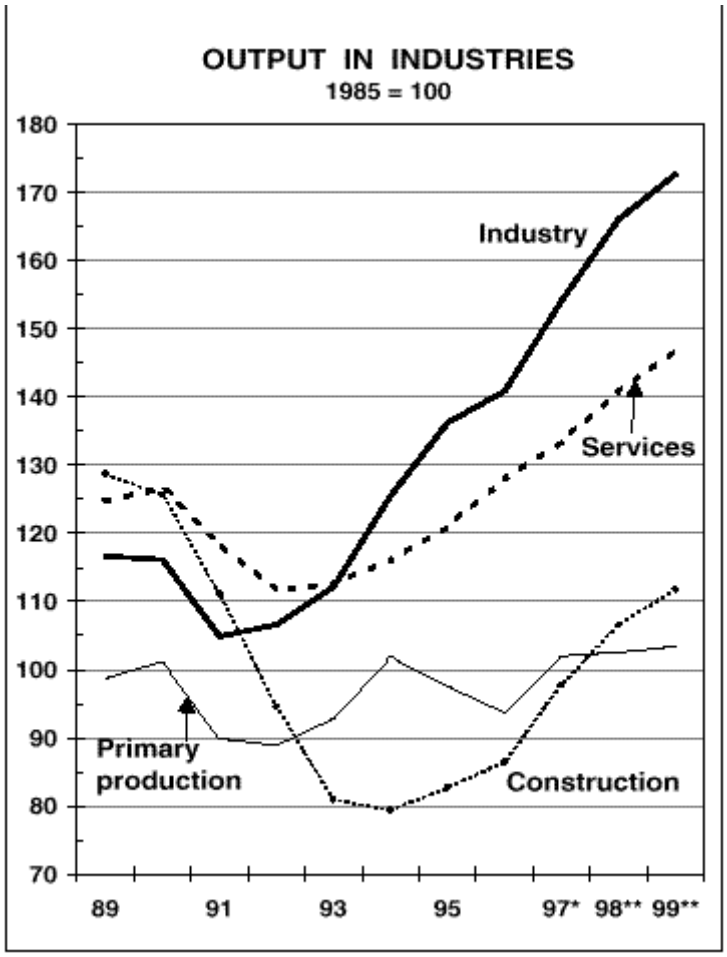


Figure 20 Source: Economic Survey, Ministry of Finance, Finland.

8. Value added by kinds of economic activity

	1997*	1995	1996	1997*	1998**	1999**	Average 1997/87
	share, %	change in volume, %					
Industries	79.5	5.4	4.1	7.2	6 1/2	4 1/2	1.3
agriculture, hunting and fishing	1.5	-10.1	-0.4	6.0	-4 1/2	-2	0.2
forestry	2.6	1.7	-7.1	11.6	5	3	1.4
mining and quarrying	0.4	4.8	-0.4	11.5	-17	18	2.1
manufacturing industries	26.4	9.6	3.0	10.2	8 1/2	4	3.2
electricity, gas and water supply	2.6	-1.5	8.9	-0.1	4	2	2.5
building construction	4.7	4.4	5.4	17.2	11	5 1/2	-4.2
land and waterway construction	1.7	3.5	2.5	2.1	2	2 1/2	-1.2
wholesale and retail trade, restaurants and hotels	11.1	3.6	3.8	5.6	5 1/2	5	-1.9
transport, storage and communication	8.9	5.6	5.7	9.3	7 1/2	7	3.6
financing, insurance, real estate and business services	19.8	4.1	7.1	1.0	5	4 1/2	1.6
community, social and personal services	2.7	3.7	5.1	4.1	3	2	0.2
less imputed bank service charges	-2.8	-2.0	2.6	5.9	4	-1	0.4
Government services	18.4	1.5	1.9	1.6	1	1/2	0.0
Other activities	2.1	2.5	0.8	3.5	2	2	0.4
GDP in basic values	100.0	4.7	3.7	6.1	5.4	3.9	1.0
GDP at market prices		5.1	3.6	6.0	5.5	4.0	0.7
Employment in whole economy(1)		2.0	0.8	2.5	2.6	1.9	-2.4

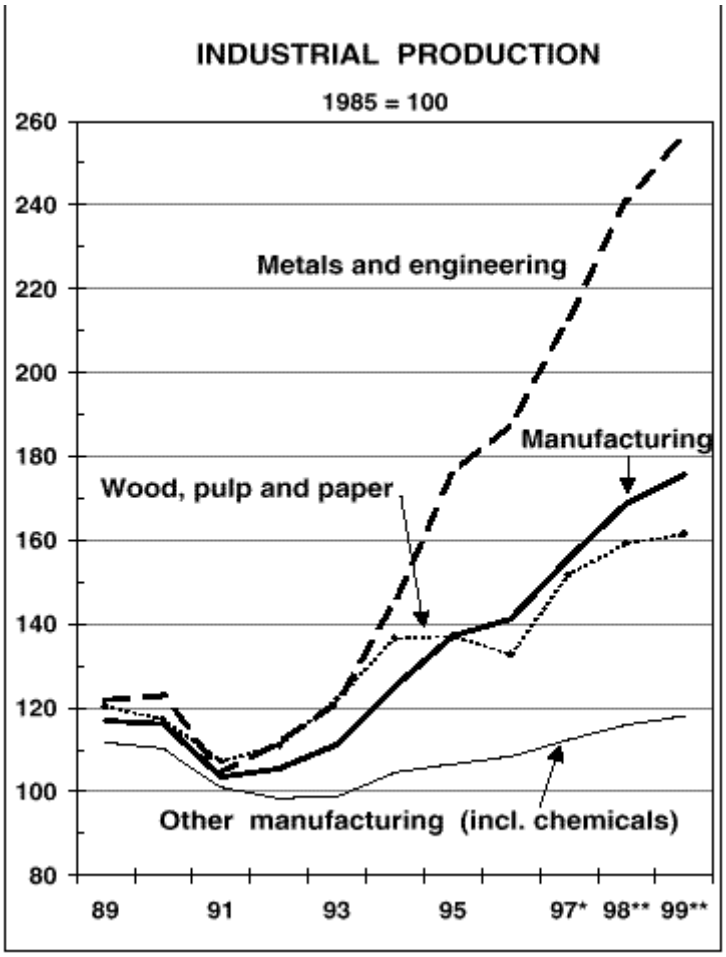
(1) In terms of man-hours.

Table 11 Source: Economic Survey, Ministry of Finance, Finland.

In terms of the value added by different kinds of economic activity (see Table 12), the best value-added growth over the decade 1987-97 was in communications and manufacturing. The largest contraction was in construction, which, as noted before, was hit very hard by the recession.

Industry

Figure 21 shows the spectacular growth in the metals and engineering sectors in Finland during the 1990s. While manufacturing as a whole has increased by



around 80%, the metals and engineering sector has grown by about twice this amount.

Figure 21 Source: Economic Survey, Ministry of Finance, Finland.

Much of this growth has been due to the burgeoning telecommunications industry and the Nokia Corporation, which has net sales (1998) of around US$8 billion. Nokia has averaged growth of around 25% per annum since 1994 and possesses around 20% of the international mobile phone industry (the other big players being Ericsson and Motorola).

The forestry sector has also posted strong growth of around 60% over the same period, while growth in the chemical industry has been more modest at around 20%.

Nokia Corporation

Nokia Corporation has contributed significantly to Finland's successful recovery.

Nokia was founded in 1865 as a forestry enterprise in south-west Finland, obtaining its name from the river on which its sawmill was based. In 1966 the company merged with Finnish Rubber Works and Finnish Cable Works to form the Nokia Corporation. It was initially a diversified conglomerate, involved in paper, rubber, chemicals and cables, entering the telephone industry in the 1960s.

The groundwork for telecommunications was laid in the 1960s, when Nokia researched the field of radio transmission in its electronics department. In the late 1970s, mobile phones and telecommunications infrastructure products were developed for both domestic and international customers. Nokia really began to focus on telecommunications as its core business in the 1980s, and this has borne fruit this decade when it has become one of the world's leading mobile telecommunications companies.

Since 1992, Nokia has divested most of its non-core operations and has concentrated on telecommunications and mobile phones. It has become a global leader in supplying systems for mobile and fixed networks, which accounts for around 30% of its turnover. Another 30% of turnover comes from multimedia, interactive satellite and cable terminals and PC and workstation monitors, as well as accessories and components for mobile phones.

The other 40% of Nokia's turnover comes from Nokia Mobile Phones, which is currently the second largest manufacturer of mobile phones in the world (and the largest in Europe).

Partly because of the seeding by its development units in the 1970s and 1980s, Nokia is now a technological front-runner in cell-phone technology. For example, the company was the first to introduce cell-phones compatible with all digital standards. Over a quarter of its 32,000 employees are actively involved in research.

The diversification from rubber and cable company to telecommunications giant had several aspects. Even before the 1960s the Finnish Cable Company had been involved in making cables for the Finnish telegraph and telephone network. In 1960 the company set up an electronics department to take advantage of emerging technology in electronics. This was a good time to be involved because the dispersion of semiconductor technology meant that most players faced similar learning curves with the new technology.

The then president of the company, Björn Westerlund, made sure it had good relationships with universities and colleges and was enthusiastic about hiring scientists and inventors, while the head of the electronics department had a clear idea of how to turn the ambitious blueprints into goods that would work in the marketplace.

In 1967 Nokia adopted the pulse code modulation (PCM) system, which was the latest available technology in telecommunications. Nokia Corporation attributes much of its recent success to the strategic decision to enter the digital age early. Work on wireline and microwave transmission and mobile radio technology – which had export markets in Scandinavia and the Soviet Union– continued throughout the 1970s.

There are about half a dozen aspects in the liberalisation of telecommunication markets which are believed to have been significant in the success of Nordic telecommunications firms:

- The erosion of the monopoly power of telecommunication companies through the establishment of new operators.
- The complete liberalisation of the market for subscriber equipment.
- The harmonisation of technical standards to reduce non-tariff barriers to trade.
- The opening of national markets through the legal requirement to internationally tender all public procurement above certain amounts.
- Changes in corporate culture through increased competition.
- Increased separation of service provision and service regulation.

All six are consistent with current New Zealand policy, although it is likely that the third would not receive the attention in New Zealand that it has in Finland, where there is a considerable emphasis on harmonisation.

From the Nokia website:
“One of the reasons for Nokia's strength in telecommunications is that Finland, unlike many other countries, has always encouraged competition in the industry. In the 1960s and 70s most European operators still purchased their switches from national suppliers and the expensive research needed was in the hands of just a few companies. In the Finnish market a unique competitive situation reigned. Since the country's first telephone connections were established in the 1880s there have been several operators in Finland. Neither they nor the Finnish PTT (Post, Telephone and Telegraph Administration) automatically bought their equipment from national suppliers. Since entering the telecom markets, tough international competition and demanding customers have helped Nokia constantly develop its businesses and products.“

Table 12 presents Finnish industrial production on a finer scale. The first and last columns are probably the most interesting aspects for current purposes – the 1997 shares of production and the 1997-87 ratios of production.

It can be seen that the fastest growing sector of industry – by far – has been electronics and electric products. Output in 1998 grew by 22% overall, while output in telecommunications grew by a staggering 45%. Growth in demand has been good globally, but capacity limits and shortages of skilled labour – despite Finland's world-leading production of scientists and engineers – looks set to impose limits on the growth of these sectors within Finland.

Generally, growth has been stronger in the high value-added sectors than in the commodity sectors. The basic metals sector has seen good growth, but the Finns are not optimistic about this sector in the long run as profitability is expected to fall with sinking prices over time.

Table 12 Source: Economic Survey, Ministry of Finance, Finland.

6. Industrial production[1)] and employment in industry

	1997*	1995	1996	1997*	1998**	1999**	Average 1997/87
	share, %	change in volume, %					
Manufacturing	89.9	9.6	3.0	10.2	8 1/2	4	3.2
forest industry	18.0	0.4	-3.2	14.4	5	1 1/2	2.9
wood	4.8	-2.2	1.6	13.6	4	1/2	1.5
pulp and paper	13.2	1.5	-5.2	14.7	5	2	3.5
metal and engineering industry	42.6	21.2	6.5	13.5	13 1/2	6 1/2	6.4
basic metal industries	5.2	6.5	3.8	6.5	7	3	4.9
machinery, metal products, vehicles	21.2	16.6	2.2	6.8	2	0	1.3
electronics and electric products	16.1	31.4	11.9	21.8	24	12	15.9
chemical industry	8.9	2.2	2.4	3.5	4	2	2.6
other manufacturing industries	20.5	1.8	1.4	3.8	3	2	-1.0
foodstuffs	7.9	1.2	2.9	2.2	2	2	1.2
textiles, clothing, etc.	2.4	-4.0	-0.1	1.1	-3	-2	-5.9
printing and publishing	5.6	4.5	-1.2	2.1	4	2	-1.2
building materials	2.7	0.6	5.2	12.8	8	4	-2.1
other products	1.9	5.6	-1.7	6.1	2	1	-1.0
Mining and quarrying	1.2	4.8	-0.4	11.5	-17	18	2.1
Electricity, gas and water supply	8.8	-1.5	8.9	-0.1	4	2	2.5
Total industry	100.0	8.6	3.4	9.4	8	4	1.3
Employment in industry (2)		4.6	-0.3	3.8	3 1/2	1/2	-3.3

(1) According to the National Accounts.
(2) In terms of man-hours.

