MONOPOLY MONEY

THE COST OF CORPORATE WELFARE SINCE 2008

JIM ROSE

TAXPAYERS' UNION

YOUR MONEY, YOUR VOICE

CHAMPIONING VALUE FOR MONEY FROM EVERY TAX DOLLAR

AUTHOR

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Jim has Masters degrees in economics and in public policy from the Australian National University and from the National Graduate Institute for Policy Studies in Tokyo respectively. He blogs at www.utopiayouarestandinginit.com.

> The bounty to the white-herring fishery is a tonnage bounty; and is proportioned to the burden of the ship, not to her diligence or success in the fishery; and it has, I am afraid, been too common for vessels to fit out for the sole purpose of catching, not the fish, but the bounty.
>
> – Adam Smith

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ABSTRACT

Under the current National-led Government, corporate welfare – subsidies to business – ranges from $1 billion to $1.4 billion per budget. About a third of this corporate welfare is for KiwiRail.

The major growth areas in corporate welfare under the National-led Government are ultra-fast broadband and R&D grants for commercial ventures in science and innovation particularly in the primary sector.

Corporate welfare in the last budget of the last Labour-led Government totalled $1.751 billion, comprised principally of $700 million planned for the New Zealand Fast Forward Fund and $577 million for KiwiRail.

This report will serve as a wake up call for taxpayers - the per household cost of the corporate welfare detailed in the report equals between $600 and $800 every year. The amounts may be justified - if the Government is a better investor than private citizens. The economic evidence, however, suggests that governments, politicians and bureaucrats do not have the market disciplines to be better investors on a consistent basis. Private investors that make bad decisions quickly run out of money. There is no similar hard discipline on politicians when they invest public money in business.

Taxpayers and politicians from all sides of the political spectrum should ask whether the public gets value for money from these business handouts.

> “For every dollar spent on corporate welfare, it is a dollar not available for education, health, and investment by the taxpayer who earned it.”

FOREWORD BY MICHAEL BARNETT

When it comes to economic development I have always believed that there are stages in development where business will not invest because the risks are too high. Often these risks are associated with local government and relate to zoning and consents and require local government to intervene and remove the risks in order that development opportunities can occur. This has always seemed a legitimate role for government when managed well.

Corporate welfare on the other hand is different – this is more often manipulation that occurs with an intervention from government using tax or ratepayer money in a way that benefits some players in a sector and disadvantages others. It seldom represents a good or fair use of tax and ratepayers' money.

Money always has alternative uses. One of the great claims made by governments is that money "invested" by them is stimulating business and will provide a return to Government and benefit society generally. Rarely does this occur.

Governments have no special ability to pick which businesses will succeed and which will fail, or even to pick which sectors of an economy will do better than others. The information governments use is no better than that available in the market. Few people ever claim that public servants are better entrepreneurs than those who put up their own capital to start a business, or that they are smarter than those who back entrepreneurs with their own savings.

So why have successive governments persisted with the concept that governments can do good and foster prosperity by investing money on one sector rather than another? In terms of rational economics I would suggest that the results over time speak for themselves.

A possible answer could be that political support is obtained by investing public money on certain sectors of the economy, or by spending public money on selective pet projects. Irrespective of how these projects are chosen taxpayers are entitled to ask where is the evidence that shows an economy will benefit from this investment that uses public money on projects that private money will not support.

As this report shows, the amount of patronage successive New Zealand governments have given and continue to "invest" is significant. The report also shows that the evidence of substantial benefits is scant and limited.

The production of this publication is a timely opportunity for all politicians to re-examine why governments invest tax and ratepayer money and where, what benefit it truly delivers or if it is in fact corporate welfare.

Michael Barnett is Chief Executive of the Auckland Regional Chamber of Commerce & Industry. The views expressed do not necessarily reflect those of the Chamber.

FOREWORD BY STUART NASH

As elected representatives of the people, politicians are stewards of taxpayers' money. It is up to Members of Parliament and their parties to articulate their vision for the country and, if elected to the Treasury benches, channel this tax revenue to projects that are intended to provide a nationwide social or economic benefit.

As a Labour MP, I believe the government has a very important role to play in stimulating economic growth through ensuring the market variables that determine optimal outcome are set at the right level.

As a former Labour Revenue Spokesman, I understand the power of the tax system to drive growth; but also to destroy it (or certainly limit it).

The tax system has two purposes in a modern economy: to gather revenue and to influence behaviour. One way to influence behaviour is to distribute revenue into areas that drive growth. I have, however, never believed in providing government grants to businesses that should be able to raise money from the market. In fact, by giving out taxpayer money to companies that have the ability to raise capital from either public markets or private investors, one could argue that the government is having a negative impact on the growth of our rather shallow capital markets.

This report suggests that a significant amount the tax we pay is being channelled into corporate welfare. How is this fair to the thousands of small businesses which are the backbone of our economy? And is it really the best use of scarce resources at a time of record government debt? I personally don't believe it is.

The current National Government's economic vision appears to consist of little more than crony capitalism. This does not drive the type of sustainable economic growth needed to create long term economic wealth and opportunities for all New Zealanders; but rather subsidises the very companies least in need of taxpayer-funded largess. The difference between National's political rhetoric and reality could not be more striking. This report shows that rather than working hard to get the books back into shape and investing in a more prosperous, fairer New Zealand, senior National Party Ministers appear to be delving into the country's coffers to dole out money to their favoured businesses and industries.

Given that politics is a contest of ideas and vision, any government spending on the scale identified in this report should be transparent and open to public scrutiny. I therefore welcome the Taxpayers' Union's efforts in this area.

While my own politics and that of the Taxpayers' Union differ significantly, I commend them on this report. It allows readers to think about the relative values and priorities from the spending the report outlines.

Stuart Nash is the Member of Parliament for Napier.

1 INTRODUCTION

1.1 WHAT IS CORPORATE WELFARE?

Corporate welfare is subsidies for businesses. Corporate welfare runs against the notion that businesses should make a profit or go out of business. The term implies that businesses need as much, or more, support than the poor. Supporters of corporate welfare often justify these subsidies as a remedy for a market failure. A kissing cousin of corporate welfare is farm welfare. In the economic literature, corporate welfare is increasingly used interchangeably with crony capitalism; however these terms have different meanings:

> *Crony capitalism is a system where companies with close connections to the government gain economic power not by competing better, but by using the government to get favoured and protected positions (Becker 2006).*

The focus of this report is not crony capitalism. It is not suggested that the items listed as corporate welfare in this report are a reflection of cronyism.

If a business is losing money, they should try better, do something different or go out of business. Losses are not a reason for a taxpayer bailout. No business should be premised on subsidies:

> *This is a profit-and-loss system, and the loss part is even more important than the profit because it helps get rid of badly managed, poorly operated companies (Friedman 1979).*

The purpose of the capital market is to direct investment to businesses that have a future and take away support from failing firms that do not improve and regain customer favour. The entrepreneurs and investors who are not as good as their rivals in picking winners and avoiding losers go out of business.

1.2 METHODOLOGY FOR IDENTIFYING CORPORATE WELFARE

The aim of this paper is to collate publicly available information on corporate welfare. Corporate welfare is computed from each Parliamentary 'vote' based on the most recent information available on The Treasury's website. Where relevant, policy advice underpinning the administration of the corporate welfare is included in the computation. This policy advice would not be required but for the corporate welfare.

> **What is a Vote?** When Parliament considers legislation relating to the appropriation, the appropriations are grouped within "Votes". Generally, a Vote groups similar appropriations together. For example, Vote Health includes all health-related appropriations administered by the Ministry of Health. Ministers can administer more than one Vote within the same Ministry.

1.3 PLAN OF THE PAPER

A summary of aggregate corporate welfare by budget and by portfolio is in the key findings chapter. The subsequent chapters tabulate corporate welfare by spending portfolio. A small amount of corporate welfare within Vote Commerce, mostly the $5.782 million in funding for the Retirement Commissioner, is not discussed. The film subsidies administered by the Minister for Arts, Culture and Heritage are discussed in section 5.2, which discusses the film subsidies overseen by the Minister for Economic Development.

> For people who are risking their own money will of course risk it foolishly and recklessly, whereas politicians and bureaucrats who are risking other people's money will do so only with the greatest care and after long and profound study.
>
> Naturally, the businessmen who have earned the money have shown that they have no foresight; but the politicians who haven't earned the money will exhibit almost perfect foresight.
>
> The businessmen ... whose success depends upon the degree to which they satisfy consumers, will of course have no concern for 'the general social advantage'; but the politicians who keep themselves in power by conciliating pressure groups will of course have only concern for 'the general social advantage'.

Henry Hazlitt (1959), The Failure of the 'New Economics'

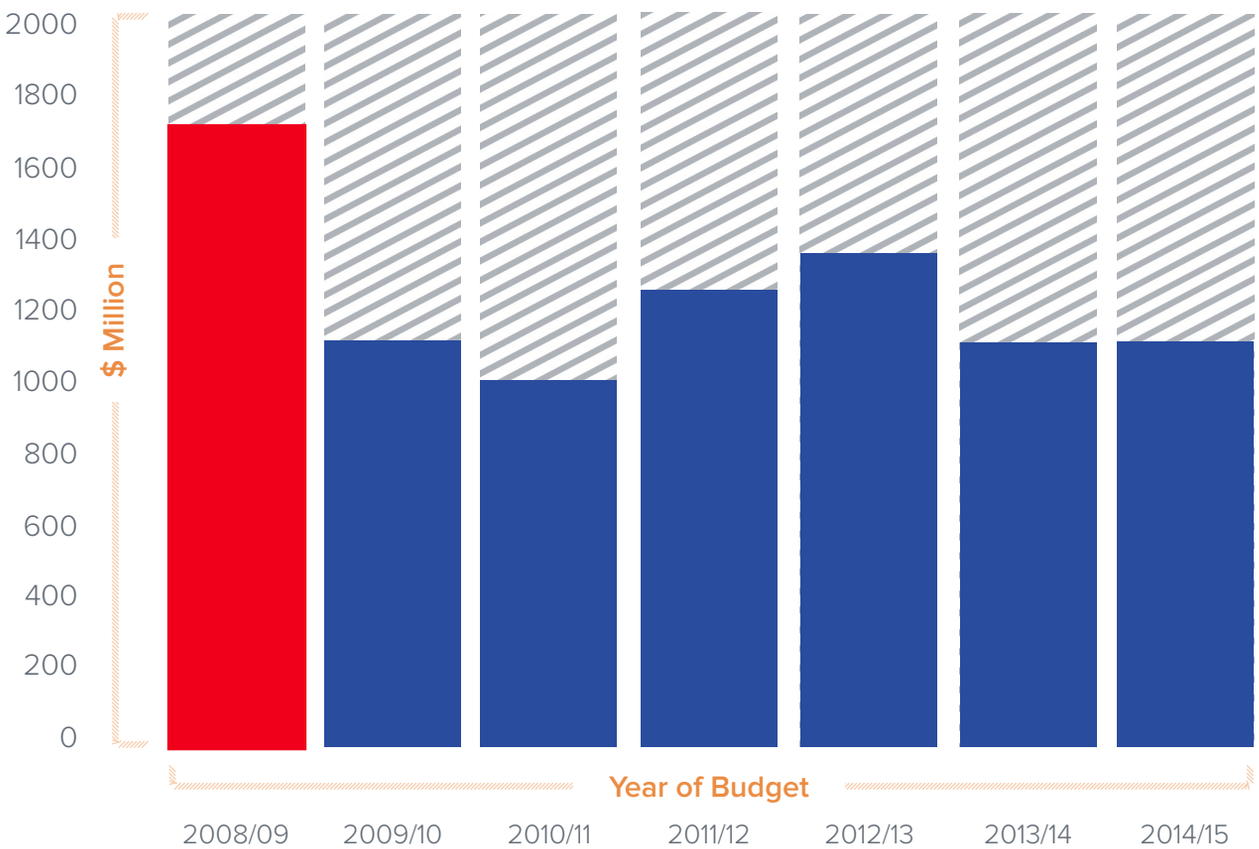
2 KEY FINDINGS

2.1 CORPORATE WELFARE IN THE NATIONAL GOVERNMENT BUDGETS

Corporate welfare has ranged between about $1 billion and $1.4 billion per year in each of the six budgets presented by the current National-led Government first elected in 2008 – see Figure 1. This is about $1.18 billion on average – see Table 1. The annual cost varies between $600 and $800 per household.

If the corporate welfare identified in this report was abolished, enough money would be saved that, based on Treasury figures, the corporate tax rate could be lowered from 28 per cent to 22.5 per cent. If applied to personal income tax rates, that saving would allow the 30% and 33% income tax rates to be lowered to 29 per cent. Alternatively, the 10.5 per cent rate (applicable to the first $14,000 of income) could be reduced to 7 per cent.

Figure 1: Corporate welfare, Budgets 2008/09 to 2014/15



Source: Budget Papers 2008/09 to 2014/15.

Notes: The $690 million for the purchase of Toll NZ Ltd's rail business and associated costs are not included in 2008/09 data. $700 million for the New Zealand Fast Forward Fund is included in Vote Primary Industry despite its cancellation by the incoming National-led Government.

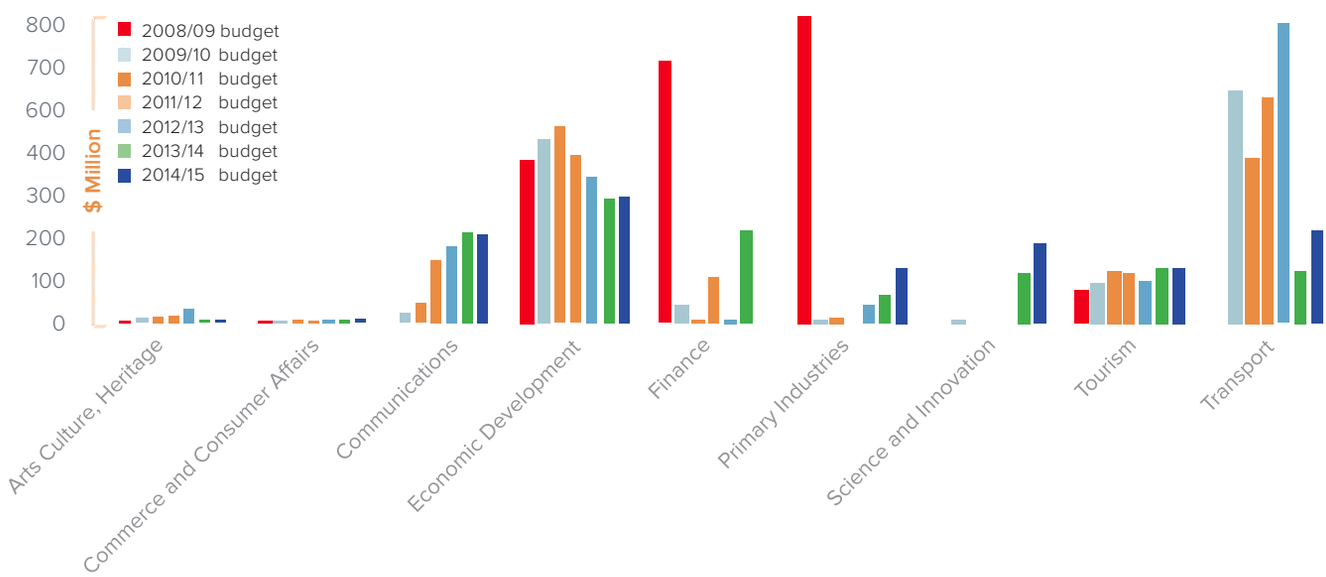
Table 1 and Figure 2 are summaries of corporate welfare under the National-led Government by ministerial portfolio and the last budget of the Labour-led Government, defeated in the 2008 general election. The major player in corporate welfare in National budgets is KiwiRail ($2.425 billion) through the Minister of Transport in Vote Transport. One-off state-owned enterprise welfare was bestowed on Solid Energy ($195m) in the 2013/14 Budget by the Minister of Finance in Vote Finance.

