



# **Role of government in capital market development**

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**Report for the  
Capital Market Development Taskforce**

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## **Preface**

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## Introduction

The Capital Market Development Taskforce (the Taskforce) was established to develop proposals to improve New Zealand's financial system for the benefit of the New Zealand economy and its businesses. Specifically, the Taskforce is to identify key constraints and opportunities for development of New Zealand's financial system, identify and debate options to improve the performance of the financial system and develop a blueprint and action plan.

In support of its work, the Taskforce is seeking a framework to shape and organise its thinking about the roles of government in capital market development, particularly as a direct participant and innovator in markets and in negotiating international agreements that enhance financial sector development. This report contributes to that aim by:

- outlining why government should care about the performance of financial markets
- briefly summarising the ways in which government policies and operational activities impact on capital markets
- developing a high-level framework for considering the role of government in capital market development.

This paper considers what potential market failures and other problems may motivate various roles for government in supporting the performance and development of the capital markets. It outlines possible roles for government but does not undertake the detailed analysis that would be necessary to support specific interventions.

A specific feature of the timing of this report is the impact of the global financial crisis on the outlook for New Zealand's capital markets. This outlook is still highly uncertain but, while New Zealand's financial system has avoided many of the balance sheet impairment problems that have plagued financial institutions in many OECD countries, the future will undoubtedly be very different to what was expected two years ago. Governments globally are re-emerging as significant borrowers and risk crowding out private sector capital-raising. Further, *risk premia* have increased with significant implications for the cost of capital. A key question for the taskforce is how it should think about the role of government in the aftermath of the crisis.

Some of the possible rationales for government intervention identified in the paper are more controversial than others. In general, given the important role that capital markets play in the allocation of resources and management of risk within an economy, the government should intervene cautiously. That said, existing axioms and dogma that imply a limited role for government should be challenged if there is evidence to the contrary.

## Why do we care about the performance of capital markets?

Capital markets comprise a myriad of financial instruments offered and issued by firms to investors through a range of markets (primary and secondary, debt, equity and derivatives, informal and formal), facilitated by a wide range of organisations and individuals (financial institutions and advisers), and underpinned by a complex system of laws, regulation, behavioural norms, and infrastructure (eg, the payment and settlement system). In effect, the capital markets represent a complex system, and no part of that system can be understood independently of other parts. Capital markets, in turn, are a part of the wider financial system, which forms part of the overall economy.

The linkages between capital markets and the real economy are the main reason for policymakers' interest in the performance of the capital markets. More precisely, our interest in capital markets stems from the important functions they perform in the economy:

- mobilising savings
- allocating resources and funding new investment
- promoting the production and discovery of information
- monitoring managers and exerting corporate control
- promoting flexibility and innovation in the use of technology and financial instruments
- facilitating the trading, hedging, diversifying and pooling of risk
- facilitating the exchange of goods and services.<sup>1</sup>

Specific market frictions (eg transaction costs and information problems) motivate the emergence of specific financial markets and specialist intermediaries that collectively perform these seven functions. The level of capital market development refers to the effectiveness and efficiency with which these functions are performed by the various financial instruments, markets and organisations that make up the capital markets. These in turn improve the allocation of resources (in both a static and dynamic sense), the quality of governance, the rate of capital accumulation and technological innovation, and the long-run rate of economic growth. Effectively functioning capital markets do not imply that all agents that seek to raise funds necessarily receive funds (i.e. a crucial function of the capital markets is to withhold funds from investments deemed 'undeserving' by informed investors).

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<sup>1</sup> There are a variety of taxonomies in the literature that identify the functions performed by capital markets. This list is drawn from Leahy et al (2001).

An important feature of capital markets in a small open economy such as New Zealand's is the importance of international capital flows. New Zealand has benefitted from relatively free and unfettered access to international capital in recent years, such that it has been able to sustain persistent current account deficits. In simple terms, this ability to access foreign capital enables New Zealand, in the aggregate, to fund investment in excess of national saving. While this results in the accumulation of external liabilities, it enables households and firms to determine their levels of spending somewhat independently of domestic funding sources and contributes to a higher rate of economic growth (assuming investments generate a positive net present value) than would otherwise be the case. Access to international capital helps reduce the country's cost of capital, reduces the risk of constraints on the quantity of credit, and contributes to the development of domestic capital markets.

A key point emerging from recent economic research on financial system development is that the cause-and-effect relationship between domestic capital market development and economic growth runs in both directions. That is, while strong corporate performance and associated investment demand contributes to domestic capital market development, causality also runs from local capital market development to economic growth. A key implication is that under-developed domestic capital markets may inhibit economic growth.

Until recently, policy orthodoxy in relation to financial system development largely entailed a focus on ensuring stable macroeconomic policy, sound tax and regulatory policies and the protection of property rights. In relation to capital markets, this meant ensuring neutral tax treatment of different forms of investment (so as not to distort the allocation of capital), low overall taxation of the returns to capital, efficient and effective regulation of securities issuance, securities exchanges, market conduct and so forth and sound commercial law (eg, protection of property rights) more generally. It also involves ensuring an efficient payment, settlement and clearance system.

The above policies, which can be summarised as 'good fundamentals', remain the most important determinants of capital market development and are supported by strong evidence in the economic literature. For example, a country's cost of capital is largely determined by key macro-economic considerations such as monetary and fiscal policy settings, history of inflation and actual default, and the level and composition of external liabilities.

Notwithstanding the primary importance of good fundamentals, policymakers in New Zealand and overseas now question whether they are, by themselves, sufficient to maximise the contribution of capital markets to economic growth. Increasingly, conventional thinking would appear to be that pro-savings and other policies specifically aimed at promoting capital market development may also have an important role to play.

There are two broad trends underpinning this development. First, as noted above, there is a growing body of evidence that capital market development not only correlates with but is a cause of economic growth. This has prompted close inspection by policymakers and

researchers of the determinants of capital market development. The resulting literature reports evidence of positive impacts for capital markets associated with a wider range of policy settings than those normally encompassed by the term “sound fundamentals”. A second, related, trend is the emergence of a range of specific capital market development policies (eg, policies to foster the development of venture capital, demand-side R&D subsidies etc). It is instructive, for example, that OECD guidance currently promotes a wide range of policies (beyond tax and regulation) aimed at promoting development of the venture capital industry. These include using public equity funds to leverage private finance, government schemes targeted at specific financing gaps, promotion of business angel networks, and policies to encourage development of second-tier stock markets (Lerner & Shepherd, 2009).

When considering the role of government, it is important to acknowledge that markets themselves develop and evolve over time to address opportunities and impediments to economic development. Because of this, we should be cautious when considering policies to intervene in financial markets. Given the fundamental importance of the financial system in the allocation of resources within the economy, the risk of introducing distortions – including unintentionally - should be weighed very carefully. When formulating policy, it is important to take a dynamic view of the financial system, in particular its considerable capacity to evolve and adapt to changing conditions.

Nonetheless, as is well recognised in the economic literature, the financial system is also susceptible to problems that may not be self-correcting. As the effective operation of the financial system is a critical enabler of economic growth, we should continue to investigate its strengths and weaknesses.

## What role does government currently play in the capital markets?

There is a wide range of ways in which government currently impacts on capital markets, both intended and unintended. This chapter summarises the key interactions between government and the capital markets.

### Direct participant in the markets

The government is a significant direct participant in capital markets. It participates in the money markets through the issuance of Reserve Bank and Treasury bills. The DMO issues domestic and foreign currency bonds, including the occasional issue of inflation-indexed bonds, on behalf of the core Crown. It also manages retail debt issuance through the Kiwi Bonds scheme. Through the Crown Financial Institutions (NZSF, GSF, EQC, ACC), the government is a holder of diverse securities portfolios comprising cash and money market instruments, fixed income, equities, commodities and alternative asset class investments. These entities, along with the DMO and the Reserve Bank, engage in portfolio risk transformation activities through the use of derivatives (primarily foreign exchange and interest rate forwards/futures and swaps).

The State Owned Enterprises, which can be thought of as an equity exposure to the Crown, borrow on their own account and engage in financial risk management activities. Some non-financial Crown entities maintain their own borrowing programmes, such as Housing New Zealand Corporation's commercial paper facility, although in recent times the DMO has increasingly conducted borrowing on behalf of large Crown entities including the DHBs and rail entities.<sup>2</sup> The government also owns Kiwibank, a subsidiary of New Zealand Post, which competes with banks in the provision of residential and business lending.

Government departments are also able to enter into agreements to hedge specific financial risks, usually foreign exchange exposures related to the purchase of fixed assets. Increasingly, departments and some Crown entities transact this business with the DMO, which then chooses whether or not to offset these exposures in the market.

Student loans advances can be interpreted as a substitute for private provision of capital, although this is somewhat simplistic since the advances are mostly funded by Crown borrowing.<sup>3</sup>

<sup>2</sup> The decision for the DMO to borrow on behalf of these entities is made on cost efficiency grounds but has the consequence of reducing the number of investible securities in the marketplace. On the other hand, the decision contributes to deeper, more liquid government securities markets.

<sup>3</sup> Student loans help the Crown meet objectives other than maximising return for a given level of volatility. This argument, however, does not imply that the Crown must hold student loans – there may be private sector lenders willing to bear some of the risk associated with student lending.