In spite of modest recent growth in the chemical industry, the Finns seem optimistic that this has been due to turbulence in the oil industry and that the chemical industry should be able to flourish in the long run.

Growth has been negative in most of the “other” categories, except food, which has been aided during the recovery by the “gateways” opening up to the East. In particular the clothing and textile sector has been hit hard over the last decade, especially since the collapse of trade with the Soviet Union (which was the destination for much Finnish clothing).

Services

The movement away from the primary sector into the service sector has been a common phenomenon throughout the industrial world since the end of the Second World War. Finland shares this trend with most countries, including New Zealand (see Tables 9 and 10).

However, Finland’s recent past (Figure 22, Table 13) masks Finland’s success in services because the 1990s’ recession shows so strongly in that sector. Figure 22 shows all the plotted sectors sinking in terms of their output between 1990 and the mid-1990s.

Some of these sectors have taken longer than others to recover – generally the high-tech, high value-added end of the service spectrum has bounced back more quickly than the low-technology sectors, and this is reflected in the column at the far right of Table 13, which shows that many service sectors had not recovered to their 1980s’ boom level even by 1997. However, as Finland shakes off the last of the effects of the recession, the service sector is expected to grow by around 10% in the next year or two.

	1997* share, %	1995	1996	1997*	1998**	1999**	Average 1997/87
		change in volume, %					
Trade	22.0	3.7	3.9	5.6	6	5	-2.2
retail trade	7.5	2.1	4.3	3.1	4	3 1/2	-1.2
wholesale trade	11.1	3.1	2.1	5.5	6	4 1/2	-3.2
car sales and service stations	3.4	9.3	7.8	11.0	9	8	-1.6
Hotels and restaurants	4.0	2.9	3.5	5.6	4	4	-0.4
Transport	20.9	5.6	5.7	9.3	7 1/2	7	3.6
transport and storage	15.0	4.6	3.3	5.7	5	4	2.9
post and telecommunications	5.9	7.9	11.4	17.2	12	12	5.4
Finance and insurance	7.5	2.7	17.2	-11.9	8 1/2	8	-1.3
Ownership and renting of dwellings	22.2	1.4	2.9	2.5	2 1/2	3	3.1
Other real estate services	3.7	9.0	4.3	1.3	3	3	4.3
Business services	13.2	7.4	7.1	10.2	7	5	1.0
Community, social and personal services	6.5	3.7	5.1	4.1	3	3	0.2
Total	100.0	4.3	5.8	4.2	5 1/2	5	0.9
Employment(1)		2.3	2.8	2.1	3	3	-1.8

(1) In terms of man-hours.

Table 13 Source: Economic Survey, Ministry of Finance, Finland.

Value added in private services increased by 20% between 1994 and 1998, although some areas – such as commerce and financial intermediation – continue to drag the chain. Much of the slowness in some sectors is due to the gradual recovery of domestic demand for these services in the post-recession years.

Transport and communication services have grown faster than any other service sector, reflecting the blossoming of Finnish telecommunications. This trend is expected to continue into the future as telecommunications strengthens. Computer services, business services, construction technology, advertising and security services are also growing robustly towards the end of the decade.

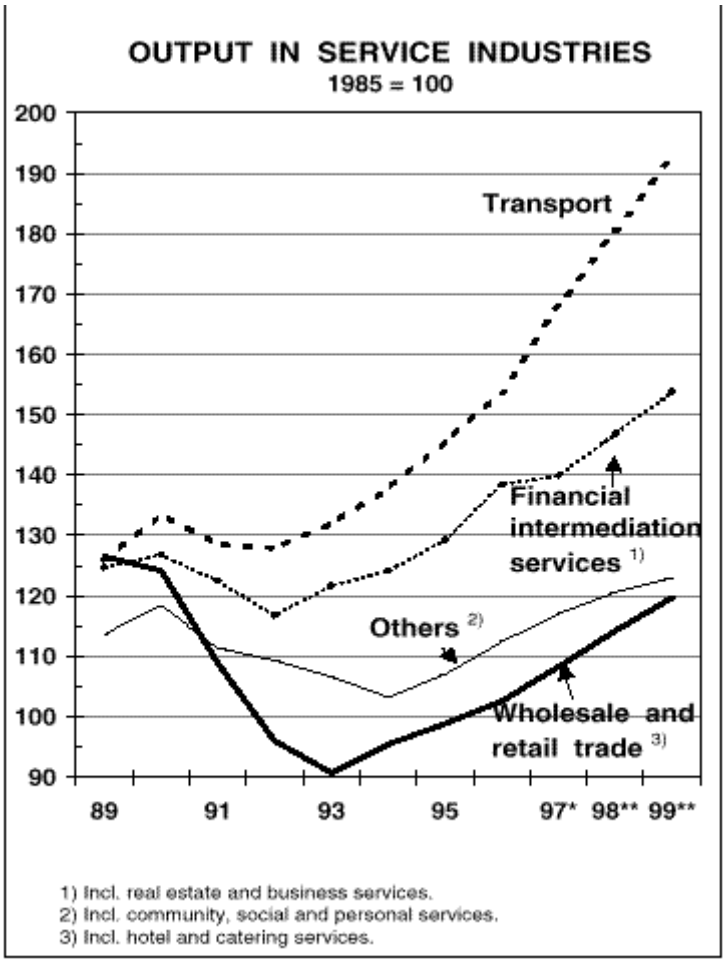


Figure 22 Source: Economic Survey, Ministry of Finance, Finland.

Industrial Structure

Finnish authorities express some concern that their history and culture have not supported entrepreneurship. This is because the large-scale industrialisation that has taken place over the past 50 years has often been associated with large, often government, firms. A culture of "going out on your own" does not seem to have developed to the level the Finns would have liked.

Table 14 shows Finland's industrial structure in firm size and employment. New Zealand has more firms at all sizes than Finland does. The fourth column presents the ratio (in percentage form) of the number of New Zealand firms at each size to the number of Finnish firms at each size. The final column then weights these ratios by the average ratio of New Zealand firms to Finnish firms to see – relatively – the differences in composition between the sizes of firms in each country.

Firm size	Finland	New Zealand	Ratio NZ/Fin	Weighted ratio
0-10	190,931	224,720	117.7%	100.0%
10-49	10,128	15,955	157.5%	133.8%
50-99	1082	1429	132.1%	112.2%
100+	1217	1276	104.8%	89.1%
Totals	203,358	243,380	117.7%	100.0%

Table 14 Sources: Statistics Finland, Statistics New Zealand.

Compared with New Zealand, at least, the Finnish authorities do appear to have a point: New Zealand has more than half as many firms in the 10-49 employee range as Finland. Even when we consider that New Zealand simply has more firms than Finland, we can see there are proportionally a third more firms of this size within the New Zealand economy than there are in Finland.

Only at the largest scales in terms of firm size do we see anything like aggregate parity, and this implies that there are proportionally fewer large New Zealand firms than large Finnish firms. And the largest of Finnish firms are quite large – Nokia employs 32,000 people (worldwide), while New Zealand's largest private sector employer is Telecom, with about 9000 staff.

Finland is particularly anxious about the number of small and medium-sized enterprises (SMEs) – that there are not enough of them and that costs are very high for small businesses (in compliance and in employers' social security contributions[20]). This situation probably arose out of Finland's post-war industrial structure, where large firms and a large public sector dominated employment, and unions – representing the interests of workers – sat across the table in negotiations.

[20] Both unemployment and social security are partially funded by employers.

The result seems to have been that SMEs were for some time left out of the policy loop, and only in the recent past have Finnish authorities been seeking to make it easier for these firms to do business.

Another part of the reason for renewed focus on SMEs is that this is where a good portion of Finland's growth has been occurring, even during the recession. Encouraging entrepreneurship is one of the main planks of industrial policy, along with the development of Finland as an information society.

The next section discusses growth owing to new, technology-based firms in Finland, with particular focus on growth among these firms before and during the recession, which is also before and up to the start of the Nokia boom. It is therefore likely that many of these high-tech firms were being started and beginning to prosper independent of Nokia.

New, Technology-based Firms

New, technology-based firms (NTBFs) have been a prime force behind Finland's growth over the last dozen or so years.

High-technology firms have had higher creation and destruction rates than others and this sector responded differently to the recession from other sectors by experiencing higher volatility (perhaps reflecting a different risk profile of high-tech enterprises).[21] The high-tech industry also accounted for higher proportional job growth (relative to its share of the economy) than other sectors, while the low-technology sectors contributed proportionally more in job destruction.

Several different explanations have been offered for the economic contributions from NTBFs:

- Schumpeterian – NTBFs are the agents of "creative destruction" destroying old firms and replacing them with more efficient high-tech enterprises.
- Flexible specialisation – NTBFs allow more flexible specialisation than would be available under other institutional arrangements.
- Innovation system – NTBFs fulfil the role of innovation assets, possibly arising from the process of vertical disintegration of research and development enterprises.
- Industrial organisation – NTBFs develop as the balance between internal and external co-ordination costs changes.

During the recession of the early 1990s NTBFs continued to proliferate in Finland. This is consistent with several of the explanations of the effects of NTBFs – the presence of unemployment among innovative punters provides a somewhat desperate incentive to create their own entrepreneurial enterprises.

[21] See, for example, Vainiomaki and Laaksonen (1999).

The rapid growth in high-technology sectors in Finland in 1986-93 “indicates a sharp increase in the relative importance of high-technology sectors during the economic recession”[22]. The number of firms in high-technology sectors increased by 42% between 1986 and 1993, despite the fact that the total number of industrial firms declined by 9% over the same period.

Looking at the Finnish economy as a whole, NTBFs increased from 19% to 27% across all industries over the same period.

Increases in the high-tech sectors were most common in very large firms (firms employing over 1000 people increased by 57%) and very small firms (firms employing four or fewer). This is consistent with explanations of the effects of NTBFs which emphasise the importance of networking.

There was less growth over the period in medium-sized NTBFs. One explanation for this is that once firms reach around 10 employees the next phase of growth eats capital, partly because small firms often have difficulties accessing distribution channels.

There was rapid growth among the smallest firms during the recession, and this is consistent with the recession-push explanation, as is the increasing rate of unemployment among university-trained engineers during this period.

During the recession the highest growth occurred in high-technology services, among the smallest-sized firms. Strong growth was also recorded among small firms in some of the high-tech hardware sectors (instruments, fine-mechanical apparatus, etc) and much of this is believed to have resulted from the effects of clustering, particularly in the telecommunications industry where the success of the Nokia Corporation has helped small firms grow.

The strong growth in high-technology sectors was (obviously) not sufficient to completely ameliorate the effects of recession in other parts of the economy. During the recession the share of people employed in high-technology sectors increased from 13% to 17% of the total workforce, but such relative changes must be viewed with some caution because of the large contraction in employment over this period.

On another hand, other evidence supports the flexible specialisation explanation. Many of the more successful SMEs on the Helsinki Stock Exchange are subcontractors to the Nokia Corporation, and it seems their success is not entirely independent of that fact.

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[22] Erkkp Autio & Annaleena Parhankangas, Employment Generation Potential of New, Technology-Based Firms During a Recessionary Period: The Case of Finland, *Small Business Economics*, **11**: 113-123, 1998.

High-technology Firms in Small Countries

Michael Porter's *The Competitive Advantage of Nations* emphasised the important role played by firms clustering with other relevant firms to produce positive externalities in the production process. On this view, competitiveness can be generated via the numerous interactions and networks that firms can share with other firms working in similar industries, or at least towards similar goals.

According to Porter, national competitiveness is generated by the number and size of internationally competitive firms in a given country, and ultimately this is a function of the capacity of an industry to innovate and upgrade. If a country can create internationally competitive industries, it can potentially bring greater growth to the national economy.

The agglomeration or clustering of similar or related industrial activities is an important part of most accounts of clustering. This co-location of firms can occur on a variety of scales: a few city blocks, a province or region, or even across an entire small country.

Clustering does seem to be a common phenomenon, and there might be various reasons why this is the case.

Marshall (1890) proposed the following reasons why clustering might be important in some industries' success:

- It provides a pooled market for workers with specialised skills.
- It facilitates the development of specialised inputs and services.
- It enables firms to benefit from spill-overs

Because technological progress, technological spill-overs and human capital are important to this process, and because they are under-provided by the market[23], there is potentially a place for government action in enhancing human capital and correcting for private sector under-investment.