Table 1: Corporate welfare in Budgets 2008/09 to 2014/15 ($million)

	08/09	09/10	10/11	11/12	12/13	13/14	14/15	Grand Total
Arts, Culture & Heritage	3.27	10.91	18.89	10.49	29.23	3.69	4.06	80.53
Commerce and Consumer Affairs	6.13	5.78	05.78	5.78	6.82	6.96	5.78	43.04
Communications		25.40	39.00	149.56	178.35	204.88	204.53	801.73
Economic Development	372.46	419.45	446.28	379.46	331.96	284.29	287.16	2 521.06
Finance	594.00	44.27	3.11	108.12	15.00	210.00		974.50
Primary Industries	700.00	0.25	13.50		42.72	64.81	126.48	947.76
Science and Innovation		4.20				112.10	178.91	295.21
Tourism	75.50	93.73	119.45	113.00	97.55	124.44	123.69	747.36
Transport		529.85	375.76	510.15	680.00	118.85	208.75	2 423.36
Total $ million	1 751.00	1 134.00	1 022.00	1 277.00	1 382.00	1 130.00	1 139.00	8 835.00
Per household	**$1 042.00**	**$668.00**	**$598.00**	**$741.00**	**$797.00**	**$646.00**	**$645.00**	**$5 138.00**

Source: Budget Papers 2008/09 to 2014/15.

Figure 2: Corporate welfare, Budgets 2008/09 to 2014/15 by Vote



Source: Budget Papers 2008/09 to 2014/15.

After KiwiRail, the Minister of Economic Development has been the main source of corporate welfare in National budgets. Corporate welfare in Vote Economic Development has been in decline in recent budgets because one-off support for mega-events such as the Rugby World Cup and the Shanghai Expo are in the past. There was also a $108 million contribution to the Rugby World Cup in Budget 2011-12 by the Minister of Finance in Vote Finance.

The subsidies to Crown Fiber Holdings Ltd to develop ultra-fast broadband are making Vote Communications a major new player in corporate welfare over the last few years. Vote Tourism has been consistently handing out $120 million a year for promotional work which, arguably, businesses should do for themselves.

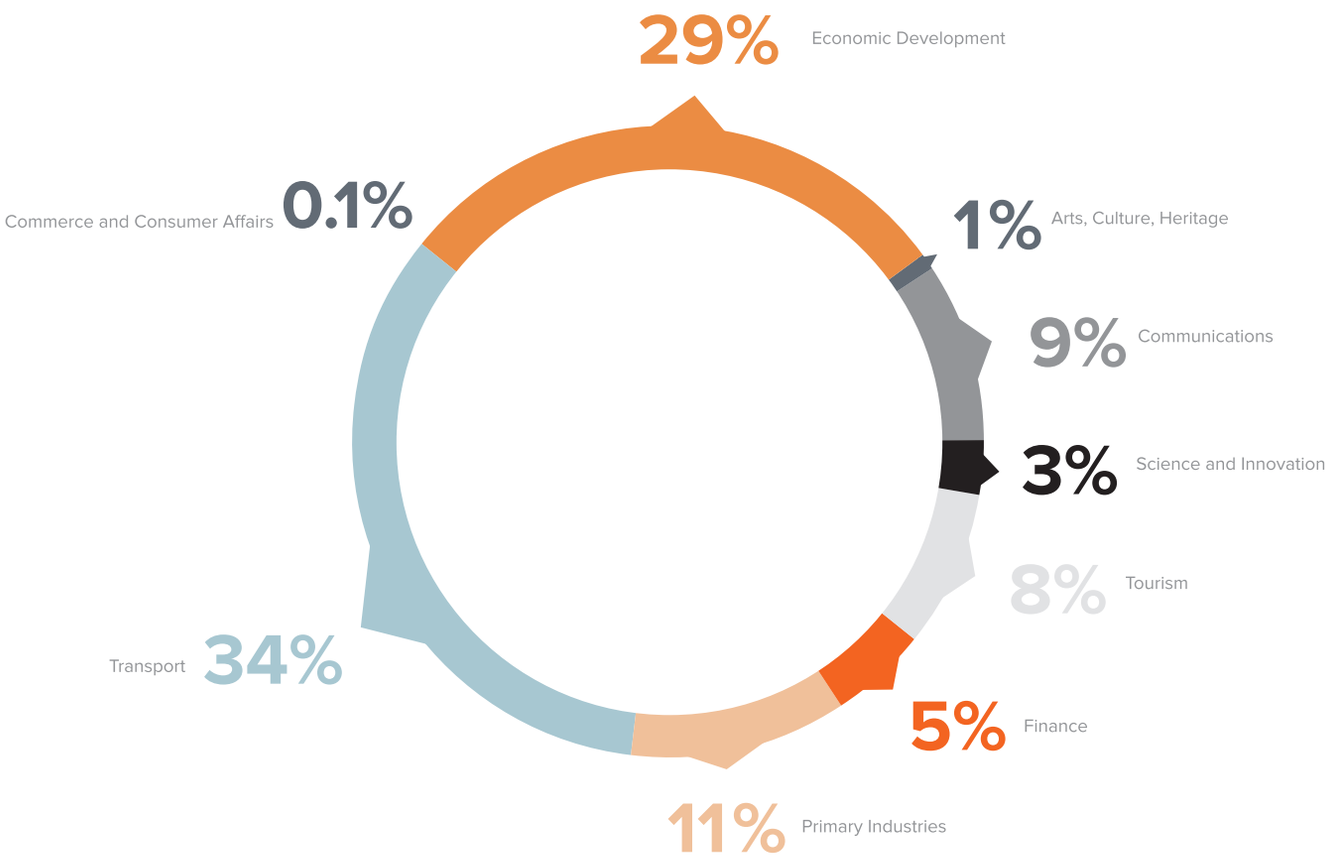
2.2 CORPORATE WELFARE IN THE LAST LABOUR GOVERNMENT BUDGET

Corporate welfare planned in the final budget of the last Labour-led Government was $1.751 billion – see Table 1 and Figure 1. The main components of this were state-owned enterprise welfare ($582 million) for KiwiRail from Vote Finance and $700 million planned for the New Zealand Fast Forward Fund in Vote Primary Industry that was cancelled by the incoming National-led Government.

2.3 CORPORATE WELFARE BY PORTFOLIO

Figure 3 summarises the percentage distribution by portfolio of corporate welfare over both the six budgets of the National-led Government and the last budget of the Labour-led Government. Over the last seven budgets, state-owned enterprise welfare in Vote Transport was the single largest item, taking up 34 per cent of all corporate welfare over the seven budgets. The next largest source of corporate welfare was Vote Economic Development with 29 per cent of all corporate welfare 2008/09 and 2014/15.

Figure 3: Distribution of total corporate welfare across votes, 2008/09 to 2014/15



Source: Budget Papers 2008/09 to 2014/15.

2.4 WHAT IS THE VALUE FOR MONEY FOR THE TAXPAYER?

What taxpayers need to ask of all these business subsidies is: what do they get for the money? What is the problem that has been solved? Could this problem be solved by market process on its own, at its own pace? Why is it not better to have the businesses subject to hard budget constraints, competition in the market place, the threat of innovation, and continuous updating of the knowledge available to the entrepreneurial decision-makers by changes in prices and profits (or losses)?

> A business has a soft budget constraint if it has a reasonable expectation that should it start to lose money or otherwise get into trouble, it will be bailed out in some way by the government. Such bailouts could come in the form of direct subsidies, cheap loans or other concessions; any loans may not have to be paid back or will be continually rolled over. If a rescue operation was mounted, losses and growing debts may be unpopular with the shareholding ministers but they were not a life-or-death matter for the firm.
>
> When there is a soft budget constraint, the incentives to contain costs and innovate are much less because there is no threat of insolvency and bankruptcy. Unless they are politically favoured, private businesses are subject to a hard budget constraint. If a private business does not at least break even, they will soon go out of business unless their investors or bankers think the business has a bright enough future that makes it worth their while to tide that business over a rough patch, but their patience is usually rather limited.

A central notion of capitalism is the that normal market system runs itself. Each business pays its own bills or goes out of business. Government intervention should be the exception and only after careful scrutiny.

It is not the purpose of this paper to draw final conclusions about the merits of specific subsidies. Instead it is to quantify the amount of corporate welfare and let taxpayers judge for themselves whether any particular subsidy is justified, or is an unwarranted use of their hard earned dollars.

> **“The existence (and preservation) of a competitive situation in private industry … frees the state from the obligation of adjudicating endless, bitter disputes among persons as participants in different industries and among owners of different kinds of productive services.”**
>
> **– Henry Simons, Economic Policy for a Free Society (1947)**

3 THE MINISTER OF FINANCE

3.1 GOVERNMENT AS COMPANY DOCTOR

Our review starts with the oldest form of corporate welfare: bailouts for failing businesses. There is no ambiguity here. No externalities. No market failures. No infant industries. Not even picking winners. The subsidies under the hand of the Minister of Finance prop up losers.

This is old time industry policy: slowing down the evolution of industries, not speeding it up on the basis of correcting market failures or capturing externalities. The only justification in most of the examples listed below in Table 2 appear to be political, not economic – the desire to avoid job losses.

Table 2: Corporate welfare, Vote Finance excluding KiwiRail, Budgets 2008/09 to 2014/15 ($million)

	2008/09 budget	2009/10 budget	2010/11 budget	2011/12 budget	2012/13 budget	2013/14 budget	2014/15 budget
Solid Energy New Zealand Limited - Loan Facilities					15	130.00	
Solid Energy New Zealand Limited - Redeemable Preference Shares						25.00	
Solid Energy New Zealand Limited - Redeemable Preference Shares Impairment				25.00			
New Zealand Export Credit Office	2.227	2.87	2.925				
Payment in respect of Export Credit Office Guarantees and Indemnities			0.186				
Rugby New Zealand 2011 Limited		4					
Rugby World Cup 2011 - Crown share				108.12			
New Zealand Aluminium Smelters - Electricity Agreement Incentive Payment						30.00	
Public Trust Capital Injection		30					
Hawke's Bay Airport Equity Injection	8	7.4					
Industrial Research Limited Equity Injection	4.5						
Invercargill Airport Suspensory Loan	1.5						
Total	**16.2**	**44.3**	**3.1**	**133.1**	**15.0**	**185.0**	**0.0**

Source: Budget Papers 2008/09 to 2014/15

Note: the $690 million for the purchase of Toll NZ Ltd's rail business and associated costs is not included in the 2008/09 data. All other spending on KiwiRail is discussed in the chapter on the Minister of Transport.

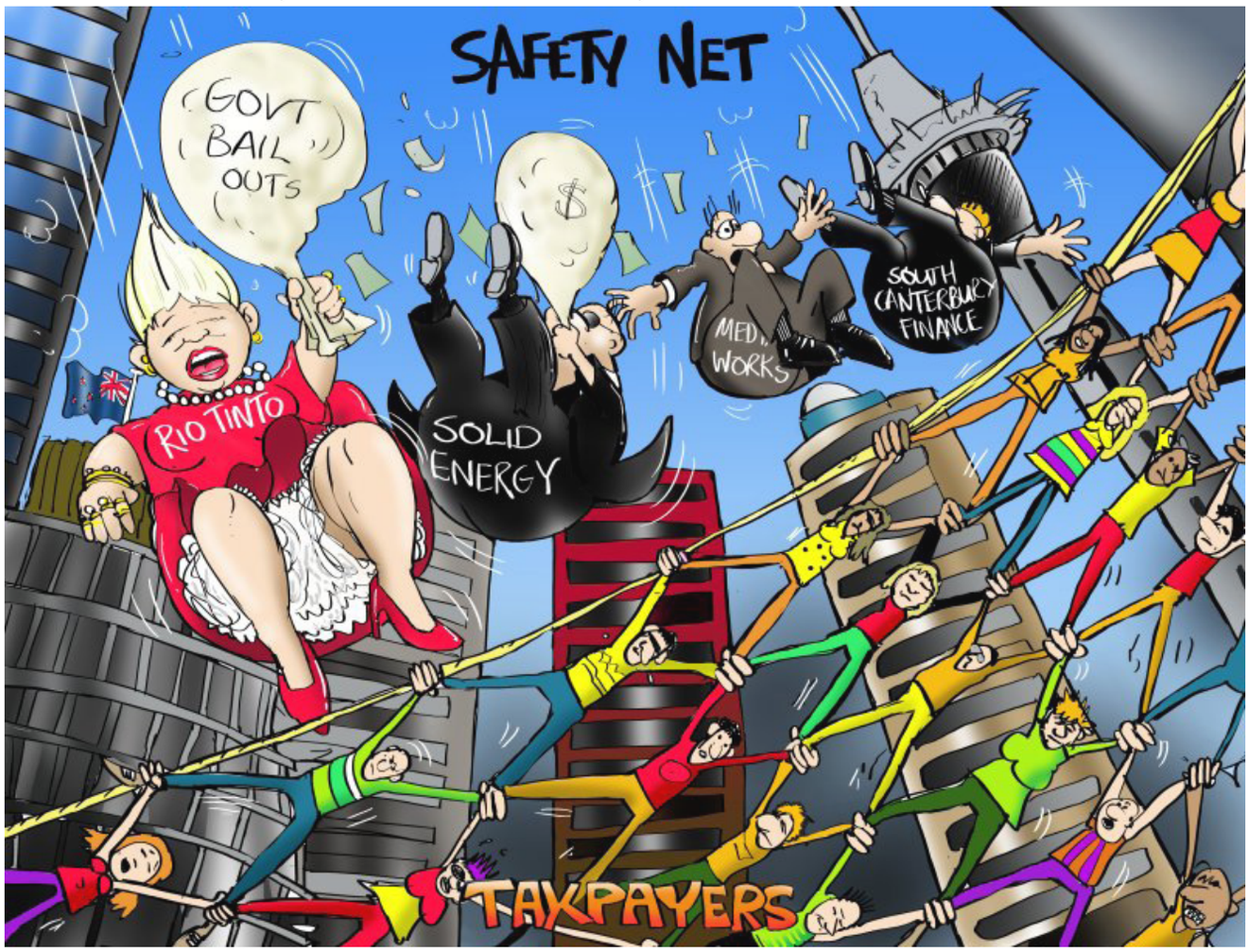
Solid Energy ($195 million) and New Zealand Aluminum smelters ($30 million) were failing because their international competitors were better at serving their customers and keeping costs down. The effect of this corporate welfare under the patronage of the Minister of Finance was to prevent the market from working as it should every day, which is weeding out high cost businesses, and favouring low cost businesses.

State ownership of Solid Energy does not in any way excuse the corporate welfare for that company. Solid Energy has a duty under section 4 of the State-Owned Enterprises Act 1986 to be: *... as profitable and efficient as comparable businesses that are not owned by the Crown.*

Bailouts for state-owned enterprises are no less of a loss to the taxpayers than any other bailout. Bailouts of state-owned enterprises are a bad precedent for other state-owned enterprises. Thanks largely to the losses suffered by KiwiRail, the state-owned enterprises portfolio comprising of about $20 billion in assets, is currently returning only $20 million in net annual dividends to the taxpayer. This 0.1 per cent return on equity strongly suggests that the portfolio of state-owned enterprises needs more discipline, not less.

3.2 THE SOCIAL COST OF SUBSIDIES

Subsidies destroy wealth by encouraging the growth in activities that have a cost larger than their benefit to society and to consumers who buy the subsidised product.



A subsidy incentivises the relevant industry to grow to a size that is not supported by the consumer's willingness to pay for its output (McCloskey 1985). The choice by each consumer on whether to pay the prices charged by the industry or a particular firm is made after considering all of the options they have before them in a free market. The resources used to expand the subsidised industry are valued more highly by consumers in all other uses in New Zealand. Subsidies therefore move assets from higher-valued uses to lower-valued uses — the wrong direction for wealth creation.

An economy is efficient if all assets are employed in their highest-valued uses. Subsidies undermine entrepreneurial profits and losses as the driving forces of the market process. As Froeb (2014) explains:

> *Making money is simple in principle—find an asset employed in lower-valued use, buy it, and then sell it to someone who places a higher value on it.*
>
> *The art of business consists of identifying assets in low-valued uses and devising ways to profitably move them to higher-valued ones.*

The idea behind efficiency in a normal economic system is that the goods that are worth more than they cost to produce are produced; the goods worth less than they cost to produce are not produced (Friedman 1990, 1996). Firms pay the value of the inputs they buy from their owners in wages, interest, dividends and rents and then receive the value of what they produce when they sell. If a good they produce is worth more than it costs to produce, the entrepreneur makes

a profit; if the good is worth less than it costs to produce, they take a loss and rethink their plans (Friedman 1990, 1996; McCloskey 1985).

There is no value for money for the taxpayer in slowing down the market process of competitive selection, industry evolution and the perennial gale of creative destruction:

> *The opening up of new markets, foreign or domestic, and the organizational development from the craft shop to such concerns as U.S. Steel illustrate the same process of industrial mutation—if I may use that biological term—that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one. This process of Creative Destruction is the essential fact about capitalism (Schumpeter 1942, p. 83).*

3.3 CAPITALISM IS A PROFIT AND LOSS SYSTEM

Losses and bankruptcies are fundamental to the success of the market economy. Losses are a clear signal that businesses such as Solid Energy and New Zealand Aluminum Smelters needed to either restructure, cut costs or go out of business. The corporate welfare paid to these firms postponed those difficult choices.

