

Capital Market Integration: The Structure of the New Zealand Economy and its Capital Markets

A Report Prepared for the Ministry of Economic Development and the Capital Market Development Taskforce

by

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1. Introduction and Summary

The purpose of this review is to set out how New Zealand's equity markets relate to the economy, how this relationship varies across countries of a similar size to New Zealand and how it relates to certain institutional arrangements. The review is brief, reflecting the specification of this work for the taskforce that recognised in advance the potential paucity of data of sufficient quality to enable definitive inference. The investigation confirmed the severe data limitations associated with meaningful cross-country comparisons of institutional arrangements – for example, the extent to which economic activity is conducted by entities that issue equity and if so whether or not it is traded – let alone their linkage with economic performance. The OECD puts together a report on each country infrequently, usually focusing on a single utility, and often with different focuses that would make them hard to compare. Often these are qualitatively descriptive and seek to propound guidelines (see for example OECD (2005)).

Comparison of institutions is an inherently difficult subject for cross-country comparisons. At one level definitions vary widely across countries - e.g. New Zealand does not have a specific company category for cooperatives, in contrast to many other countries - and at another level the structures themselves have to be understood in detail before inferring their role in equity markets. Taking the example of cooperatives, it has been a theme of Michael Cook (for example Cook (2003) and Sykuta, and Cook (2001)) that the pure form of cooperative is rare and that under this label there are many varieties of organisational form that attempt to solve market power, governance and ownership issues in a wide range of settings; such that the label "cooperative" spans participation and nonparticipation in equity markets. Further, forms of cooperative participation in equity markets vary to an extent that has various implications for their effects on organisational performance, their contribution to the ownership market, and the liquidity of equity markets. Firms labelled State Owned Enterprises (SOEs) also have this feature of wide variation (see Vagliasindi (2008)). It means that it is not sufficient to assess institutional arrangements by their labels or even a subset of the features of them, if cross-country comparative work is to be useful.

The following remarks are drawn from the material that follows. Certain elements of the picture that emerges are well known.¹

Economic characteristics of the economy in 2007

Among the sample countries Australia, Denmark, Finland, Ireland, Norway, Singapore, Sweden and Switzerland, New Zealand has:

- the lowest population, lowest income per head, and is ranked 4th in 2007 in income growth rates;
- a similar economy-wide structure in that all countries GDPs are about 70% services; with the exception that New Zealand has a relatively more agriculturally based contribution to GDP than manufacturing; and
- relatively small firms.

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The commentary in this report is limited to the periods of the data which all end by 2007.

Distinctively New Zealand Features

New Zealand is isolated by distance. There is evidence (and reason) that suggest that New Zealand's isolation matters more for its economic structure and performance than does its small size and population. Of all countries that New Zealand is often compared with, New Zealand has the greater economic distance from its markets; where economic distance takes account of proximity to markets of various sizes. Further, it is not clear that New Zealand has benefitted from the huge reduction in transactions costs - transport and communication - that have accompanied the digital revolution in goods and services. It has been argued that these technologies are complements of, rather than substitutes for, standard face-to-face communication which, if true, means that isolation remains an issue for New Zealand (relative to countries closer to markets) for commerce. This might be a contributing factor in the fact that other countries seem to have become more open to trade relative to New Zealand in the 1996-2007 decade, and that New Zealand product variety is low relative to other developed economies. The extent of trade will have implications for financial markets.

A second distinguishing feature is that New Zealand has among the weakest private property right protections from the state among all OECD countries (see Evans, Quigley and Counsell (2009)). While recognising that enforcement and outcomes will depend on institutional arrangements in any country, New Zealand is the only country to not provide in statute that property rights are an element of individual rights. The absence of this affects the way all sorts of regulation is conducted and investment incentives within New Zealand. It is noteworthy that recent economic literature explores the importance of this issue. Perotti and Oijen (2001) find a strong connection between reduced political risk and privatisation; whereas Bortolotti, de Jong, Nicodano and Schidele (2007) find a strong positive association between privatisation and stock market liquidity across 19 developed economies.

A third distinguishing feature of New Zealand is that it has little manufacturing and significant agricultural processing relative to the comparator countries. A large proportion of New Zealand's export earnings are derived from agriculture. The consequences are that New Zealand's business cycles are quite strongly influenced by commodity prices, and by the fact that New Zealand produces few durable goods. Durable goods production is particularly sensitive to variations in income associated with business cyles.