Finland does this by risk-sharing between government agencies such as the National Technology Development Centre (TEKES) and the Academy of Finland, and the Finns seem enthusiastic about the results. The idea that Finland can become an "information society" seems to have some real faith behind it. Finland also seeks to encourage people into certain areas of education – engineering and the natural sciences, and business and commercial skills.

The growth of Nokia and the high-tech telecommunications sector has encouraged many people to believe that Finland should concentrate on high-tech, high value-added products, consistent with Porter's emphasis on technological progress and the ability to innovate. The increasing fraction of

[23] This seems less controversial in Finland than in New Zealand.

GDP devoted to R&D in Finland provides some evidence that it is committed to the information society in a concrete way.

It is important to note that this R&D is not necessarily in high-tech sectors – Finland is relatively specialised in the low- or medium-tech sectors, and this is where much research activity happens. For example, the Finnish forestry industry spends approximately 3% of value added on R&D, while the Swedish and Canadian forestry industries spend 2.5% and 1% respectively[24].

It has been suggested (by Maskell et al, for instance) that small countries lack competitive advantage in research-intensive activities, and will struggle to maintain high-tech industries in the long run. On this view:

- high-technology is high risk. Old technological leaders tend to get new competitors under control by massive R&D investments, economies of scale and acquisitions
- leading technology is expensive and normally exceeds the financial resources available to small companies and small countries
- scarcity in the availability of capital and labour in small countries can seriously constrain development. Finland has been experiencing this recently with shortages of scientists and commercially trained people, although this may potentially be a smaller problem in countries that speak more widely-spoken languages
- spill-overs are not always contained within the country investing in R&D. Technological spill-overs are likely to pour across borders as windfall gains for countries that have not made the initial investment
- small domestic markets can fail to make intensive R&D investment worthwhile.
- small countries lack the sorts of R&D facilities that large countries enjoy, which inevitably leads to specialisation. In Finland this has been in forestry and telecommunications; in New Zealand, grass products.

Maskell et al offer quite a lot of evidence for their position, but there are enough counterexamples, both in the region[25] and in other small countries, to think that this might be a general rule rather than an inviolable law.

They discuss the paths by which Nokia and Ericsson came to their current positions of strength, and offer somewhat melancholy conclusions: that large-country firms such as Motorola and AT&T might move into the small-country firms' markets to the detriment of the Scandinavian firms.

When considering their discussion of the idiosyncratic path of the Scandinavian cell-phone manufacturers, it is worthwhile remembering that similarly idiosyncratic stories of good fortune and path dependence can be told about any successful firm, regardless of the country of origin. However, there is

[24] Hernesniemi et al, 1996.

[25] Volvo, Husqvarna, Saab, Ericsson, Nokia, for instance, are all high-technology firms from Scandinavia.

probably good reason to suspect that the conclusions are reasonable enough – that small countries' competitive advantage in innovation is in highly specialised, niche products where technological innovation is on the process rather than product side.

The comparison certainly provides compelling evidence that an appropriate mix of location, available resources, human capital and policy settings is crucially important – and that adopting Finnish policy without careful thought about the other pre-conditions of success is unlikely to achieve such impressive results. In fact, one of the most striking characteristics of Finnish public policy is the very careful thought given to how it can help different industries and sectors, such as in its agricultural policy (see page 85).

Social Capital in Finland

The social capital explanation is another commonly advanced for the success of some high-tech firms (on which Maskell et al touch but which has been discussed further in Perry (1998), and even *Scientific American*).

According to this view, firms prosper when there is a high level of trust and information-sharing across firms within industries. Silicon Valley is the most commonly cited example – it is said there is a culture of idea-sharing that enables the firms to perform more highly than would otherwise be the case.

Various arguments have been advanced for why small countries may be more likely to generate and sustain higher levels of social capital. These include:

- co-ordination issues – co-ordination is considerably easier in smaller countries, and this may be a reason why centralised wage setting has lasted better in small countries
- homogeneity – shared senses of identity contribute to trust, as does shared experience. If the members of a community are experiencing the same events as their neighbours, bonds are more likely to develop between them.

Most measurements of social capital place the Nordic countries at the very top of international comparisons. It may be that homogeneity, egalitarianism or some other cultural phenomenon drives this in Scandinavia more than in other small countries like New Zealand.

One thing Nordic governments seem particularly adept at is managing to bring the whole country with them when they change; generally the political process in Scandinavia is more consensus-based and less adversarial than it is in New Zealand. If trust is the goal, it seems reasonable that consensus-based policy-making has some advantage over the adversarial processes often employed in New Zealand.

In addition, the Nordic countries generally do very well on internationally standardised literacy and numeracy tests, and there is probably a link between a country's social capital and its educational performance.

Perhaps another salient feature in Finland's cultural milieu is newspaper circulation. Finland has the third highest newspaper circulation per capita in the world[26] behind Norway and Japan, two countries often cited as exemplars of social capital. If nothing else, this reflects the high level of Finnish literacy and suggests they take an interest in their community. These two features alone go some way to suggesting that the Finns enjoy a reasonably healthy democracy[27].

New Zealand starts on the diversification path later than Finland

As pointed out by Brian Easton in *In Stormy Seas*, New Zealand started the post-war period with an economy similar to that of Argentina or Uruguay, but closes the century with an economy more like that of Finland, although nowhere near as technically oriented.

Both New Zealand and Finland have diversified their exports since the war, and New Zealand's story may be more dramatic in this regard. Easton's point about New Zealand's post-war similarity to Argentina has an ominous echo in Jane Jacobs' comparison between Uruguay and New Zealand in *Cities and the Wealth of Nations*, where she discusses these countries in the context of "supply regions". These are regions – "economic grotesques", Jacobs calls them – that are removed from the cities they supply and that specialise in very few, usually primary sector, products.

> "Today Uruguay has what is called a Third World economy, but even when it was prospering, Uruguay had a Third World economy insofar as that term conveys backwardness, lack of development. Uruguay had merely been rich, and the difference between a rich backward economy and a poor backward economy is not all that great. Rich or poor, supply regions are inherently over-specialized and wildly unbalanced economies, hence unresilient and fragile, helpless when they lose their fragments of distant markets…."[28]

Although New Zealand's performance over the last couple of decades has been less than stellar, it has not been as catastrophic as Jacobs suggests it might otherwise have been. New Zealand's forays into import substitution were arrested before they could wreak the sort of damage they wrought in Uruguay. In many senses, if we are looking for "counterfactual" countries for New Zealand, we would be better to look at countries from which we have diverged

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[26] Economist Intelligence Unit Country Profile 1999-2000.

[27] See, for example, the interesting discussion on necessary pre-conditions for democracy in Machiavelli's Discourses.

[28] Jane Jacobs, *Cities and the Wealth of Nations: principles of economic life*, 1984, Random House, p63

rather than those (like Ireland and Finland) which we have become like (because the causality flows the wrong way in these cases).

On this view, the urbanisation and diversification which have played such a part in New Zealand's recent story may well be the most important economic events of the last two or three decades. Finland (and most industrialised countries) have experienced similar trends, but because New Zealand's post-war economic base was so narrow, these factors may have been relatively more significant in New Zealand's case than in countries like Finland, where there was always more than forestry.

GOVERNMENT POLICY

Monetary Policy

The Finnish Markka was managed within a narrow band against a basket of currencies for most of the 1980s (October 1982 to March 1989). This was done to provide a solid anchor against inflation expectations and to keep Finnish goods reasonably neutral in terms of cost-competitiveness with those of other countries.

The inflation objective was largely successful from 1982 to 1987, but then domestic overheating in the wake of financial deregulation led to an increase in the differential between Finnish inflation and inflation in the countries against which the Markka was fixed.

In 1988 the Bank of Finland found that maintaining a short-term interest differential of between 1.5% and 2% between the Markka and the basket of currencies implied that the Markka was nearly always at the top of the band in terms of the exchange rate. In response to mounting pressure on the Markka, the fluctuation band was widened from 4.5% to 6% in November 1988. However, this did not alleviate the situation much at all – by January 1989 the exchange rate was again close to the upper limit of the band as capital inflows during 1987 and 1988 strongly boosted domestic liquidity and bank lending. The Bank of Finland mopped up liquidity by raising the cash reserve requirement of banks several times during the period of rising pressure, but ultimately these techniques proved ineffective.

In early 1989 overheating affected wage agreements – the agreements after August 1988 were much higher than the incomes policy had expected, while continuing terms-of-trade gains increased demand and weakened employers' resistance to wage demands.

In March 1989 Finland moved the fluctuation band by 4%, and allowed the Markka to appreciate by around 3%. This reduced international competitiveness and the profitability of Finland's export industries. Exports fell sharply in response, particularly in the forestry sector. Later in 1989 speculative pressure on the Markka began to build, and this increased domestic interest rates.

Although there was a fall in interest rates in January 1990, it was only a brief respite – further speculative pressures increased interest rates again in the final quarter of 1990, which raised the real costs of finance in the wake of falling inflation.

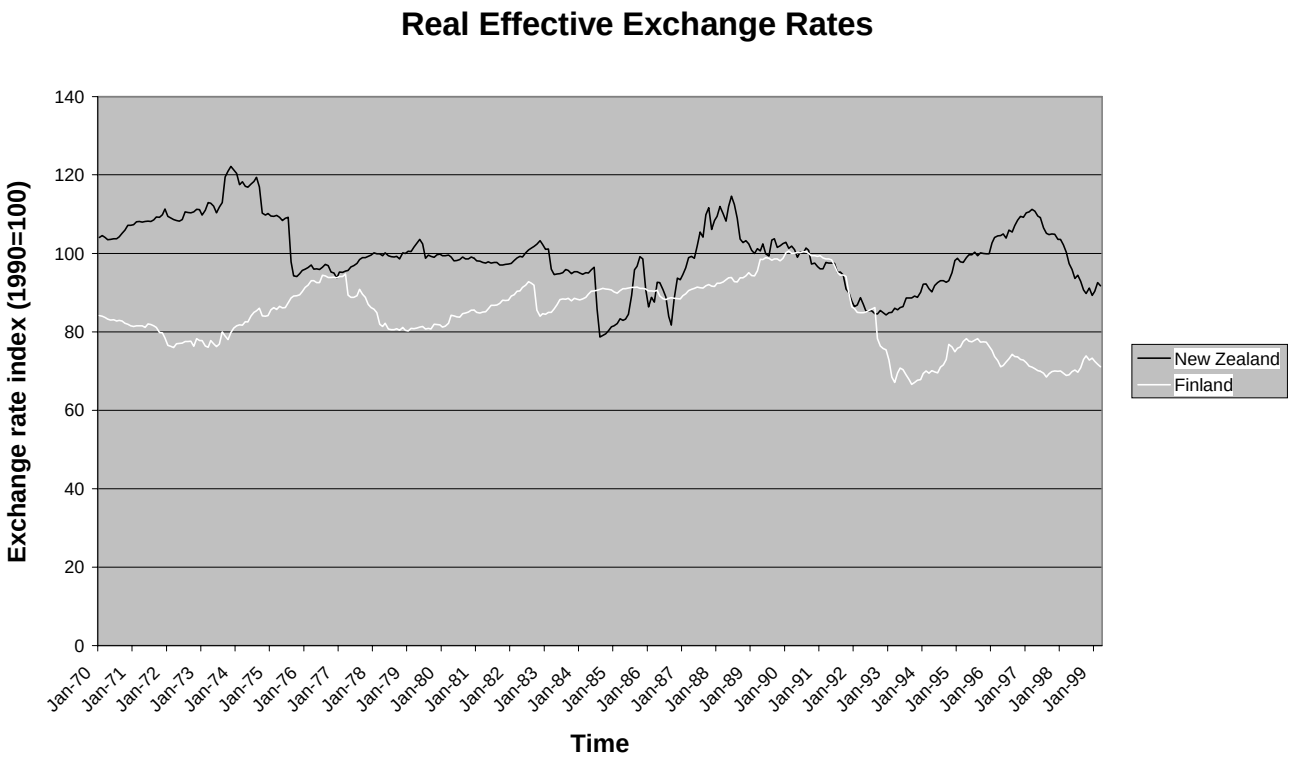

Figure 23 Source: OECD.

The first clear signs of a recession began with a decline in domestic demand around the start of 1990, when household consumption started to decelerate. This was followed by dramatic declines in household and business investment some time later; seasonally adjusted private sector investment shrank by 27% in the second quarter of 1990. The nascent Finnish recession was then exacerbated by the collapse of the Soviet Union, in particular the collapse of bilateral trade agreements.