Table 1 illustrates the scale of the Crown's direct participation in the capital markets, as represented by the cumulative stocks of financial asset and liability positions and derivative exposures using figures from the June 2009 Crown financial statements:

**Table 1: Selected Crown financial assets and liabilities**

	\$ million	% of GDP
<b>Financial assets</b>		
Marketable securities	38,373	21.3%
Derivatives in gain	3,745	2.1%
Share investments	11,160	6.2%
Student loans	6,553	3.6%
Kiwibank Mortgages	8,492	4.7%
Other advances	559	0.3%
<b>Borrowings</b>		
Government stock	21,164	11.7%
Treasury bills	7,432	4.1%
Government retail stock	491	0.3%
Derivatives in loss	2,158	1.2%
Other borrowings	22,798	12.7%

Source: The Treasury, Crown Financial Statements, year ended 30 June 2009

## Promoting capital market development and financial innovation

The government has recently introduced a number of interventions aimed at promoting the development of early-stage equity markets. For example:

- In 2000, the government introduced the Investment Ready Scheme, subsequently rebranded as the Escalator Service, to provide capital raising information and training and a deal-brokering service. The scheme is managed by New Zealand Trade and Enterprise and, according to the scheme's website, has assisted 130 companies to raise over \$90 million over the last five years.
- The government established the Export Credit Office (ECO) in 2001. The ECO provides financial guarantee products for New Zealand exporters and banks aimed at assisting exporters to manage trade-related risks. Its stated role is to complement rather than compete against the credit insurance products offered by commercial providers, in other words providing insurance assistance where the private market lacks the capability or willingness. The scheme, which is administered by the Treasury, has significantly increased its level of activity post-crisis. As at September 2009, its exposure was \$246 million across 110 deals, supporting \$520 million of exports.
- The New Zealand Venture Investment Fund was established in 2002 to help develop the venture capital industry by acting as a co-investor in private sector venture capital funds, and through its role in supporting market development alongside the relevant industry associations. The VIF has up to \$160 million in capital to invest, most of which has now been committed. As at 31 March 2009, 6 venture capital funds had invested combined VIF/private (matched) capital of \$218 million in 48 companies, of which 33 were seed and start-up investments.<sup>4</sup>
- In 2005 the government established the Seed Co-Investment Fund (SCIF), which is an early stage direct investment fund aimed at early stage businesses with strong potential for high growth. The government allocated \$40 million to SCIF for investment over 12 years. The SCIF is managed by NZVIF Ltd and, as at October 2009, \$26 million had been committed through the programme (SCIF plus commitments from 11 partners) and a total of 33 companies had received funding.
- In 2008, parliament passed the Taxation (Limited Partnerships) Act 2008, allowing fund managers to adopt fund structures that are more recognizable to overseas investors, and strengthening protections for limited partners (passive investors) in venture capital funds.

The government is also active in financial education and promoting financial literacy, particularly through the efforts of the Retirement Commission which led the development of the National Strategy for Financial Literacy. Supporting the strategy is a network of provision comprising around 55 programmes offered by 30 providers. The government also provides some financial education through schooling.

<sup>4</sup> The total amount of private capital raised, including unmatched funding, is closer to \$400 million.

In addition, some government policies have market development as a second-order consideration. For example, the DMO aims to minimise the cost of debt within an acceptable risk tolerance. In support of this it has a strong interest in liquid government bond markets and the build-up of benchmark securities. For the most part this works in favour of market development. However, it can also potentially work against wider policy objectives of market development and financial development if a certain cause of action (eg, issuing inflation indexed debt, or establishing a new long-dated bond) has positive externalities but is deemed inconsistent with DMO's cost minimization objective. We discuss this further later in the paper.

## Capital market regulation

A central role for government in relation to capital markets is the determination of an appropriate legal and regulatory framework, the promotion of awareness and understanding of those laws and regulations, and their effective enforcement. New Zealand, like other advanced economies, has a complex system of law and regulation surrounding the capital markets. Key pieces of legislation include the Securities Act, the Securities Markets Act, the Financial Advisers Act and the Takeovers Act, and their associated regulations. Key regulatory institutions include the NZX, the Securities Commission, the Takeovers Panel and the Reserve Bank. The government also owns and runs a settlement system (the Reserve Bank's Austraclear), as well as supervising aspects of the NZX's Faster system.

It is beyond the scope of this paper to describe the detail of capital market regulation. However, we note that capital market regulation, broadly defined, is undoubtedly the most significant direct channel through which government impacts on the capital markets. There have been frequent significant law changes in recent years, and further major reforms are currently being considered, including a comprehensive review of the Securities Act. It is expected, based on the Capital Market Development Taskforce's July 2009 Progress Report, that the Taskforce will pay significant attention to the direction of future law reforms. While the law provides the framework within which the market operates, enforcement is crucial for aligning the incentives of market participants with that framework. We discuss this in more detail later in the report.

Beyond capital markets regulation, there are also laws that govern bank and non-bank financial institutions. While these laws, and their enforcement, may not be viewed as capital markets laws per se, they may have significant implications for capital markets. For example, financial institutions are major issuers of securities, particularly debt, and major players in financial markets. Similarly, certain industry-specific laws and regulations can have capital market implications, such as those applying in the dairy sector.

## Negotiating international agreements

International agreements can have important implications for New Zealand capital markets and the institutions that underpin them because capital is internationally mobile and because international agreements are a significant lever used by governments to achieve mutual recognition, harmonization and other forms of regulatory integration.

Nowhere is this more relevant in a New Zealand context than with regard to the Trans-Tasman relationship. Australian tax and regulatory policy and practice are important considerations in the development of New Zealand tax and capital markets regulation. A good example of where closer integration of capital markets has been pursued with Australia, and where it makes sense from an issuer's perspective, is the development of the Mutual Recognition of Securities Offerings regime. Under the regime issuers can extend an offer being made in either Australia or New Zealand to investors in the other country without being required to fulfill costly additional requirements.

## Other policies with indirect influences

Beyond the above direct roles, a number of other government policies have potentially significant *indirect* impacts on capital market development.

Perhaps most complementary to capital market development is the suite of policies specifically aimed at promoting business innovation. For example, New Zealand Trade and Enterprise offers a suite of subsidized business development services primarily targeted at innovative high-growth companies and the Foundation for Research, Science and Technology is a significant investor in applied research and development, including commercialization activities. Crown Research Institutes and universities are similarly encouraged to commercialise technologies that result from publicly funded research, which may include tapping into private sources of capital and business development expertise. The venture capital funds established through the NZVIF programme have funded 11 deals which originated in CRIs and universities.

In addition, other policies with seemingly little direct capital market impact may still have significant indirect effects on the capital markets. For example, sound monetary and fiscal policies and robust microeconomic regulation (general and industry-specific) provide the basis for a well performing economy in which firms have opportunities to grow through investment. Monetary policy influences monetary conditions and short-term investment decisions by financial and other institutions, and exerts some influence on the path of the exchange rate over the economic cycle. Fiscal policy determines, in part, the level of demand-side stimulus in the economy (which interacts with monetary policy) and impacts directly on debt markets by determining the path of gross debt. Tax policy can potentially have a significant influence on investment decision-making, for example by tilting incentives in favour of one form of investment over another. Debt management policy further impacts on markets, and the type and volume of government securities available, through decisions about issuance. Savings policy potentially influences household savings levels, investment choices and the institutional structure of the

market for savings products. Related to this, the provision of social insurance may impact on savings by reducing the motive for precautionary saving. The government's attitude towards private capital raising by Crown entities and State Owned Enterprises has direct implications for the capital markets. As do decisions regarding the funding of infrastructure investment, such as whether to allow private financing of infrastructure.

Finally, throughout history governments have often been called on to act as lender and/or guarantor of last resort. The most recent such example is the government's response to the global financial crisis and, in particular, the introduction of the retail deposit guarantees scheme and the wholesale funding guarantee facility. Other well known examples with capital market impacts include the rescues of Air New Zealand in 2001 and the Bank of New Zealand in 1990.

## Framework for thinking about the role of government

In this section we develop a high level framework for thinking about the role of government. We briefly discuss key contributions in the literature before discussing possible roles for government and the underlying rationale for those roles. We stop short of making the case for specific interventions.

### Previous consideration

This section selectively summarises two important contributions in the literature on the role of government in capital markets, by Robert Merton and Joseph Stiglitz, as well as an influential contribution on the role of government in industry development by Dani Rodrik. Both Merton and Stiglitz develop overarching frameworks for how we might think about the role of government. Merton does this by suggesting a taxonomy for the different roles of government in influencing capital markets. Stiglitz presents a set of market failures that apply to capital markets and which may motivate government action. Rodrik develops a general framework for how we should think about the role of government in industry policy.

### Merton

Merton (1990) argues that the promotion of competition, ensuring market integrity, and managing public good type externalities cover the broad roles for regulation and other government activities in improving the economic performance of the financial system. The potential costs of such activities include:

- direct costs to market participants, such as fees for using markets and the costs of filings
- distortions of market prices and resource allocations
- transfers of wealth between private participants in capital markets
- transfers of wealth from taxpayers to participants in capital markets.

Analysis of these costs, and the trade-offs between them, provides a basic framework within which the role of government can be analysed. The goal of policymakers is to improve the performance of the functions of the financial system while ensuring a reasonable level and distribution of the above costs. Activities that provide private gains to individual sectors of the system but reduce its efficiency overall are not improvements in economic performance.

Merton argues that there are five main paths by which government affects capital markets, each of which effectively represents a different lens through which to consider policy:

- As a market participant following the same rules for action as other private-sector transactors, such as with open-market operations.

- As an industry competitor or benefactor of innovation, by supporting development or directly creating new financial products and markets, such as index-linked bonds or all-savers accounts.
- As a legislator and enforcer, by setting and enforcing rules and restrictions on market participants, financial products and markets, such as up-tick rules, margin requirements, circuit breakers, patents on products.
- As a negotiator, by representing its domestic constituents in dealings with other sovereigns that involve financial markets.
- As an unwitting intervenor, by changing general corporate regulations, taxes and other laws or policies that frequently have significant unanticipated and unintended consequences for the financial-services industry.

We use an adapted version of this taxonomy to discuss the possible roles for government later in this chapter.

## Stiglitz

Stiglitz (1994) examines the role of the state in financial markets and identifies seven major market failures that provide a rationale for government intervention. The paper also presents a taxonomy of government interventions used by governments and sets out principles for regulatory interventions.

The basic thesis of the Stiglitz paper is that:

- financial markets are markedly different from other markets
- market failures are likely to be more pervasive in these markets
- there exist forms of government intervention that will not only make these markets function better but will also improve the performance of the economy.

