Improving New Zealand's Productivity - A way forward

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INTRODUCTION

The purpose of this paper is to extend recent analysis of why productivity in NZ is much lower than other OECD countries and to make some suggestions as to future policy directions.

The term 'productivity' is used to mean the amount of value added per unit of input. The NZ economy is characterised by some well performing industries and businesses with good productivity and value added, while a much larger part of the economy, including some major sectors employing the majority of the labour force achieve low productivity and value added. The solution is to incentivise all businesses to improve their performance and where they will not, or can not, then let the resources employed by those businesses move elsewhere in the economy, either within the same sector or to another higher performing sector.

COMMON POSITED REASONS FOR NZ'S LOW PRODUCTIVITY, some weak/wrong and some very relevant.

The following are the often cited reasons for NZ's low productivity and an analysis of them.

<u>Weak international connection and distance from foreign markets.</u>
Despite NZ being relatively open on paper, only a small share of NZ firms engage in global markets through trade and foreign investment links. The weak international connection through relatively low international trade volumes resulting in low innovation is suggested to lower productivity. But is this low international connection a cause of, or an effect of, low productivity? In particular are the factors that lead to NZ's low productivity, especially low managerial ability, the lack of an 'up or out' environment, and a lack of interest in innovation, also the reason for the lack of international connection. With low productivity NZ firms can not compete internationally so do not have international connections. This idea is expanded on later in this paper.

Also often mentioned as a possible reason for NZ's low productivity is our geographic isolation. This is cited as perhaps being more relevant in recent years because of the greater proportion of intermediate goods traded as part of global value chains. Transporting goods to overseas markets obviously increases the landed costs in those markets and reduces the net return to sellers. To export and cover the higher (than competitors) freight costs and still receive an acceptable net return exporters must in fact be more efficient (productive) than their competitors. So being an exporter requires a higher than average level of productivity.

Larger NZ firms not exporting, but who potentially could, then fall into the same category as all the other hundreds of thousands of domestic firms lacking strong domestic competition, and thus the need to adopt the best innovative practices. Hence geographic isolation is not the reason for low productivity but low general productivity means most firms are not productive enough to overcome geographic isolation. And the low productivity firms are that because they do not adopt innovative equipment and processes.

We can not change geographic position so we have to live with it and do the best we can in reducing the impact of distance. NZ has been successfully exporting on a large scale for 150 years and since the 1970's when our access to European markets began declining our growing markets (in Asia) have been much closer. Market distance is not an insurmountable problem. The issue is what do we export that reduces the proportional effect of freight costs on net returns, that is adding more value in NZ relative to freight costs.

The idea that NZ's overall low productivity can be partly attributed to the tyranny of distance, especially for intermediate goods is, at best, exaggerated. For example, complete wings and fuselage sections for Boeing 787s are made in Italy and Japan and flown to the USA. Airbus does the same within Europe.

In conclusion geographic isolation is not a cause of lower productivity, but the reverse, our lower than desired level of exports directly reflects NZ's lower productivity.

Effect of 'high' real exchange and interest rates

It has been suggested that NZ's real interest rates are 'high' and overvalued exchange rates are also significant in lowering NZ's productivity. It is also suggested that the high real interest rates may be connected to persistent excess demand pressures in the economy and low saving. This is a reasonable explanation. And of course in NZ with a substantial proportion of people being on low real incomes it is not surprising that saving rates are low. Given this, is it not the case that high real interest rates are a reflection of low productivity, consequent low incomes, and hence low saving rates? Plus of course a high level of borrowing for expensive housing, exacerbated by high immigration levels and high building costs.

However, I doubt high real interest rates have anything but a marginal effect on business investment decisions. When a business is deciding whether to invest in a capital project they are usually looking to get a rate of return exceeding 10%. Here are recent percentage rates of return on investments for some of NZ's more successful firms; Air NZ 8.0, Freightways 13.8, Kathmandu 10.0, Scales Corporation 11.1, Skellerup Industries 11.1, Spark 16.3, Tourism Holdings 9.9. So a 1 or 2 percentage point difference in real interest rates between NZ and elsewhere has to be put in perspective.