As the recession deepened it became increasingly difficult for Finland to maintain appropriately loose monetary conditions to help it weather the recession, and appropriately tight monetary conditions to resist speculative attacks. Given Finland's track record in devaluation (it had been a frequent

exchange-rate tinkerer until the early 1980s) Finnish authorities found it difficult to convince the markets of their commitment to the status quo. This lack of confidence generated high risk premiums in Finnish interest rates.

Eventually, Finland was forced to devalue the Markka by around 12% in November 1991. This improved the international competitiveness of Finnish goods but largely failed to address credibility concerns. Monetary policy was still constrained by exchange rate considerations, and renewed downward pressure on the Markka eventually led to the decision to float the Markka in September 1992.

The Markka immediately devalued by around 8%, but the combination of the float, fiscal consolidation package and restrained wage-setting round eased short-term interest rates. However, interests rates remained higher than their historical average in response to the costs of servicing the credit that Finns racked up during the late 1980s.

In February 1993 the Bank of Finland announced a specific inflation target which was designed to serve as a guideline for monetary policy – this basically aimed at stabilising inflation – although it was accepted at the time that volatility in the exchange rate would mean that the target band would be breached from time to time.

The exchange rate has remained low throughout most of the export-led recovery. While the Markka has appreciated since its 1993 level, it has not risen to more than 90% of its real 1990 value. The appreciation between 1993 and 1995 was basically driven by the shift in the net trade position (see Figure 14): a “permanent” wedge between exports and imports seems to have opened up since the recession, with Finland moving from a near-zero net trade position to a positive equilibrium position. The fact that exports are no longer accelerating away from imports has alleviated upward pressures on the Markka.

On 1 January 1999 Finland entered into monetary union with several other European countries. Monetary conditions had been relatively loose as Finland recovered from its deep slump. By the start of 1998 it appeared that Finland had largely completed its recovery process and was looking to tighten monetary policy somewhat. There have been concerns that the Finns have inherited looser monetary conditions (mainly from France) than are appropriate given the advanced stage of the recovery. Finnish authorities have indicated they will tighten local domestic conditions via fiscal thriftiness.

The exchange rate series for the two countries reveals substantial differences, especially in the period to the mid-1980s, when New Zealand floated its currency. Since then the Markka and dollar have varied by similar amounts, with both countries being beset by large real devaluations in the 1990s (Finland in 1990 and New Zealand in the wake of the Asian crisis). The low (by 1970s and 1980s standards) value of the Markka aided an export-led recovery from the deep slump of the early 1990s.

Interest Rates

Both long- and short-term interest rates rose during Finland's slump. Long-term rates rose from around 10% in 1988 to about 14% in 1990, then stayed high for around three years before falling to around 6% in 1993. They rose in 1994 to about 8% but have steadily decreased since to about 4%.
Short term interest rates showed more variability (around a slightly higher mean) in the early years of the slump, mirrored the decline of long-term rates in 1993, but remained lower than long-term rates through the mid-1990s.

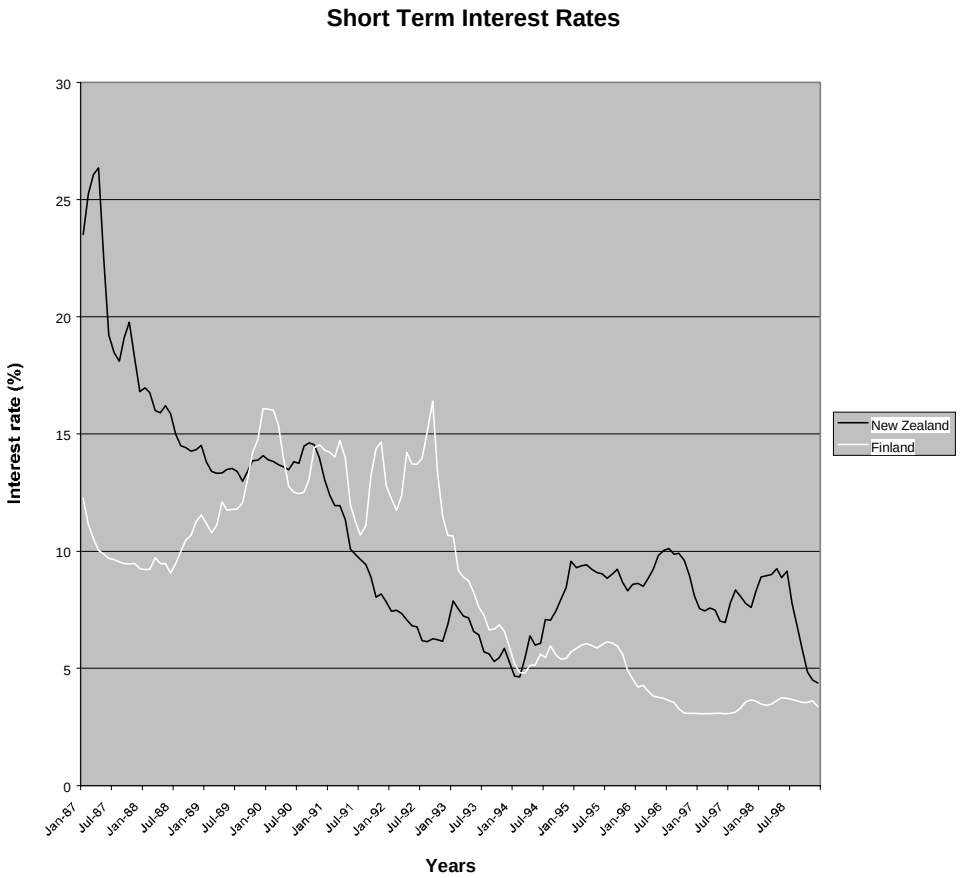

Figure 24 Source: OECD.

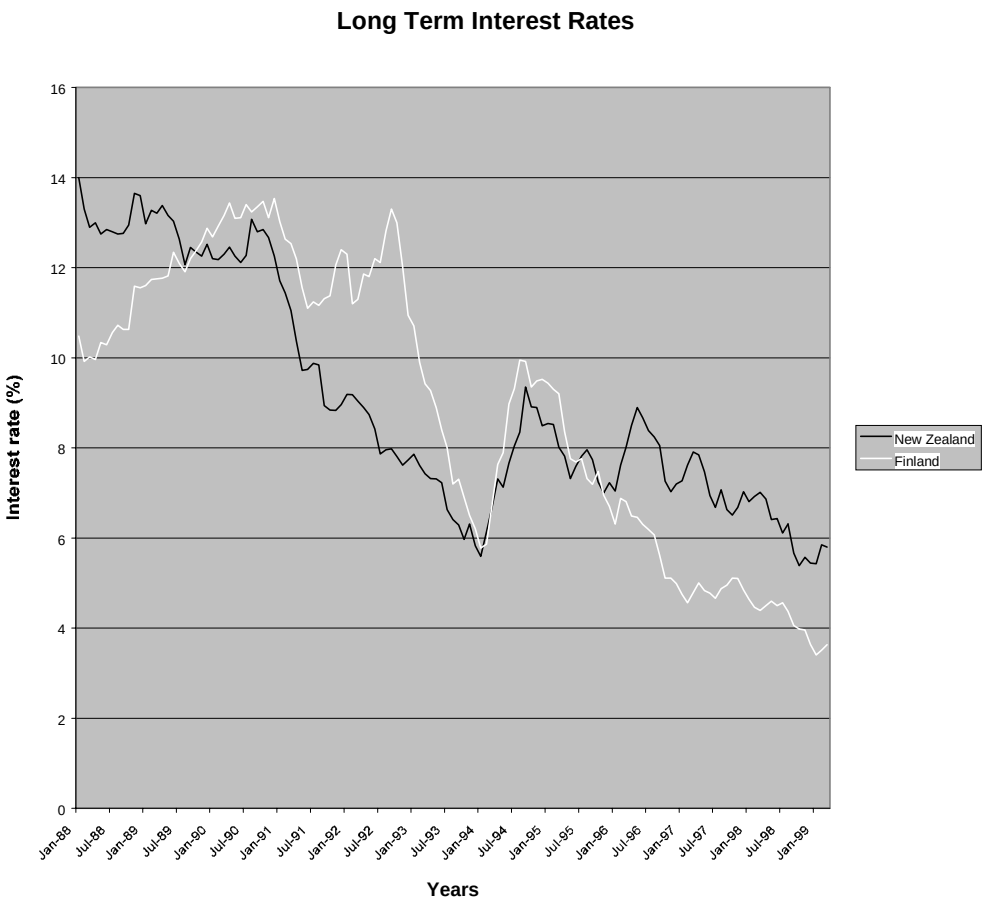

Figure 25 Source: OECD.

Consumer Prices

The CPI inflation rate (percentage change in consumer prices) for both Finland and New Zealand was generally high for a decade from 1973. While inflation declined in Finland in the mid-1980s, this was a time of high inflation in New Zealand. Both countries have experienced low inflation throughout the 1990s.

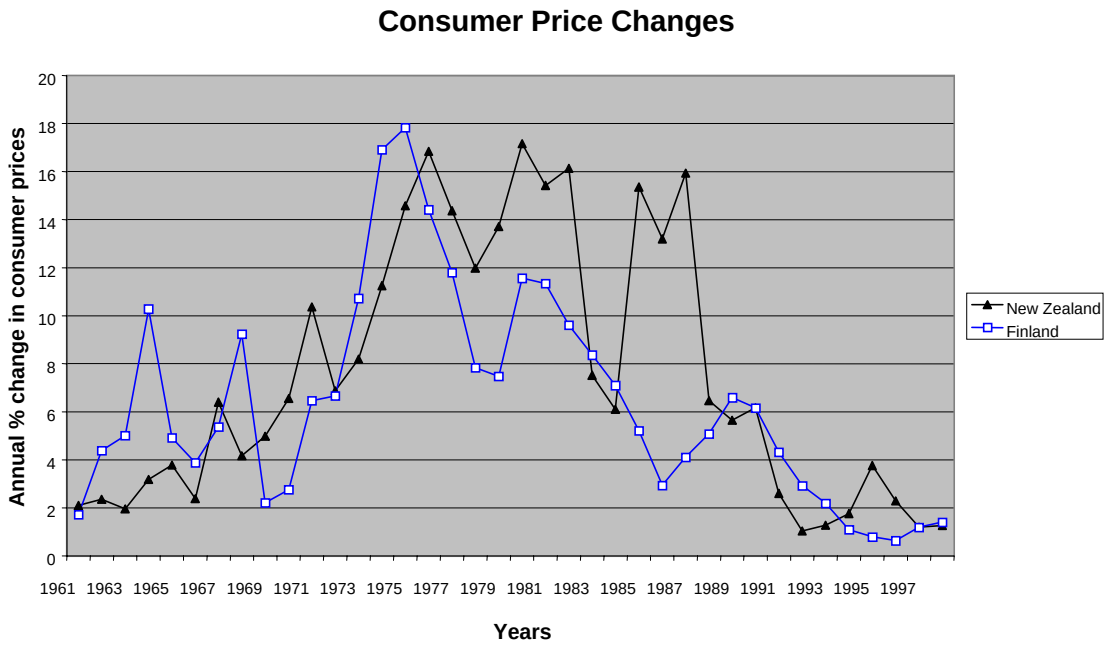

Figure 26 Source: OECD.

Fiscal Policy

The public sector of Finland's economy has – predictably – grown significantly in the last decade: in 1988 it was a mere[29] 40.5%. A decade later, following the recession, the tax burden had risen to 47% of GDP, while government expenditure was at 54% of GDP.

The generous welfare entitlements which the Finns share in common with their Nordic neighbours have magnified the costs of the recession – when unemployment increased more than five-fold between 1989 and 1993, welfare costs increased considerably.

Finland did not reduce transfers during the recession, nor did it raise tax rates to cover the full costs of welfare. It treated the welfare costs incurred as largely temporary and was prepared to fund them through borrowing (see Figure 27). Finnish debt increased from less than 20% of GDP in the late 1980s to nearly 70% by 1996.

The central government financial balance has recently moved from deficit to a small surplus of ½% of GDP in 1998. The central government is using asset sales to retire debt. Central government debt as a fraction of GDP is projected to fall to around 60% by the end of 1999, a 13% reduction on the maximum debt of 68.9% in 1996.

Finland has recently embarked on dealing with some of the less desirable incentives which (may) arise from a generous welfare state. In early 1997 the Government began to reform some welfare programmes, tightening the rules around benefit eligibility[30] and reducing the generosity of some benefits.

Since the crisis in the early 1990s (rises in transfers and decreases in output affect both the numerator and denominator in tax/GDP), fiscal consolidation has become an increasingly important priority. Austerity packages have been introduced during the last two administrations, and savings of about 6% and 4% (respectively) of GDP have been attained.

These packages have targeted a variety of areas:

- Reductions in central government transfers to municipalities.
- Social transfers to households.
- Central government consumption and subsidies.