Equity Market Characteristics of the Economy 1996-2007

- During this period the New Zealand domestic equity market declined relative to GDP, in contrast to a number of comparator countries. In addition the number of listed companies fell from a low level in 1996 in New Zealand. Just one other of the comparator countries experienced such a fall.
- The average size of listed New Zealand companies remained constant but generally increased in the comparator countries. Where company size is assessed relative to GDP New Zealand was not that different from a number of

other countries; but the small decline in this measure over the ten year period for New Zealand has been unusual across comparator countries.

- The value of domestic equity market annual turnover relative to GDP is the smallest among countries considered and it has changed negligibly over the period, again in contrast to the other comparator countries. The seemingly rather flat performance of New Zealand in this respect is confirmed by no change in the number of companies listed; a result that masks the fact that foreign companies listed declined during the period.
- New Zealand lies in the pack with respect to the value traded relative to GDP suggesting that controlling for the size of the market, liquidity is similar to other countries. However, New Zealand has a relatively low number of traded equity transactions per head of population.
- The data across comparator countries suggest that New Zealand has a much higher gross dividend yield and that it has grown relative to other countries. The price earnings ratio of New Zealand listed companies has varied over time relative to other countries, increasing steadily to 2007 when it was at its highest level. However, given the variability of this statistic New Zealand is not significantly different from other countries. Combining the price earnings findings with that of the high dividend yield is somewhat suggestive that New Zealand's dividend imputation tax system may be influential in the relatively high dividend yield, but various other factors may also play a role.
- The concentration of the New Zealand market as measured in various ways places New Zealand within the same range as the comparator countries, and the group that experienced declines suggesting that listed companies became relatively smaller over the decade. Depending somewhat on which statistic is used quite a number of other comparator countries' equity markets increased in concentration over the period.
- The real dividend yield (the yield after adjusting for inflation) is very different across countries in the early part of the decade but from 2000 it has been quite similar. Since the year 2000 it has exhibited the same characteristics as growth in market capitalisation. They were each very different across countries early in the decade at which time New Zealand's growth in market capitalisation was relatively very low. It has been very similar across comparator countries since 2000. During this latter period it would seem that any shocks these markets have been experiencing have been common across countries rather than country specific.
- There is some evidence that liquidity or transactions on a value basis are generally less in New Zealand than the comparator countries.

Summary: New Zealand Equity Market and Economic Characteristics

This preliminary analysis suggests that isolation may matter for the New Zealand economy, although the link to equity markets is not established; and the result may be confounded by other characteristics such as state policies with respect to private sector property rights. However, it is the case that New Zealand has had in the decade 1996-2007 relatively less deepening of trade and of its listed equity market than other small economies that are often compared with New Zealand. Also compared to these countries New Zealand has a small listed equity market, even when assessed relative to its relatively low GDP. There is literature that suggests that the preponderance of cooperatives and state owned firms that are of a pure form that do not participate in equity markets may also inhibit the development of listed equity markets. The extent of these firms in the economy is difficult to assess relative to that of other countries.

2. Information on Comparable Economies

It is useful to understand key characteristics of developed countries with similarly small populations and stages of development to New Zealand in order that findings with respect to New Zealand can be placed in perspective. The sample of countries we consider varies but generally includes those with which comparisons are commonly made, namely: Australia, Denmark, Finland, Ireland, Norway, Singapore, Sweden and Switzerland.

2.1 Country Characteristics

Table 1 shows that in 2007 New Zealand had the smallest population in this sample, the lowest income (GDP) per head (on a US\$ and purchasing power parity basis) and an economic growth rate that ranked in the middle of these countries.

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		GDP	
		per	Annual
	2007	capita	Growth
Population	CDP	2007	Roal

Table 1:	Comparable	Countries	Used in	Cross	Sectional	Analysis 2007
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	Population - millions	GDP (US\$	GDP/Capita	2007 (US\$	Real GDP
Country	(2007)	million)	2007 (US\$)	PPP)	2007
Australia	21,017,000	821,716	39,098	34,882	3.51%
Denmark	5,460,000	308,093	56,427	35,787	2.17%
Finland	5,289,000	466,020	88,111	15,504	3.77%
Ireland	4,366,000	254,970	58,399	43,035	7.33%
New Zealand	4,228,000	129,372	30,599	26,110	2.91%
Norway	4,709,000	381,951	81,111	53,334	2.89%
Singapore	4,589,000	161,347	35,160	50,299	7.70%
Sweden	9,148,000	444,443	48,584	36,365	3.06%
Switzerland	7,550,000	415,516	55,035	39,963	1.79%
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Source: WTO trade profiles, OECD.