A subsidy that stops Solid Energy and New Zealand Aluminum Smelters from shrinking in size or closing undermines this evolutionary process of competitive selection that, through trial and error, favours lower cost, more innovative firms. New Zealand should follow the lead of Sweden in 2009 when General Motors threatened to pull out completely from Saab unless it received a government subsidy. The response of the Swedish Enterprise Minister Maud Olofsson was:

> *... they wash their hands of Saab and drop it into the laps of the Swedish taxpayers.*
>
> *We are very disappointed in G.M., but we are not prepared to risk taxpayers' money. This is not a game of Monopoly (Lyall 2009).*

Failing firms do not need any more breathing space than the capital market is willing to supply them.

3.4 CROWDING OUT BUSINESS TURNAROUND SPECIALISTS

Some entrepreneurs specialise in turning around failing businesses. A prime impetus for mergers and takeovers is when one firm takes over another it judges to be under-performing but can do better if restructured by new managers hired by new owners (Manne 1965; Jensen and Meckling 1976; Fama and Jensen 1983a, 1983b; and Easterbrook and Fischel 1991). Tumbling share prices and other signs of business decay are untapped opportunities for more alert entrepreneurs, as Henry Manne explains:

> *The share price, or that part reflecting managerial efficiency, also measures the potential capital gain inherent in a corporate stock.*
>
> *The lower the stock price, relative to what it could be with more efficient management, the more attractive the take-over becomes to those who believe that they can manage the company more efficiently. And the potential return from the successful takeover and revitalization of a poorly run company can be enormous (Manne 1965, p. 113).*

The share prices of merger and takeover targets spike an average of 30 per cent in anticipation of these higher profits from better management by the eventual new owners (Eckbo 2009; Betton, Eckbo and Thorburn 2008). This market process of business renewal is not perfect nor without upheaval and disruption, but it is the best of the available institutional options, as

Edmund Phelps explains:

> *Granted, enterprises in the private sector are prone to making mistakes in deciding to develop new products – since feasibility, cost and market reception are all unknown.*
>
> *The difficulty with a national industry policy is that it places those decisions in the hands of government officials who are remote from the local expertise and insights that companies draw on for dynamic innovation. It is hard enough for venture capitalists and early-stage investors to make the right choices (Phelps 2013b).*

In the case of failing firms, investors back their entrepreneurial judgments with their own capital. If these entrepreneurs are not consistently good at identifying troubled businesses that can be brought back to life through a restructuring, they themselves are quickly weeded out of the market process. They exhaust their own capital and will be unable to win further investor and bank backing.

A fundamental aspect of business turnarounds, mergers and takeovers is trial and error. A large number of entrepreneurs back their hunches about the future of failing businesses. Private investors face hard budget constraints. It is only through competition and experimentation in the marketplace that the successful venture capitalists are identified. Entrepreneurs are continually turned over as new players enter the field and the more established operators lose their edge.

Playing company doctor is a high risk business. Mergers and acquisitions have about a 50 per cent success rate. Many mergers and acquisitions are underdone by later divestitures (Klein and Klein 2001).

> *The common rule of thumb is that of 10 start-ups, only three or four fail completely. Another three or four return the original investment, and one or two produce substantial returns (Gage 2012).*

The lesson for New Zealand taxpayers from the limited success of mergers and takeovers is not to play company doctor. If the purpose of playing company doctor is to help a fundamentally sound company through a bad patch, taxpayer support should be in the form of a loan, not a subsidy. These loans should be sold in a secondary market to obtain a judgment of the private sector on whether they were good deals.

> **“One great invention of a private enterprise system is bankruptcy, an institution for putting an eventual stop to costly failure. No such institution has yet been conceived of in the political process, and an unsuccessful policy has no inherent termination. Indeed, political rewards are more closely proportioned to failure than to success, for failure demonstrates the need for larger appropriations and more power.”**
>
> **– George Stigler, The Government of the Economy (1968)**

4 THE MINISTER OF TRANSPORT

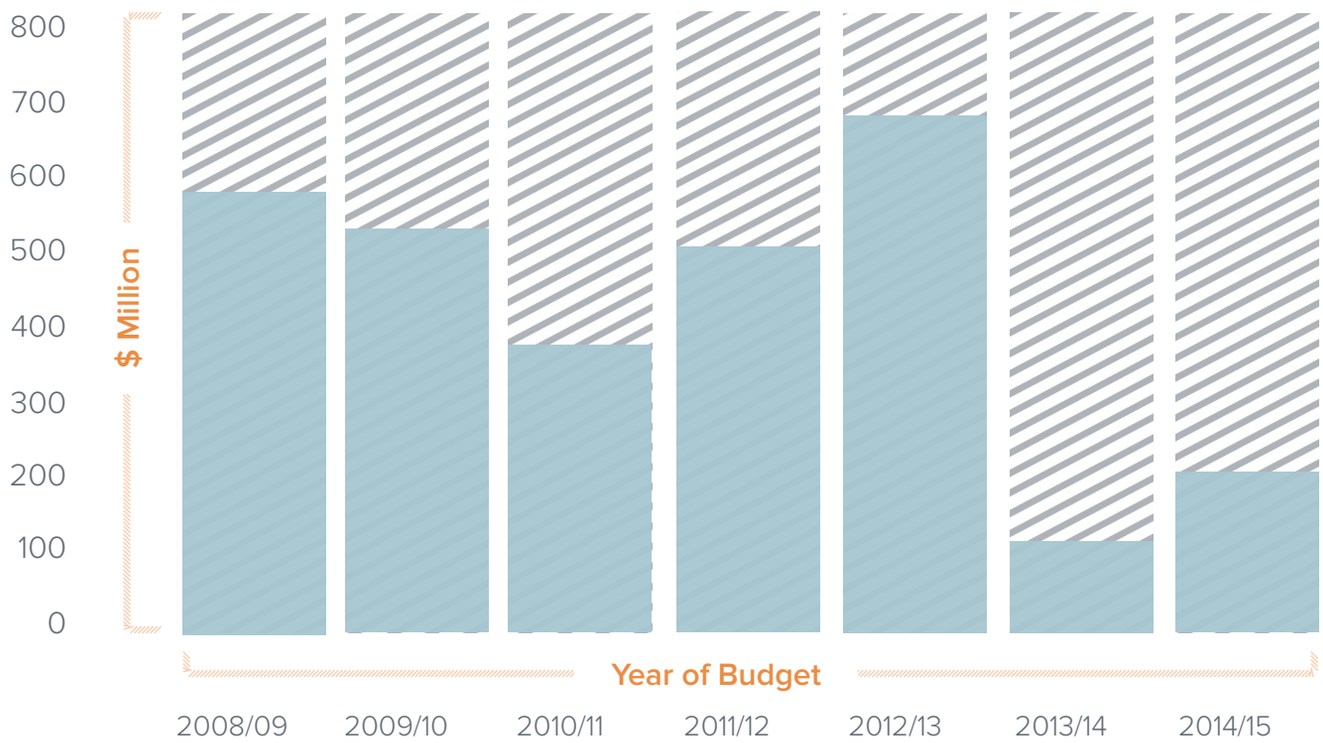
4.1 STATE-OWNED ENTERPRISE WELFARE

KiwiRail has been a constant thorn in the taxpayers' side. Since this rail business was acquired in 2008 for $665 million, Crown investments have totaled $3 billion, $2.4 billion of this under the National-led Government – see Figure 4 and Table 3.

In addition to the KiwiRail subsidies discussed in this report, KiwiRail has also caused write-downs in the Crown balance sheet of an incredible $9.8 billion since it was repurchased in 2008 (Bennett 2012). We have chosen not to include that figure in our measurement of corporate welfare, but arguably, as it is a cost to the Crown, the taxpayer has suffered a loss equivalent to $5,610 per household, in addition to what is detailed.

This is more than the total spending on police over the same period. The total cost to taxpayers for the bailouts to KiwiRail under the current National-led Government amounts to $1,359 per household over the last six budgets.

Figure 4: State-owned enterprise welfare, Vote Transport and Vote Finance (KiwiRail), Budgets 2008/09 to 2014/15 ($million)



Source: Budget Papers 2008/09 to 2014/15.

Table 3: State-Owned Enterprise welfare, Vote Transport and Vote Finance (KiwiRail), Budgets 2008/09 to 2014/15 ($million)

	2008/09 budget	2009/10 budget	2010/11 budget	2011/12 budget	2012/13 budget	2013/14 budget	2014/15 budget	Grand Total
Rail - New Zealand Railways Corporation Loans		405.00	55.00	250.00	107.50		10.75	
KiwiRail Turnaround Plan		20.00	250.00	250.00	250.00	93.85	198.00	
KiwiRail Equity Injection					322.50	25.00		
Rail Network and Rolling Stock Upgrade		104.85	70.76	10.15				
New Zealand Railways Corporation Loans	55.00							
New Zealand Railways Corporation Increase in Capital for the Purchase of the Crown Rail	376.00							
Crown Rail Operator Loans	140.00							
Crown Rail Operator Equity Injection	6.77							
Total	**577.77**	**529.85**	**375.76**	**510.15**	**680.00**	**118.85**	**208.75**	**3001.13**

Note: $690 million for the purchase of Toll NZ Ltd's rail business and associated costs not included in 2008/09 data.

4.2 WHEN WILL KIWIRAIL TURN AROUND?

KiwiRail has a 10-year Turnaround Plan to make its freight business commercially viable. The current network of 4,000 km is to be reduced to 2,300 km for the company to break even. The Treasury advised that this massive and painful restructuring was required before KiwiRail was purchased.

The taxpayer must ask what they are getting for these regular half-billion dollar annual bailouts. If not for these bailouts, government revenue would have been enough to have cut the company tax by two percentage points from 28 per cent to 26 per cent.

Bill English, Minister of Finance, said it all in terms of value for money for the taxpayer in March 2009:

> *The Government is now the owner of a business which probably has no value, in fact negative value, having just eight months ago paid almost a billion dollars for it (Swann 2009).*

4.3 SOFT BUDGET CONSTRAINTS

The unwillingness of governments to walk away from failing businesses it owns is an ongoing risk to taxpayers. Entrepreneurs have no choice when they exhaust their retained earnings and banks and private investors will no longer support them. As George Stigler (2000) explains:

> *The competitive industry is not one for lazy or confused or inefficient men: they will watch their customers vanish, their best employees migrate, their assets dissipate.*
>
> *It is a splendid place for men of force: it rewards both hard work and genius, and it rewards on a fine generous scale. The success of a competitive enterprise is not the least uncertain if its employees are able and diligent and its leadership sane and courageous.*

Firms that successfully serve their market find it easy to obtain capital to stay in business and to expand; unsuccessful, inefficient firms of course go out of business.

A hard budget constraint is a defining characteristic of a well-functioning market economy. KiwiRail, Solid Energy, and other state-owned enterprises and businesses supported by subsidies have increasingly soft budget constraints. Kornai (1986) explains:

> *... the softening of the budget constraint occurs when the strict relationship between expenditure and earnings has been relaxed because excess of expenditure over earnings will be paid by some other institution typically by the State. A further condition of softening is that the decision maker expects such external financial assistance with high probability, and this probability is built firmly into his behavior.*

The bailouts for KiwiRail and Solid Energy signal to all state-owned enterprises that they have a soft budget constraint. When they get into trouble, there will be subsidies and bailouts forthcoming. The link between profits, innovation, cost control, and good customer service are all slowly broken when a soft budget constraint creeps into a business environment.

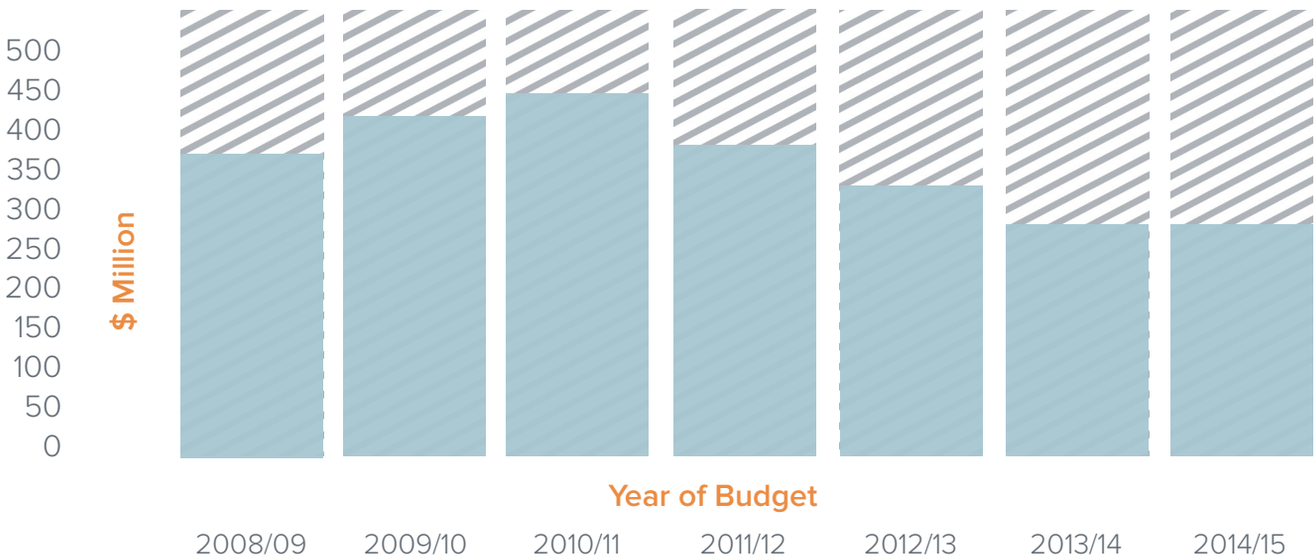
> **"The strongest argument for free enterprise is that it prevents anybody from having too much power. Whether that person is a government official, a trade union official, or a business executive, it forces them to put up or shut up. They either have to deliver the goods, produce something that people are willing to pay for, are willing to buy, or else they have to go into a different business"**
>
> **– Milton Friedman, "The Tyranny of Control" in Free to Choose (1980)**

5 THE MINISTER FOR ECONOMIC DEVELOPMENT

5.1 GOVERNMENT AS SUPERIOR ENTREPRENEUR

The $280 – $450 million in corporate welfare under the patronage of the Minister for Economic Development over the last seven budgets is peppered across industries – see Figure 5 and Table 4. The two big spending items in the portfolio of the Minister for Economic Development are trade promotion by New Zealand Trade and Enterprise and fluctuating subsidies for the New Zealand film industry.

Figure 5: Corporate welfare, Vote Economic Development, Budgets 2008/09 to 2014/15



Source: Budget Papers 2009/10 to 2014/15.