In regard to the posited overvalued exchange rate (driven partly by high interest rates) the term 'overvalued' itself is pejorative. What is too high an exchange rate for an exporter is the opposite for an importer. To the extent the NZ dollar is 'overvalued' then this lowers the cost of imported capital goods and services.

When considering productivity policy options, interest and currency rates can only be seen as they are what they are, especially in the medium term, and we should not try to institute productivity enhancing policies to tackle these 'problems' directly. Given the above reasoning as to why we have 'higher than desirable' real interest and exchange rates then increasing NZ's productivity will create a self-reinforcing positive process.

Small insular domestic markets.

The NZPC reports that NZ firms in the services sector are most likely to operate in small local markets insulated from competition and learning opportunities and with little opportunity or incentive to scale up. Small and dispersed markets impact on firm growth. A lack of international connection coupled with small domestic markets most likely lowers the return on investment in R & D. Firms start small and survivors remain relatively small, consistent with a lack of 'up or out' dynamics.

Much of NZ's work force work in tiny businesses that are dispersed widely across the country with demonstrated low productivity. Of the 515,000 NZ companies 495,000 are classified as small or medium, and 363,000 employ no staff or less than 5 people. And the low productivity of the construction industry must impact negatively on investment costs for other businesses. NZ's productivity will not improve without a significantly better performance from the large proportion of the economy comprising small businesses. Most commentators take the poor performance of this major part of the economy as unalterable, but if NZ is to improve its productivity on a widespread basis then these thousands of small businesses must up their performance and in the proposed policies section are suggestions how to achieve this.

Low investment and a capital-shallow economy

The NZ economy is capital-shallow. Above is discussed and generally dismissed the role of 'high' real interest and exchange rates leading to capital 'shallowness'. The main reason for the lack of productivity enhancing investments is the lack of competitive and other pressures compelling business owners, boards, and managers to implement better ways of doing things.

Weak investment in knowledge-based capital (KBC)

While the NZPC notes that little is known about investment in KBC in NZ it also says that in general, R&D and managerial capability - both important in facilitating technology diffusion - are weak.But a key issue occasionally mentioned in various papers but not given the absolutely necessary attention required is the lack of quality management and leadership in these hundreds of thousands of small businesses. The NZPC reports there is evidence that well-managed firms are more innovative. Jaffe and Le (2015) find that firms that complete a management programme are more likely to undertake various types of innovation.

The NZPC also reports on studies that have shown multinational and publicly listed firms in NZ have superior management performance compared with privately-owned firms, family owned firms, and cooperatives and while some NZ firms are managed as well as any in the world, there is a substantial tail of mediocre and poorly-managed firms.

The weak investment in knowledge based capital, especially management expertise and true leadership, is the main reason why NZ business is failing. And one of the core elements of good management is leadership. From experience I know that in the building industry there is a common attitude of 'this is how we have always done things so this how we will continue' despite there being better ways. There used to be a firm in Wellington, L V Martin, which sold appliances and had a sales slogan something like "It's the putting right that counts' That is totally wrong. It is getting it right the first time that counts.

THE MOST IMPORTANT REASON WHY NZ HAS LOW PRODUCTIVITY

It is the board/managers of a firm who make the decisions as to what to produce, how to produce it (especially the mix of capital and labour), how to market their output, etc. It is the leadership aspect of high level management that encourages all the people in the business to work cooperatively to the common objectives. Managerial decisions and leadership are the only things that determine whether a firm is more or less productive than other firms in the same market segment. It is the managers who make the decisions about innovation and capital investment and motivate staff to perform well. The severe shortage of knowledge based capital in the form of leadership and management is by far the primary reason NZ is failing.