Stiglitz cautions that the existence of market failure need not, by itself, justify government intervention. He notes that financial operations are complex and regulators are beset by a variety of problems. Many historical problems in financial markets can be interpreted as manifestations of government failure. It is necessary to appreciate the limits – as well as the strengths – of government intervention.

A central theme of Stiglitz's paper is the importance of information in financial markets, the special qualities of information, and the pervasive potential for market failures that the attributes of information give rise to. His argument runs something like this:

- Financial markets essentially exist to facilitate the efficient allocation of funds and risks to market participants.

- Market participants in turn participate in financial markets based on their assessment of the information available to them.
- Financial markets are therefore fundamentally concerned with the production, processing, dissemination and utilisation of information.
- Information has public good characteristics in that it is non-rivalrous in consumption and non-excludable.
- Competitive markets provide an insufficient supply of information because of the difficulties of appropriating returns to information and the externalities associated with its acquisition.
- Expenditures on information can be viewed as fixed costs and, as such, markets that are information-intensive are likely to be imperfectly competitive.
- If there are to be incentives to gather information, markets must to some extent be informationally inefficient.
- Consequently, various forms of information-related market failures are likely to be pervasive in capital markets.

Stiglitz expands on these arguments to develop a taxonomy of seven discrete market failures that may (either individually or in combination) provide a rationale for government intervention, notwithstanding the earlier observation that government failure is a material risk and some level of *market failure* will always be optimal.<sup>5</sup> In other words, elimination of market failure is not the policy goal. Instead, market failures should be reduced where the benefits of doing so exceed the costs, taking into account the risks of getting it wrong.

### Market failure 1 – Monitoring as a public good

Stiglitz argues that monitoring has the characteristics of a public good since if one shareholder takes actions that enhance the value of the shares of the firm, all shareholders benefit. The same is true regarding monitoring by lenders. There is, therefore, an undersupply of monitoring because of difficulty appropriating returns, and therefore too little effort is expended on monitoring. This lack of monitoring may lead to inappropriate risk taking, under-supply of funds to corporations, and fraud. One area where these arguments have been used to support government intervention relates to the supervision of banks and other financial market participants (eg, risk-weighted capital adequacy requirements).<sup>6</sup> While Stiglitz does not advance the argument, the same principles can be applied to the monitoring of non-financial corporations by shareholders, especially where those corporations are widely held.

### Market failure 2 – Externalities of monitoring, selecting and lending

<sup>5</sup> Formally, this is the same as saying that the conditions required for completeness of markets (and an absence of market failure) are unattainable in reality even with well targeted government intervention.

<sup>6</sup> Such activities are also justified by the need to manage systemic risk reflecting externalities associated with financial disruption (see market failure 3).

One of the most important functions of financial institutions and capital markets is to select among alternative projects and to monitor the use of those funds. The observation that another investor is willing to supply funds reassures a potential investor. It confers an externality, the benefit of which is not taken into account when the first lender undertakes his or her lending activity. By the same token, the second lender may confer a negative externality on the first lender. This is a form of “within market” externality.

There are other “within market” externalities. The presence of a large number of “bad” firms may make it difficult for “good” firms to raise capital, because potential investors find it difficult to differentiate the two (i.e. presence of bad firms imposes screening costs and can even “spoil” a market). This is the *market for lemons* problem famously analysed by Akerlof (1970). This problem leads to arguments for various *consumer protection* interventions.

Some externalities extend across markets. Actions in the credit market affect the equity market, and vice versa. For example, the fact a bank is willing to lend money affects the firm’s ability to raise equity capital, both through a positive signalling effect and because potential stockholders know it is more likely that the firm will be monitored by the bank.

The separation of ownership and control gives rise to an important class of monitoring problems and externalities. Shareholders exercise effective control neither directly nor indirectly. Banks often exercise far more influence during times of financial stress. Those exercising control have significant effects on others; for instance, bank monitoring, while it may reduce the likelihood of insolvency, may reduce the upside potential of equity.

The design of financial institutions and regulations may affect the extent and form of monitoring as well as the extent to which externalities are internalised.

### **Market failure 3 – Externalities of financial disruption**

The macroeconomic consequences of disruptions of the financial system provide a further rationale for government intervention. The failure of even a single financial institution can have significant effects. It is often argued that the cost of bankruptcy is greatly overestimated because the assets of the firm do not disappear but merely change ownership. However, according to Stiglitz, the essential asset of a bank – its information capital – is not easily transferred and in the event of bankruptcy may be largely dissipated. Thus, the bankruptcy of a single bank – and multiple banks even more so – may disrupt the flow of credit to particular borrowers.

Bank insolvency is argued to have indirect effects as well. Borrowers may have to curtail their activities, with further repercussions on customers and suppliers. This may lead to a cascade of general equilibrium effects including recession and increased unemployment. There are also signalling effects that can multiply leading to perverse or self-fulfilling outcomes (eg bank runs).

Individual decisions are made on the basis of private benefits and costs and do not take account of such externalities.

These externalities have been used by governments as an argument for rescuing failing financial institutions. Moreover, banks and investors may believe that the government will intervene in the event of a failure because it cannot credibly commit not to. The government thus performs the role of an insurer, whether or not it has explicitly issued a policy. The provision of insurance tends to alter behaviour, giving rise to the well-known problem of moral hazard; that is, the insured has a reduced incentive to avoid the insured-against event. In this case, banks, knowing they are effectively insured, may take greater risks than they otherwise would. In particular, they may undertake risks similar to those being undertaken by other banks, since they assume that although the government might ignore the problems of a single bank, it could not allow the entire financial system to go belly-up. So as long as the bank does what other banks are doing, the probability of rescue is high.

Most insurance gives rise to moral hazard problems. Insurance firms attempt to mitigate the moral hazard problem by imposing restrictions. Stiglitz argues that once we recognise the role of government as an insurer (willing or unwilling), financial market regulations can be seen from a perspective akin to that which an insurance company adopts when it decides what conditions to impose on policy holders.

#### **Market Failure 4 - Missing and incomplete markets**

Information is imperfect and costly to obtain. This gives rise to problems of adverse selection and moral hazard. If the problems are acute enough, the effective cost of transactions may be so high as to limit trade or to lead to the demise of those markets. Missing markets equal missing opportunities for risk sharing and so are welfare reducing. For example, not only are key markets (such as those insuring a variety of risks) missing, but even long-term contracts (eg, annuities) that seem obviously desirable were not available until relatively recently. In many countries their existence was the direct result of government actions (see Rey and Stiglitz, 1992).

Even where the above information problems are not acute, imperfect and costly information can lead to the under-development of markets. Even in industrialised countries, Stiglitz argues that “under-developed” equity and bond markets and the prevalence of credit rationing suggest that the markets for equity and debt are not working well.

Stiglitz argues that the government has several marked advantages in risk-bearing. First, because it can force membership in insurance programs, it can avoid the adverse selection problems that plague risk markets in general and insurance markets in particular.<sup>7</sup> Adverse

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<sup>7</sup> Of course, forced participation can lead to other problems since insurers may impose draconian rules that stifle innovation and risk-taking without concern for the overall impact on economic welfare.

selection has a social cost as well. Insurance firms must spend large amounts to improve the quality of their pool of insured policy holders, and the prices (premiums and interest rates) of insurance reflect those expenditures. Second, Stiglitz argues private markets cannot handle the kinds of social risks associated with macroeconomic disturbances. Only the government, for example, can spread risk across generations.

Offsetting these advantages, the government is at a marked disadvantage in assessing risks and premiums, in part because such assessments are to a large extent subjective. The government inevitably has to employ relatively simple rules in risk assessments – rules that almost certainly do not capture all the relevant information – and political considerations make it difficult for the government to differentiate risk on bases that the market would almost surely employ. By contrast, the market converts the subjective judgments of a large number of participants into an objective standard.

### **Market Failure 5 – Imperfect competition**

Information asymmetry naturally gives rise to imperfect competition. A distinguishing characteristic of perfect competition is that any seller is willing to sell to any buyer at the equilibrium price. This is arguably true in deposit markets where the lender is a price taker and there are many borrowers, but in capital markets borrowers may face a limited number of suppliers because of costly information and may find it difficult to switch from one investor to another. For example, each bank has specialised information about its customer base. A customer who has a long track record with one bank, and who is viewed as a good loan prospect by that bank, may be unknown to another bank and may be seen as a riskier prospect.

### **Market Failure 6 – Pareto inefficiency of competitive markets**

Information (eg, prices) in capital markets may be affected by the action of a single (class of) participant (eg, insiders). In this case, the assumptions underpinning the fundamental theorem of welfare economics break down and the resulting market equilibrium is sub-optimal. In other words, there may be government interventions that take into account the costs of information and of establishing markets that can make all individuals better off. Stiglitz argues that these arguments establish that markets may not allocate capital to the uses with the highest return. There may be systematic deviations between social and private returns that direct government intervention – eg, restricting some classes of loans and or encouraging others – may partially address.

### **Market Failure 7 – Uninformed investors**

Stiglitz's final category of problem relates to problems individuals have in processing information. While strictly speaking this is not a market failure, this line of reasoning has motivated considerable government intervention. Research in behavioural economics has drawn attention to the fact that there are systematic biases in most individuals' judgments about

financial returns and risk. Stiglitz argues that this raises a question of whether government should intervene to ensure that individuals' subjective judgments are determined with more complete knowledge.

Some of the disclosure requirements imposed by governments are designed to ensure that firms do not take advantage of uninformed consumers. However, much trading is based on differences in information. A key question is therefore what information should market participants be required to disclose. There seems to be consensus that, by prohibiting unfair practices, government helps to create a more level playing field and promote investor confidence since, if there is a widespread view that markets are rigged, trade will be thin and markets will not function well. However, there remains debate about whether and how much consumer protection to afford, including whether the regulations attempting to restrict unfair practices may actually make matters worse, and whether a greater reliance on the principles of "caveat emptor" should apply.