Table 4: Corporate welfare, Vote Economic Development, Budgets 2008/09 to 2014/15 ($million)

	2008/09 budget	2009/10 budget	2010/11 budget	2011/12 budget	2012/13 budget	2013/14 budget	2014/15 budget
3D Digital Graphics Cluster	2.00	2.00					
Analysis and Development Services for Firms	19.93	18.22	20.45				
Depreciation on the temporary Rugby World Cup showcase and festival building on Queens Wharf			2.00	4.90	4.90		
Enhancing Small Business Capability and Performance					0.22	0.22	1.23
Enterprise Development Fund	2.77	0.60					
Enterprise, culture and skills fund	1.55						
Establishment and operation of the Food Innovation Network New Zealand		0.35	13.00	4.00	4.60		
Film New Zealand	0.75	0.80	0.83	1.13	1.13	1.30	1.30
Growth Services Fund	5.93						
Identification and Coordination of International Market Opportunities	68.92	73.59	80.41				
International Biotechnology Partnerships		0.73					
International Business Growth Services			0.00	101.66	101.26	104.63	111.01

International Growth Fund		9.84	20.33	25.83	30.03	15.73	29.71
International Investment Facilitation Services	16.03	15.21	13.61				
Investment Fund Management	2.59		2.33	2.33	2.33	2.33	
Investment Fund Management		2.33					
Large Budget Screen Production Fund	47.80	52.48	127.00	91.66	50.56	40.56	57.65
Louis Vuitton Pacific Series	0.75						
Louis Vuitton Trophy Series		3.50					
Major Events Development Fund	4.50	7.85	8.35	13.53	15.08	10.00	10.00
Management Development Fund	0.28	0.30	0.50	0.22	0.76	0.76	0.76
Market Development Assistance Fund	44.94	40.77					
Negotiation and Completion of Stadium Projects		40.77					
New Zealand Trade and Enterprise	2.00	0.60	0.15	0.17	0.17	0.17	
New Zealand's Participation at Expo 2010 Shanghai, China	9.38	26.45	10.58				
Policy Advice - Economic Development							10.45
Policy Advice - Sectoral Leadership, Firm Capability, and Regional Development	15.76	19.85	27.01	25.66	13.26	18.45	
Policy Advice - Small Business	1.73	1.54	1.23	1.42	1.33	1.45	1.23
Promotion of New Zealand Associated with the America's Cup			2.00	19.75	1.68	5.00	
Purchase of Queen's Wharf, Auckland		20.00					
Regional and Industry Development Fund	1.76	1.03	0.60	3.90	1.15	0.80	0.40
Regional and Sector Development Services	47.16	47.51	31.37				
Regional Partnerships and Facilitation	9.34	11.82	4.56	4.56	4.49	4.56	
Rugby World Cup			1.80				
Rugby World Cup Free-to-Air Broadcasting Right		0.64	1.60	0.96			
Rugby World Cup Leverage and Legacy Programmes			5.75	7.70			
Sector Strategies and Facilitation	1.50	1.50	1.20	1.20	1.20	1.20	1.20
Sectoral Leadership, Firm Capability, and Regional Development Operational Policy Ministerial Servicing and Crown Entity Monitoring					5.77	9.58	0.00
Seed Co-investment Fund	13.76	3.00	8.00	7.60	16.23	7.25	7.58
Services to Develop Business Capability				11.71	13.75	13.44	
Services to Support Sector Development and Special Events				31.09	32.81	31.87	31.07
Services to Support the Growth and Development of New Zealand Businesses							13.18
Stadium Development			27.87				
Standardised Training and Advisory Services	15.19	15.17	11.41				
Temporary Rugby World Cup showcase and festival building on Auckland's Queens Wharf			8.00	1.80			
Transformational Initiatives Fund	2.47		3.99	3.00			
Venture Investment Fund	33.70	1.00	10.35	13.67	29.26	15.00	10.38
Total	**372.46**	**419.45**	**446.28**	**379.46**	**331.96**	**284.29**	**287.16**

Source: Budget Papers 2008/09 to 2014/15.

Note: policy advice within Vote Economic Development is included as corporate welfare because this policy advice would be redundant if the corporate welfare had not been dispensed.

5.2 SUBSIDIES FOR THE FILM INDUSTRY

Initially, film subsidies were for local productions as part of fostering New Zealand arts, culture and heritage. New Zealand is now the host to what the Directors Guild of America and the Screen Actors Guild of America define as runaway productions; motion picture productions that are:

> *Intended for initial release/exhibition or television broadcast in the US, but are actually filmed in another country.*

This may have little to do with promoting our own culture, telling our stories, or hearing our "voices", as originally intended.

New Zealand is a major beneficiary of the growth in internationally mobile film productions combined with Sir Peter Jackson's unique creative and entrepreneurial talents and determination to film The Lord of the Rings. Part of the location decision of any commercially minded film producer is what the competing national or federal, state and local authorities are willing to do for them for the privilege of hosting their film production. This preferment can be for location shooting as well as for pre and post-production.

Table 5 incorporates the film industry subsidies administered by the Minister for Economic Development with much smaller subsidies by the Minister for Arts, Culture and Heritage. Table 5 shows that film subsidies have been as high as $146 million in 2010/11 and as low as $44 million in 2013/14 depending on whether a big budget production is in New Zealand. The past is no indicator of the future. It depends on the success of New Zealand in that race to the bottom that results from a global market for film subsidies.

Table 5: Film industry subsidies, Budgets 2008/09 to 2014/15 ($million)

	2008/09 budget (Labour Party)	2009/10 budget	2010/11 budget	2011/12 budget	2012/13 budget	2013/14 budget	2014/15 budget	Total (National Party)
New Zealand Screen Production Incentive Fund	3.27	10.91	18.89	10.49	29.23	3.69		73.20
New Zealand Screen Production Grant - New Zealand							4.06	4.06
Large Budget Screen Production Fund	47.802	52.481	127	91.66	50.56	40.56	57.65	419.90
	51.07	63.39	145.89	102.15	79.78	44.25	61.71	497.17

Source: Budget Papers 2008/09 to 2014/15

New Zealand's film subsidies have evolved into the country becoming a player in the rather expensive global subsidy market for films. These films can be about any country, any story and any era and might be filmed in New Zealand for the right subsidy because of modern digital technology and the variety of backgrounds that allow New Zealand locations to look like any place in the world.

Extreme uncertainty is pervasive in film and television show production. Producers learnt right from the start that audiences demanded novelty and innovation – they wanted to be surprised again and again. Many famous films and TV shows succeeded because the producers made something that audiences did not know they wanted to see. Their success surprised everyone, including the producers. Subsidies for the film industry are a high risk for the taxpayer. The first law of Hollywood economics is:

> *Nobody knows anything ... Not one person in the entire motion picture field knows for a certainty what's going to work. Every time out it's a guess and, if you're lucky, an educated one (Goldwin 1989)*

Big budgets, star power and large marketing budgets do not reduce 'the terror of the box office' and films involving stars often run over budget. There is no typical movie – industry profits depend on the rare blockbuster: 78 per cent of films are unprofitable (Walls 2005; De Vany and Walls 1999). Every film is unique but competes with many ever changing imperfect substitutes (De Vany and Walls 1997).

Studios and film investors respond to these entrepreneurial uncertainties with a portfolio approach. They invest in a range of films and in both established and new talent (Sedgewick 2005). New Zealand taxpayers cannot diversify their risks through this global portfolio approach. The taxpayer is providing subsidies but recoupment through extra tax revenues on film profits is highly uncertain (and we are generally not an equity partner).

The poor returns to the taxpayer are well-known in terms of spillovers and spin-offs. The Treasury estimated the current subsidy scheme had delivered net economic benefits to New Zealand of just $13.6 million from 2004 to 2011. This is an annual rate of return of less than one per cent to the taxpayer. The large screen production grants from 2004 to September 2013 totalled $472 million. This is no small sum of taxpayers' money. The Avatar sequels have been promised at least $125 million in taxpayers' money in return for agreeing to spend at least $500 million in New Zealand. This film subsidy is twice what was paid in subsidies for making the first Avatar film in New Zealand.The Offices of the Minister for Economic Development and the Minister for Arts, Culture and Heritage gave frank advice to Cabinet on the screen production incentive grant:

> *Countries that are engaging in using increasingly generous incentives to entice international business are effectively promoting a 'race to the bottom' mentality.*

Taxpayers should ask themselves whether they want to keep investing more and more money in a race to the bottom in the global subsidy market that will always face 'the terror of the box office'. As the Offices of the Minister for Economic Development and Minister for the Arts, Culture and Heritage noted in the relevant cabinet paper again with an admirable commitment to value for money:

> *New Zealand should not simply seek to compete on this basis as in the longer term this is likely to lead to an economic loss to New Zealand and it will not assist in building sustainable screen businesses.*

Not only is the film subsidy business a global subsidy market where New Zealand is a small player, but film making is also an immensely risky endeavor. The overseas promoters of these international films have diversified portfolios of films and other investments. The New Zealand taxpayer has no such diversification in its film investment portfolio. At best, New Zealand is backing a poor investment. There is an increase in risk of backing international films that fail at the box office. Whether that will be enough to induce the taxpayer to pull out of this global subsidy market is a story that remains to be told.

5.3 EXPORT PROMOTION AND INFORMATION SPILLOVERS

New Zealand Trade and Enterprise is responsible for about $110 million of spending per year on what is termed 'International Business Growth Services'. The rationale for this export promotion is information externalities (Lederman, Olarreaga and Payton 2010). Private firms may hesitate to spend on research and marketing costs that might benefit rival exporters. Pioneering exporters risk developing foreign market footholds and country-specific reputations that can be quickly imitated by rivals – fast-seconds – once they have opened the door (Lederman, Olarreaga and Payton 2010; Panagariya 2003). These fast-seconds wait for a mature product design to break-through and then enter the market to offer a cheaper me-too product that can overtake the brand name capital of the export pioneers (Geroski and Markides 2005).

Export promotion labours under the misapprehension that exports are good and imports are bad. Trade is merely a clever technology for turning exports into imports. Exports have no economic purpose other than earning the necessary foreign exchange to buy imports. Consider the following by Krugman (1993):

> *James Ingram's (1983) textbook on international trade contains a lovely parable.*
>
> *He imagines that an entrepreneur starts a new business that uses a secret technology to convert U.S. wheat, lumber, and so on into cheap high-quality consumer goods.*
>
> *The entrepreneur is hailed as an industrial hero; although some of his domestic competitors are hurt, everyone accepts that occasional dislocations are the price of a free-market economy.*
>
> *But then an investigative reporter discovers that what he is really doing is shipping the wheat and lumber to Asia and using the proceeds to buy manufactured goods--whereupon he is denounced as a fraud who is destroying American jobs.*
>
> *The point, of course, is that international trade is an economic activity like any other and can indeed usefully be thought of as a kind of production process that transforms exports into imports.*

Both exporters and importers must search for relevant markets, review the available products and services and find reliable trading partners. Few, if any, countries have import promotion agencies. Many imports into New Zealand are high-technology consumer goods, production inputs and the latest new plant and equipment.

If trade promotion by New Zealand Trade and Enterprise is motivated by concerns about market failure and externalities, on the face of things, there is a stronger case for an import promotion agency than there is for an export promotion agency. New Zealand's exports are notorious for being low technology and dominated by labour intensive primary products from the agricultural and fishery sectors.

Such exports are easier to promote abroad because the individual exporter is supplying something in the nature of the standard product familiar to the buyer in terms of quality. Imports into New Zealand include many high-technology products where asymmetric information about the quality of each import is more likely to arise. The main difference is that most people would immediately accept that importers have to run their businesses without subsidies because that is what a normal business does.

As for value for money, in a major review of the effectiveness of export promotion agencies for the World Bank, Lederman, Olarreaga and Payton (2006, p. 2) concluded that:

> *It should be clear that program evaluation of [export promotion agencies] on economic welfare grounds is difficult if not impossible. Thus often – if not always– evaluations of EPAs stop short of an assessment based on welfare grounds, and focus on the more modest objective of assessing whether exports have increased or whether new markets have been opened.*

Findings that export promotion increases exports are of no value to the taxpayer. If the government subsidises anything, more is usually produced. Panagariya (2003, p. 10) suggested that:

> *Given the past failures of import-substitution policies, often justified on the basis of unsubstantiated claims of external economies, skeptics are entitled to a higher standard of proof of the existence of externalities this time around.*

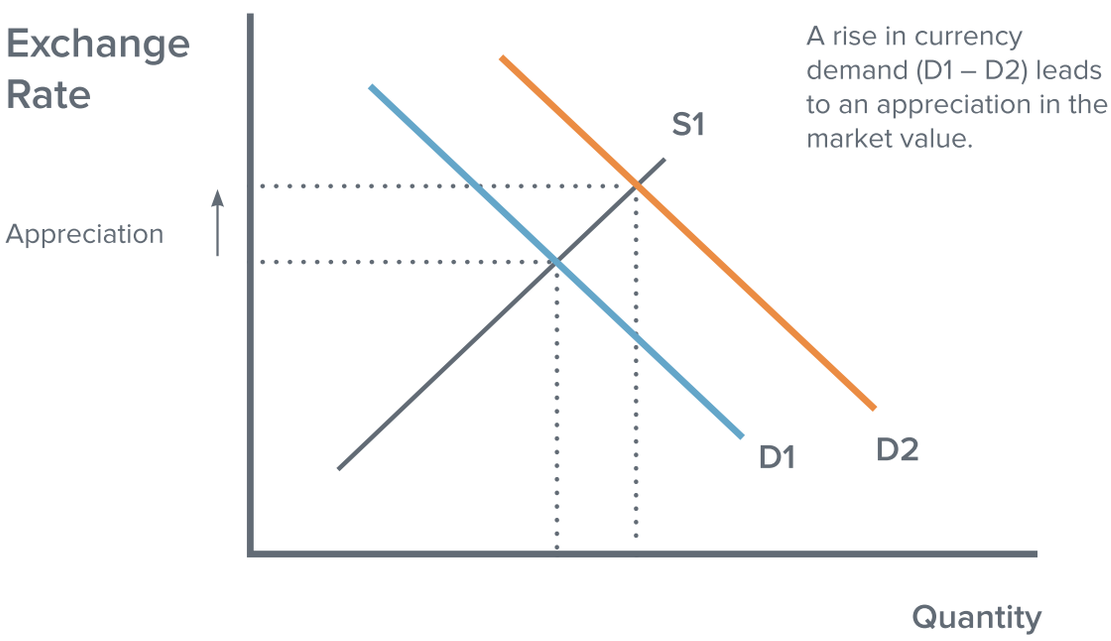
Rose and Spiegel (2011) found that the national branding from bidding to host the Olympics or FIFA World Cup is nuanced. Exports increased by 20 per cent for the nation that won and for losing bidders as well! The Olympic effect on trade is from the signal a country sends when bidding to host the games, rather than from actually hosting the mega-event. Bids to host mega sports events are soon after or in conjunction with major trade and investment liberalisations such as joining the WTO or the Common Market. Bidding for mega-events is a credible signal that a country has turned a political corner. This credible regime change towards openness is what matters, rather than the window of global publicity.

5.4 THE TRADE BALANCE MUST BALANCE

Any increase in exports as a result of subsidies or trade promotion by New Zealand Trade and Enterprise is offset by an increase in imports. This is because there is an appreciation of the New Zealand dollar as the trade surplus increases, or the trade deficit reduces because of the increased exports.

Figure 6 shows that the increase in demand for exports increases the demand for New Zealand dollars in the foreign exchange markets. This increase will cause an appreciation in the value of the New Zealand dollar in the foreign exchange markets. This appreciation will make imports cheaper so imports will increase. This currency appreciation and increase in imports into New Zealand will continue until exports again equal imports.

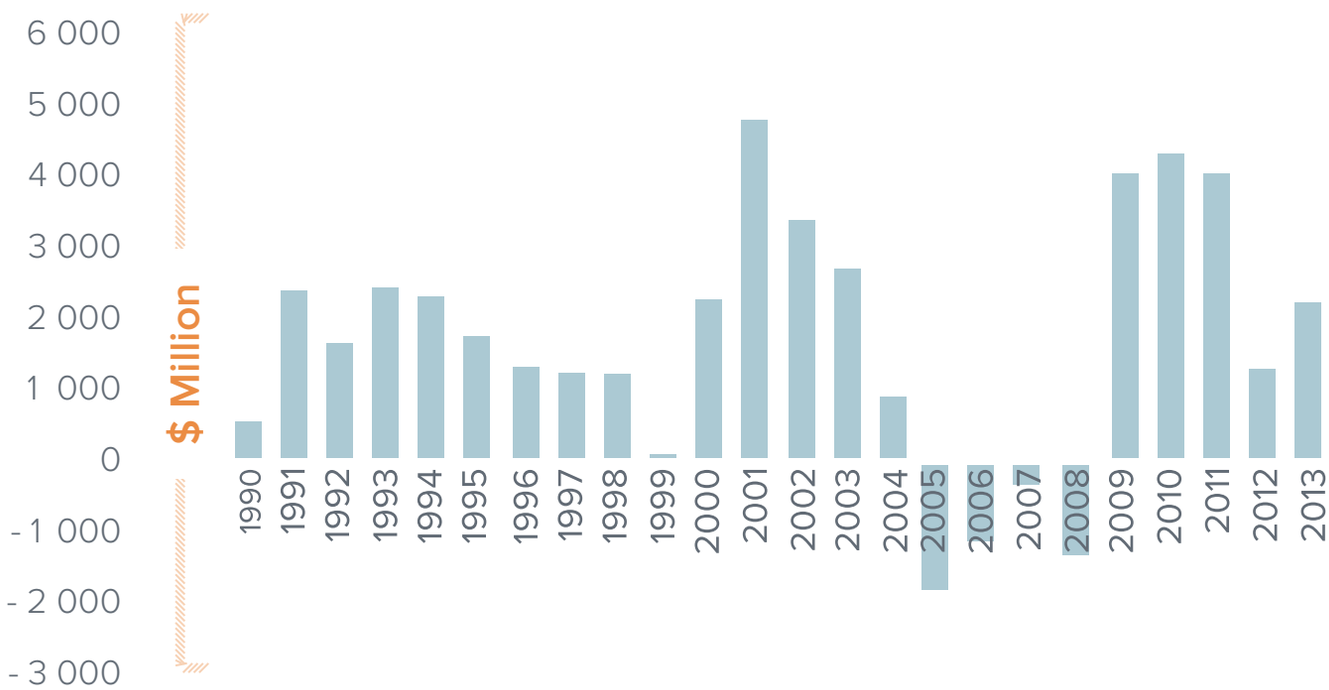
Figure 6: The exchange rate effects of an increase in exports



The size of the traded goods sector will be larger when there are export subsidies or trade promotion. The size of the trade in goods sector would also be larger if there are import subsidies. Any subsidy to exports, either directly or through trade promotion will increase imports in equal measure because the trade balance always balances. By the same token, tariffs reduce both imports and exports.