WHAT IS THE RATIONALE FOR IMPROVING PRODUCTIVITY?

The common objective for analysing NZ's low productivity rate is to help achieve a higher national income through a higher return on capital, increased salaries and wages, and hence increased Government income that can fund improved health, education, social, and other central government services. What share of the improved national income goes to each of these three participant groups in the economy depends of course on the ongoing political process including what economic tools are used to achieve the increase in productivity.

However, one mindset must be altered.This is in regard to using the term 'wage and salary inflation'. The word 'inflation' when used in relation to the price of labour is generally seen to have negative connotations. For example, a 2018 news headline was "Wage inflation is tipped to rise, warns NZ economists" Also a bank economist concurrently said: "He expects the central bank will want to be sure that wage growth will continue to firm before lifting the OCR, meaning hikes are distant" That is, a sustained increase in the income of wage earners is seen as undesirable and should be dampened down by increasing interest rates. This attitude is also shown by some leaders of manufacturer and employer organisations to whom it seems any increase in the living standards of their employees through higher wages and salaries is something to be abhorred. Rather than, 'Okay, wages are going up so how can we use these workers more productively' their approach is to try and suppress the wage increases. These organisations, but not necessarily all their members, have a completely backward and negative approach. Keeping their workers suppressed is probably a lot easier than doing the hard yards themselves improving their own performance. This backward and very damaging attitude by employers and manufacturers organisations was highlighted by the August/September 2018 debate around business confidence and what the Government (according to the organisations) needed to do.

Increasing salaries and wages and profits, through better economic performance by the owners of capital and by labour is what it is all about. An increase in the price of labour (so called wage inflation) associated with increased productivity is totally desirable.

IMMIGRATION & PRODUCTIVITY

As noted above, the objective is to improve GDP per capita. The two interactive legs to this process are to move resources into those areas of production/service which give the greatest value added and to make those areas as efficient as possible. In recent years there has been an historically high level of immigration to NZ
and despite policies intended to achieve the opposite the average skill level of migrants has been low. This

high level of immigration has placed great pressure on the nation's infrastructure, especially housing, health services and roading. As part of this, while total GDP has grown, GDP per capita has stagnated. Immigration has certainly not added to NZ's productivity.

We do not need any more low skilled migrants going into low paid jobs but should only allow in skilled workers that meet critical needs. Our productivity problem, and consequent low average real personal incomes can not be solved by mass immigration as much as some employers would like this as a means of keeping labour costs down and avoiding the need for them to improve their performance.

NZ LABOUR MARKET

This section is intended to illustrate the type of issues the NZ labour market faces which can only be resolved in productivity terms by the improvement of labour productivity within industries and the movement of labour from one industry to another.

On a daily basis there are comments from employers that they can't get the workers they need, albeit, labourers, carpenters, mechanics, truck drivers, panel beaters, farm workers, software analysts. The kiwifruit industry expects to double production in the next ten years and will need another 7000 pickers/packers plus a more limited number of extra long term staff. The apple and pear industry is also growing rapidly and can not get enough seasonal workers. The wine industry also uses thousands of seasonal and full time workers. The use of seasonal workers on short term contracts from the Pacific Island countries has increased rapidly in recent years. This is not necessarily bad since these workers do not place a proportional impact on NZ's infrastructure, especially in the larger cities, and it supplements NZ's foreign aid assistance to these Pacific countries. But this should only continue providing the workers are not paid exploitative wages that mean their employers do not have to adopt more productive practices. It is only recently that the kiwifruit employers have begun to acknowledge that to get more NZ and backpacker employees they will need to raise wages, and improve terms and conditions by such things as longer term contracts.

So in NZ many industries/sectors see themselves growing significantly with a greatly increased need for relatively low skilled workers. This demand for more low-skilled workers is of course based on the continuation of existing production systems whereas those industries should instead of importing labour be looking at technology that improves the productivity of labour.