[29] By Nordic standards.

[30] In the areas of unemployment, early retirement and various labour market programmes. They have also moved to ensure medical authenticity in the areas of sickness and invalid benefits.

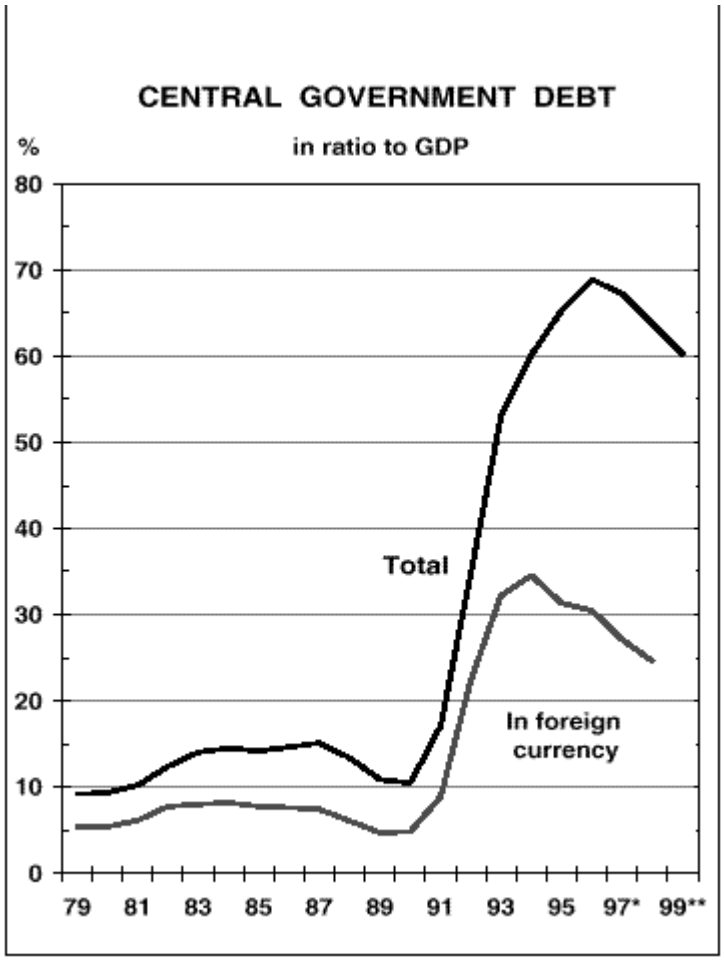

Figure 27 Source: Economic Survey, Ministry of Finance, Finland.

These austerity measures have mitigated the effects on expenditure, and the consensus seems to be that they have largely met their objectives – government expenditure peaked in 1993 at just over 60% of GDP and has since fallen to 54%.

The initially low level of indebtedness probably helped Finland weather the crisis better than it would have otherwise – blowing out from 20% to 70% involves lower servicing costs than blowing out from 60% to 110%.

Because the Finnish economy is currently in a phase when the brakes need to be applied, and because the Finns have effectively lost monetary policy as a tool for controlling their economy, the task of arresting the voracity of excess demand falls to further fiscal prudence.

In order to do this, and to reduce government debt levels, the Government has introduced further spending cuts in the last year or so (although these only amount to around 0.5% of GDP). This has been accompanied by small tax cuts (to payroll tax).

Composition of Government Expenditure

Table 15 shows Finnish and New Zealand government expenditure according to sector.

The most immediately evident feature is the huge difference between the welfare components between the two countries. In Finland, as in New Zealand, superannuation accounts for much of this, but unemployment figures strongly in the Finnish picture – approximately 5% of GDP in 1996. This share has declined but the Finns still contribute considerably more of their national earnings towards transfers.

	Finland	**New Zealand**
Health	4.7	5.7
Education	5.9	5.4
Social security and welfare	22.6	13.0
Other	17.1	10.8
European Union and regional transfers	2.7	-
Subsidies	2.9	-
Total as percent of GDP	55.9	34.9

Table 15 Sources: Statistics Finland, New Zealand Treasury.

New Zealand spends about 20% more on health than Finland, but about 9% less on education. However, given Finnish enthusiasm for science and engineering this should not be surprising as these endeavours are costly.

Amongst the "Other" category are expenditures such as core government services, law and order, defence, transport and communication, financing costs (more severe for Finland than New Zealand) and the purchase of other goods and services by the Government.

Superannuation

Finland has recently revamped its superannuation system, largely because of concerns about the sustainability of the previous system in the face of population ageing. This problem has been exacerbated by the lowering of retirement age over time and the erosion of the tax base during the recent crisis. Reform has included introducing a means test for the flat rate pension.

The Finnish superannuation system has two tiers:

1. *National Flat Rate Pension Scheme* – provides a basic income to all people aged over 65 (this accounts for around 4.5% of GDP). The rate is not flat, but falls with increasing income from the occupational scheme.

2. *Occupational Scheme* – all working Finns contribute a percentage of their income to "pay-as-you-go" pension plans, which are usually run by private pension institutions and normally provide more income than the national scheme. The expenditure on occupational pensions at 9.6% of GDP is more than twice the expenditure on the national scheme. While managed by private institutions, defined benefits are not fully financed. These contributions are essentially a tied tax, which is supplemented by general revenue sources to pay any deficit[31].

The two schemes between them account for 11.6% of GDP, substantially exceeding both New Zealand's expenditure (around 6%) and the OECD average of around 7.5%. Only Sweden and Italy spend more on their older citizens.

Finland's population is ageing more rapidly than those in most other OECD countries and this places increasing pressure on public pension financing. The ratio of elderly people as a percent of the working age population will increase from 21.5% in the year 2000 to 24.3% in 2010, 34.7% in 2020 and 41.1% in 2030. The comparable ratios for New Zealand are 17.1%, 18.9%, 24.6% and 30.5%.

Summary

Finland already spends considerably more than the OECD average on its older citizens and has been looking to reform its own system. The ageing of its population means that the fiscal burden of pension financing will rise dramatically in the first few decades of the next century.

Other Welfare Costs

Despite the cost blow-outs of the early 1990s, Finland is continuing to pursue the Nordic system of welfare – universality, gender equality and a reasonable benefit level. However, as the fiscal costs of welfare have ballooned as unemployment has risen, tensions have increased between the employed and unemployed, with some claiming that there is a cultural change taking place (the beginnings of an "unemployment culture").

Health

Public provision is the dominant form of financing both general and specialised health care in Finland, with the public sector fulfilling the role of both purchaser and provider. Budget reform in 1993 has meant that the system has basically been run at municipal level over recent years. Municipal authorities enjoy almost full discretion on the scope, content and organisation of health services.

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[31] David W Kalisch and Tetsuya Aman *Retirement Income Systems: The Reform Process across OECD Countries*, Social Policy Division, OECD, p12.

Central government transfers lump sum funding to municipal health authorities, which add it to their own funding. The health authorities then spend this as they see fit.

Primary health care is provided by municipal health centres, which provide a wide array of services including general care, health counselling, maternity, infant and school health care, ambulance transport and dental care. In 1998 there were around 250 of these centres in Finland.

Physicians in Finland are allowed to create their own private practices but generally these services are provided on a part-time basis by physicians who hold full-time posts at hospitals. A high proportion of visits to specialists are to private practices[32]. The fees for service paid to private physicians are only partly reimbursed by the national health service, so the services tend to accumulate in the wealthier urban areas.

Many municipalities are too small to sustain their own hospital, so many Federations of Municipalities have been created to co-ordinate regional care. In 1998 there were 51 municipal hospitals, of which five are university hospitals, 16 are central hospitals and 30 local hospitals. Recently (1997) municipalities have been allowed to purchase hospital care from outside their own hospital district, and the less specialised hospital services offered by health centres also offer some degree of competition between health providers.

The recession led to sharp reductions in central government funding. This resulted in reduced volume output, largely through efficiency gains with – according to the OECD – minimal loss in the scope and quality of care provision. Health care currently accounts for roughly 7.5% of GDP in Finland, of which about 4.5% is provided by central government and the rest is locally funded. The aggregate expenditure is consistent with the average for OECD countries.

The Finnish health system is generally regarded as excellent, both in terms of facilities and health workers' skill. As a result, the Finns enjoy good health with reasonable life spans in spite of questionable diets. At the other end of the life span, they have a tradition of broad-based child care and school care. They consequently enjoy some of the lowest rates of peri-natal and infant mortality in the OECD.

Historically the Finns have not had the most nutritious diet, but programmes focusing on nutrition, exercise, smoking and reproductive health have made some positive in-roads over the last 15 years. However, in spite of these positive moves there are significant differences between the life expectancies of older and younger generations, with circulatory diseases being among the highest in Europe.

[32] The majority of private practices in Finland are run by specialists.

Finland also has a large gap in potential lives lost between men and women, which has several causes including cardiovascular disease and injuries. However, the most important component of this gap is believed to be the high incidence of suicide among young and middle-aged men.

Because municipalities control health far more than they did in the 1980s, there are substantial variations in health care costs per capita across the 21 hospital districts. This is not necessarily a result of to economies of scale – for example, in the Helsinki district the costs of health care are 20% higher than the national average. It is expected that further efficiency gains can be made.

Education

Finns spend a long time in the education system. Primary and secondary schooling is run by municipal authorities (which also run voluntary day care and pre-school centres). Comprehensive schooling lasts for nine years, from the age of seven to 16, and is compulsory for all Finns. After that, pupils can (and around 60% do) enter upper secondary schools that offer three years of broad-based education (again run by municipal authorities).

If a pupil does not wish to continue into the upper secondary school system, they can move into vocational education. Most schools that provide this are small, with narrow focuses. However, the Government has recently moved to enjoin some of the vocational schools into polytechnics; in 1991 85 vocational schools were re-assembled to comprise 22 polytechnics. Studies in polytechnics take three or four years – approximately the same length of time as upper secondary school – at the end of which students leave with diplomas that are classified as being on the same level as university degrees.

At the end of upper secondary school pupils sit matriculation examinations, which they are required to pass before they can enter one of the 20 state-run universities (which offer both undergraduate teaching and postgraduate research). The Finnish university system has expanded significantly in the last 30 years and has been subject to considerable reform in the last decade.

Although Finnish education is of a very high standard, there are problems in the system, notably at transition points. There are concerns that many able students find it hard to get into university in their first-choice course – it takes on average two to three years after matriculation to find a place at university. Because of the shortage of places, students normally apply for several courses at once in the hope of gaining entry to a second-choice course in the likely event that their first choice is not available. They frequently change courses as soon as a place in their preferred course becomes available and as a result often have several unfinished courses to their credit. This lengthens the already long duration of study in Finland.

Another point of strain for the system is at the top end when students attempt to make the transition from study to work/ There are concerns that the system's unresponsiveness to employer demand means that it churns out too many of some types of graduates (social sciences) and too few of others (business graduates). There is evidence that some students from the less employable areas extend studies even further in response to the relatively high levels of unemployment among their colleagues.

The cost of the system is relatively high – historically very high – but the economic crisis has led to substantial fiscal consolidation in this sector. As of 1996 students did not pay tuition fees to attend university.

Labour Market Training (LMT) is managed by the public employment service and aims to enhance the skills of the unemployed. During the crisis the number of people enrolled in LMT increased dramatically. The focus of LMT programmes has been shifted in recent years towards the high-tech sectors that are underlying much of Finland's growth and increasing shares of its exports.

Reforms

In 1995 the Finnish authorities adopted a Development Plan for Education and University Research, the aims of which are three-fold:

1. *Promoting vocational skills and entrepreneurship* – training on small business management and entrepreneurial skills will be included in the vocational education sector.
2. *Improving the transition from higher education to work* – basically making universities more responsive to the demands of employers. Lecturers will be appointed on five-year contracts and "output-based" resource allocation will be implemented, whereby universities will be measured against various performance indicators.
3. *Increasing training for the unemployed* – in addition to increases in LMT, the vocational training establishments will seek to increase the number of (currently) unemployed using their services.

There is a strong correlation between education and earnings in Finland. Male university graduates can expect to earn 1.9 times the amount earned by those who have only completed upper secondary school – however, there is evidence that this ratio may be somewhat inflated at the moment because increases in demand for the highly skilled have so far outstripped the ability of Finnish universities to produce sufficient numbers of graduates. It is expected that the returns to education will decline to more normal international levels as the supply of graduates increases.

Finland, to a greater extent than most countries, exemplifies the current trend away from traditional industries towards knowledge-based, high-tech industries – the export share of high-tech products has quadrupled in the last two decades. Even within the more traditional sectors such as forestry and paper there is a shift towards product diversification and high value-added products.

“These developments have been driven by the wealth of engineering know-how in Finland.” (OECD Economic Survey, 1996). Science parks – intended to create clusters or networks of engineering expertise – have also played a part in revamping the Finnish economy.