## Rodrik

Rodrik (2004) outlines a framework for conducting industrial policy that has the objective of maximising an industry's contribution to economic growth while minimising the risks that it will generate waste and rent-seeking. The framework is in part a response to what he would term a "narrow view" of industry policy based solely on identifying various forms of externalities and targeting policy interventions at these market failures. His argument can be seen as a less axiomatic/more pragmatic approach that takes account of a wide range of 'real world' factors including the administrative and fiscal feasibility of policy interventions, their informational requirements, their political-economy consequences, and so on.

While Rodrik's point of departure is generic market failures, he assumes that the nature, location and magnitude of these market failures is highly uncertain. Policymakers therefore have a great deal of difficulty knowing whether or how best to intervene. Consequently, he sees the primary task of industrial policy being to elicit information from the private sector on significant externalities and their remedies, rather than the design and implementation of appropriate policies.<sup>8</sup> The model for industrial policy, therefore, is not that of an omniscient government applying the blunt instruments of taxes, subsidies and regulation, but rather of strategic collaboration between the private sector and the government with the aim of uncovering where the most significant obstacles to restructuring lie and what joint actions or interventions are most likely to remove them. Correspondingly, the analysis of industrial policy needs to focus less on the policy outcomes — which Rodrik argues are inherently unknowable *ex ante* — and more on getting the policy process right. In Rodrik's words:

<sup>8</sup> The latter is important, clearly, but in Rodrik's framework good policies cannot be discovered without close engagement with industry.

We need to worry about how we design a setting in which private and public actors come together to solve problems in the productive sphere, each side learning about the opportunities and constraints faced by the other, and not about whether the right tool for industrial policy is, say, directed credit or R&D subsidies or whether it is the steel industry that ought to be promoted or the software industry.

Rodrik's central thesis is that industrial policy is a discovery process—one where firms and the government learn about underlying costs and opportunities and engage in strategic coordination. He is not ignorant of the risks of industry capture. On the contrary, he acknowledges that industrial policy is open to corruption and rent-seeking. The natural response of (non-corrupt) bureaucrats is to insulate policymaking and implementation from private interests and to shield public officials from close interaction with business people. Rodrik's argument is that this instinct to keep the private sector at arms-length is diametrically opposed to the need for bureaucrats to engage with business people in order to properly understand impediments to growth.

Although Rodrik does not discuss it in his paper, capital markets are a critical institution for helping the economy with its discovery process, since when they work well they are an efficient mechanism for the production and dissemination of information about the risk and return characteristics of different ventures. Under-developed capital markets may lead to a failure to “discover” opportunities to improve the economy's productive performance. Under-developed and/or unbalanced capital markets may impede investment and growth. On the other hand, Rodrik sees demand constraints on innovation and growth as more important than supply side constraints. Again, information externalities are at the centre of his argument:

When we put ourselves in the shoes of an entrepreneur engaged in cost discovery, we immediately see the key problem: this is an activity that has great social value and yet is very poorly remunerated. If the entrepreneur fails in his venture, he bears the full cost of his failure. If he is successful, he has to share the value of his discovery with other producers who can follow his example and flock into the new activity. In the limit, with free entry, entrepreneurship of this kind produces private costs and social gains.

While Rodrik's ideas apply more obviously to low-income countries without effective institutions, his idea that getting the policy process right is also important for developed countries. To see this, consider the following, again in Rodrik's words:

The traditional classical economic view of role of government in the literature holds that the key role of government is to perform a few, broad functions with limited interaction between them. They are constituted by a general system of property rights and contract enforcement, a good general-purpose business environment, infrastructure and education. All this should be financed with reasonable taxes and a fiscal position that is consistent with sound money. These tasks can be defined for the economy as a whole and allocated to different government agencies for their implementation.

But this is a rather poor description of reality. The areas of government participation are many, highly specific to individual markets, and deeply interacting with each other and with different markets in existence. The rules governing these markets are complex, specific and hard to design ex ante. The complexity does not only come from the fact that the list of non-market inputs and capabilities are long, but also from the fact that it is relatively specific to each activity and deeply interacting.

The idea that the government can disengage from specific policies and just focus on providing broad-based support for all activities in a sector neutral way is an illusion based on the disregard for the specificity and complexity of the requisite publicly provided inputs or capabilities.

These observations are particularly relevant for thinking about the role of government in capital markets. Capital markets are, after all, embedded within a complex system of laws, regulations and the wider structure of the economy. The solutions to capital market development problems are not obvious and nor is the appropriate role of government self-evident. Policymaking in the capital markets arena is very much a discovery process and some experiments are bound to fail. While the government should be wary of intervening in markets that play such a critical role in the allocation of resources, the counter to this is that the government should also be wary of not intervening if capital markets are not performing as well as they might. A “least regrets” approach to policy is likely to be appropriate.

## Discussion

In this section we discuss how the Taskforce might think about the role of government in fostering capital market development in New Zealand. Specifically, we discuss each of the five roles identified by Merton, plus a sixth role – Government as industry policymaker – that incorporates the ideas of Rodrik. Within those roles we refer to the market failures identified by Stiglitz, and how they might be applied to think about the role of government. The goal here is not to fashion specific policy recommendations but to further examine how each role might be thought about in a New Zealand context.

### Government as market participant

As noted earlier, the government (through a range of different institutions including the Reserve Bank, DMO, and the four large Crown financial institutions) is a significant participant in the capital markets. Overall, the main activities can be characterised as borrowing, investing and transforming the risk characteristics of financial assets and liabilities.

In terms of borrowing, which is mostly conducted by the DMO but also directly by a number of Crown entities and the SOEs, the primary objective of government policy is usually to fund

public sector activities at least cost while keeping risk to an acceptable level.<sup>9</sup> There are a variety of possible risks that need to be managed including refinancing risk, interest rate risk and foreign currency risk (to the extent that borrowing is undertaken in foreign currencies).

In the case of the DMO, the policy objective requires it to maintain the government securities market and, in particular, to build up liquid benchmark securities. In other words, an efficiently functioning government securities market is fundamental to the core debt management task of raising new funds and refinancing existing borrowing at least cost within an acceptable level of risk. Managing refinancing risk also requires the government to sample the debt markets at a range of different maturities.

The development of benchmark securities supports the emergence of a risk-free yield curve. However, it should be noted that the development of the yield curve is a by-product rather than an explicit objective of a cost-minimisation policy. In relation to long-dated maturities, there may be a trade-off between the higher cost of issuing long-term debt and the market development arguments for issuing the debt to support the pricing of other financial assets. There may also be a trade-off between the number and size of benchmark issues. Further, the current DMO objective would presumably lead to an argument for reducing government debt to zero or low levels, inconsistent with the idea of a yield curve based on the prices of liquid sovereign benchmark bonds.

In relation to investment activities by the CFIs, the standard objective is “to maximise returns without undue risk”, a vague objective given the significance of the risk to the Crown’s balance sheet. That said, while the CFI objective function permits a very range of investment objectives (and corresponding strategic asset allocations), CFIs generally manage assets within an asset-liability matching framework (ie, if a liability clearly exists such as in the case of the ACC) or in accordance with modern portfolio theory (ie, a well diversified portfolio invested along prudent person lines).

CFIs are concerned with capital market development only to the extent that they take related factors, such as liquidity, into account when making investment decisions. For example, a CFI that requires liquidity and/or frequent price discovery may choose not to invest in low liquidity markets or securities. None of the CFIs are required to take account of the capital market impacts of their investment decisions.

Some commentators (and, indeed, the current government) have called for certain CFIs to invest a greater proportion of their assets in New Zealand equities and infrastructure projects. These arguments are usually framed in terms of advancing economic and capital market development. The NZVIF has also argued that institutional investment in venture capital funds is needed for building a vibrant venture capital industry and, without it, the industry will struggle

<sup>9</sup> We abstract from the appropriate definition of cost and risk.

to achieve scale and sustainability. This is not the same as saying that Crown financial institutions should invest on a non-commercial basis, nor that they should have a role in capital market development.

Arguments in support of giving CFIs wider economic development objectives are controversial and there are strong counter-arguments that run against these proposals. However, the arguments should be considered systematically rather than being discounted without proper consideration. I have yet to see a carefully constructed analysis that considers the full range of perspectives on the issue.

A more compelling argument can be made for the government to develop a deep, liquid market for government securities because of the government's unique ability to issue risk-free instruments. As noted above, sovereign bonds represent *benchmark securities* and their value depends solely on factors that are systematic to the country. This feature makes them a useful benchmark for pricing other risk with a country-specific component, such as corporate bonds which additionally involve an idiosyncratic credit risk component.

That is, by issuing liquid benchmark securities at different terms and maturities, the government facilitates the development of a risk-free yield curve, which in turn can underpin the pricing of other securities such as corporate bonds or annuities. Relating the arguments back to conventional market failures, there are three channels by which the issuance of sovereign benchmark securities may affect the prices of other securities in the market. The first channel is the completion of an incomplete market. For example, Shiller (1993) argues that macro securities (i.e. securities that represent systematic risk factors) help to complete the market by allowing investors to hedge against major income risks. The second channel is price discovery. Benchmark securities (and better pricing of systematic risk) increase the incentives on investors to acquire more systematic and firm-specific information, thereby improving the price informativeness of all securities. The extent of this price discovery benefit is closely related to the number of benchmark securities in the market. The final mechanism is an increase in liquidity. Benchmark securities may provide a liquidity service for existing securities, which translate into reduced liquidity premiums and decreased bid-ask spreads.

The theoretical literature on benchmark securities suggests conflicting possibilities in terms of a sovereign bond issuance's impact on existing bonds in the market. One argument is that benchmark securities improve the market by making it more complete, reducing adverse selection costs, and improving liquidity by acting as hedging instruments (see, for example, Shiller, 1993). However, the introduction of benchmark securities may also inhibit price discovery, crowding out the trading of all or a fraction of existing securities. The question of whether the government should aim to ensure whether there is a well-spanned market of liquid government securities independent of aiming to achieve a cost-minimisation debt management objective is therefore an empirical issue. While the literature is mixed, recent studies tend to support the notion that issuance of sovereign bonds lowers corporate yields and bid-ask spreads (see Dittmar and Yuan, 2008).