2.2 Isolation is More Distinctive than Small Size

The gravity model (see Evans and Hughes (2002)) constructs a scale that reflects nearness to relevant markets weighted by size of these markets and the domestic economy. The idea is to construct an index of economic distance. The approach is used in regional economics.

The research produced the result that New Zealand at 2.45 is the most economically isolated of all OECD countries. It is close to Australian isolation (2.5 on the scale; but otherwise significantly more economically distant than any other country. Other countries' positions were Finland 9.6, Sweden 11.92, Norway 12.05, Ireland 14.22, Netherlands 26.57, and the UK 26.87).

The figures show that generally other small countries in the sample have relatively short economic distances. Distance does seem to matter for economic performance. An Australian Treasury Study (Rahman (2005)) claims distance explains 50% of the Australian income gap with the USA.

Digital and other technologies have reduced the communications and transport costs for modern economies; but it is not clear that this reduction has improved the comparative advantage of remote economies (Gaspar and Glaeser (1998)): because, it is argued, the new technologies have been complements rather than substitutes for existing communication channels. Since the 1990s there has been burgeoning trade between relatively close countries such that NZ is no longer an "open" economy relative to many other nations (McCann (2007)). This is confirmed by the following analysis of "openness".

Figures 1 and 2 indicate the annual trade of goods of each country against its total economy (in terms of GDP). It shows New Zealand has a surprisingly low percentage, only Australia and Finland have a lower 2007 figure. New Zealand's total trade has also fallen, while all other countries considered, with the exception of Ireland and Finland, have increased in this trade measure. This position has evolved from 2000 - 2007 in a way that suggests that New Zealand has not participated significantly in the growth of trade over the period, although a few countries of similar size are in the same position. Trade of agricultural products is a large part of New Zealand's exports, but trade in goods relative to GDP has dropped in the last decade.





A similar picture emerges from study² of the variety of goods New Zealand imports. While variety grew dramatically in the 1980s, it seems to have reached a plateau in terms of the varieties of goods imported (Figure 3). New Zealand goods variety grew 49% between 1983-2005 faster than all but "developing" countries but it remains less than that of other developed nations.





Variety in Figure 4 can be viewed as describing the number of different countries goods are sourced from. The data for this graph counts goods from different countries separately as different goods, to give the total variety. On this measure the same general picture emerges of slowly increasing variety with a rapid growth spurt in the late 1980s.

² ISCR unpublished work.

It is arguable, but it may not be that economic distance has declined for New Zealand since the 1990s despite the developments of modern economies. This is relevant to financial markets because of the synergies between financial markets and markets for goods and services.

2.3 Market Structure is Affected by Size & Isolation

In 2000 S&P and ANZ data suggested (see Arnold, Boles de Boer, and Evans (2003))

- NZ domestic markets are concentrated relative to other markets
- NZ industries and firms
 - were tiny and not profitable, capital intensive --relative to output
 - had diseconomies of density.
 - produced a relatively high (reasonable) operating profit per unit of capital (revenue)
 - had relatively high average costs accounting for the higher wacc => poor productivity and/or absence of economies of scale
 - NZ400 firms had a higher average cost (per revenue) than did the larger NZ60 firms.

More recent data continues to suggest that New Zealand private enterprises are relatively small (Figure 5). The majority of New Zealand's registered private firms have no employees and the average number of employees per New Zealand enterprise was 5.2 as at February 2005.



This graph takes all domestically registered businesses into account, including those that are not actively operating

As Figure 6 shows, services dominate New Zealand and the comparator countries, and as is well known New Zealand has a relatively large (small) agricultural (industrial) sector. New Zealand has, by employment, 68% of its economy in services.





Competition matters for good performance in services; since the output of services generally cannot be quantified and must be experienced for assessment. Competition among services will also likely increase synergies with financial markets. New Zealand has chosen to limit competition in a range of services that include: education, health and insurance. There may be scale/variety limitations in many services resulting from the size and isolation of New Zealand despite structure (e.g. retail services/logistics). There are some New Zealand service market structures (e.g. banking and supermarkets) that are quite similar to those of other larger countries.