There is concern, however, that the development of marketing, economic and business skills has lagged behind engineering and the natural sciences. (The OECD regards the development of these skills as “essential”, since the demand for commercial workers is expected to grow significantly.) However, Finland is concerned that it is under-investing in business subjects rather than over-investing in technical subjects, and as part of its attempt to “Make Finland an Information Society” has started a development programme to improve skill levels in mathematics and the natural sciences.

Education and the Knowledge-based Economy

The Finnish education system is currently being revamped to more seamlessly fit the enterprise and research systems. In particular, Finland is attempting to refocus the education system so that students are more likely to be aware of and respond to career opportunities once they leave the training system. Part of this refocusing has involved reducing the research resources of universities, although funding in technical areas has remained high and the resources of the Academy of Finland have been left virtually untouched.

The university system is well integrated into the wider research environment, and it is through the universities that many of the state-funded projects are carried out. Both aspects of higher education – teaching and research – are being positioned to deal with the needs of employers. Polytechnics are specialising in educating people in advanced professional skills, while changes are proposed to the structures of some university courses so that students gain greater exposure to needed skills.

Despite some adjustments in the funding of university research, the total share of R&D funding has increased in Finland to 2.9% of GDP. Of this amount the Government intends a 60/40 private/public split. The Finns are attempting to find a balance between basic and applied research, product development, technology development and training under what might broadly be called an innovation system. The main features they desire from this system are quality, relevance and efficiency.

Stitching together research, education and industrial needs will obviously require strong and responsive communication networks, and the Finns apparently see the development of such networks and information sharing schemes as aspects of “clustering”.

Finnish authorities are keen to embrace external players and forces in their innovation strategy, and to this end actively seek project partners from outside

Finland. In addition, the innovation system involves monitoring (and learning from) research being conducted outside Finland.

European Union structural funds[33] are also used to fund the innovation system through the establishment of science and technology parks and the development of systematic mechanisms for ensuring a high level of innovation.

Summary

The Finnish education system suffers bottlenecks and appears slow to respond to changes in demand from employers. However, the Finns do very well on standardised international comparisons, so maybe there are lessons for New Zealand in terms of the way they construct their comprehensive sector.

In the university sector, the lack of discrimination on the basis of course cost probably helps Finland continue to produce such large numbers of technically trained graduates. If New Zealand is serious about improving capacity in these areas, harmonisation between education policy and industrial policy appears important.

Recent Finnish education initiatives, designed to foster appreciation of mathematics and the natural sciences, are new and as yet untested. If successful, they may provide some insight as to how Government can increase interest in science. This may have relevance for New Zealand, where there have been concerns about current levels of scientific literacy.

[33] Not as significant for Finland as they are for Ireland.

Labour Market

Unemployment

In the 1980s Finland enjoyed decreasing unemployment, to the point where it was under 3% before the bubble burst in 1989. However, the recession sent unemployment levels soaring more than six-fold to over 18% between 1990 and 1993 (see Figure 28). Unemployment has fallen steadily since 1993 to around 10% in 1998 in response to the export-led recovery and subsequent increase in domestic demand.

New Zealand's experience has been more moderate, with a steady rise in unemployment between the mid-1980s and 1990, peaking around 11% before an equally steady fall to a mid-1990s' low of around 6% in 1994-95. Unemployment has risen slightly since then, partly in response to the Asian crisis, although the magnitude of this factor is open to dispute.

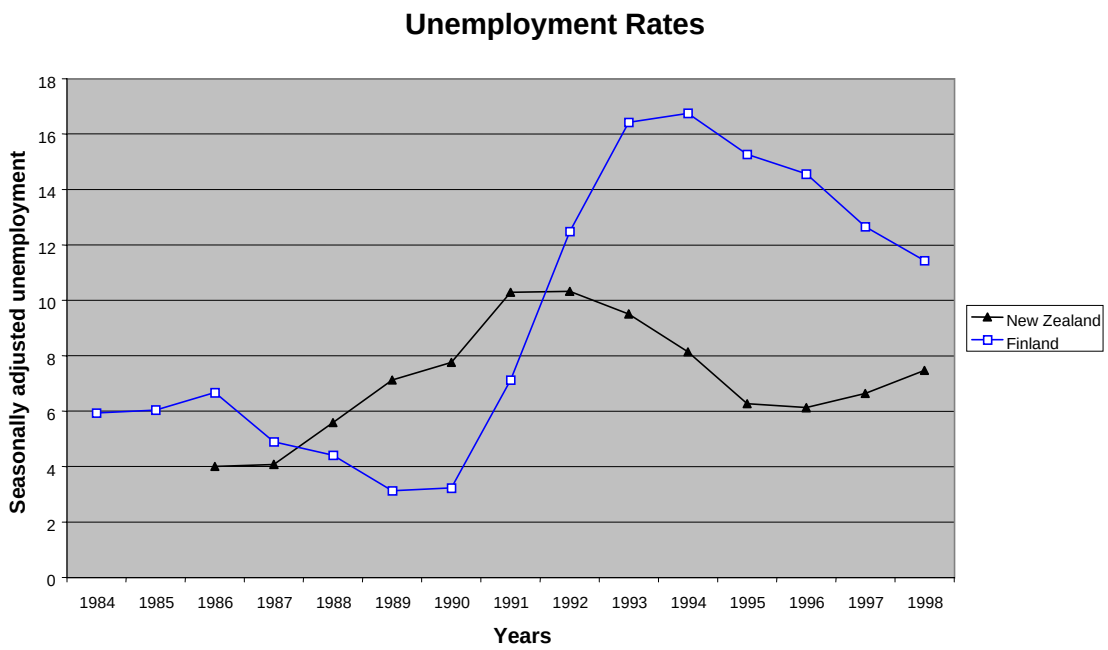

Figure 28 Source: OECD.

Employment

As Figure 28 shows, employment in Finland has grown reasonably steadily over the last five years. Sectorally, services have seen constant rises in employment, especially in areas such as community and personal services, financing and real estate and transport, storage and communications. Continued growth in the service sector reflects a broader long-term trend in Finland and indeed most industrialised economies, as does the decline in jobs in agriculture and forestry.

The construction sector has seen strong growth over the last five years too, but this is probably a cyclical adjustment – construction was one of the worst-hit sectors during the recession. Jobs in the industrial sector remained roughly constant between 1995 and 1999, reflecting the long-term consistency of employment in this sector.

The increase in employment in the wholesale, retail and restaurant sectors reflects a firming of domestic demand generally, while much of the growth in personal services has been part of the story of the rapid rise of the telecommunication and electronics industries. Significantly, it appears that job growth in Finland has been in “young people” sectors: the unemployment rate among those under 25 has fallen from around 30% in 1995 to around 19% now.

10. Balance of manpower resources[1)]

	1995	1996	1997*	1998**	1999**
	annual average, 1 000 persons				
Population of working age(2)	3 839	3 850	3 862	3 872	3 882
Labour force	2 481	2 490	2 484	2 490	2 495
Unemployed labour force	382	363	314	262	225
Employed labour force	2 099	2 127	2 169	2 228	2 270
agriculture and forestry	171	160	153	146	139
industry	456	460	464	467	469
construction	115	118	130	142	147
service industries	1 351	1 383	1 417	1 467	1 509
wholesale and retail trade, restaurants and hotels	301	316	329	340	346
transport, storage and communications	163	160	164	167	169
financing, insurance, real estate and business services	229	241	240	251	261
community, social and personal services	658	666	685	709	733
branch unknown	6	6	8	6	6
	%				
Labour force participation rate	64.6	64.7	64.3	64.3	64.3
Employment rate	54.7	55.3	56.2	57.5	58.5
Unemployment rate	15.4	14.6	12.7	10.5	9.0
aged under 25	29.6	27.7	25.2	21.5	18.5
	1 000 persons per annum				
Immigration, net	3.3	2.7	3.9	4	4

(1) According to the renewed Labour Force Survey of Statistics Finland.
(2) Persons aged 15 to 74.

Table 16 Source: Economic Survey, Ministry of Finance, Finland.

Wage Setting

Wages in Finland are set by agreements between labour unions, the employers' federation and central government. Although there have been attempts to decentralise this process during the 1990s, the wage-setting system remains one of the most centralised in the OECD. Although the agreements arrived at under the system are not legally binding, they have historically specified the lower limit of wage increases.

Contracts at industry or enterprise level – which cover up to 80% of the workforce – are set in light of these central agreements, often using them as a lower bound and negotiating upwards from there.

There is no legislated minimum wage in Finland, but contractual minima are set in various industries. These minima generally keep pace with other wages in the industry and act as a "wage floor" that contributes to the compressed wage structure in Finland (the dispersion of earnings in Finland is considerably flatter than that in most OECD countries). This is thought to more adversely affect the employment prospects of low-skilled workers than other groups.

Flexibility

Finland is about average by European standards in terms of its employment protection laws, but procedural obstacles to dismissal are higher than in most other OECD countries. Severance pay and the criteria for dismissal are roughly the same as those found elsewhere in Europe.

Part-time work is less common in Finland than in other countries, the result of government attempts to enable both men and women to work full-time. In addition, unemployed people face administrative complications if they wish to take up part-time work. Employers, too, may contribute to the relative scarcity of part-time work in Finland; many regard part-time work experience as being inferior to full-time experience, and workers' recognition of this may contribute to the low demand for part-time work.

Tax

The Finnish system is characterised by high progressive tax rates on labour income, and lower tax rates on capital income. Capital tax rates in New Zealand are reasonable comparable with the Finnish rates (although we tax New Zealand-resident investors at a lower rate once wealth taxes are incorporated in the analysis). However, New Zealand income earners are taxed at a substantially lower average rate than the Finns. The Finnish system

reflects a philosophy that more mobile factors of production (eg, capital) should be taxed less heavily than labour.

Capital taxation

The Finnish tax system taxes foreign investors at a lower rate than domestic investors. Foreigners are taxed at 28% on their capital income. However there is no tax on interest income earned by foreigners. There is a full dividend imputation system, so effectively capital income is taxed only once.

This is about the level at which New Zealand taxes foreigners. We do an imputation credit swap with foreigners that effectively reduces the tax rate below our maximum 33% - but only just. We have an approved issuer levy for foreign debt which taxes foreign debt, albeit at a very low rate. Unlike Finland though, New Zealand does not charge the foreign-owned company capital gains tax on its gains in New Zealand.

Finnish domestic investors are taxed at a higher rate than foreigners because they are liable for high rates of inheritance and gift taxes (effectively taxes on capital accumulation). The details are in Appendix 2.

Assuming that property taxes and inheritance taxes are just forms of capital taxes, the implicit rate of capital tax on domestics in Finland is high, much higher than New Zealand. However, the implied tax on foreigners in Finland is about the same as New Zealand.

Capital income is taxed on a withholding basis. To distinguish labour from capital income, the Finns presume a rate of return on capital actually employed and everything else is labour income. The formula allows businesses with a low rate-of-return on equity to be taxed lower. (Symmetrically, small business with a high rate-of-return on equity tend to be overtaxed until they meet criteria as a public company and hence become taxed purely as having capital income).

Income taxation

The top income tax rate in Finland is 65%, taking account of national taxes, municipal taxes and social security payroll taxes. Finnish residents pay flat taxes to municipalities, with the rate varying between 15% and 20% depending on the municipality. A sickness insurance premium of 1.5% is a tax on earned income. Pension and unemployment insurance premiums are usually withheld from employees' salaries at a rate of 6.05%. Table 17 gives a breakdown of the state taxes on earned income for Finnish residents.

Amount of income, FIM	Average tax paid to upper threshold	Marginal tax applying over range
0-47,000	50	
47,000-63,000	930	5.5
63,000-80,000	3565	15.5
80,000-112,000	9805	19.5
112,000-176,000	26,125	25.5
176,000-312,000	68,965	31.5
312,000 and over		38.0

Table 17

Consumption tax

Value-added taxation (VAT) is applied at a high rate. The general rate is 22% but there are a few lower rates (food, transport). VAT is economically a tax on labour income and its introduction involves the confiscation of accrued wealth.

Summary

In summary, Finland is a high tax country that has reduced its tax on foreign capital because it believes it is very mobile, and reduced its tax on domestic capital, albeit to a lesser extent, given death duties and a wealth tax. The taxes on labour income are thus disproportionately higher.

Industry Policy

Finland takes a more active approach to industry policy than New Zealand, but maintains a clear focus on the goals its policy seeks.

The Ministry of Trade and Industry's web site leads with the statement "The task of public authorities is to formulate and implement long-term policies so as to ensure that companies operating in Finland have the necessary business framework to maintain and improve their international competitiveness."

Although its central goal is to "further real entrepreneurship that is independent of state aid" Finland believes that the Government has a real role to play in achieving this through "making greater outlays on technology, education, and training; raising the standard of education and training" while also "mak[ing] sure that the regional industrial infrastructure develops in a balanced way".