Analytically, the role of the benchmark security is to provide investors with a stable (eg, in terms of credit risk) NZD (relative) benchmark against which to price other assets. In other words, the benchmark need not be sovereign debt. The most obvious alternative to a sovereign debt-based yield curve is a curve derived from the interest rate swaps market. This choice between sovereign and private benchmarks was considered by the Australian government during its 2002 review of the Commonwealth government securities (CGS) market.<sup>10</sup> The Review concluded that, while financial markets may innovative in the absence of the CGS market, it was more likely that closing the CGS market would lead to slightly higher interest rates given the development of Australia's financial markets and current lack of effective alternatives to CGS. The main reason given for the higher interest rates was the higher costs associated with managing interest rate risk without a Treasury bond futures market.<sup>11</sup> A further concern was that the Australian economy may be more vulnerable during periods of instability in the absence of a CGS market.

New Zealand commentators have also considered the potential for interest rate swaps to be used as the basis for pricing. The swaps market in New Zealand is many times the size of the government securities market. The disadvantage with swaps pricing is that there is a potential for a time-varying credit risk premium which means swaps prices may not be a good proxy for risk-free prices. Some commentators see the swaps market as less transparent than the government bonds market although it is not clear that this is a material concern since it would be relatively straightforward to remedy this.

Some New Zealand commentators, including the Capital Market Development Taskforce in its interim report in July 2009, have argued that certain sovereign benchmark issues lack liquidity and that there is an insufficient number of maturities (so that too much interpolation is required in constructing the yield curve). Certainly, the amount of government securities outstanding and their liquidity have substantially reduced in recent years.

With gross sovereign issued debt (excluding Reserve Bank settlement cash and bills) projected to increase from a low of 17% of GDP in 2007/08 to a high of 43% of GDP in 2016/17, there is an opportunity to consider the desirable debt structure from the perspective of ensuring a well spanned yield curve. It should be noted, however, that McCauley and Remolona (2000) suggest that a size threshold of around US\$100 to US\$200 billion may apply for achieving a liquid government bond market. Thus, even with the projected increase in gross debt, it may be difficult for New Zealand to achieve a 'complete' government securities market.

<sup>10</sup> The Review was carried out against a backdrop of rapidly diminishing commonwealth debt, which raised questions about the future viability of the CGS market.

<sup>11</sup> In Australia, the Treasury bond futures market was the primary vehicle for managing outright interest rate risk, reflecting its high liquidity, low transaction costs, and wide accessibility to market participants. The interest rate swap market, by contrast, was limited to large financial institutions and was used to establish customized arrangements for interest rate risk management. At the time, swaps were a generally more expensive hedging instrument than Treasury bond futures. Factors argued to contribute to this included a lower level of market liquidity, less transparent pricing of the OTC market, and the concentrated nature of the market.

A final consideration is that the government is a whole or majority owner of a number of state owned enterprises and Crown companies. While many of these entities participate directly in markets through their debt issuance, with the exception of Air New Zealand (which is a special case since it was subject to a government rescue), SOEs and Crown companies do not participate in public equity markets. Governments in New Zealand have generally chosen to either fully control the business (through 100% ownership) or fully privatise the ownership.<sup>12</sup>

There are two major implications of this. One is that the government, as a generally weak monitor of commercial performance, misses the potential monitoring benefits from outside equity investor involvement.<sup>13</sup> More significant from a capital market perspective, it also denies the capital markets the possibility of new issues. While it is beyond the scope of this paper to analyse this issue in detail, there would appear to be obvious benefits from a capital markets perspective of partial privatisation by share-market float of a number of SOEs and Crown owned companies. If full privatisation is considered, the government may wish to consider requiring the listed company to be listed on the NZX subject to appropriate provisos.

While capital market development is unlikely to be the primary objective when considering any of the above issues, a clear theme emerges that it should be a second-order policy objective for a number of entities, particularly the Treasury. It is plausible that significant gains may be achievable in terms of capital market development and related benefits, from the Crown taking a small departure from its current policies (whether that be full ownership of SOEs, or the cost minimisation objective of DMO). Of course, there are advantages in simple, clear objectives for policy that approximate objectives of welfare-maximisation, so any proposals should be carefully considered and, where possible, the costs, benefits and risks quantified.

## Government as financial innovator

In this area, the central policy question is whether there is a role for government to be an innovator in capital markets. Financial innovation can be thought of in a range of ways but in this context we emphasise the issuance of new or novel securities<sup>14</sup> or the seeding of new types of markets. Of course, financial innovation may be a by-product of other government policies. For example, the first issuance of a new government bond is a financial innovation but is primarily done within the framework of raising debt to fund a cash deficit. We are less interested in this 'accidental' financial innovation than we are in the role of government as a deliberate financial innovator.

<sup>12</sup> CFI holdings of privatized assets are ignored here since these holdings come about indirectly and bear no relation to the original policy decision for privatization.

<sup>13</sup> This argument can be countered since minority shareholders have, in practice, weak incentives for monitoring. Further, during times of financial stress debt issuers exert far more influence than equity shareholders unless of course equity shareholders agree to invest additional capital.

<sup>14</sup> The potential role for government in seeding new types of private capital markets, including venture capital, is discussed elsewhere in this paper.

Missing or incomplete markets is the principal market failure that motivates a possible role for government as financial innovator. Missale (1997) explains that incomplete asset markets (ie, the existence of unexploited insurance opportunities) allow the possibility of improving risk-sharing and, hence, welfare through debt management policy. In particular, the government's choice of financial portfolio composition may contribute to improving the allocation of risk between generations or between investors and taxpayers.

By issuing state-contingent securities, the government can expand individuals' investment opportunities and improve risk sharing. For example, public debt provides insurance to citizens by offering a safe asset which is a claim on the next generation. All generations may be better off since each generation is providing insurance to the preceding generation.

It is tempting to conclude that any government initiative to complete markets will be welfare enhancing. However, the interaction between Crown issuance decisions and welfare is inconclusive.

Allen and Gale (1994) argue that issuing a tiny amount of a new security has a large impact on risk-sharing, while a large change in the amount of an existing security has no impact. However, that asymmetry relies on the assumption that investors can take unlimited short positions in government securities. As soon as short sales are constrained, the discontinuity disappears.

Fischer (1983) explains that the effect on risk allocation of introducing new securities is jointly-determined by the government's tax policy. As the introduction of new securities may change the distribution of taxes across future states of the world, the effect on risk allocation is dependent on how taxes will change and who will be liable for paying them. Assuming that tax policy is a higher-order policy than Crown financial policy, it is plausible that the impact of portfolio composition on inter-generational risk sharing is weaker than the impact of tax policy. However, the effect of portfolio composition may still be material if the government's financial portfolio is large.

Bohn (1998) provides an example of how tax policy can unravel the impact of public securities on risk-sharing. If the government issues safe debt, it provides safety to the current 'old' generation. However, future generations will face an increase in volatility of after-tax incomes since they have to pay a non-contingent debt service out of stochastic income. Issuing safe debt will not always increase welfare because it increases the deadweight costs of taxation.

Grimes (2001) highlights an implication of Bohn's approach: governments should seek to structure their net financial liabilities (assets) so that liability service rises (asset returns fall) when pre-tax incomes (productivity) rise. In other words, if the government is holding net financial assets it should be investing in assets that are negatively correlated with domestic incomes. If it has net financial liabilities, it should issue debt with returns positively related to domestic incomes.

Shiller (1993) proposed a new set of markets that could in theory provide much better diversification opportunities than are available in existing financial markets. These so-called macro markets would be large international markets trading long-term claims on aggregate national incomes. Athanasoulis, Shiller and van Wincoop (1999) find that the benefits of eliminating exposure to country specific risk are large and existing markets do not provide a good substitute for macro markets. However, there are serious practical obstacles to introducing macro markets, including lack of investor awareness, measurement problems and difficulties in designing enforceable contracts.

Bohn (2001) considers the role of fiscal policy in determining the aggregate allocation of risk within the context of an aging society with over-lapping generations. He demonstrates that, as the population ages, state-contingent government bonds are better risk-sharing tools than pensions, which become too costly, or taxation, which raises time-consistency concerns. In particular, wage-indexed and longevity-indexed bonds yield unambiguous efficiency improvements. Pension policy provides additional degrees of freedom if pensions are partially pre-funded and if the “trust fund” is invested in risky assets.

Index-linked bonds have an advantage in that not only can they reduce risk for investors, they also reduce the variability of the government's real borrowing costs, so that they benefit both borrower and lender (if both are primarily concerned with real rather than nominal returns). Inflation-indexed bonds (IIBs) may also reduce the cost of capital in the economy, by lowering the risk premium, if they are seen to strengthen the government's commitment to a policy of low inflation. However if index-linked bonds are not sufficiently liquid, their value to the private sector will be reduced and may make IIBs a relatively expensive form of financing. Correspondingly, if they are too costly then governments will not find it worthwhile to issue them. In the UK, index-linked bonds appear to command a premium, not least because they meet a particular institutional demand by pension funds and because of idiosyncratic regulatory factors. In other markets, such as New Zealand, this may not be the case.

In considering if there is a role for government financial innovation, it should be noted that markets may be “missing” for good reasons (ie, because of high transaction costs and/or imperfect information). The government is not immune to these factors and so it is not sensible to assume that the government can issue any security without cost. Indeed, unless the government has a cost or information advantage, there is likely to exist a trade-off between the cost of intervention and the expected gains from more efficient risk-sharing. Furthermore, the efficacy of innovative debt management will need to be assessed within the context of other government policies that affect risk-sharing (eg, social security and tax system design).