In looking at the NZ labour market for examples of where things must change it is impossible to avoid the tourism industry. It is a large industry, one of our biggest foreign exchange earners, employs a significant part of the population, and has very low productivity. It employs thousands of people doing menial jobs at minimum wage rates. At the same time in tourism hotspots like Queenstown there are major infrastructure problems including housing. To improve NZ's overall productivity the tourism industry must be one of those sectors which greatly improves productivity and wages, or shrinks.

The Government has announced a massive tree planting programme of which evidently half will be native trees and half commercial forests. But the forestry industry is already bringing in workers from the Pacific region to undertake the essential pruning and thinning of existing commercial forests.

The NZ Government has promised more teachers, more nurses, more police, more social workers - all highly skilled workers. In the short term this demand can only be satisfied by immigration and in the longer term newly qualified people beginning their first job or people leaving other industries and retraining.

It is not that a shift of labour and management to businesses where they can be used more productively means that whole industries/sectors need to go out of existence. Productivity within sectors varies considerably. For example, within the kiwifruit industry there are large variations between orchards in production per hectare due to different climate, soils, and particularly orchard management. Kiwifruit packhouses are already replacing some labour by automation. Efforts are being made to develop robots to pick fruit. Increasing labour costs would force both orchard management and off-orchard activities within the industry to improve. There would be orchard amalgamations and some orchards with less favourable soils and climate would cease operation. It is at the lowest productivity margins of the different sectors where the ongoing changes will be.

So to improve overall productivity policies need to be established that do not allow scope for existing industries to expand on the basis of low productivity supported by the import of cheap labour.

RAISING PRODUCTIVITY THROUGH FOCUSING ON HIGH TECH IT

A 2018 report of the Technology Investment Network summarised the performance of the top 200 technology companies ranked by turnover showed;

- total annual turnover of S10 billion
- total annual export receipts of $7.9 billion, which was less than dairying and tourism but more than the meat industry and forestry
- they had a 38% increase in operating profit growth
- they employed a total of 47000 people, with 25000 of these in NZ

These are very impressive figures and show the potential of individual technology companies. But the total number of NZ employees, 25000, is miniscule compared to the total NZ workforce. From the TIN report I would think that the total number of people employed in NZ by advanced 'software as a service' firms is no greater than 10000 - against the hundreds of thousands working in low-value-added traditional businesses.

It is often suggested that the best way to raise NZ's productivity is through developing a multitude of firms producing information technology products delivered to the end customer over the internet. Often quoted examples are Xero, Vista, and Pushpay. There are others as well, some doing well and others not so well.

While IT looks the way to go in reality there are a number of constraints to rapid expansion. To start with somebody has to have the entrepreneurial skills to think up the product idea and the skill set necessary to develop the product and market it (the skill set needed to start and successfully run a growing business is discussed below). Next, how many software developers are there with sufficient knowledge to develop the very advanced software needed? I know from personal contacts that these leading edge firms struggle to obtain sufficient highly skilled and experienced technical staff. While the universities and polytechs annually graduate hundreds of IT staff only a small percentage of these have the ability to advance to the higher levels after some years of experience.

While it would be great if we could use IT as an engine for growth in overall productivity software development and marketing is the creme de la creme of innovation.

WHAT SKILLS ARE NECESSARY IN A SUCCESSFUL BUSINESS

To start and run a successful business requires knowledge/skills in a number of subject areas. There is a set of knowledge areas common to all businesses and these are supplemented by more specialised skills for particular types of business.

Among the common knowledge/skills are: product/service identification and development, market identification (geographic and other), employment law, staff management, health and safety, financial management (e.g. understanding your accounts, cash flow forecasting, costing, taxation obligations, financing), how to identify and incorporate new technology into the business, marketing/advertising, planning law relevant to what you are doing, and environmental issues/expectations.