For most of the last 25 years, exports have exceeded imports, so the current account deficit has little to do with the performance of exports or imports – see Figure 7. The current account balance is the result of the international trade in savings and the relative returns from investing at home or abroad. The current account is in surplus when national savings exceed domestic investment, and is in deficit when national savings are less than domestic investment (Barro 2007; Humpage 1998, 2004).

Figure 7: Balance of goods and services, New Zealand



Statistics New Zealand InfoShare.

Export subsidies either directly or through trade promotion lead to a reshuffling of employment out of import competing industries into the exporting industries but wages will be lower. This is because New Zealand is producing more of what is subsidised rather than what is the most price competitive. In a digital age with e-commerce and internet marketing, the case for a government agency undertaking marketing on behalf of private companies should be waning, not growing in size of budget.

5.5 BUT THE EXCHANGE RATE IS TOO HIGH/TOO LOW?

One rationale for export subsidies is that Kiwi taxpayers should dig deep into their pockets to take on a world of under-valued exchange rates. Under-valued exchange rates mean cheap imports. It is not obvious that we should object to other countries subsidising their exports to New Zealand. A good rule in public policy is lower prices are a good thing. There is no such thing as the scourge of lower prices. Maybe we should just roll with the punches – accept what we cannot change and make the best of a bad situation. In this case it is foreign countries and foreign taxpayers subsidising New Zealand consumers through cheap imports.

Those claiming that the Kiwi dollar is itself over-valued or under-valued must define the long-

run equilibrium value of the exchange rate. So daunting is that task that it is still the case that the best available forecast of the exchange rate is whatever it is today. Anyone who knew any better than that would not tell you. They would be too busy trading on their own account before their exchange-rate modelling breakthrough is out of date, or even worse, is reverse engineered by a rival currency trader.

If another country undervalues its exchange rate by running a loose monetary policy, perhaps with the intention of making products and investment opportunities in the country cheap, any trade advantage from this undervalued exchange rate would erode as domestic prices adjust through higher inflation.

> *First, because monetary policy ultimately determines only the domestic inflation rate, a central bank that wants to engineer a depreciation of its currency must create more money than its trading partners and thereby generate a higher inflation rate.*
>
> *Second, because any resulting exchange rate depreciation will ultimately offset the inflation differential, a monetary-induced depreciation cannot secure a competitive trade advantage (Humpage 1998, p. 1).*

Most central banks around the world gave up on exchange rate interventions in the mid-1990s, because several decades of attempts to manipulate exchange rates without loosening monetary policy rarely worked. These exchange rate interventions, known as sterilised interventions, become an independent source of exchange rate instability and invite counter-speculation by currency traders and hedge funds. Every hint that a central bank might intervene to stop the exchange rate going too high to low invites speculation.

Using the monetary policy to keep the dollar from going "too high" would have ruinous domestic consequences as the Governor of the Reserve Bank explained last year:

> *If New Zealand decided to cap the NZ dollar, depending on where the cap is enforced, similar levels of intervention might be required as global foreign exchange turnover in NZ dollars relative to GDP is similar to that in Swiss francs.*
>
> *The OCR would need to drop to zero first in order to eliminate the interest arbitrage motivation for NZ dollar inflows.*
>
> *Any attempt to retain non-zero interest rates by "sterilising" such massive intervention would be very difficult. In effect therefore a Swiss type operation to cap the value of the NZ dollar through large scale FX intervention would also amount to quantitative easing.*
>
> *As I mentioned, this would be highly inflationary in the NZ context.*
>
> *Graeme Wheeler, Governor of the Reserve Bank, 20 February 2013*

Monetary policy is incapable of improving the competitive position of New Zealand exporters through exchange rate manipulation. A looser monetary policy required to induce a depreciation of the too high Kiwi dollar will inevitably lead to higher inflation that will erode any temporary advantage to exporters from the initial depreciation.

New Zealand should make the most of what it has in light of the world as it is. Export subsidies merely reshuffles employment and production in and out of the traded goods sector while lowering the wages and productivity. Matching foreign industrial and exchange rate policies is always a recipe for subsidising sectors where there is already excess capacity and low returns (Krugman 1983, 1984).

5.6 A PRETENSE TO KNOWLEDGE

When exports are subsidised or promoted, the government is pretending to know what the optimal size of the traded goods and services sector is in New Zealand. The government is further pretending to have in its hand sufficient information, knowledge and computational power to forecast in a disinterested manner free of politics that optimal outcome well in advance.

The Government must then have the tools to fine tune exports and imports to deliver that optimal outcome in a rapidly changing world where any rational decision will be out of date very quickly, often before it is even calculated, much less delivered. A further complication for the Minister is that any knowledge he has in advance will be rather limited.

Most of the more important knowledge is in the hands of the vast number of people. Hayek (1945) viewed the market process as a vast telecommunication network that mobilised bits and pieces of incomplete and frequently contradictory knowledge dispersed across countless individuals and summarise that knowledge into prices:

> *The most significant fact about this system is the economy of knowledge with which it operates, or how little the individual participants need to know in order to be able to take the right action. In abbreviated form, by a kind of symbol, only the most essential information is passed on and passed on only to those concerned.*
>
> *It is more than a metaphor to describe the price system as a kind of machinery for registering change, or a system of telecommunications which enables individual producers to watch merely the movement of a few pointers, as an engineer might watch the hands of a few dials, in order to adjust their activities to changes of which they may never know more than is reflected in the price movement (Hayek 1945).*

The market process works because as people buy and sell and prices change as a result, their limited individual fields of vision sufficiently overlap through these price changes that the relevant knowledge is communicated to all (Hayek 1945). Neither the Minister nor a bureaucrat can replicate this telecommunications network that is embedded in the market process when gathering the knowledge that they will need to review both subsidy applications and industry strategies.

An entrepreneur simply needs to learn prices and costs that are relevant to their particular circumstances of time and place, and act quickly before their knowledge and hunches about how the future might unfold are overtaken by events and more alert competing entrepreneurs. Changes in prices and forecasts of future prices are the basis on which entrepreneurs adjust their plans. Through buying and selling in the market, there are constant incremental adjustments of both price and quantities so that economic decisions dovetail towards the prices and quantities that clear the market. Entrepreneurs are nonetheless still profoundly ignorant of most events in the economy:

> *The chief insight gained by modern economists is that the market is essentially an ordering mechanism, growing up without anybody wholly understanding it, that enables us to utilize widely dispersed information about the significance of circumstances of which we are mostly ignorant (Hayek 1978).*

5.7 COPING WITH IGNORANCE

A minister or bureaucrat attempting to subsidise or promote the exports of a particular industry must gather a vast amount of incomplete, conflicting information dispersed across countless individuals. This information is gathered against a background of constant small changes in prices, costs and available opportunities and there is a lack of immediate feedback to this minister or bureaucrat through daily changes in prices, profits and costs. Steven N.S. Cheung explains the challenge facing the minister:

> *... economists who propose corrective policies tend implicitly to assume unrealistic constraints on governments. It is assumed, for example, not only that situations exist which entail divergences between private and social costs, but also that some state agency will incur a sufficiently low, if not zero, cost in correctly assessing the values of various marginal schedules, even for complex situations where multiple uncontracted effects will have an impact on large numbers of individuals (Cheung 1978, p. 39).*

Statistics are the eyes and ears of governments when intervening in the market process (Rothbard 1960). Most of the important knowledge in the market process is tacit and simply does not exist in a format that can be summarised into statistics or otherwise conveyed to a central authority; and much of the rest of the relevant information that can be collated quickly becomes out of date (Hayek 1945).

The Minister and the bureaucracy stand outside of the market process and are not aided by its process of communicating knowledge among its participants through prices and profits:

> *Competition is essentially a process of the formation of opinion: by spreading information, it creates that unity and coherence of the economic system which we presuppose when we think of it as one market. It creates the views people have about what is best and cheapest, and it is because of it that people know at least as much about possibilities and opportunities as they in fact do (Hayek 1948).*

The attempts by the Minister to rectify market failures with government intervention and through subsidies to manipulate supply and demand curves to take into account social costs and benefits is an example of playing the all-powerful role of the teacher in what Ronald Coase called ‘blackboard economics’:

> *... in which with full knowledge of the curves (which no participant in the actual economic process possesses), we move factors around (on the blackboard) so as to produce an optimal situation. This may well be a good way of teaching the tools of economic analysis but it gives students a very poor idea of what is normally involved in deciding on economic policy (Coase 1964, p. 195).*

There is no real-world counterpart of the teacher next to a blackboard moving the curves at will. Coase (1960, 1974), Demsetz (1969), Cheung (1973) and Barzel (1977) warned of the risk of moving quickly from the identification of a market imperfection to assuming government can correct it in reality:

> *The tax policy of an all-knowing, well-motivated state results in corrective adjustments for externalities in accord with the economist’s prescription; this obviates the need for considering alternative assignments of responsibility.*
>
> *The problem was analysed as if the state is a perfect agent through which the blackboard plans of economists can be brought to fruition. Ignoring State-associated costs of error, implementation, and improper motivation,*

rather than ignoring the cost of using of markets, is the root cause of the asymmetric approach brought to the assignment of responsibility (Demsetz 1996, p. 567).

The great advantage of real markets is the immense amount of explicit and tacit knowledge that is summarised in prices. Price tags do not come with explanations attached. They instead are a signal wrapped in an incentive (Alchian and Allen 1983; Stigler 1987). All the entrepreneur needs to know whether prices are up or down. If the entrepreneur does not adapt to the latest price changes, he risks going out of business. If the entrepreneur can anticipate changes in prices faster than rivals, he stands to profit.

The Minister must gather a vast amount of knowledge to make up for the fact that he does not actually own the asset at stake and is not competing in the marketplace subject to a hard budget constraint. His soft budget constraint is in contrast to Darwinian evolutionary selection in the market process where:

> *... the necessary changes in habits and customs will occur only when those who are ready and able to experiment with new procedures can make it necessary for the others to imitate them, with the former thereby showing the way ... competition not only shows how things can be improved, but also forces all those whose income depends on the market to imitate the improvements (Hayek 2002).*

5.8 THE INFANT INDUSTRY ARGUMENT

Most of the justification for government subsidies in the rest of the portfolio of the Minister of Economic Development boils down to the infant industry argument. A new industry or firm has good long-term prospects but is unable to find private sector investors who are willing to stake the venture. Governments, however, can see further than the private sector regarding the existence and riskiness of these long-term prospects.

A heavy burden of justification lies upon claimants for subsidies that are premised on fixing gaps in the market that arise from the existence of persistent, known but unexploited opportunities for entrepreneurial profit:

> *There is no more important proposition in economic theory than that, under competition, the rate of return on investments tends towards equality in all industries.*
>
> *Entrepreneurs will seek to leave relatively unprofitable industries and enter relatively profitable industries, and with competition there will be neither public nor private barriers to these movements. This mobility of capital was crucial to the efficiency and growth of the economy (Stigler 1963, p. 54).*

The infant industry argument is problematic because if the industry will be profitable in the long run, the firms concerned should be willing to accept losses in their first few years of business, treating them as an investment to be paid back by later profits (Friedman 1990). If private investors are unwilling to accept the losses inherent in establishing any new firm, perhaps the anticipated later profits from the investment are not large nor certain enough as officious observers might think (Friedman 1990, 1996).

There could, of course, be learning by doing and other cost reductions that spill over to other firms, which no firm takes into account when deciding its own level of output. Too little is produced. McCloskey (1985, p. 288) called this under-production a 'leading objection to market capitalism'. Panagariya (2003) suggested that the empirical relevance of externalities remains as illusory for infant export industries as it was for tariffs and subsidies for import-substituting industries in earlier times.

Edmund Phelps (2013a) made this argument against subsidies and for grassroots innovation:

> *The problem is that subsidies redirect the economy's innovation toward politicians, who lack deep specialized knowledge, and away from the private sphere, where judgments are made by ideas men, entrepreneurs, financiers, and market people who consider whether there are not better initiatives to think about or develop.*

The competitive market process selects which innovators are rewarded with profits and which fall by the wayside because of losses. Subsidies impede this competitive market process of trial and error and Darwinian natural selection through profits, losses and business failure. Political processes cannot replicate the outcomes of competitive market selection. Most of the knowledge about what consumers will buy is revealed down the road as the market sifts and sorts between competing product options.

5.9 SPILLOVER BENEFITS AND INDUSTRY TARGETING

A common rationale for targeting an industry with subsidies is that it has various benefits to the wider community that cannot be captured by individual entrepreneurs so they are ignored in their investment plans. The industry is too small because these spillover effects are ignored.

Krugman's (1983, 1993, 1994) summary of the pros and cons of industry targeting stands to this day:

- The most commonly cited criteria for industry targeting such as future competitiveness, linkage industries, high value added per worker or responding to the industry policies of other governments are misconceived, in some cases disastrously so;
- To the extent there is a valid theoretical case for targeting, this theoretical basis for industry targeting is too complex and ambiguous to be useful given the current state of knowledge; and
- It is not easy to evaluate the costs and benefits of industry targeting even after the fact that the criteria generally used are crude and can easily be misleading.

Arguments for a strategic industry policy based on game theory in oligopolistic industries and externalities from learning by doing in production cost curves:

- It is highly sensitive to the parameters: the cost of R&D, the slope of the learning curve, the number of potential competitors, and the size and growth rate of the target market – about which there is very imperfect knowledge;
- The argument is highly sensitive to assumptions about competitive strategies – some assumptions call for export subsidies but equally plausible assumptions call for export taxes;
- An activist industry policy could provoke foreign retaliation, which makes the venture unproductive; and
- The decision-making process is assumed not to be captured by special interests (Krugman 1984).

According to Pack and Saggi (2006) for a politician or policymaker to successfully target industries, they must be knowledgeable in the following:

1. the firms and industries that generate knowledge spillovers;
2. the firms and industries benefit for dynamic scale economies, including the path of such learning and the magnitude of the cost advantage at each stage of the learning

process;

3. the sectors that have a long-term comparative advantage;
4. the size of the scale economies of the different firms in the different sectors;
5. their potential competitiveness (the policymaker must have an ability that is superior to that of entrepreneurs and individual firms);
6. the nature and extent of capital market failures as they apply to each subsidy applicant;
7. the magnitude and direction of inter-industry spillovers;
8. the relative amount of learning by the individual firms from each other and from their own experience;
9. the extent to which early entrance into an industry generate benefits for future entrants;
10. the extent of heterogeneity in the learning abilities of each firm;
11. the potential effects of foreign direct investment to international trade on efforts to coordinate industry spillovers, including a detailed knowledge of which tens of thousands of production inputs are tradable; and
12. forecasting which firms can create knowledge and discover better production methods.

Taxpayers may not be as optimistic as the government is as to its ability to gather all this information and process it with sufficient political deftness to escape special interest capture. The performance of portfolio managers in the sharemarket suggests that few of these well-paid equity analysts are able to beat the market over any extended period of time. The knowledge and skills required by the Minister and his advisers to take into account externalities and spillovers makes this challenge even more daunting. By definition, externalities and spillovers are not priced in the market – they must be guessed.

The purported successes of industry policy icons of the past, such as Japan and South Korea, fail to stand up to closer inspection (Pack and Saggi 2006). For example, Beason and Weinstein (1996) found that a disproportionate amount of Japanese industrial targeting was in low-growth sectors and sectors with decreasing returns to scale. More importantly, they found no evidence that productivity was enhanced by industry policy measures. Lee (1996) found a similar lack of impact of Korean industry policies on sectoral capital accumulation and total factor productivity growth. In both cases, the better explanation of Japanese and South Korean economic success was a credible adoption of a free market economy functioning under low taxes and openness to trade and new technologies.