3 International Comparison: Financial Markets

Market capitalisation as a percentage of nominal GDP is reported in Figure 7. It shows New Zealand's domestic equity market shrank relative to the economy between 1996 and 2007, while all but one of the other economies have grown considerably. While Ireland similarly has a relatively small capital market, it has grown during the decade.





Figure 8 shows the total number of companies registered on the stock exchange per million people in the country. There are two distinct groups of countries: those markets that have had considerable growth, such as Singapore, Australia and Sweden, and the others that have had small or negative growth. For New Zealand the number of listed companies per million people has fallen slightly, relatively in line with the fall in market capitalisation over the same time period.



In Figure 9 the average value of a listed company on that country's stock exchange in millions of US dollars is illustrated. It shows that New Zealand has a much smaller average company size than comparable countries. Countries such as Australia have had significant growth in company size over the last decade, while the average value of New Zealand companies has fallen. This will reflect various factors that include the effect of mergers and divestments.

In Figure 10 the average value of a listed company on each country's stock exchange as a proportion of Gross Domestic Product is shown for 1996 and 2007. New Zealand performs much better relative to other countries when economy size is adjusted for, but again the average company value fell between 1996 and 2007, and on this metric relatively more than other countries. Switzerland and Norway demonstrate significant growth in average company value over the decade.



In Figure 11 the value traded ratio is presented. It measures the value of the annual domestic equity market turnover relative to GDP. New Zealand has significantly the smallest ratio of this group and has had negligible increase over the period. The other countries shown typically start at higher levels and have



had significant increases in this ratio over the last three years. This result may suggest market growth and/or increased liquidity for these countries; but not for New Zealand.

The rather flat performance of the New Zealand market over the period of our sample is further indicated by the following Figure 12 which evidences a moderate growth in listed domestic companies and a decline in foreign companies listed: the net result being little change in numbers of listed companies over the period.

Figure 12: New Zealand - No. of Companies Listed and Domestic Company Market Capitalisation 1996-2007 (excluding investment funds)

Year	Domestic Co.s listed	Foreign Co.s listed	Market Capitalisation domestic Co.s (NZ\$ million)
1996	132	43	54,684.70
1997	120	60	52,543.30
1998	124	58	47,222.50
1999	124	65	54,364.40
2000	147	56	42,063.60
2001	145	50	42,799.40
2002	146	50	41,482.30
2003	141	43	50,338.00
2004	158	42	60,546.00
2005	153	32	59,601.90
2006	151	31	63,558.80
2007	152	26	61,707.50

Source: WFE and NZSE

The turnover ratio described in Figure 13 measures market liquidity by calculating the value traded relative to total market capitalisation. New Zealand generally has a slightly lower turnover ratio than the other countries measured, but the difference is much smaller than in the previous graph that has turnover relative to GDP. This suggests that New Zealand's market, despite being small, is not more illiquid: that is, that the value of traded stock in the relatively small



New Zealand market is about what might be expected in comparator countries, had they an equity market of New Zealand's small size.

Figure 14 depicts the number of trades of shares per year as a proportion of the population. It shows a clear divide between low and high liquidity markets. Australia especially is shown to enjoy high turnover considering it has the largest population in the sample. New Zealand's trades per head have grown very little in the last decade when compared to Ireland, which had the lowest per capita turnover in 1996, and to all the countries for which there are data.

The Price/Earnings ratio measures the value of the market relative to its annual earnings, and it is shown in Figure 15 for the 1996-2007 decade. A relatively high P/E ratio may be associated with a relatively low interest rate and will reflect market expectations about the growth of future earnings. With the exception of Finland, the P/E ratio of countries sampled has not increased, but there is large variation over time. New Zealand was near the bottom of the sample in 1997, but had a relatively high P/E ratio in 2007, compared to those countries with available data.







The gross dividend yield measures the value of dividends paid relative to total market capitalisation. Figure 15 illustrates that New Zealand has a very high dividend yield compared to similar economies, and that this gap appears to have increased between 2000 and 2006. The level of dividend yield may be affected by a country's corporate and personal taxation systems, its investment opportunities and the actual and perceived governance of the companies. A high P/E ratio jointly with a high gross dividend yield may reflect the dividend imputation tax system but an explanation requires analysis of a complex interaction of factors.