A clearer insurance role for government securities emerges when idiosyncratic risk (eg, taste for liquidity shocks) as opposed to macroeconomic risk is considered. Policies which provide insurance against idiosyncratic risk have, at first approximation, no adverse consequences in terms of taxation (Missale, 1997). For example, efficient secondary markets for government securities provide liquidity and information that private security markets cannot offer because of

imperfections and/or externalities. That suggests the liquidity of government securities can be as important as their stochastic characteristics, implying there are gains from issuing large amounts of standardised securities and costs associated with introducing novel public securities.

High fixed costs of introducing new securities limit diversification in the menu of public securities and suggest that innovation in the inherited financial structure can be difficult. Countries with small economies may find these costs prohibitive due to the absence of economies of scale and less liquid financial markets.

In sum, theory suggests a role for government to facilitate risk-sharing in the economy and across generations. Welfare considerations may potentially support the case for introduction of new and novel debt instruments (such as index-linked bonds) because they offer a valuable form of insurance, that is not available in the private sector. However, the effect of Crown financial portfolio composition on inter-generational risk-sharing is tied to the government's tax-borrowing decisions. Also, the value of a debt instrument might be intrinsically linked to its liquidity characteristics – hence new and novel instruments might not be valued by the private sector because they are harder to price and/or harder to trade. It is also not clear that governments have a comparative advantage over private market participants when it comes to financial innovation. The introduction of new securities is likely to be expensive, particularly in small economies due to an absence of economies of scale and less liquid financial markets. Overall, the analysis suggests that the welfare gains are closely linked to the premium that bidders are willing to pay for such instruments – if close substitutes exist (either in the government or the private sector) then both the potential welfare gain and the premium that investors are willing to pay will be small. More compelling is the role for governments to provide insurance against idiosyncratic risk. In particular, there seems to be a role for government in promoting secondary market liquidity (eg, by issuing significant volumes of standardised securities).

## Government as regulator

The government's role as regulator is undoubtedly its most important direct channel of influence over the capital markets. Capital market regulation is central to market development in that the laws surrounding the conduct of capital market transactions must be seen to be robust and fair to market participants while not imposing undue compliance costs. To state the obvious, though, regulation can have either positive or negative effects on capital markets.

As Stiglitz emphasises, the source of most market failure arguments in support of various capital markets regulations is asymmetric information. Imbalances in information make it costly, if not impossible, for one or more parties to effectively monitor the behaviour or situation of others. Large asymmetries of information exist between buyers and sellers of financial services and products.

These asymmetries provide the basis for undesirable incentive effects, such as moral hazard and adverse selection, providing an argument for regulation to deter and prosecute unfair or fraudulent conduct, promote transparency and contestability, ensure fairness of treatment of different classes of market participant, and, more generally, promote investor confidence in the markets. Information imbalances may also be a source of market power, giving rise to the need for a supervisory regulatory function.

It is beyond the scope of this paper to discuss in detail the specific market failures in capital markets and how specific forms of regulation might address them. The regulation of capital markets is a large, complex topic and the Ministry and the Capital Market Development Taskforce are considering a number of detailed regulatory proposals. Instead we discuss some high-level principles that ought to be used to test any specific proposals. The following list is adapted from a number of sources:

- A systems perspective needs to be taken to capital markets regulation. In other words, regulation should be comprehensive and ensure that all significant market failures and broader economic and social needs are properly addressed.
- Regulatory and non-regulatory tools and mechanisms should work harmoniously and reinforce each other. In this context:
  - all relevant financial system participants and related products, services, institutions, systems, and markets should be subject to appropriate regulatory and supervisory frameworks and oversight
  - interconnected components of the financial system, be it in terms of financial groups, sectors, systems, or markets, should be appropriately subject to an integrated, global view so that interrelated risks can be appropriately identified and addressed
  - all appropriate tools and mechanisms should be used to ensure an integrated approach to the regulation and supervision of relevant participants, products, services, institutions, systems, and markets.
- Regulation should be competitively neutral and as far as possible applied in a consistent (ie, functionally equivalent) manner across products, institutions and markets. The risk of regulatory arbitrage should be carefully weighed.
- In developing regulatory proposals, there should be as much of a focus on developing practical strategies for achieving compliance as there typically is on the rules, penalties and institutional arrangements. This is because compliance and the costs of achieving acceptable levels of compliance are material decisions on whether or not to regulate.
- A risk-based approach should be taken, with regulation oriented around the risks in the financial system, giving priority to those risks that, due to their nature or impact, have the greatest potential of compromising the achievement of policy objectives. Compliance strategies should be proportional to the size of the problem.

- Enforcement is only one element of compliance. Consideration should be given to how non-regulatory interventions will be used to support regulation, including ensuring understanding of the purposes of regulation by those being regulated. Initiatives designed to promote financial literacy can also be seen in this light.
- Regulation, as with government spending proposals, should be subject to regular evaluation, and policy proposals should specify how the effectiveness and efficiency of new (or different) regulations are to be measured.

One issue worth commenting on relates to the level of consumer trust in the New Zealand retail savings industry. Grimes (2005) argues that “the New Zealand market appears particularly susceptible to the marketing of complex, high-fee products that may be inappropriate for consumers’ needs”. He notes that “... if this pattern of savings behaviour (New Zealanders holding a small proportion of their net wealth in financial products) is to alter, New Zealand investors need to be able to place greater trust in the range of investment products on offer, and particularly on the investment advisers who help direct investors into available products” (Grimes, 2005, pp. 18-20). Grimes identifies a number of options for improving trust in, and the efficiency of, the New Zealand retail savings industry:

- All investment products should include a standard disclosure form outlining expected gross returns, expected net (after-fee) returns, and standard, simply specified risk measures that enable comparison across products.
- A mandatory requirement should be introduced for investment advisers to declare their fee income (from all sources) consequent on a client's product choice. The fee should be expressed in percentage and in dollar terms. A complete schedule of fees, including fees bundled into a product, should also be disclosed. It should be mandatory for investment advisers to offer a range of similar products to a client, each with fees disclosed as above.
- The Retirement Commission's educational activities regarding investments and related fields should continue, and funding should be increased to enable the educational role and reach of the commission to be expanded.
- The Retirement Commission, or some other body, should undertake a regular and comprehensive "mystery shopper" programme for financial advisers, and report the results publicly on its website so as to provide assistance for potential investors seeking an investment adviser.
- A Financial Ombudsman should be created by statute in New Zealand to cover complaints across a broad range of financial services, modelled on the United Kingdom Financial Ombudsman Service.

## Government as negotiator

The role of government as negotiator is principally concerned with the development of international agreements relating to tax and regulation. Since national governments can unilaterally determine their own tax and regulatory policies, including deciding to adopt the

policies of other countries, the negotiation of international agreements is primarily concerned with joint efforts to remove barriers and impediments to certain cross border transactions and activities, thereby leading to the closer integration of national markets. A key question for the Taskforce is whether the New Zealand government can negotiate with other governments to improve the functioning of its capital markets.

The benefits from greater integration of capital markets are summarised in Boyle (2009):

- Better allocation of capital.
- More efficient risk sharing.
- Enhanced portfolio diversification (for investors).
- Lower cost of capital.
- Increased domestic competition between financial intermediaries and other financial service providers.

However, as Boyle notes, the size of the benefits of further integration for New Zealand is uncertain. The evidence would suggest that claims of large benefits should be viewed sceptically, given the already strong integration of capital markets with Australia and the significant barriers (small size and distance) to achieving close integration with the capital markets of other economies.

Consider, for example, the experience one year on from the adoption of the Australia-New Zealand mutual recognition of securities offerings agreement. To date the deal has brought minimal benefits for New Zealand since only 5 New Zealand prospectuses were formally recognised in Australia in the first twelve months. New Zealand investors (and Australian issuers) have arguably benefited more as 155 Australian prospectuses were recognised in New Zealand over the same period. This is not to say that the policy is a bad one; simply that the benefits would appear, at least in the short-term, to be modest.

One possible reason why harmonisation may lead to lower than expected benefits is that international capital flows are imperfect and are influenced by a wide range of factors other than differences in taxes and regulation. The tax and regulatory impediments may not address the underlying reasons for low integration or, alternatively, the benefits of integration may already have been largely achieved in spite of differences in taxes and regulations. For example, the international finance literature clearly shows that market size and proximity are the principal determinants of cross-border financial flows, explaining around 70% of the variation in volumes of cross-border transactions. There are a range of other factors that, between them may account for the remaining 30% of variation, including tax and regulatory differences, language differences, cultural and institutional differences, and differences in familiarity and trust. The high fixed costs of acquiring information about small markets relative to investment opportunities, which may be proxied by size and distance, is also relevant to cross-border flows. The well known 'home bias' may reduce the benefits from integration.

There are also risks associated with closer integration. Boyle (2009) highlights the potential for rapid and destabilising capital flight, increased risk of importing credit crunches, and a greater propensity for financial contagion more generally. These risks are important but there are other risks as well. For example, pursuing integration may entail the adoption of policies that are *inferior* and entail costs that outweigh the benefits. This is more likely under proposals that involve harmonisation of regulation compared with proposals to achieve mutual recognition, since the latter involves the maintenance of separate national legislation which can still be tailored to local circumstances.

A more significant concern is the potential for integration to undermine the sustainability of local capital markets, including underpinning institutions such as the stock exchange. This could occur, for example, if regulatory harmonisation made it easier and more cost effective for New Zealand companies to list in Australia. There are powerful forces working in favour of the agglomeration of financial market activity, including improved ICTs<sup>15</sup>, economies of scale in transaction processing, and information, liquidity and other 'thick market' externalities. These forces mean that the risks of loss of capital market activity, and related financial services, are very real.