5.10 THE SERVICES SECTOR AS THE WALLFLOWER OF CORPORATE WELFARE

A major source of productivity gains comes from the reallocation of market shares and employment from the lower productivity firms to higher productivity competitors and to newcomers. In the manufacturing sector, the sources of productivity gains are about 50 per cent from within-plant productivity improvements with the rest through reallocation that is, in turn, evenly divided between new entrants and the reallocation of market shares to lower-cost incumbents. In the retail sector, nearly all productivity gains arrive through new entrants (Foster, Haltiwanger and Krizan 2001).

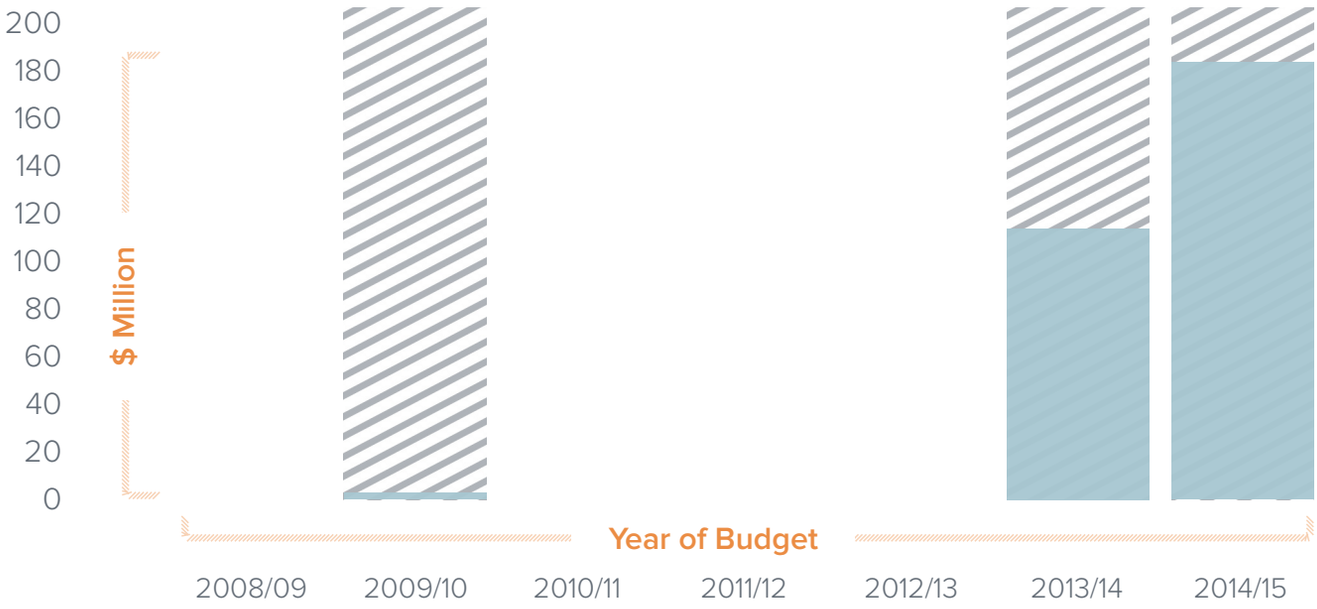
Corporate welfare does not speak to this form of productivity enhancement because it is driven by loss of market share and business failure. Subsidies would only slow down this process of reallocation.

6 THE MINISTER OF SCIENCE AND INNOVATION

6.1 GOVERNMENT AS ORACLE

Figure 8 shows that a new player on the corporate welfare block is the Minister of Science and Innovation. Over the last two budgets, a large number of co-investment grants were handed out through R&D subsidies – see Table 6.

Figure 8: Corporate welfare, Vote Science and Innovation, Budgets 2008/09 to 2014/15



Source: Budget Papers 2008/09 to 2014/15

Table 6: Corporate welfare, Vote Science and Innovation, Budgets 2008/09 to 2014/15 ($million)

	2009/10 budget (Labour Party)	2009/10 budget	2010/11 budget	2011/12 budget	2012/13 budget	2013/14 budget	2014/15 budget
Realising the Benefits of Innovation						10.50	23.30
Research and Development Facilitation and Promotion Service		4.20					
Repayable Grants for Start-Ups						0.90	14.11
Research and Development Growth Grants						65.10	96.60
Targeted Business Research and Development Funding						35.60	44.90
Total	**0.00**	**4.20**	**0.00**	**0.00**	**0.00**	**112.10**	**178.91**

Source: Budget Papers 2008/09 to 2014/15

The main argument for R&D grants is the inability of the inventor to obtain the returns from their innovation because competitors immediately copy the new product and the ideas behind the new product. Inventors and innovators will not anticipate a sufficient return to justify investing in the R&D in the first place. The usual solution to this problem of appropriating the returns from innovation are patents and copyrights rather than subsidies. In the case of basic science, where the research output is more likely to not lead to ideas that can be immediately commercialised, the case for subsidies is stronger.

6.2 IT'S TOUGH TO MAKE PREDICTIONS, ESPECIALLY ABOUT THE FUTURE

R&D grants are a particularly high risk form of corporate welfare. Standard subsidies to industry at least have the advantage that the New Zealand Government can imitate the successes of other governments in terms of subsidising industries that appear to be successful overseas.

Most of the knowledge necessary to work out what will be a successful innovation lies in the future and emerges only slowly through trial and error in the marketplace as many products enter the field. Most fail and the few that remain are well rewarded by the market in profits and market share.

6.3 MARKET-TESTED INNOVATION

The information available to private investors must be as least as good as that gathered by government. The key question is whether ministers and bureaucracies have better information than private investors, and can they use this knowledge more wisely? Investors are skilled and experienced in evaluating profitable uses of the capital – the better ones survive, losses eliminate the rest.

> *... The basic problem facing public and private policy [is] the design of institutional arrangements that provide incentives to encourage experimentation (including the development of new products, new knowledge, new reputations, a new ways of organising activities) without overly insulating these experiments from the ultimate test of survival (Demsetz 1969).*

Markets work because of the institutions that shape individual choices. These institutions – property rights, price signals and profits and losses– are the invisible hand that encourage success and filter out error and failure. The market process does not rely upon either individuals to be well informed or astute calculators. Property rights, prices and profits and losses are the institutions that do the heavy lifting (Smith 1962, 2008; Alchian and Allen 1983; Boettke, Caceres and Martin 2013; and Wright and Ginsburg 2012). People deal with human frailties and correct errors through specialisation, exchange and learning (List 2004; Epstein 2006a; Glaeser 2006). As Hayek (1945, 1948, 1989, 2002) argued, the price system allows profoundly ignorant individuals to use the knowledge dispersed across countless individuals about changing economic conditions without having to possess that knowledge themselves.

Ministers and the bureaucracy have no substitute for price signals and the incentives of profit (or loss). Ministers and bureaucracies must instead collect for themselves a vast amount of knowledge, much of which is tacit and is not summarised in statistics or any other written form. The judgments of ministers and the bureaucracy about how to interpret the incomplete and conflicting information that comes into their hands is not subject to a hard budget constraint, continuous and often subtle updating by the price system, and changes in the profits and losses on investments that may result in bankruptcy. Coase (1959) illustrated these institutional shortcomings of intervention with the government allocation of radio spectrum frequencies:

> *This "novel theory" (novel with Adam Smith) is, of course, that the allocation of resources should be determined by the forces of the market rather than a result of government decisions. Quite apart from the misallocations which are the result of political pressures, an administrative agency which attempts to perform this function normally carried out by the pricing mechanism operates under two handicaps.*
>
> *First of all, it lacks the precise monetary measure of benefit and cost provided by the market. Second, it cannot, by the nature of things, be in possession of all the relevant information possessed by the managers of every business which uses or might use radio frequencies, to say nothing of the preferences of consumers for*

the various goods and services in the production of which radio frequencies could be used

In fact, lengthy investigations are required to uncover part of this information, and decisions of the Federal Communications Commission emerge only after long delays, often extending to years. To simplify the task, the Federal Communications Commission adopts arbitrary rules (Coase 1959, p.18).

Business subsidies are likely to be based on shared expectations, proven solutions and the conventional wisdom of the time. The bureaucratic process of government neglects the idiosyncratic and speculative knowledge that give the most successful entrepreneurs their edge. The market process is at its most creative when entrepreneurs compete by experimenting in parallel to see which rival idea is best. Learning by results follows where others imitate and improve on the most successful experiments. As Easterbrook (1984) explained, market participants do what they do because they survive by doing it but the reasons why may be less apparent to them and to outside observers:

Wisdom lags far behind the market. It is useful for many purposes to think of market behavior as random. Firms tried dozens of practices. Most of them are flops, and the firms must try something else or disappear. Other practices offering something extra to consumers – they reduce costs or improve quality – and so they survive in the competitive struggle the firms that use the best practice of survive.

Why do particular practices work? The firms that selected the practices may or may not know what is special about them. They can describe what they do, why is more difficult.

Only someone with a very detailed knowledge of the market process, as well as the time and date are needed for evaluation, would be able to answer that question. Sometimes no one can answer (Easterbrook 1984, p. 5).

6.4 THE SURVIVOR PRINCIPLE AND EFFICIENCY AND INNOVATION AS EMERGENT PROCESSES

A challenge for ministers and bureaucrats in deciding whom to subsidise is business vitality and capacity for growth and innovation, which are only weakly related to cost conditions and often depend on many factors that are subtle and difficult to observe (Stigler 1958, 1987). To survive in the market, a firm, new or old, must rise above all of the problems it faces such as employee relations, skills development, innovation, changing regulations, unstable markets, access to finance and new entry. This is the decisive (and Darwinian) meaning of efficiency from the standpoint of the individual firm (Stigler 1958).

The more and the less efficient firms are identified by ascertaining which firms and classes of firms are growing and which are declining in size (Stigler 1958). Competition between different sizes, shapes and organisational forms of firms all vying for sales, cheaper sources of supply and investor support slowly seeks out the keener priced, lower cost, and more innovative enterprises (Alchian 1950; Stigler 1958).

If the small firms in one industry are currently shrinking or going out of business while medium and large firms continue to survive, the small firms are inferred to have higher per unit costs. If the large firms in one industry are shrinking while the smaller firms continue to survive, it is inferred that the larger firms currently have the higher per unit costs and the inferior products (Stigler 1958; Demsetz 1973, 1976).

One method of organisation replaces another when it can supply at a lower price (Marshall 1920). The number and size of firms in any one industry or market reflects the rise and fall of firms in a competitive struggle to survive with competition between firms of different sizes sifting out the more efficient firm sizes and product ranges (Stigler 1958, 1987; Demsetz 1973, 1976; Peltzman 1977).

The puzzlingly large size and productivity differences across firms even in narrowly defined industries producing standard products lead to misplaced doubts about the efficiency of some firms and of the market process (Barzel and Kochin 1992). Some firms can produce half as much output from the same measured inputs as their market rivals and still survive in direct competition (Syverson 2011). This great diversity in firm sizes is nonetheless efficient simply because it survived. The diversity reflects inter-firm differences in managerial ability, organisational practices, choice of technology, the age of the business and its capital, location, workforce skills, intangible assets and changes in demand and productivity idiosyncratic to each individual firm (Stigler 1958, 1976a, 1987; De Alessi 1983).

6.5 PRODUCT LIFE CYCLES AND PUBLIC SUBSIDIES

The life cycle of many industries starts with a burst of new entrants with similar products. These new or upgraded products often use ideas that cross-fertilise. In time, there is an industry shakeout where a few leapfrog the rest with cost savings and design breakthroughs to yield the mature product (Boldrin and Levine 2008, 2013). Fast-seconds and practical minded latecomers often imitate and successfully commercialise ideas seeded by the market pioneers using prior ideas as their base.

This entire dynamic market process of competitive selection, competition as a discovery procedure, trial and error and leapfrogging is distorted if one or more of the contending entrepreneurs secures a subsidy from government to stay in the race for longer than justified by its competitive merits. The government cannot enable this process because neither the outcome nor even the direction of the competitive struggle for survival is known in advance. To quote Thomas Babington (1830):

> *The maxim, that governments ought to train the people in the way in which they should go, sounds well. But is there any reason for believing that a government is more likely to lead the people in the right way than the people to fall into the right way of themselves?*

The firms that survive and grow in competition with rival ways of doing business are the more efficient simply because they survived. What will survive in market competition will not be known in advance to the politicians and policymakers when he is deciding which industries and firms to subsidise. The results of the competitive market process that weeds out the less efficient firm are known at the end of this long race, not at the start. The politicians/policymaker faces a knowledge gap about prospective relative efficiency that can never be closed.

6.6 GOVERNMENT AS CO-INVESTOR IN INNOVATION

The returns to public R&D may be overplayed. The OECD (2003) when investigating the sources of economic growth disaggregated R&D into private and public components. It was expecting a large positive and statistically significant relationship. Instead, it found a statistically significant negative relationship. The OECD was surprised by this result and attempted to downplay it:

> *... at face value [the results] suggest publicly performed R&D crowds out resources that can be alternatively use by the private sector including private R&D.*

There is some evidence of this effect on studies of it looked in detail at the different forms of R&D and the interaction between them (OECD 2003).

If the OECD reports of publicly funded R&D has a negative return are true, R&D grants should be viewed with great suspicion. The economic literature has a long history of finding that public R&D grants have poor returns (Davidson 2006). Diamond (2006) found that the citation rate of chemistry papers funded by the private sector is more frequent than the papers funded by the government. This suggests that privately funded R&D is more effective in identifying important and fruitful lines of research.

Importantly, increases in public R&D grants, at least in the short run, mostly increase the wages of the scientists and engineers undertaking the additional R&D. Goolsbee (1998a, 1998b) who later became President Obama's Chairman of the Council of Economic Advisers, found that:

- Much of the benefit of investment tax incentives does not go to investing firms but rather to the suppliers of their equipment and capital through higher prices;
- The majority of R&D spending is actually just salary payments for R&D workers;
- The labour supply of R&D workers is quite inelastic in the short term so a significant fraction of the increased spending on R&D goes directly into higher wages;
- By raising the wages of scientists, engineers and other R&D workers to the private sector, government funded R&D crowds out private R&D; and
- Because of the wage and equipment price rises, the conventional estimates of the effectiveness of R&D policy may be 30-50 per cent too high.

Goolsbee's (1998a, 1998b) findings suggest that the main beneficiaries of R&D grants are equipment suppliers and knowledge workers. He found that this wage rise effect may have grossly over-stated the previous estimates of the returns from R&D. The reason that wages go up sharply when R&D grants increase is the supply of scientists, engineers and other R&D workers is relatively unresponsive to higher wages in the short run. There is a long training pipeline in formal education and on-the-job before a new R&D workers gain the necessary experience to be fully effective inventors and innovators.

Romer (2001) concluded that governments make an error in subsidising the private sector to hire scientists and engineers through R&D grants. Governments must instead check whether the education and immigration systems can provides the supply response for these subsidies to work.

6.7 TOO MUCH OF A GOOD THING?

Why is it that there always seems a need to encourage R&D? There should be no presumption of under-investment. Remember there was considerable talk of investment bubbles, the 'dot com' bubble and housing bubbles all in the last decade or so.

The Minister must be wary of contributing to the ICT and other so-called investment bubbles. Government subsidies can intensify these so-called market failures rather than remedy under-investment in R&D. The Minister cannot pick and choose his market failures, targeting one for remedy without worrying about intensifying another. Barzel (1968) identified two offsetting drivers affecting the optimal timing of innovations.

It is widely recognized that when innovators are unable to realize the full benefits generated by their innovations the profit motive may not provide an incentive strong enough for them to innovate at the socially optimal rate.

> *On the other hand, it has not been recognized that competition between potential innovators to obtain priority rights (and profits) from innovations can result in premature applications of discoveries (Barzel 1968, p. 348)*

Competition between potential innovators tends to make the amount of resources invested in R&D too large because of the possibility of the patent foreclosing competition.

> *If innovations are introduced at their optimal dates, their contribution to wealth will always be larger than could have been supplied by the same resources employed elsewhere in the economy. However, competition among potential innovators may deprive innovations of all their special economic value (Barzel 1968, p. 349).*

Jones and Williams (1998, 2000) discussed two distortions that promote over-investment in R&D. The first is a negative duplication externality. This stepping on toes effect arises out of the patent races discussed by Barzel (1968). In a patent race, multiple firms run parallel research programs hoping to first to create and patent a new good or process. This increase in R&D effort to win the patient race induces duplication that reduces the average productivity of R&D in the economy and society is poorer for it.

There is also a "business stealing" effect identified by Jones and Williams (1998, 2000). The R&D aims to redistribute the rents from past innovators to current innovators. There is a risk of over-investment in research where innovators earn rents on ideas that are not entirely new or novel. The purpose of the R&D then becomes to repackage existing ideas so that the most recent inventor is entitled to all subsequent rents for this small increment in the quality of the underlying product or production process.