An investment's real return is the nominal return adjusted for the inflation rate. Figure 17 gives the real return as a percentage of investment.³ It shows that the variability of real returns has decreased considerably since 1999, that their pattern is similar across countries and in consequence there is strong cross-country correlation. The close correlation of the later years is suggestive that any significant shocks have been common across countries, rather than country specific. New Zealand exhibits the common pattern.

³ The WFE website does not explain how the real return that it reports is calculated. Since they publish a "total return" and an "annual inflation rate" both in percentages, I assume real return is calculated total return minus inflation. The website reports that total return is calculated by adding the annual stock price index performance and the gross dividend yield paid during a given year.



Source: WFE (some data unavailable: only data for Ireland and Singapore post 2005))



Figure 18 shows the number of companies listed each year as a proportion of the national population. It suggests that the number of new listings follows a similar cycle in most countries. New Zealand's new listings per million persons are in the middle of this group, but have dropped in the last few years. It should be noted that new listings need not be company start-ups at or near that date.



Figure 19 shows the percentage of the market that is made up by the 10 firms that make up the highest (traded) capitalisation, which is measured by multiplying the number of shares traded by the share price over a period of a year. It is a measure of concentration derived from an indicator of company size. The concentration is gradually decreasing for most of the countries in the sample, with New Zealand again in the middle of this data. A tentative inference is that the declining trend suggests that small and medium sized companies are gradually making up more of the market.

Figure 20 shows the percentage of the market that is made up by the 10 firms that have the highest turnover, by value, over the year. Reduced volatility of market structure on this measure is present in all countries considered after 2004. New Zealand has a relatively high market concentration on this measure, while Australia's figure is considerably lower. This may suggest that few firms in the New Zealand market have liquid stocks.





Figure 21 measures the proportion of the market made up by the 5 percent of domestic companies that have the highest value in the year considered. On this basis New Zealand has had the largest drop in concentration between 1996 and 2007. It may suggest that smaller companies are becoming more evident in the domestic market.

This change is the opposite of Norway, Sweden and Australia where this measure of concentration has increased considerably over the same period



Figure 22 represents the proportion of the market made up of the 5% of domestic companies that were the most heavily traded, by value, over the year considered. New Zealand is again in the minority, as the concentration of the most traded companies fell over the last decade in that country; whereas in Australia, Switzerland, Sweden, Norway and Singapore, the concentration of these firms has increased.



Domestic Market Capitalisation measures the size of the domestic stock exchange by multiplying the number of shares traded in a year by their value. In Figure 23 this value is normalised by the size of the economy as measured by Gross Domestic Product. New Zealand has the smallest capital market relative to the size of its economy, although Norway and Ireland also have small markets. Note that this result should be viewed in the context that New Zealand also had the smallest economy on a GDP basis (see Table 1).



The turnover velocity is the ratio between the turnover of domestic shares and their market capitalisation and it is indicated in Figure 24. New Zealand also has the lowest turnover velocity or liquidity when compared to similar economies, with a significant margin between New Zealand and the next lowest, Singapore.



The data of Figure 25 measures the change in market capitalisation (or stock market value) between one year and the next in each of the economies studied. A significant increase in correlation between the sampled economies is evident since 2001. New Zealand exhibits the lowest annual growth over the period. Prior to 2001 New Zealand had much lower annual growth than comparator countries such as Finland and Singapore

4. References Relating to New Zealand economy and equity markets 2007

J. Kerr et al (2008), suggest that privatization of State Owned Enterprises (SOEs) can have a significant impact on capital markets, and this might be a reason for the government to sell assets. However this study also points out that during New Zealand's privatization process many firms were not listed.

Cooperatives make up a significant part of New Zealand's agricultural sector, but are often not publicly listed. The dairy industry is the primary example of cooperative dominance, with over 99% of the market being made up by cooperatives (Evans & Meade (2005)). Cooperatives also make up around half of the meat processing market, and are involved in wool and fruit exporting.

Bekkum & Bijman (2006) discusses two historical cases of New Zealand cooperatives listing publicly, Otago Farmers and Affco. Otago Farmers was later taken over by what is now Fonterra, while Affco is still listed. It has no supplier representation.

Bekkum & Bijman (2006) also examine "hybrid listed cooperatives" where there is partial investor ownership but the cooperative model remains and the members retain control. This model has been used in agricultural sectors in Ireland, Australia and Finland with continuing success.

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