Then for a business such as a builder there is a need to know about matters such as; resource consent and building consent requirements, costing of jobs, a very good knowledge of cashflow analysis and planning, job scheduling, establishing effective arrangements with sub-contractors, identification of legally approved materials, and of course the actual technical building skills.

So to run a successful business in 2020 a business must have, or have access to, a very wide range of knowledge. It is unlikely that any one person, or even 2 or 3 working together, have the complete skill set necessary. Of course a business operator can overcome any identified lack of skills by employing advisers and the most commonly used one, and for many businesses the only one, is an accountant. But outside consultants are relatively expensive and limited in number compared to the number of small businesses in NZ.

It is at this stage of this analysis that two old adages are extremely pertinent; 'You don't know what you don't know.' and 'If you keep on doing the same thing in the same way don't be surprised to get the same outcome.' If people don't know there is a better way of doing things then they won't learn about and use that better way. E.g, if you don't know that formal cash flow forecasting is a critical business tool then you won't use it.

The converse to the lack of essential knowledge in the hundreds of thousands of small businesses is that the larger significantly more productive firms, especially those exporting have all the basic essential skills available inhouse or are of sufficient scale to afford outside consultants.

MOTIVATING MANAGERS AND WORKERS

The classic assumption in economics is that if you want a person or firm to improve their or its performance you pay them more money. There is a bit of a chicken or egg situation here but the normal outcome is to promise more money, formally or implicitly in employment relationships, if certain outcomes are achieved. Cuts in personal and business taxes are often suggested by some vested groups and political parties as a way to encourage better business performance, but where tried have generally proved ineffective.

The 'house, bach, boat' syndrome is suggested as one reason why many NZ small businesses are not growing, i.e. once a person has sufficient income to achieve ownership of these assets they cease trying to expand. In terms of environmental impact and claims on the world's physical resources placing personal limits on your material consumption is no bad. But the same self-limitation can be achieved in a higher productivity situation

In looking at the role of monetary incentives the reverse of paying more to achieve better outcomes needs to be examined. By this is meant the situation where businesses/people have to work harder or more productively to achieve a desired monetary outcome. An example of this is the Japanese Government during the Meiji Restoration period when Japan was trying to move from an essentially agrarian economy to an industrial one. The need was to shift labour from the rural rice growing sector to industrial production while still maintaining the total amount of rice produced - in other words increasing the productivity of rice farmers. The Government achieved this by increasing farmer taxes. They had to be more productive to survive, literally.

Also, there is a growing body of analysis showing that monetary rewards are only one of the factors motivating people to perform better in the workplace. While a certain level of income is essential to workers they make a bigger effort if they feel valued, are treated as contributors to the business, are listened to in regard to how things are done, and generally feel they are genuine participants in the firm. The term 'teamwork' encompasses these positive aspects which are present in successful firms. For a country which worships sports teams it is amazing how little teamwork exists in many workplaces.

NZ'S BUSINESS STRUCTURE

The NZPC correctly identifies that one of the main reasons for NZ's low productivity is the thousands of small firms spread though the country serving only their local markets, and not subject to competitive pressures and the 'up or out' scenario. I would add that these small firms also significantly lack KBC in terms of wider business skills and management/leadership, a situation which is directly related to the small staff numbers. In contrast the NZPC notes that non-exporting firms that have a national presence through branches or subsidiaries have higher productivity.

It is often assumed that the multitude of non-competing small firms is an inevitable outcome of NZ's small population spread over geographically isolated regions. That is not correct. By example, for the building industry, it implies that the huge numbers of independent builders, electricians, plumbers, drainlayers, roofers, kitchen makers, etc, each employing 2 or 3 people, that currently exist, can not brought together in larger firms still serving the same markets, but with better economies of scale, better and more knowledgeable management, and capable of adopting innovative technology. E.g. in regard to electrical services there is no reason why there can not be national firms supplying electrician services to new houses, factories, commercial buildings, doing repairs, etc throughout the country. Each regional area could be serviced by a branch or a franchised operator. Such national firms could then employ the fullest range of management and technical expertise. Just because the market is geographically dispersed it does not mean that the servicing firms have to be small. The same applies of course to retail where the franchise model is common. Also with fewer, larger, better managed firms with a drive to grow there will be greater competition.