Consider market liquidity for example. Investors prefer to trade in liquid markets and, accordingly, more liquid markets attract more trading volume, creating a positive dynamic of momentum and reinforcement. By the same token, markets with low liquidity lose investors to relatively more liquid markets, and this decline becomes self-reinforcing. In other words, the most liquid markets become increasingly attractive and the least liquid become increasingly illiquid and, ultimately, may cease to be economic. Levine and Schmukler (2005) examine data on nearly 2,900 firms from 45 emerging economies over the period 1989-2000 and find that domestic firms that cross-list or issue depositary receipts on foreign exchanges increasingly see a decline in domestic trading of their shares. Further, migration of stocks away from the domestic exchange to foreign exchanges negatively impacts liquidity of the remaining firms on the home market.

The internationalisation of capital market transactions and other activity can have further adverse local economy impacts. One benefit associated with a critical mass of financial activity is an effectively functioning market for highly specialised financial services. It is well known that smaller financial sectors struggle to attract workers away from larger financial centres with more liquid markets. Some economists argue there are also significant information and technological spillovers associated with agglomerations of financial activity.

An essential feature of closer integration is increased competition. Indeed, competition is the key mechanism by which the benefits of integration are realised. In the limit, full integration

<sup>15</sup> ICTs also work in favour of the delocalization of financial market activity. For example, foreign exchange is traded by telephone and computer in a very decentralised, truly global marketplace. In terms of stocks, a significant share of trade in US equities is done online.

implies no restrictions on where and when firms or market participants decide to transact. Full integration also implies that the NZX should be open to takeover by the ASX or vice versa. This motivates a question about how far New Zealand should pursue integration, and what types of integration we may wish to limit.

While individual New Zealand companies may see benefits in easier access to foreign capital, with potentially lower costs of capital, from a New Zealand Inc perspective the welfare implications of further integration are ambiguous. It is probably the case that further integration would be beneficial in some areas and a net cost in other areas.

The above discussion suggests a simple framework for thinking about whether to pursue further capital market integration (eg, through the negotiation of international agreements for mutual recognition or harmonisation). Figure 1 shows this framework diagrammatically. A good way of summing it up is that policy must balance the benefits of local capital market development against the benefits to firms and investors of deeper integration with regional markets, particularly Australia. Unfortunately, applying the framework to individual policy proposals is not simple and requires sophisticated analysis and complex judgments which are beyond the scope of this paper.

The above discussion presupposes that New Zealand policymakers have a choice about whether or not to pursue tax and regulatory harmonisation. However, there are real questions about how much choice a small economy like New Zealand has. As Simmons (2002) notes, the concentration of financial power has significant implications for regulatory harmonisation.<sup>16</sup> She argues that most of the international financial regulatory harmonization that has occurred in the 1980s and 1990s was not “cooperative”; it resulted less from mutual adjustment than from unilateral decisions ‘imposed’ by the dominant financial centres on other jurisdictions.

A regulatory change by one country may increase the costs of the current set of regulatory policies in another, particularly where the country changing its policies is dominant. It follows that the decisions of Australia, and major economies such as the UK and the US, set the overall tone for regulation in New Zealand. Their choices, in relation to tax and regulation, are likely to significantly alter the choices available to New Zealand. The pursuit of harmonisation may be less about removing impediments to market integration and more about ensuring international competitiveness. There are obvious dangers in pursuing alignment or harmonisation to maintain competitiveness, including the potential to spark a “race to the bottom”. This highlights the importance of multilateral approaches and New Zealand’s participation in the development of capital market regulatory standards by organisations such as IOSCO, the Basel Committee on Banking Supervision, and the International Association of Insurance Supervisors.

<sup>16</sup> The large size of the internal US market gives US regulators an incentive to make unilateral regulatory decisions, even if foreign regulators do not follow suit. The US is hegemonic in financial regulation, in the sense that it is costlier to alter its preferred regulation than to try to change the policies of the rest of the world. Hence, US regulators can be thought of as unconditional first movers. This idea is extendable to any relationship between a dominant and a dominated country.

Figure 1: Framework for improving cross-border integration of capital markets

	Low risk of adverse effects	High risk of adverse effects
Large benefits from integration	Strong argument for pursuing closer integration	Least regrets policy would suggest weigh the risks carefully and, if in doubt, do not pursue integration
Small benefits from integration	Limited argument for pursuing closer integration	Strong argument against pursuing closer integration

## Government as industry policymaker

Government's role as industry policymaker relates to the development and implementation of policies that aim to maximise the contribution of capital markets, and the financial sector more generally, to economic growth while minimising the risks of creating perverse incentives and inappropriate distortions in the allocation of resources and financial risks. In some ways, it can be seen as a 'catch-all' for policies that do not conveniently fit any of the preceding categories.

As Stiglitz argues, capital markets may be a special case for government intervention because of pervasive information problems that give rise to market failures, including missing markets. It is tempting to see these market failures, in a collective sense, as a general justification for policy measures to support the capital markets and the financial services sector that underpins them. Indeed, a number of countries have introduced policies aimed at developing various financial services and/or market specialisations. The Taskforce's July 2009 interim report noted that it is looking for ways in which New Zealand can leverage its competitive strengths to play a greater part in the market for international financial services.

Countries have increasingly been using favourable policies as a means of competing to capture a share of the global market for financial services. Some countries have gone as far as to create "international financial centres" supported (at least initially) by significant tax concessions for financial services firms that locate themselves within the centre. Prominent examples include Dublin, Singapore and Toronto. These experiments have been costly and have not all

been successful. Generally speaking, it is hard to see how the policy instruments used, in particular large tax breaks, have targeted particular market failures or externalities.

Policymakers have rightly learned to be wary of proposals to support particular industries through subsidies and other means. Generally speaking, capital markets are viewed as the appropriate vehicle for making resource allocation decisions. While governments may have laudable objectives in mind, it needs to be remembered that the government resolves market failures imperfectly and, where the policy measures are blunt, the costs may often outweigh the (often temporary) benefits. Some interventions do not appear to have even well intentioned objectives in mind, and are primarily motivated by lobbying from special interest groups. Such measures impede the functioning of markets and redirect the allocation of capital in ways that cannot easily be related to any correction of a market failure. These lessons caution against general, untargeted policies aimed at development of the financial sector.

There are some areas where governments have intervened on a targeted basis in an attempt to improve the functioning of specific capital markets. One such example is loan guarantee schemes, which have been introduced by a number of advanced economies to improve the availability of credit to small firms lacking limited collateral. These schemes do not have a good track record and most have significant hidden subsidies built into them. Further, businesses are remarkably adaptive to capital constraints and find ways to adapt to them. In New Zealand, for example, it is generally thought (and the banks confirm this) that a significant proportion of small business lending is underpinned by residential housing. In other words, a lack of bankable business collateral is countered by the strong bankability of houses.

An area where the arguments for government intervention to target specific capital market failures have a stronger evidence base relates to early stage equity capital markets, in particular policies that aim to spur venture capital. Lerner and Shepherd (2009) explain that the desirability of venture capital from a public policy perspective lies in the importance of innovation as a spur for economic growth, and evidence that venture capital is an efficient stimulator of innovation. The potential market failures that suggest government assistance may be appropriate and needed to support the formation of a venture capital market relate to R&D spillovers, infrastructure building (because venture capital is seen as an increasing returns industry) and information asymmetries. According to Lerner and Shepherd, all venture capital markets that they are aware of were initiated with government support, implying that such markets are unlikely to emerge in the absence of an extended period of government support.

The New Zealand government has a number of policies aimed at promoting development of early stage capital markets. As noted in a recent report on venture capital and its development in New Zealand, there was a virtual absence of dedicated venture capital funds operating in New Zealand prior to the establishment of the NZVIF programme. By March 2009, the programme had facilitated the establishment of six venture capital funds which together had invested around \$218 million in 48 portfolio companies.

In reflecting on the achievements of the NZVIF programme, Lerner and Shepherd (2009) note that:

The tendency of political decision-making processes to lead to sub-optimal outcomes points to the need for the careful design of any publicly funded support for venture capital. The fund-of-fund design used for the NZVIF is a good example of this, whereby the allocation of funds to fund managers is devolved to an independent board and its fund management team, and is subject to private investors committing money to the same fund (i.e. the fund manager must pass a market test prior to obtaining government support). (pg, 3)

Developing a viable venture capital industry is a long term task, and is not easy. It requires prolonged commitment from those involved directly and from policymakers. Over recent years the growth in New Zealand's venture capital activity has been encouraging but modest. The VIF Venture Capital Funds are growing slowly and at this stage their value is just under the amount invested. Few divestments have been made and none of the options to buy out the Crown's stake in these Funds within the first five years have been exercised (pg, 7)

In our view the government should maintain a steady and predictable policy with respect to the development of a venture capital market. The global financial crisis has slowed the ability of the VIF Venture Capital Funds to grow and exit their investee businesses over the medium term. In reality, given that four of them are now more than half way through their 10 year terms and face a difficult environment, these Fund managers may find it challenging to raise further funds without government support. This suggests that government support is likely to be necessary for at least the next generation of funds. If this is accepted, it suggests that the government should be viewing its involvement in the sector for at least another fifteen years (assuming each generation of fund is about ten years) (pg, 7)

Another area where there may be sound arguments for government intervention relates to improving the information environment surrounding the capital markets. For example, because monitoring has some public good characteristics there may be an argument for subsidising the provision of information and analysis on New Zealand publicly listed firms, particularly small cap stocks. Cameron et al (2008) argue that there could be a role for government to support equity research in small cap stocks because:

- the lack of equity research on these firms could be constraining the growth of the equity market and the firms themselves
- equity research has public good characteristics, a significant fixed cost to produce the information and a low marginal distribution cost
- there is a role for government to help up-skill the financial literacy of the population and to facilitate independent and reliable research.

As noted in a paper produced for the Taskforce by Esperance Capital, a number of other countries have introduced equity research schemes designed to extend research to a wider

range of listed companies in the interests of market development.<sup>17</sup> While such schemes are unlikely to cause significant harm, they would not be expected to make a large contribution to market development. Even if there is a strong argument for this type of subsidy, it would seem likely that it should only apply to small, widely-held companies that are not currently adequately covered.<sup>18</sup>

There may also be a role for government to provide information and brokerage services to help small firms to access public and private capital markets. Raising outside equity is a big step, particularly when undertaken for the first time, and the lack of deal flow inhibits the development of a private brokerage market. This is essentially the argument underpinning NZTE's Escalator Service.