> The business stealing effect arises when new firms produce imitations, and minor upgrades, of the pioneering products without having to undertake any of the R&D and initial business risk. One purpose of patents and copyrights is to ensure that the initial innovator is sufficiently rewarded to make the initial outlay of R&D. When cheap imitations can quickly enter the market, the initial product is less likely to be invented. Patents and copyrights offer some protection but imitation products eventually will enter undermining the incentives of R&D. Moreover, the R&D behind these imitation products does not result in genuine new products and production processes. This R&D duplicates the initial R&D as part of a scramble to grab the rents associated with being first in the market or a fast second.

R&D subsidies are a subset of the general policy area of promoting innovation through patents, copyrights, and selective subsidies. The main theme about patents and copyrights in contemporary policy debates is intellectual property rights overreach rather than whether they are not a sufficient incentive for innovation and risk taking. Major reforms have been called for to deal with a wave of predatory litigation by patent trolls that may stifle cumulative innovation (Posner 2012; Epstein 2006b). In recent years, Apple and Google spent more on patent litigation and acquisition than on R&D (Watkins 2014). Bessen and Meurer (2008) claim that:

> *... in industries other than chemicals and pharmaceuticals, defense against American patent lawsuits amounts to 13% of R&D spending by defendant firms.*

Some even call for the abolition or radical curtailment of patents because they are now counter-productive (Boldrin and Levine 2008, 2013). If patents and copyright appear to be over rewarding inventors and stifling secondary innovation in the diffusion of new technologies, the case for R&D subsidies appears to be weaker in light of innovation perhaps already being over-

rewarded by patents and copyrights.

When the innovation is motivated by subsidies rather than the prospect of sales in a market, there can be premature invention: inventions that simply were not worth the cost of their discovery at this time. These inventions sit on the shelf, but the subsidies that encouraged their invention are not recovered.

Subsidising R&D is a far more ambiguous policy choice than might first be thought because of patent races, duplication externalities and patent trolls that destroy wealth, rather than create it. Subsidies to R&D in New Zealand risk duplicating R&D efforts overseas for little gain to the taxpayer and distract attention from designing an innovation policy regime that fosters technology adoption. That risk should be taken into account by the taxpayer when assessing value for money from R&D grants.

For a small open economy such as New Zealand, R&D duplication is a major risk because over 99 per cent of global R&D is undertaken abroad. The policy priority is importing and adapting technologies, not duplicating their invention locally. There are three prongs to technological change:

1. Invention;

2. Innovation – the development of a technology through to its first marketing or use; and

3. Diffusion – the spread of a new technology across its entire potential market.

Jovanovic (1997) estimated that technology adoption costs are twenty to thirty times the costs of invention in the USA where technology invention costs are about one-half of one per cent of GDP. Too much effort in science and innovation policy is at the start of the process rather than at the end:

> *Although it is generally realised that it is the process of diffusion, or use of technology that creates productive potential and competitiveness, policy initiatives are largely by-passed opportunities to improve the diffusion process.*
>
> *If this may seem misplaced emphasis, it does in fact reflect the state of the academic literature which is wide ranging and extensive as it relates to policies in R&D, but small and fragmented as regarding policies on diffusion (Stoneman and Diedren 1994, p. 908).*

6.8 THE SUCCESS OF THE PRIVATE SECTOR IN PICKING WINNERS

Politicians and policymakers is unlikely to pick winners because the private sector itself backs a large number of losers before it hits on a few winners with rewards that are large enough to have justified chancing their arm. For example, Mansfield et al (1971) found that of 220 R&D projects they studied, 40 per cent were technically incomplete, 45 per cent were never commercialised, and of those that were commercialised, 60 per cent of these projects did not earn a positive economic return. Astebro (2003) similarly found that out of 1091 Canadian inventions reviewed, only 75 of these inventions were commercialised. [1]

A few big wins can justify considerable market volatility and a great many failed ventures. What is left standing after all the bloodletting might be extremely profitable if only to justify the ride for those that risked it all to have it all. For example, Eugene Fama estimated that the many business failures in the 'dot com' bubble were justified if about 1.4 more Microsofts were born as a result (Clement 2007). In other words, many failed start-ups can be justified with the foundation of only a few successful businesses.

1 See Davidson (2006) for a general critique of publicly funded R&D. This paragraph draws on his references.

If this track record is to speak to the current context, R&D subsidies should result in many failures and a few successes. High risk ventures such as these are better undertaken by the private sector where entrepreneurs are subject a hard budget constraint rather than political considerations.

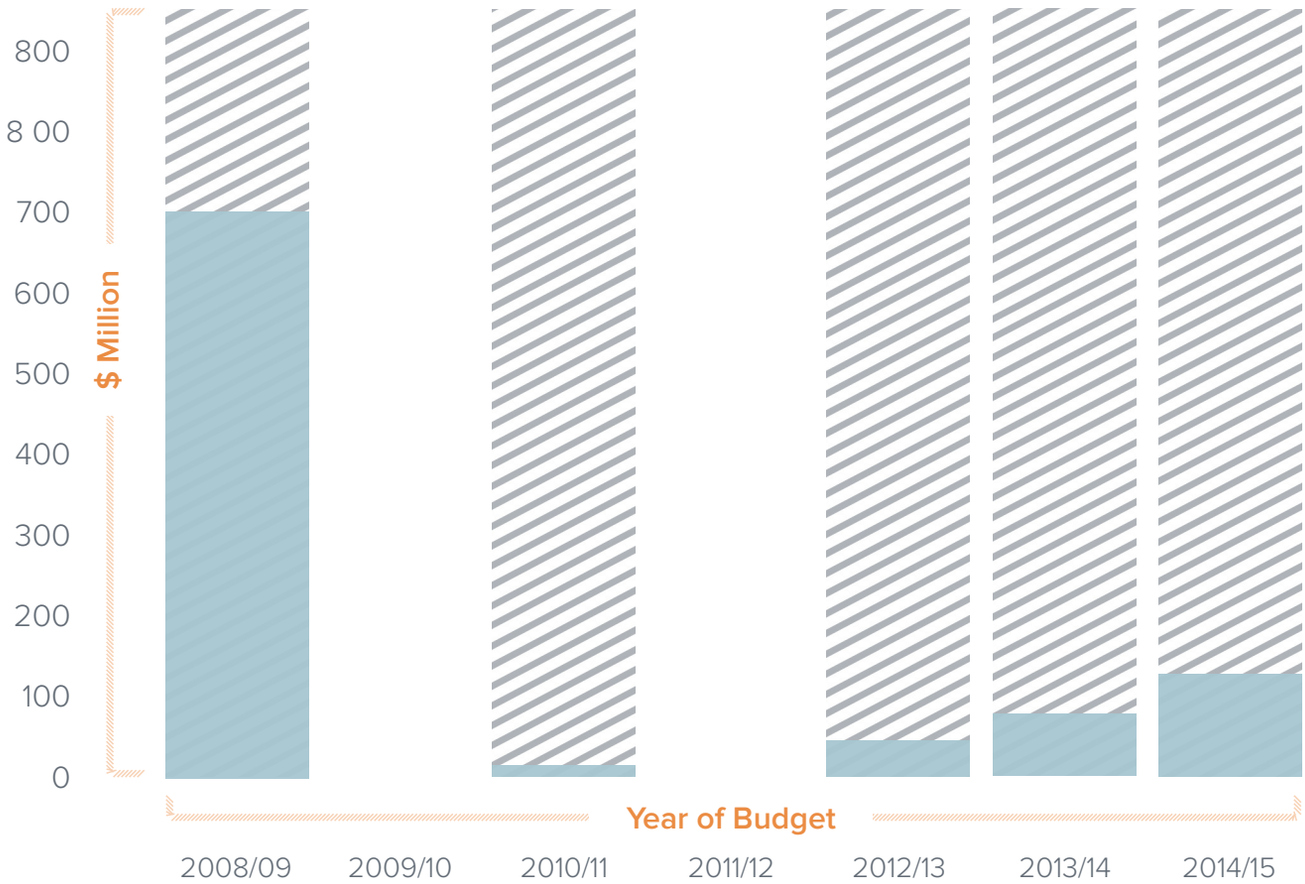
> A government could print a good edition of Shakespeare's works, but it could not get them written...
>
> I am only urging that every new extension of governmental work in branches of production which need ceaseless creation and initiative is to be regarded as prima facie anti-social, because it retards the growth of that knowledge and those ideas which are incomparably the most important form of collective wealth.
>
> — Alfred Marshall, The Social Possibilities of Economic Chivalry (1907)

7 THE MINISTER FOR PRIMARY INDUSTRIES

7.1 GOVERNMENT AS AGRIBUSINESS DEVELOPER

Figure 9 and Table 7 show that the Government is getting back into the business of subsidising agriculture with the Primary Growth Partnership. The Primary Growth Partnership (PGP) is an R&D grants programme for the primary industry sector. There are 18 PGP programmes underway with a funding commitment from government and from industry combining to $708 million.

Figure 9: Farm welfare, Vote Primary Industries, Budgets 2008/09 to 2014/15



Source: Budget Papers 2008/09 to 2014/15.

Table 7: Farm welfare, Vote Primary Industries, Budgets 2008/09 to 2014/15 ($million)

	2009/10 budget (Labour Party)	2009/10 budget	2010/11 budget	2011/12 budget	2012/13 budget	2013/14 budget	2014/15 budget
Primary Growth Partnership		0.25	13.5		36.73	55.81	77.48
Water Storage and Irrigation Investment Proposals					5.99	9.01	9.00
Crown Irrigation Investments Limited							40.00
New Zealand Fast Forward Fund	700						
Total	**700**	**0.25**	**13.5**	**0.00**	**42.72**	**64.81**	**126.48**

Source: Budget Papers 2008/09 to 2014/15.

As at 30 May 2014, total government funding underway for this farm welfare was $105.58 million. The purpose of the Primary Growth Partnership is to drive:

> *... the future market success of the primary industries through long-term innovation programmes that are jointly funded by government and industry. A key goal is to encourage more private investment in research and development in New Zealand, which is low by OECD standards (Ministry of Primary Industries 2014)*

The Government is pretending to know what the future will hold for the primary industries of New Zealand in terms of innovation and are then attempting to prefund it.

Figure 9 shows the $700 million in the last budget of the Labour-led Government for the New Zealand Fast Forward Fund. The expenditure was to be for sustainable pastoral systems, research and education capability, food innovation clusters, and internationalisation (Clark 2009). In 2009, the incoming National-led Government cancelled this planned spending on primary industry R&D. The $700 million for the New Zealand Fast Forward Fund is still shown in farm welfare in Figure 9 and table 7 despite its cancellation because the Labour Party opposed these spending cuts (Mackey 2009).

7.2 THE NATURE OF THE FARM

R&D grants for primary industries are particularly risky because this sector is a highly decentralised industry. One of the reasons why farming is so highly decentralised is the moral hazard arising from seasonal and random factors such as weather and pests affecting the productivity of individual farms, parts of farms and the performance of individual tasks by workers in the production process (Allen and Lueck 1998). This is why farming never evolved into large-scale corporate business: there are very limited gains from specialisation and scale economies in farming. The family farm provides the best work incentives in light of all the unobservable and localised random factors affecting productivity:

> *Although the organization of industry has generally followed a transition from family firms to large, factory-style corporations, farming remains a last bastion of family production. Production stages in farming tend to be short, infrequent, and require few distinct tasks, thus limiting the benefits of specialization and making wage labor especially costly to monitor. Only when farmers can control the effects of nature by mitigating the effects of seasonality and random shocks to output does farm organization gravitate toward factory processes, developing into the large-scale corporate forms found elsewhere in the economy (Allen and Lueck 1998, p. 379).*

R&D grants to a sector prone to moral hazard and limited gains from specialisation and economies of scale cast a further shadow of the likelihood of a good return to the taxpayer. The bits and pieces of frequently contradictory and incomplete knowledge the politician must somehow collate across countless situations that will be unusually dispersed in comparison to, for example, those who specialise in a particular industry.

> **“The first question has to be: ‘If we didn’t get this bribe [the subsidy], would we do this as part of our business strategy?’ If the answer is ‘no,’ don’t do it however tempting the bribe. It will be a costly failure. Even if the answer is ‘yes’, it is almost certainly wise to say ‘no’ to the proffered bribe. All experience – and there is plenty of it – indicates that, one pays and pay heavily for accepting bribes.”**
>
> **– Peter Drucker**

8 THE MINISTER FOR COMMUNICATIONS AND INFORMATION TECHNOLOGY

8.1 GOVERNMENT AS ICT ENTREPRENEUR

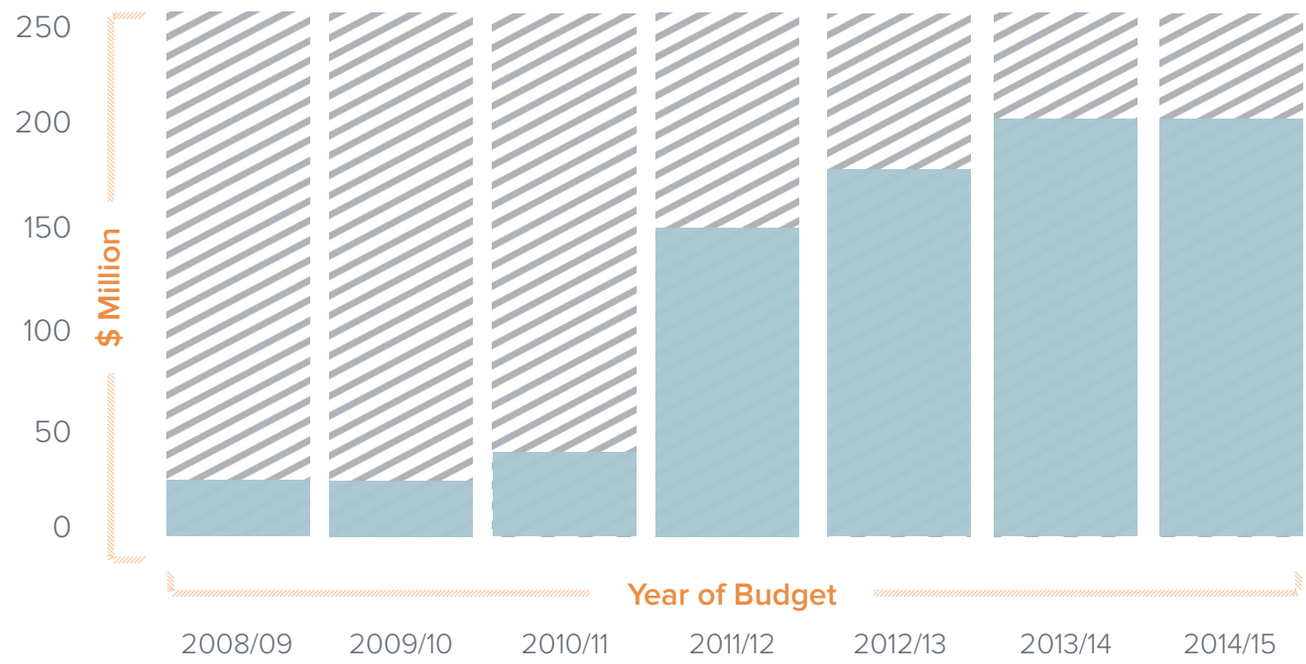
The National-led Government is a major investor in fast broadband infrastructure. Ministers are pretending to know how one of the most dynamic, innovative and unpredictable industries will unfold. The National-led Government has committed $817 million in total to broadband investment. Table 8 and Figure 10 show that these investments have been rising over the recent budgets.