The owner, contractor, sub-contractor, sub-sub-contractor system in NZ has performed extremely poorly. Another building industry model would be large firms directly employing the total range of tradespeople necessary for the whole job. One advantage of this is that each trades person would recognise that any mistakes they make create additional work for themselves or another trade within the firm and thus adversely impact their own firm. These multi-trade building firms would necessarily be larger firms needing an ongoing flow of work.

THE PYRAMID OF PRODUCTIVITY

The small percentage of firms exporting is lamented and this has been suggested as being due to the low productivity of potential exporting firms. But the cause is deeper than that. To successfully export a quality product or service to a competitive overseas market the exporter must be on top of their game in all aspects of production, supply, transport, finance, marketing, etc. But it is difficult to do that if the firms they source inputs from in NZ are inefficient, charge higher than necessary prices, unreliable in quality and delivery, or in other ways don't meet the needs of the exporter.

Even a firm supplying only the domestic market has to rely on inputs from other businesses and if that supply of inputs is troublesome then it reduces the productivity of the first business. For example, if you have to spend hours repeatedly trying to get a telecommunications firm to fix a problem with your telephone/internet then you not only suffer from the lack of availability of the telephone/internet but you have also wasted time that could have been usefully spent working elsewhere on your business.

Thus while there are suggestions that the lower than desirable export performance leads to lower rates of innovation and capital shallowness elsewhere in the economy through the lack of a trickle down effect, it is the reverse that applies, i.e. that the lack of export performance is due to the lack of a solid foundation of quality, high productivity, supporting businesses.

So the generally low levels of productivity in NZ is undermining the ability of the country to increase exports. Greater capital density, better management and innovation, and better leadership throughout the economy is the foundation of better export performance. Exporting of advanced products and services (as against the exporting of bulk commodities) is the peak of the pyramid of NZ productive processes.

SUMMARY OF ABOVE CONCLUSIONS

Better business management and leadership is the key factor to improving productivity through:

firms being more innovative.

firms being more capital intensive both in terms of physical equipment and knowledge based capital, so that they adopt world best equipment, processes, and practices.

employees being more knowledgeable and committed to common objectives.

Consolidation of the hundreds of thousands of small firms in NZ into larger businesses, with better/wider skill sets, improved management and leadership, that are more competitive, and especially with higher productivity, is a perfectly feasible objective.

NZ's weak international connectivity, together with high real interest and exchange rates, are the result of low productivity not a contributor to it.

International geographic isolation simply means that NZ firms have to be more productive/clever than those with which they are competing closer to the market.

The current high number of low skilled migrants is not helpful in either the short or long term. The industries employing those potential migrants must be placed under pressure to employ labour more productively.

The development and 'export' of sophisticated IT products can only be the cream of productivity on a relatively small scale. The emphasis within the bulk of NZ businesses should not be on inventing new technology and science but in applying the latest proven technology to existing industries to improve their productivity. Being a 'fast follower' is the key.

NZ can not have a sufficient population increase to supply all the likely need for lower skilled workers already identified by some industries/sectors without both failing to achieve the desired productivity increase and creating further infrastructural deficits.

There is a need to create an economic environment that creates pressures on industries/sectors to increase productivity or else shed resources, i.e. an 'up or out' situation.

POLICY SUGGESTIONS

Essentially a situation needs to be created where firms, including everybody within them are incentivised to increase innovation, use more and better equipment, use better work practices, develop more comprehensive skill sets, and work as teams. As always the best policy approach entails both the 'carrot' and the 'stick'.