A wider policy concern may relate to the lack of an investment culture. The government could, for example, aim to foster capital market participation through investor education. KiwiSaver can be seen in this light, although it is ostensibly aimed at increasing the level and composition of household saving. However, the wider cultural impacts of schemes such as these should not be ignored and, arguably, could be better harnessed. The area is a sensitive one from a government point of view, since it would not want to be seen encouraging New Zealanders into risky investments if those investments do not perform. However, the government is already taking on this risk through its promotion of KiwiSaver, although arguably its very conservative default fund settings reflect that the government may be reticent to "go too far" in this respect.

Related to investment culture is the area of financial education. Capital markets work best when market participants are fully informed and make sound decisions on the basis of the information available to them. Unfortunately, evidence suggests many New Zealanders do not understand financial products (O'Connell, 2009). This is of particular concern where investors adopt investment strategies they believe to be low risk but are in fact high risk. Recent examples include households with high exposures to finance companies.

Low financial literacy can lead to a lack of participation in capital markets, low rates of saving, inefficient forms of saving, a lack of diversification in household portfolios, and greater demands on the state in the event that investments perform poorly. While New Zealand's scale and commitment to financial education appears to compare favourably to other countries, and surveys suggest New Zealanders' general financial literacy is no worse than that of other populations, other countries do have a greater emphasis on financial literacy in schools. New Zealand is bringing financial literacy into the school curriculum but this will not go as far as in a number of other countries.

<sup>17</sup> Esperance Capital, *The Research Market In New Zealand: Equity and Debt* (July 2009). This report was commissioned for the taskforce.

<sup>18</sup> Even relatively small companies might be well monitored if there is one or more significant shareholders.

Andritzky (2007) suggests that there is an argument for the state to support expansion of the universe of investible securities. In a New Zealand context, this could be achieved by full or partial listing of SOEs and Crown-owned companies, supporting the development of a local government bond market, using its influence to encourage the listing of large co-operatives or privately held companies, issuing special instruments to fund infrastructure or otherwise allowing private finance participation (eg, PFIs). New Zealand's relative lack of very large firms, the predominance of the cooperative structure in certain key industries, and the significance of commercial enterprises under the control of central and local government have significantly shaped the current state of public capital markets, particularly the stock market.

## Wider government roles

We discussed earlier how governments may influence capital market development through a wide range of policies that *prima facie* have little to do with capital markets (at least in the minds of policymakers). Social security is a classic example where the provision of various forms of social insurance without transparent pricing of the risk (eg, unemployment) may weaken the precautionary motive to save (thereby reducing the flow of funds seeking investments through financial institutions and the capital markets). My point is not that these policies are inefficient. Rather, policies that *prima facie* have nothing to do with capital market development may in fact have significant capital market impacts. The policy implication is that potential capital market impacts should be considered alongside a wide range of other potential impacts as part of the policy analysis process.

In some areas of policy, for example, debt management, the capital market impacts may be sufficiently important (even if they remain second order) to require specific consideration when formulating policy. The Reserve Bank is one government institution with potentially significant impacts on capital markets and has recently included a secondary objective to support capital market development in its latest Statement of Intent. Arguably there is a need for the Treasury, Ministry of Economic Development, and the Inland Revenue Department to do the same, and for these agencies to have a joined up view on the government's strategy for capital market development.

Tax policy is another area where there are potentially significant capital market impacts. For example, the effective tax advantage enjoyed by residential investment property (because of the relative ease of using debt to fund such transactions) has implications for investment in shares and other financial securities. The Tax Working Group is currently considering the tax treatment of housing and will report to government early next year, but the Taskforce may wish to consider its own view on this issue. Other policies, such as the recent PIE tax changes and the design of KiwiSaver, similarly impact on capital markets.

A final issue worth mentioning under this heading relates to the Retail Deposit Scheme introduced by the government in 2008. This scheme was introduced in response to a similar scheme introduced in Australia, with the express objective of maintaining public confidence in

New Zealand's financial system and, more particularly, the confidence of general public depositors in New Zealand financial institutions. While the government would have preferred not to intervene, its hand was effectively forced by a combination of the global financial crisis and the response of other governments, in particular the Australian government's decision to also offer a broad-based deposit guarantee scheme. The most frequently raised concern with the scheme relates to inappropriate pricing of the default risk associated with certain scheme participants, in particular low-rated non-bank deposit takers. If pricing is insufficient to cover the risk, the scheme may result in investment shifting towards these economically risky but safe (from an individual investor's perspective) investment vehicles and away from other risky (but non-guaranteed) investments such as shares. The Taskforce may wish to consider whether further improvements to the Scheme's design can be made to mitigate the potential adverse effects on capital markets.

## Conclusions

The purpose of this paper is to assist the Taskforce to organise and test its thinking about the role of government in developing New Zealand's capital markets. Its primary contribution is to consider possible roles for government beyond its core role of ensuring sound tax, regulatory and other 'fundamental' policy settings. This is not to diminish the importance of sound laws and regulatory institutions but, rather, the primary purpose of this paper is to ask what else government might usefully do, taking into account the costs and risks of intervention.

The paper suggests that, in addition to its critical role as regulator, there may be legitimate roles for government to advance capital market development across a broad range of spheres, including as a direct market participant, as a negotiator of international agreements, and as a financial innovator. In addition, thinking about capital market development in industry development terms opens the door to policies that aim to foster the international competitiveness of financial services and/or seek to seed specific capital markets that are prone to market failures.

It is important to note that identifying possible roles for government is not the same as arguing in favour of specific government interventions. Any new intervention must satisfy standard public policy tests, namely that the benefits outweigh the costs taking account of the risks. It is beyond the scope of this paper to advance specific policy proposals. Nevertheless, it is intended that this paper will make a contribution to the Taskforce's thinking by giving it a framework within which to consider the arguments for and against specific policy options.

## References

- Akerlof, G. A. (1970) The Market for 'Lemons': Quality Uncertainty and the Market Mechanism, *The Quarterly Journal of Economics*, 1970, vol. 84, issue 3, pages 488-500
- Allen, F. and D. Gale (1994), *Financial Innovation and Risk Sharing*, MIT Press, Cambridge MA.
- Athanasoulis, S., R.J. Shiller and E. van Wincoop (1999) Macro Markets and Financial Security, *Economic Policy Review*, Vol. 5, No. 1, April 1999
- Andritzky, J.R. (2007) Capital Market Development in a Small Country: The Case of Slovenia, IMF Working Papers 07/229, International Monetary Fund.
- Bohn, H. (1998) "Risk Sharing in a Stochastic Overlapping Generations Economy," University of California at Santa Barbara, Economics Working Paper Series WP3-98, Department of Economics, UC Santa Barbara.
- Bohn, H. (2001) Retirement Savings in an Aging Society: A Case for Innovative Government Debt Management, Published in: Alan Auerbach and Heinz Herrman (eds.), *Ageing, Financial Markets and Monetary Policy*, Berlin: Springer, 139-181.
- Boyle, G. (2009) Capital Market Integration: A Review of the Issues and an Assessment of New Zealand's Position, Paper for the Capital Market Development Taskforce, Ministry of Economic Development.
- Cameron, L., B. Chapple, N. Davis, A. Kousis and G. Lewis (2007) *New Zealand Financial Markets, Saving and Investment*, New Zealand Treasury Policy Perspectives Paper 07/01, October 2007.
- Capital Market Development Taskforce (2009) Progress Report 31 July 2009, <http://www.med.govt.nz/upload/69666/Interim-report.pdf>
- Dittmar, R. and K. Yuan (2008) Do Sovereign Bonds Benefit Corporate Bonds in Emerging Markets?, *Review of Financial Studies* 21, 1983-2014.
- Esperance Capital (2009) *The Research Market In New Zealand: Equity and Debt*, Report for the Capital Market Development Taskforce, Ministry of Economic Development.
- Fischer, S. (1983), "Welfare Aspects of Government Issue of Indexed Bonds", in R. Dornbusch and M. H. Simonsen, eds., *Inflation Debt and Indexation* (223-46), MIT Press, Cambridge MA.

Grimes, A. (2001), "Crown Financial Asset Management: Objectives and Practice", Treasury Working Paper 01/12.

Leahy, M., S. Schich, G. Wehinger, F. Pelgrin and T. Thorgeirsson (2001) 'Contribution of financial systems to growth in OECD countries', OECD Economics Department Working Paper No. 280, Paris.

Lerner, Josh and Stuart Shepherd (2009) Venture Capital and its Development in New Zealand, Prepared for the New Zealand Venture Investment Fund Ltd.

Merton, R. C. (1990) The Financial System and Economic Performance, *Journal of Financial Services Research*, 263-300.

Missale, Alessandro (1997), "Managing the Public Debt: the Optimal Taxation Approach," *Journal of Economic Surveys* 11(3), pp. 235-265.

O'Connell, Alison (2009) Financial Literacy in New Zealand, Prepared for the Capital Market Development Taskforce, Ministry of Economic Development.

Rey, P. and J.E. Stiglitz (1992) Short-Term Contracts as a Monitoring Device, Stanford University, Stanford, Calif.

Rodrik, D. (2004) Industrial Policy for the Twenty-First Century, Working Paper at <http://ksghome.harvard.edu/~drodrik/unidosep.pdf>

Shiller, R. (1993), "Macro Markets: Creating Institutions for Managing Society's Largest Economic Risks, New York: Clarendon Press.

Simmons, B. (2002) "The International Politics of Harmonization: The Case of Capital Market Regulation", in *Dynamics of Regulatory Change: How Globalisation Affects National Regulatory Policies*, edited by D. Vogel and R. Kagan, University of California Press.

Stiglitz, J.E. (1994) The role of the state in financial markets, Proceedings of the World Bank Annual Conference on Development Economics 1993, World Bank.