The Finns have moved away from the competition-inhibiting industrial policies they relied on until the 1980s towards forms of industry policy that are more consistent with competition and innovation.

This was signalled by the National Industry Strategy for Finland (1993), which set out plans to:

- reduce the tax burden on businesses
- improve the quality of the markets in which they operate
- encourage the development of SMEs
- improve innovative potential by enhancing businesses' technological development.

The strategy's goal was not to remove all industrial support but to refocus it on reducing market failures and to promote "an efficiency driven growth strategy".

The strategy has involved a move away from subsidising physical investment and into subsidising intangible investment such as R&D, education, training and the acquisition of entrepreneurial and marketing skills. To reflect this, legislation introduced in 1998 stated that industry support schemes should be primarily targeted on research, product development, training or on some other form of non-corporeal corporate development, or on the long-term enhancement of SMEs. Industry support for physical investments is now only granted on special grounds.

Much of the industry assistance in Finland is conducted by the Technology Development Centre of the Ministry of Trade and Industry (TEKES). In 1997, TEKES distributed almost three billion Markka (NZ$0.9 billion) to universities, research institutes and private companies. Financial support constitutes the dominant support mechanism for technological innovation in Finland, usually taking the form of grants.

Finland has massively increased its R&D input compared to other countries, moving from 1.5% of GDP in 1985 to 3.1% in 1999. At the same time the share of high-tech exports from Finland has tripled.

Most of this investment – around 68% – comes from the private sector. The Government's target of a 60/40 private/public split in R&D funding reflects the basic argument that if the private sector is willing to make risky investments in R&D (which may well have positive spin-offs for the economy as a whole), the Government should mitigate some of the risk and bear some of the cost of the R&D.

During the 1990s the dominant forms of support have changed markedly. Support for regional development fell from 81% of total industry expenditure in 1989 to 27% in 1996. On the other hand, support for R&D, SMEs and export-oriented activities rose from 16% to 72% over the same period.

TEKES Mission Statement

TEKES' primary objective is to promote the competitiveness of Finnish industry and the service sector by technological means. Activities should diversify production structures, increase production and exports, and create a foundation for employment and social well-being.

Main Functions

- Framing and preparation of national technology policy.
- Preparing, financing and co-ordination of national technology programmes.
- Financing applied technical research and risk-intensive industrial R&D projects.
- Financing and co-ordination of international technological co-operation.
- SME advisory services in technology transfer and exploitation.

The support for SMEs has basically three aspects:

1. European Union structural funds are estimated to have created around 14,000 jobs and saved around 32,000 jobs in SMEs (at unknown cost in other sectors). The European Union has co-financed some ECU211 million, including direct support of ECU86.1 million.
2. Administrative procedures – including the filing of VAT-related forms – have been simplified.
3. Fifteen business service points were opened in September 1997. These are managed by various ministries and aim to provide start-up grants that motivate workers to become entrepreneurs. These grants are of limited duration and are assessed and evaluated as the SME begins functioning.

In 1996 the Government released its white paper on Industry Policy, which outlines in some detail how it intends to use industry policy to improve the Finnish economy. The following sections draw on this document in outlining key elements of the Finnish industry policy strategy.

1. Competition Policy

Barriers to competition have been removed to enable the smooth functioning of competitive markets.

Unfair competition has been attacked through legislation, and cartels and the abuse of dominant market positions have been prohibited. Finnish competition policy also incorporates various European Union regulations that have been designed to prevent the distortion of competition in the European market.

Included in the European Union regulations are merger controls that apply to very large corporate takeovers, although Finland's position on this seems (at the time of the white paper) equivocal. The adoption of the Euro heralds new competition in domestic finance, and this is expected to increase the Finnish market share of foreign banks.

The Finns also apply regulations on competition to state-owned enterprises: state institutions that are transformed into limited liability companies are subject to all the normal regulations governing other enterprises, as well as policies aimed at maintaining neutrality in the marketplace. However, the regulations governing market operations of state-owned institutions are a little ambiguous – an institution is expected to follow business principles when operating, but at the same time the state is ultimately responsible for its borrowing. This is exacerbated by general service objectives that allow state institutions to operate in their (often sheltered) core business, while at the same time allowing them to operate outside their core areas, competing in the open sector.

2. State Aid

Another aspect of competition policy that has been addressed in the 1990s is state aid.

The Finns have been seeking to move away from direct aid towards the creation of favourable general business conditions. This requires substantial cuts to and refocusing of public subsidies. The Ministry of Trade and Industry is over-seeing this task, and one of its main objectives is "the harmonisation of corporate subsidies" by aiming at reducing overlap, distortions and complexity.

The initial step was a "severe pruning" of corporate subsidies – between 1995 and 1999 FIM1.9 billion (NZ$0.58 billion) was cut, mainly in the areas of regional support (transport subsidies), energy subsidies, company internationalisation support and interest subsidies for exports. At the same time the amount directed towards technical R&D has remained fairly constant, and as a result the share of these schemes has increased from 28% to 43% of all Ministry of Trade and Industry subsidies.

Finland has attempted to make all subsidies that are not aimed at product development – which seems to amount to regional aid – fund intangible

investments. The exception – development subsidies – is intended to aid internationalisation and support the development of SMEs on the basis that "there is every reason to support the development of Finland's economic structure in a way that creates an abundance of new industrial and service enterprises capable of exceeding the export threshold".

The white paper acknowledges that "all corporate subsidies distort competition" and attempts to recast the objective of state aid in a way that focuses on market failures and encourages the development of projects that would otherwise not be developed.

Although Finland accepts that there will be windfall gains where firms accept subsidies for projects they would have undertaken anyway, greater targeting through more precise eligibility criteria and fixed terms for support schemes is expected to alleviate the problem somewhat. The evaluation of the success or otherwise of projects is expected to play an important part in improving the process.

One danger with corporate subsidies is that regional competition is generated as cities or provinces or countries compete for a firm's investment. Having witnessed some of the excesses this "corporate welfare" has produced in the United States, the European Union has been quite active in attempting to ensure that member states refrain from such bidding wars with each other. The Finns are enthusiastic about European Union attempts to prevent the establishment of corporate welfare on the continent.

The main problem the white paper identifies with the Finnish system of corporate subsidies is a perceived lack of coherence or "harmonisation" between different subsidy programmes, especially given the increasing number of European Union regulations that must be combined with Finnish policy. The Ministry of Trade and Industry seems to be giving more attention to harmonisation as part of the refocusing and simplifying of industry policy generally.

3. R&D Policy

The Finns have moved from subsidising plants and equipment – as is often done in regional industrial policy – in favour of supporting intangible R&D. The Finnish authorities believe that this is where they can best assist, that without some government support for these activities they will lose valuable spill-over effects.

- Finland pursues an active policy of assisting private sector R&D via grants aimed at subsidising intangible investments, rather than capital items.
- The Finnish authorities essentially "chip in" to approved private sector projects to help encourage marginal investments.
- They do not fully fund private sector research projects from the ground up.
- Asset sales have been used to fund the increases in public sector R&D.

- The Finnish authorities aim for a 60/40 private/public split in R&D spending, and to this end have recently upped their contribution in response to increased private research investment.
- The Finns attempt to target their subsidies fairly closely – imposing time limits on grants and introducing review processes in order to monitor the success or failure of particular programmes.
- In addition, general research funding has been refocused in the 1990s to strengthen support for scientific and technical programmes, with other areas experiencing cuts.
- Support is directed at viable competitive ventures, and this support is reconsidered if the venture appears to be too reliant on government support.
- One primary concern is to fund projects that would not happen in the absence of government support. There are two sorts of possible errors here:
    1. The Government can fund projects that would have happened anyway
    2. The Government may not fund valuable projects that it should.

The New Zealand stance suggests we are more worried about the first sort of error, while the Finnish position is clearly more concerned with avoiding the second. The Finnish Government's white paper on Industrial Policy (1996) does address the first sort of error, but it believes that the incidence of these errors can be decreased by careful targeting and review processes.

4. Venture capital for Research and development

Sitra, the Finnish National Fund for Research and Development, was established in 1967 but made independent of the Bank of Finland in 1991. It is an independent public fund responsible to the Finnish Parliament. Its operations are financed through income from endowment capital (FIM2.9 billion (ECU0.5 billion, NZ$0.88 billion)) and the return on the investment operations.

The primary aim behind Sitra is to "facilitate Finland's social and economic adaptation to international changes, chart and present new strategic alternatives to increase the competitiveness of the Finnish economy, as well as to identify, develop and test new instruments with an impact on the country's competitiveness".

In order to achieve this, Sitra provides finances and implementation for nationally significant research, training and innovative projects. Sitra also invests in technology companies and funds both in Finland and abroad.

Sitra finances economically promising, small-sized technology firms. This is aimed at promoting firms' development and internationalisation. Sitra operates as a venture capital firm, and sees one of its roles as introducing new operative models to Finland, promoting competence and expertise in the field.

Sitra also invests in international technology funds. They constitute a part of Sitra's co-operation network and provide Finnish technology companies with an

opportunity to find international partners and financiers. The co-operation network has been created in geographical areas that are vital to Finnish technology firms, including not only the European Union and the US, but also Finland's neighbouring areas.

5. State Ownership

Several guidelines have been laid down for the operation of Finnish state-owned enterprises:

- Enterprises should be profitable, once they are well established, and they should not maintain production which is not going to be profitable in the long term.
- Enterprises should avoid becoming excessively leveraged.
- Enterprises should pay a dividend corresponding to normal business practice.
- Enterprises should work under the same conditions as relevantly similar enterprises and are not allowed to abuse their special position in competition.
- If special conditions are placed on state-owned enterprises they must be compensated for the costs these conditions bring.
- For the purposes of public subsidies, state-owned and privately owned enterprises are treated the same.

In addition, Finland has in the 1990s embarked on a programme of asset sales, divesting the Government of mature businesses that can operate in an open, competitive economy and that are not correcting for market failures. Funds from the sale of state-owned enterprises are being used to finance a large and permanent increase in state-sponsored R&D.

The composition of the governing authorities of many state-owned enterprises is being reviewed with the intention of ensuring that efficiency and expertise relevant to the operation of the enterprise are emphasised in its management.

6. Financial Markets

The banking sector in Finland is expected to face considerable competition in the wake of European Monetary Union. The banking sector in Finland does not seem to have been as well developed or as efficient as the banking sector in other countries, and there seems to be widespread concern about the ability of Finnish banks to remain competitive in the wake of monetary union.

7. Energy Policy

Finland's industry has for a long time been energy intensive; the share of its energy-intensive sectors has remained high at around 30% of total industry.

The demand for energy is also growing at the moment, and there seem to be concerns about possible future shortfalls. This is being addressed by the introduction of active measures and financial incentives that reward energy conservation. In 1997 the Government altered energy taxation to encourage more frugal use of electricity and oil (remember that the bilateral trade agreements with the Soviet Union shielded the Finns from the pro-conservation effects of the oil shocks as well as the more hurtful price shocks).

The energy markets are also being made more competitive by increasing competition and by addressing monopolistic practices where they occur. The Government is "committed to safeguarding an adequate supply of energy and to promote energy saving, primarily through market mechanisms". In addition, the Government is promoting research into (price-competitive) alternative sources of energy.

8. Environmental Policy

Finland's environmental policy is being integrated into its industrial policy, and it is enthusiastic about moving from an industry-based society to a knowledge-based society. This is partly because it signifies a shift away from the unsustainable exploitation of natural resources and a shift towards more environmentally-friendly forms of work.

The Finnish authorities support the harmonisation of environmental taxes (including energy taxes) within the European Union, and believe that these taxes should assist the development of new sectors rather than prevent them. However, Finland is in a somewhat different position from New Zealand as far as the environment is concerned; biodiversity is more of an issue for New Zealand, where many of our indigenous flora and fauna reside nowhere else in the world.

9. Regional Policy

The northern and eastern parts of Finland have proved slower to develop than other regions, and Finnish authorities are keen to ensure these areas are not left behind.

In addition to the use of European Union structural funds (Finland was eligible for around 2 billion Markka (NZ$0.6 billion) in 1997), the Finnish Government has established a national rural programme designed to safeguard balanced rural development and revitalise rural areas "by increasing the income of their inhabitants, by improving the functioning of services and rural communities and particularly by strengthening the competitiveness and attractiveness of these areas as places to live and carry out business activities".

10. Administration of Industrial Policy

Finland has an active and comprehensive approach to industrial policy, but also needs to be mindful of limitations and incentives placed on its policy by European Union membership. Because of this it is currently seeking to harmonise its policies as much as possible to improve its international competitiveness and identify and destroy toxic incentives, double-ups and other undesirable policy implications. This is an ongoing task.