The carrot is a more comprehensive and proactive labour market policy than currently, with a heavy emphasis on training and retraining and with a major Government financial input. As noted above 'You don't know what you don't know' so much of this training will need to be compulsory in order to preserve qualifications. Currently most professional bodies require members to undertake a specified number of hours of education yearly. This should be extended to all tradespeople so that they are at least exposed to all the skill sets needed to run a business. Some will not have the ability or interest in developing a working knowledge of the various facets of business, but at least they would have a better idea of what the business they work in involves, other than just the work on the tools. Others with the ability and interest may want to study further to widen their skill set and improve their management and leadership skills for the future. Another group of people who also need considerable skills improvement in is the directors of the hundreds of thousands of private companies running small businesses. These directors are often also the owners and workers in the same business and often do not know their governance responsibilities or have the financial knowledge to be effective directors. This group of industry participants should also have ongoing annual education requirements.

The 'stick' to achieving increased productivity, including domestic business restructuring, comprises two elements: a stronger competition policy, and a steady, faster than CPI, increase in the minimum wage. Increasing the minimum wage would also result in increasing wages/salaries at higher levels within firms in order to maintain relativities.

In regards to competition policy there are two conflicting aspects. As argued above, the amalgamation of thehundreds of thousands of small firms into larger better managed entities competing for business more effectively on a regional or national basis must be encouraged. On the other hand amalgamations should not be allowed that allow market domination. e.g, the Fletcher Building attempt to take over Steel and Tube.

Implementing a steady increase in the minimum wage would be contentious. The employer organisations would cry foul and say it would put them into an impossible position and everybody would go broke. But that is an exaggeration. They would probably also argue that it would severely hamper the non-urban regions by preventing firms taking on new workers. But it is in those non-urban regions that some of the greatest future needs for workers will be; horticulture, forestry, farming, and tourism. Also increasing wages in the non-urban regions will increase the spending power of people and improve the prospects of other businesses in areas which have seen a steady decline in service businesses. There is also the factor that higher regional incomes will attract people from the large urban areas and reduce the infrastructural problems there. Plus increasing minimum wages would make working more attractive than living on benefits.

A steady, faster than CPI increase in the minimum wage would need to be accompanied by an appropriate fiscal and monetary policy stance.

The reality is that 'There is no such thing as a free lunch". There is no perfect policy that contains no negative consequences, particularly during the adjustment process. That is why I suggest there needs to be a more active labour market strategy that uses the existing income support mechanisms, greater free training/retraining, and even relocation cost subsidies for people to move into the more productive jobs. Also there are no other productivity enhancing policies including taxation changes (personal and business) that can achieve such widespread economic benefits in forcing firms to up their performance.

SUMMARY

It is clear that the top down approach to improving productivity in NZ has not and will not work. Generally the so called leaders of business have not shown leadership but the essential decisions needed to increase productivity within any firm can only be made by the board/management. Grants and tax breaks for R&D and innovation will only work for firms that are already motivated to innovate.

For hundreds of thousands of NZ firms there is no real pressure to improve their performance, yet there are major shortages of knowledge based capital in these same firms.

NZ has a major shortage of workers at all skill levels if we want to continue to do all the production and service activities currently underway and planned using existing practices. If NZ tries to overcome these shortages, especially in the lower skill areas, by importing workers at the existing wage rates then this is going to exacerbate NZ's infrastructural deficit, do nothing to improve productivity and real wages, and add to inequalities in incomes and wealth.

The keys to improving NZ's productivity are:

> Increased training and education for workers at all levels within firms.
>
> Encouragement /pressure for the multitude of small firms to merge into entities that can internally have almost all the skill sets necessary to run a successful business.
>
> Improving the competition regime in NZ.

And most effectively a gradual real increase in the minimum wage that forces firms to either improve their productivity or exit their industry.