Table 8: Corporate welfare, Vote Communications, Budgets 2008/09 to 2014/15 ($million)

	2009/10 budget	2009/10 budget	2010/11 budget	2011/12 budget	2012/13 budget	2013/14 budget	2014/15 budget	Total (National Party)
Fibre Drop Costs				4.664	13.35	4.88	4.53	
International Connectivity				2.397				
Broadband Investment (Crown Fibre Holdings Capital Costs)		25.4	39	142.5	165	200.00	200.00	
Total	**0.00**	**25.4**	**39**	**149.561**	**178.35**	**204.88**	**204.53**	**737.325**

Source: Budget Papers 2008/09 to 2014/15

Figure 10: Corporate welfare, Vote Communications, Budgets 2008/09 to 2014/15



Source: Budget Papers 2008/09 to 2014/15

8.2 A MARKET-TESTED SUPPLY AND DEMAND FOR FAST BROADBAND

There is a straightforward explanation as to why fast broadband has been slow to come to New Zealand. New Zealand consumers are yet to earn the wages that are necessary to be willing to pay the cost of installing fast broadband. Richer countries have faster broadband because this is one of the benefits of being rich – richer countries can buy more of everything – see Figure 11. As Chorus (2013) has noted:

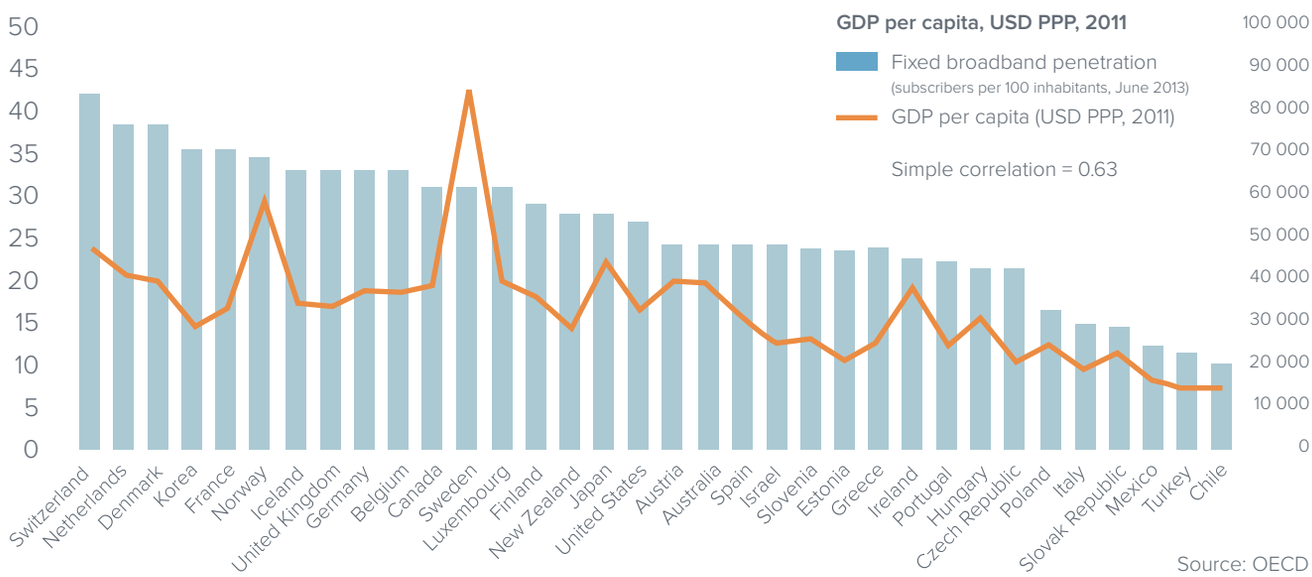
- New Zealand's growth in fixed broadband uptake remains in the top 10 in the OECD; and
- all of the countries with higher fixed broadband uptake have higher average incomes.

Put another way, despite the political rhetoric that slow broadband is holding our economy back, it is more likely that New Zealand's poor economic performance is the reason our internet is behind. The demand for internet services rises with income.

Where fast internet services are most required, and with customers willing to pay, such as New Zealand's major cities, 'ultra-fast' broadband infrastructure already existed, or was at least planned, before the Government's market intervention.

Crown Fibre Holdings Limited is a Crown-owned company set up to manage the roll-out of ultra-fast broadband. The ultra-fast broadband network is being built by private contractors such as Chorus. The taxpayer, through Crown Fibre Holdings, is taking on an investment risk that private investors in the telecommunications industry saw no merit in accepting given the risks of losing their own money.

Figure 11: OECD broadband penetration and GDP per capita



Source: OECD

Ministers are pretending to know better than professional investors what level of ultra-fast broadband infrastructure New Zealand consumers are willing to pay for in the immediate future.

Ministers are backing these entrepreneurial hunches with the taxpayers' money. Unlike private investors, ministers do not have to sell cost projections, budgets, risk analysis and market growth projections to private investors subject to hard budget constraints. There is no reason to assume that private entrepreneurs in New Zealand and abroad would leave money on the table if ultra-fast broadband was viable in New Zealand.

If New Zealand consumers were willing to pay prices high enough to justify an investment in ultra-fast broadband, there are large profits in prospect for entrepreneurs alert enough to be the first to grasp this untapped new opportunity. Private entrepreneurs must persuade bankers, private investors and the capital market to back them with a business plan that has credibility when evaluated by investors with plenty of alternatives, hard budget constraints and a real risk of going bankrupt if they choose unwisely.

8.3 ULTRA-FAST BROADBAND IS NOT THE FIRST NETWORK INDUSTRY THAT WAS THE FACE OF THE FUTURE

Broadband access is the latest in a succession of telecommunications and other network technologies that politicians thought everyone must have as soon as possible.

In just about every country, telecommunications policies promoted universal service for the old-fashioned telephone. Politicians believed that every business and household, urban or rural, should have a telephone line if they wanted one. Cross subsidies for telephone installation and usage were common so that everyone paid the same price, and had the same benefits of bringing the future forward. But as Crandall (2010) explains:

> *There is remarkably little evidence on the effectiveness of these universal service policies. Recent studies of the United States policies are not encouraging, for they find little impact on subscriptions or prices despite the great cost of these programs.*
>
> *Despite this lack of evidence and even adverse evidence on the effect of traditional universal service policies, there has been a groundswell of support for a new universal service policy directed at broadband services.*
>
> *The advocates of such policies generally rely on the older populist notions of providing everyone with equal-priced access to a valuable new service, even if they have little evidence that such policies have worked in earlier, simpler times.*
>
> *The political demand for universal-service subsidies for broadband is generally based on simple notions that broadband facilities are a form of essential infrastructure that promotes economic growth.*

Such is the clamour for an early harvest of the economic growth dividend from fast broadband, the notion that an unsubsidised private market could provide broadband services at a pace that is a reasonable chance of recovering its cost is dismissed out of hand.

In their day, the private toll roads and canal ways (of the early Industrial Revolution), the telegraph, the railroads, electricity, oil and gas pipelines, the telephone, the highway systems, the airline industry, VCR formats, and even PC operating systems were all infant network industries. Each were seen as indispensable to bringing the future forward when they first started. Private provision of all these networks services were common.

Governments took over many network industries for reasons ranging from the market failure of blackboard economics to the old-fashioned suppression of competition in favour of political insiders. When network industries were in public hands, or under public supervision, costs were high, quality of service was low, and cross subsidies were rampant. The priority of these industries changed from innovation to lobbying.

Much of the privatisation and deregulation in New Zealand and overseas in the 1980s and 1990s was in response to the conclusion that these government or privately own monopolies or regulated cartels provided a low quality service at a high cost. Governments across the Western world gave up on the pretence that they can tell a good monopoly from a bad monopoly.

Imagine if subsidies were introduced into the PC industry in the late 1980s and early 1990s to bring forward the development of this vital network industry. It is likely politicians would be subsidising use of WordStar, Lotus 1-2-3 and Netscape. The Netscape browser used every regulatory trick in the book against Microsoft Internet Explorer until both were swept aside by Google. Younger consumers may not remember these forgotten pioneers and faded giants who all temporarily had the ear of ambitious politicians wanting to be near winners and cameras.

Netscape is no more. Change is the only constant and even if a government could accurately assess the prospects of a company, it cannot forecast future innovation by third parties.

8.4 BUILD AND THEY WILL COME?

The airline industry and ultra-fast broadband have much in common. Both are network industries, both have expensive new technologies that carriers can buy. A major part of international trade and domestic shipping is air freight. The tourist and business advantages of having well-run domestic and international airline industries is well-accepted. There is also the general requirement that airlines run at a profit and make sensible investments in light of demand and cost conditions in their respective markets.

No one suggests that Air New Zealand or any other airline should buy the latest new aircraft from Boeing or Airbus ahead of the market. Every airline must balance the massive cost of new aircraft with the need to have a market that is large enough and rich enough to fill the seats. The latest wide-bodied or long distance aircraft are bought when the individual airline forecast, as entrepreneurs must, that their individual markets are suitable.

As with ultra-fast broadband, the richest and densest markets were the first to be served by the latest wide-bodied or long distance aircraft. Many national airlines, especially those that were government owned, got into financial difficulties by buying shiny new aircraft that were simply not supported by the passenger and air freight markets they served.

No one is surprised when the first of the wide-bodied aircraft or new long-distance aircraft are bought first by airlines serving a tourist hub or the densest domestic and international passenger and freight markets in the largest countries. No one is surprised that these expensive new aircraft slowly diffused to other international and domestic airline carriers as their respective markets grow to a size to serve them at a profit with the new aircraft.

A leading reason behind the multi-decade delay in any new technology moving from use by 10 per cent of an industry to 90 per cent use are the complexities of mastering new technologies. The initial incarnations of new technologies and new products are often expensive and bug-infested. Skilled and seasoned operators are needed to oversee their introduction and testing. Later versions are usually more reliable and much cheaper to run. (Greenwood 1999). The later adopters of the mature versions of electrical and electronic products expect to do little more than switch it on and go from there with few complications.

Jovanovic and Lach (1997) found a 15-30 year lag from 10 per cent to 90 per cent use for the 21 innovations they reviewed. Even for transformational technologies ranging from electricity to the Internet, a host of secondary innovations had to be invented, adopted and mastered over several decades before the most was made on their potential. There is little point having ultra-fast broadband if New Zealand consumers and businesses are yet to find it profitable to invest in the software and products required to make the most of it.

The true value of any technological improvement is uncertain. Investors adopt a new technology after forecasting the likely productivity of the new technology. Entrepreneurs invest gradually in new information and communication capital to learn more about the underlying technologies that they embodied. These new information and communication technologies were productivity improvements of a major but uncertain scope (Li 2007).

The eventual productivity gains come from two complex sources - from adopting the new technology itself and from its interface with existing capital and expertise. Because both productivity gains are verified only by experimentation and learning by doing, it is entirely possible that entrepreneurs can invest ahead of consumer demand (Li 2007).

There was a sharp decline in US investment in 2001 with large accumulations of unused capital in some sectors. About 90% of the optical fibre laid in the US in the 1990s was unused in the years that followed. Entrepreneurs discovered the optimum investment level by investing past it and then revised plans (Li 2007). Investors in other countries learned from the US experience as a technology pioneer and invested less freely because more was known about the true potential of the new technologies after the overbuild in the USA.

The aircraft industry provides a nice parallel with fast broadband in terms of the risks and high costs of premature investment in new technologies that are yet to mature. Greenwood (1999) discussed the development of the DC-8 to illustrate learning by using in technology diffusion. The DC-8 was subject to major improvements after it entered the market and experience was gained with its use. Engines and wings were upgraded to reduce fuel consumption and reduce drag. The plane was stretched from an initial 123 seats to 251, reducing operating costs by 50 per cent. As experience was gained with operation, reliability improved and maintenance costs fell as compared to the early versions. Within a decade of its introduction, maintenance costs of the DC-8 dropped 30 per cent from their initial level. The winners of this 'wait and see' game are likely to adopt much cheaper and more reliable products.

Build and they will come always turns out poorly for the taxpayer. As another analogy, there is a large literature in the United States on municipal investment in sports stadiums (Siegfried and Zimbalist 2000). Competing cities spent billions of dollars building new stadiums to attract or retain teams. Externalities and bringing forward future competitiveness were always the rationale. The usual result was local communities were saddled with huge municipal debts they struggled to service with the attendance receipts from half-empty stadiums.

> **"Laissez faire has never been more than a slogan in defense of the proposition that every extension of state activity should be examined under a presumption of error."**
>
> **– Aaron Director, The Parity of the Economic Market Place (1964)**

9 THE MINISTER FOR TOURISM

9.1 GOVERNMENT AS A PUBLICIST

The Government is particularly generous to the tourism sector in New Zealand – see Table 9. The Government spends as much on promoting the New Zealand as a tourist destination ($113 million) as it does on promoting all other exports through New Zealand Trade and Enterprise ($111 million).

Table 9: Corporate welfare, Vote Tourism, Budgets 2008/09 to 2014/15 ($million)

	2008/09 budget (Labour Party)	2009/10 budget	2010/11 budget	2011/12 budget	2012/13 budget	2013/14 budget	2014/15 budget
Marketing of New Zealand as a Visitor Destination	75.501	84.00	93.93	83.86	83.85	113.35	113.35
Tourism Growth Partnership					1.60	6.29	7.99
Marketing New Zealand As a Visitor Destination through Joint Venture Partnerships		5.00	18.36				
Implementation of the Tourism Strategy		1.68	1.20	0.80			
Tourism Facilities Development Grants		0.27	0.05				
The National Cycleway Fund		0.60	4.60	27.24			
Management Support of the National Cycleway		2.19	1.31	1.10			
New Zealand Cycle Trail Incorporated Seed Funding							0.35
National Cycleway Fund - Extension					12.10	4.79	
Maintaining the Quality of the Great Rides							2.00
Total	**75.50**	**93.73**	**119**	**113.00**	**98**	**124.44**	**123.69**

Source: Budget Papers 2009/10 to 2014/15

Again, in the era of e-commerce, internet marketing, and online booking, the need for a government tourism promotion service must be weaker than in the past as a factor in destination competiveness. Now, any tourism destination can set up a web page at a low cost with expert advice from marketing consultants. This web page can be found by any interested party in the world. There are a large number of aggregators that specialise in alerting tourists to destinations to their particular interest. The taxpayers must ask themselves why in the Internet age that such a traditional form of business subsidy as government promotion of the tourism sector has survived and is growing.

> “Because the purpose of business is to create a customer, the business enterprise has two–and only two–basic functions: marketing and innovation. Marketing and innovation produce results; all the rest are costs. Marketing is the distinguishing, unique function of the business.”
>
> – Peter Drucker

10 CONCLUDING REMARKS

The National-led Government is paying out about $1.0 - $1.4 billion on corporate welfare every year. The last Labour Party budget in 2008 planned to spend $1.751 billion on corporate welfare. The preceding chapters have argued that hard questions can be asked about the value for money of these corporate indulgences to the taxpayer. The question the taxpayer must keep asking themselves is old:

> *To widen the market and to narrow the competition, is always the interest of the dealers...*
>
> *The proposal of any new law or regulation of commerce which comes from this order, ought always to be listened to with great precaution, and ought never to be adopted till after having been long and carefully examined, not only with the most scrupulous, but with the most suspicious attention.*
>
> *It comes from an order of men, whose interest is never exactly the same with that of the public, who have generally an interest to deceive and even oppress the public, and who accordingly have, upon many occasions, both deceived and oppressed it (Adam Smith).*

Over one-third of the corporate welfare in any one year is bailouts for failing businesses – old-fashioned bailouts such as for KiwiRail and Solid Energy. The rest of corporate welfare is very much about government being midwives of the future. Picking winners and bringing forward winners. A central premise of capitalism is governments lack the knowledge to pick winners, and lack the incentive to use that knowledge wisely even if it could be acquired (Coase 1977, Stigler 1976b; Alchian and Allen 1983).

The new frontier for corporate welfare in New Zealand is government as oracle. R&D grants for the primary industry sector, for science and innovation, and for industry in general are on the rise. Taxpayers should keep a watchful eye on these expenditures because their value is suspect. The evidence is growing, rather than weakening, that R&D grants offer a poor return to the taxpayer.

It is through market competition that firms discover the best ways to run their businesses and what is profitable to supply. Hayek (1974) suggested that the role for government is similar to a maintenance squad in a factory: its role is not to produce any particular service or product itself, but rather to keep the (legal and tax) mechanisms that regulate production in a good working order. The specific products of the well-maintained machinery in each factory is decided by those who own it in light of their costs and the anticipated strength of demand of those who might buy its products and other competing products. Corporate welfare undermines the central role of competition in this discovery procedure.

> **“Almost every businessman is in favor of free enterprise for everybody else, but special privilege and special government protection for himself.”**
>
> **– Milton Friedman**

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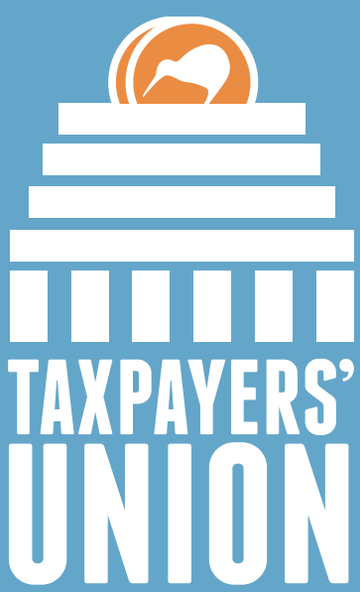

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