11. Development of the Service Sector

The high-tech service sector has basically been responsible for much of Finland's growth over the last 20 years. Its employment share (as well as the output share) is also very high – every second Finn works in the sector. The

Finnish authorities are anxious to integrate the continuing growth of the service sector with the important manufacturing sector. Because many of Finland's exports and services make use of high-technology processes, the Finnish Government is attempting to encourage synergies between the two sectors. About 15% of Finnish R&D funding is channelled into "knowledge-based services" that comprise engineering, information technology, "well-being services" and tourism. Approximately 25% of the TEKES budget goes into information technology, and this is seen as an area offering higher than usual returns on investment.

12. Small and Medium-sized Enterprises

Finland sees the development of SMEs as a central part of its industry policy. They have become increasingly important in the Finnish economy over the last decade; those with fewer than 250 employees account for about 42% of GDP and about 60% of the private sector labour force (40% of all jobs).

One – probably very significant – advantage Finnish SMEs enjoy over their New Zealand counterparts is their proximity and access to large, integrated markets. Although most Finnish SMEs have a domestic focus, the European Union market provides an opportunity for small firms to go international without the regulatory, tariff, geographic or cultural barriers New Zealand firms may have to overcome when they attempt to become export firms.

In spite of the fact that SMEs are often innovative, they often have difficulty carrying out research and development owing to their lack of resources. Additionally, financiers often see small firms as risky and this can make it hard to attract low cost finance. However, the Finns see SMEs as fundamental to the country's economic performance and the Ministry for Trade and Industry and the Council for SMEs have been working to help these businesses in start-up, growth and operation by reducing compliance and labour costs, reviewing the implications of the tax code for SMEs and improving financing arrangements for small businesses.

13. Agriculture and Forestry

The white paper on Industrial Policy acknowledges that agriculture in Finland suffers from permanent disadvantages: “Due to Finland’s northern location, transportation costs are greater, harvests are poorer and construction costs are higher than in most other European Union countries. This results in a permanent competitive handicap for agriculture…” which the Finns attempt to ameliorate by direct income subsidies and by diversifying the production and service base of rural areas and farms.

The forestry sector is one of Finland’s traditional strengths and has contributed strongly to the recovery over recent years. The industry employs around 100,000 people, with around 140,000 indirectly employed in associated occupations.

Forestry has proved important in regional development in recent years – parts of the country that may otherwise have been left behind in the last 20 or so years. The sector was of fundamental importance in the recovery of recent years, and played a substantial part in ensuring that the gains from the recovery were broadly distributed.

In the last decade forestry policy has been revised to ensure greater sustainability and diversity.

DISCUSSION AND CONCLUSIONS

Comparing Finland and New Zealand

Finland has enjoyed consistently higher GDP per capita growth than New Zealand since the end of the Second World War, but especially since about 1970. Although this may be partially due to New Zealand's higher population growth over the period, there is evidence that total Finnish output has grown at considerably higher average rates than New Zealand's.

Since the recession, Finland has grown at an even faster rate – 5% per annum since 1994 – but much of this growth has been cyclical rebound in the wake of a very deep recession that occurred between 1990 and 1993. The 1994-99 growth is probably not sustainable – recent growth rates are expected to taper off somewhat once the Finns have fully recovered from the experience of the early 1990s.

During the recession, unemployment rose from 3.5% to 18% in Finland between 1990 and 1993. It has since declined to around 10% and is experienced disproportionately by older, less skilled workers.

During the recession, Finnish debt levels rose dramatically, from around 15% of GDP to around 60%. In the last few years this has tapered off – the Finns have used proceeds from asset sales to pay back debt. Now that they have lost monetary policy as an instrument, fiscal consolidation is expected to be used to tighten demand in the Finnish economy.

In terms of productivity, the growth in output per worker achieved in Finland has substantially outstripped that achieved in New Zealand since 1960, by increasing amounts as time has passed.

Strong growth in manufacturing has helped Finland's economy since the war. As well as traditionally strong areas associated with the forestry sector, shipbuilding and engineering industries have grown strongly, probably in part because of the seeding these industries received as a result of the payment of war reparations to the Soviet Union.

Bilateral trade agreements with the Soviet Union provided a counter-cyclical balance for the Finnish economy during the 1970s and 1980s, as the Finns could expand exports to the Soviet Union as part of the trade arrangements during periods of recession in other Finnish export markets.

Finland has been well integrated in the European economy for the entire post-war period – although arrangements with the Soviet Union limited Finland politically, the Finns were free to trade with anyone.

The collapse of Soviet trade arrangements at the start of this decade contributed to the massive recession experienced by Finland between 1990 and 1993.

Finnish firms have been successful in diversifying their markets in the 1990s, to the extent that the European Union share of Finnish exports has actually decreased since Finland joined in 1993, while the total volume of exports has risen considerably (from US$1.95 billion in 1994 to US$3.6 billion in 1998).

The growth of Nokia Corporation has also contributed to recent Finnish growth. In fact, most of the astounding growth in telecommunications and electronics in Finland in the 1990s has been because of this firm or its affiliates. Nokia's growth has been formidable – 25% per annum since 1994 – but it is difficult to generalise Nokia's success to that of Finnish manufacturing in general. It is certainly impossible to attribute it to public policy, although the liberalisation of telecommunications in Nordic countries is often cited as a reason for the success of both Ericsson and Nokia.

Finland's industrial production in the telecommunications sector was about 16 times higher in 1997 than it was in 1987. This sector now accounts for around 16% of all industrial output in Finland, and is primarily an export industry.

High-tech exports accounted for 19% of total Finnish exports in 1998. The share of high-tech products within total exports has increased almost four-fold in the last 10 years, from around 5% to 19%. This is a considerably faster rate of growth than that experienced in comparable countries.

Elements of Finnish Economic Strategy

Finnish economic policy has more constraints on it than does New Zealand's. Harmonisation with European Union policies constrains Finland to a far greater extent than do New Zealand's relationships with other countries.

Finland is moving in the same broad direction as New Zealand inasmuch as it is attempting to:

- integrate into a regional economy
- promote macroeconomic stability
- encourage the growth of a competitive private sector
- build a knowledge-based skills base
- promote openness and international linkages
- foster social cohesion.

Although Finland has also reformed parts of its public sector in a similar direction to the New Zealand (such as through a programme of asset sales), there are also significant differences (for example, wage setting tends to be carried out centrally in Finland).

One factor that seems central to Finnish success is education – the Finns perform well on international literacy and numeracy tests, and are in the process of reforming their tertiary education system to become more responsive to the needs of their economy. At the same time they are encouraging younger students to take an interest in the natural sciences (in spite of very high numbers of engineers and scientists in Finland, demand still exceeds supply).

Industry policy

The success of Finland's high technology sector poses an interesting challenge for New Zealand. How much of Finland's success is due to a different policy mix? The Finnish Government does not spend much more than New Zealand on R&D, however, it pursues an active policy of encouraging industry/Government joint ventures. Private sector spending on R&D is many times higher in Finland than in New Zealand.

Other policy stances may also have contributed. As in New Zealand, the Nordic countries have liberalised telecommunications and this is often cited for the success of both Ericsson and Nokia. Finland also boosts a well-educated workforce with a higher concentration of engineering and science graduates. Finland is now encouraging more commerce graduates to develop the marketing and management skills required for further expansion.

Policy making and social capital

Another policy lesson that comes through quite clearly is the focus on coordination, consensus-building and evaluation of policy.

The Finns seem very adept at accomplishing different aspects of a single goal through quite different policy mechanisms. For example, the goal to make Finland an information society involves aspects of:

- education policy (generously funded tertiary education, an emphasis on academic quality, entrepreneurship and technical areas)
- R&D funding (via TEKES, Sitra, the Academy of Finland)
- tax and employment policy (lowering the compliance costs for small businesses)
- agricultural policy (attempting to make up for "permanent disadvantages" through the clever use of advanced food technology).

The variety of instruments used by the Finns to accomplish their goals is impressive in its breadth, although with a public service as large as theirs the need to keep everything from becoming unwieldy becomes paramount.

Consensus-building seems another feature of the Finnish policy – and especially political – landscape. The parties forming the Government regularly represent more than 70% of Finnish voters, probably enabling them to debate policy subtleties in a more sophisticated way than is possible in more

adversarial systems. High social capital or trust is likely to be a significant feature in this.

The Finns also seem eager to stand back and evaluate policy so they can minimise errors. This is illustrated in their approach to R&D, where a high premium is placed on evaluating the success or otherwise of their policies.

One of the primary drivers behind Finland's increasing focus on high-technology products has been export diversification. Since the crisis, and in particular since the collapse of trade with the Soviet Union, Finland has increasingly looked to shift away from capital-intensive, conventional modes of production to knowledge-intensive industries.

In the end, it is hard to say whether Finland's recent success in high technology– was a fortunate accident, or the product of a different policy and cultural environment. There may be lessons to learn from Finland's approach to education and R&D policy. In particular, the Finnish approach of experimenting with different policy settings, and carefully evaluating their effect is instructive.

Finland's overall economic strategy bears a close resemblance to that of New Zealand. In some areas, New Zealand has already moved ahead on issues that Finland is now addressing (for example, fiscal consolidation). In other areas, Finland is generating better outcomes (for example education policy). This suggests that differences in economic performance between New Zealand and Finland are driven more strongly by cultural and perhaps geographical features, and historical antecedents, rather than contrasting policy approaches.

APPENDIX 1: FINNISH AND NEW ZEALAND GROWTH RATES

Year	New Zealand	Finland
1962	2.5	3
1963	4.3	3.3
1964	4.2	5.2
1965	6.3	5.3
1966	8.2	2.4
1967	-3.3	2.2
1968	-2.8	2.3
1969	6.7	9.6
1970	3.3	7.5
1971	2.7	2.1
1972	1.6	7.6
1973	9	6.6
1974	11.3	3.1
1975	-5.1	1.1
1976	3.3	0.3
1977	-1.3	0.1
1978	-6.4	2.2
1979	1.5	7.3
1980	0.4	5.3
1981	4.7	1.6
1982	3.3	3.6
1983	2.5	3
1984	8.5	3.1
1985	1.6	3.3
1986	0.6	2.4
1987	0.7	4.1
1988	2.7	4.9
1989	-0.8	5.7
1990	0.3	0
1991	-2.3	-7.1
1992	0.6	-3.6
1993	4.8	-1.2
1994	6.1	4.5
1995	3.3	5.1
1996	2.7	3.6
1997	3.1	6.1
1998	0.2	5

APPENDIX 2: FINNISH INHERITANCE AND GIFT TAXATION

Tax on Inheritances

Tax on inheritances is imposed on the individual share of each beneficiary. Liability to the tax covers any property if the deceased or the heir or the receiver of a bequest is a resident of Finland. If both the deceased and the heir are non-residents, tax liability covers only real property which is situated in Finland, and shares in a corporate body in which more than 50% of the assets consist of Finnish real property.

The inheritance tax is based on the market value of the property inherited as per date of death. Insurance payments owing to death to a beneficiary or to the estate are partly subject to inheritance tax, unless the payment is subject to income taxation. Debts are deductible, as well as costs for the funeral.

If the same property has been transferred as inheritance twice or more within two years, tax is levied only once.

If inheritance tax has been paid in a foreign country, the tax will be credited against Finnish tax, unless the foreign tax was imposed on real property situated in Finland.

Finland has concluded agreements to avoid double taxation on inheritance with the following states:

- Nordic countries
- Netherlands
- US
- France
- Switzerland.

Tax agreements take precedence over internal rules for property subject to tax and over rules for avoiding double taxation.

Gift Tax

Gift tax follows the same principles with small deviations and amendments as tax on inheritance. In gift taxation, gifts from the same donor within three years are accumulated for the purpose of determining the amount of tax. There is an agreement for avoidance of double taxation of gifts between the Nordic countries. With Greece there is an agreement covering only donations of real property.

Tax on inheritance and gift is based on the Inheritance and Gift Tax Act. The same tax rates apply for both inheritances and gifts. Recipients are divided into three categories, the tax being twice and correspondingly thrice the amount in the first category.

The first category includes following relationships:

- Spouse
- Children and their direct heirs
- Parents.

The second category is applied to siblings and their descendants. Other relationships fall under category three.

Tax rates in the first category (FIM):

Taxable amount	Tax at the lower limit	Tax on the exceeding part
20,000-100,000	500	10 %
100,000-300,000	8500	13 %
300,000 or more	34,500	16 %

Real Property Tax

Real property that is situated in Finland is subject to real property tax. The revenue goes to the municipality where the real property is situated. Land used in forestry or agriculture is exempted from real property tax.

Tax is paid annually by the person who was the owner of the real property at the beginning of the year.

Real property tax is based on the taxable value of the real property. Tax rates may vary in different municipalities between 0.2% and 0.8%. The rate for permanent residences is half the normal rate.

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