



## **Regulatory Impact Assessment of pre-positioning for Open Bank Resolution (OBR)**

**November 2012**

## **EXECUTIVE SUMMARY**

1. The failure of a bank can have significant implications, both through the direct impact on the individuals and businesses that transact with the failed bank, and indirectly for the wider financial system and economy through a reduction in stability and confidence. The costs associated with a potential failure are likely to be reduced if there are formal arrangements in place to manage the failure in an orderly fashion. The Reserve Bank considers that existing tools make it difficult to resolve a failure in a timely fashion, other than through government providing public support to the banking system. As a result, it is proposing to implement the Open Bank Resolution (OBR) policy.
2. The proposals build on the existing legislative framework under which a statutory manager can be appointed to run a failing institution. An OBR will allow a statutory manager to temporarily close a failing bank, place a freeze on a proportion of unsecured liabilities and re-open for transactional business the next banking day. This is designed to ensure that liquidity is maintained in the system, minimising as much as possible the costs to the wider economy. By minimising economic disruption, the OBR should help to ensure that short-term liquidity concerns do not dictate how the important matter of loss allocation is determined, i.e. ensuring the government is not forced to bail out a bank simply because there are no acceptable alternatives (and governments often find that liquidation is not an acceptable short-run solution).
3. To implement the OBR, it is necessary for banks to amend their internal systems to ensure that the process is able to be completed before the start of the next business day. These changes are referred to as pre-positioning for OBR. Once complete, the changes will mean that banks will be able to close all their access channels at short notice, calculate each creditors position, freeze a proportion of unsecured creditors' liabilities, and then re-open channels to provide access to the unfrozen portion by 9am the following day.
4. Implementing systems changes can be a complex and time-consuming task for some banks, and will involve an investment by each bank to build and maintain the required functionality. The Reserve Bank has sought to minimise the burden on the banks by allowing an extended implementation period, and by adopting an outcomes-based approach to the requirements. This means that banks are able to design the solution that best fits with their own current internal systems. This regulatory impact assessment (RIA) takes account of the anticipated build costs, together with an assessment of the wider costs and benefits of the OBR policy.
5. All locally incorporated banks with retail deposits over \$1 billion will be required to pre-position their systems to meet the OBR requirements.

## **ADEQUACY STATEMENT**

6. This RIA has been produced by the Reserve Bank in accordance with the requirements of section 162AB of the Reserve Bank of New Zealand Act 1989 (the Act). Also, the Reserve Bank is satisfied that the RIA has been produced in a way that is consistent with the Government Statement on Regulation.

## INTRODUCTION

7. This impact statement considers the introduction of a requirement for registered banks to pre-  
position for OBR. It is made up of six sections containing:
- an overview of the existing industry structure and an identification of the problem;
  - a summary of the objectives and assessment criteria against which the various options have been assessed;
  - a description of the options considered and a summary of the analysis supporting the preferred option. This section includes a summary of the cost-benefit analysis that has been undertaken on the potential impact of the policy;
  - a description of the consultation that has taken place during the development of the policy;
  - an outline of the proposed implementation process; and
  - a brief description of the monitoring and review process that will be introduced to support the policy.

## PROBLEM DEFINITION AND STATUS QUO

### Problem definition

8. The recent global financial crisis has highlighted a number of weaknesses in the international financial system. One of the key areas for concern has been inadequate and insufficient tools available to deal with the failure of a large bank, i.e. those characterised as ‘too big to fail’. In the absence of explicit arrangements, the options are limited to liquidation, public bail-out, or takeover by a private acquirer. If a private sector solution is not available, the government must therefore choose between allowing the bank to enter the liquidation process or provide public support. Each of these options carries significant potential costs.
9. The important role that banks play at the centre of the financial system is likely to mean that a straight-forward liquidation of a failing bank may not be desirable. This is primarily due to the intermediation role banks play in the economy, the complexity of the process and the length of time that the resolution would take as a result, during which time customers of the bank, including small businesses, would have no access to their funds or banking services. This would have potentially significant implications for the wider economy.
10. The costs associated with bank failures can create pressure on the government to provide public support. One of the key lessons of the financial crisis was the potentially enormous fiscal costs associated with supporting troubled banks. Some governments that chose to guarantee their banking system’s liabilities are now faced with a sizeable public debt burden, which can have serious consequences for their sovereign credit rating and the availability and cost of accessing international financial markets. The liabilities of the New Zealand banking system account for around 180% of national GDP.<sup>1</sup>

---

<sup>1</sup> Reserve Bank calculation based on March 2012 data.

11. Whilst shareholders have incurred significant losses during the financial crisis, one of the outcomes has been that the risks that depositors and wholesale lenders (particularly subordinated lenders) should rightly have borne have fallen instead on taxpayers. As identified above, without special resolution tools it is costly to impose losses on creditors meaning governments feel pressure to bailout. The resulting ‘moral hazard’ can damage incentives on bank management to operate in a prudent manner, and reduce the incentive for creditors and depositors to scrutinise their bank’s affairs, distorting decision making and encouraging too much risk. Ultimately, this can result in an increased probability of failure.

### **Status quo**

12. The New Zealand banking system is highly concentrated by international standards, dominated by the four large banks that are subsidiaries of Australian parent banks. Whilst these banks are not classified as globally significant financial institutions, their size in the domestic market means that the failure of any one of them would have a significant economic impact on the New Zealand system.
13. The rest of the banking system is made up of medium and small-sized domestic institutions and smaller branches and subsidiaries of international banking groups. Whilst these banks would, in principle, have less of an impact on the system if they were to fail, a number of them are heavily concentrated in specific geographical areas, so could have significant impact on a regional level if they were to fail.
14. All of these institutions are subject to prudential supervision by the Reserve Bank. The Reserve Bank’s approach towards prudential supervision relies on a well-established ‘three pillars’ approach, based on:
- Self discipline: this refers to a firm’s internal risk management and governance systems, responsibility for which rests primarily with the firm’s board and senior managers. The Reserve Bank seeks to embed and enhance self discipline via a number of channels including governance requirements and powers to object to the appointment of directors and senior managers who may not meet a ‘fit and proper’ test;
  - Market discipline: this is about the role that financial market participants play in monitoring the risk profile and performance of firms and influencing their behaviour, through the prices they demand for supplying funds or through their choice of product provider. The Reserve Bank seeks to strengthen this discipline by working to reduce information asymmetries through disclosure requirements; and
  - Regulatory discipline: the third pillar takes the form of explicit regulatory requirements that are included within banks’ conditions of registration, including minimum capital adequacy and liquidity requirements. The Reserve Bank’s approach aligns with the Basel<sup>2</sup> Core Principles, and is considered by the Reserve Bank to be conservative relative to standards imposed in many other jurisdictions.

---

<sup>2</sup> The Basel Committee on Banking Supervision provides a forum for regular cooperation on banking supervisory matters. It develops international standards on a range of banking supervisory matters.

15. The regulatory framework should ensure that the New Zealand financial system is robust to all but the most severe shocks, and therefore mean that the risk of a bank failure is low. However, the supervisory approach is not designed to completely eradicate the risk of failure.
16. The existing legal framework for managing the failure of a bank is contained within Part 5 of the Act. Sections 117 to 156 of the Act outline the powers that would be available to a statutory manager in the event that he/she is appointed to manage a failing bank. Amongst other things, these include the power to:
- place a moratorium over the bank’s activities;
  - suspend payment of money owing by the bank;
  - transfer assets of the bank to a new entity; and
  - sell or liquidate the bank.
17. These powers allow the statutory manager, on direction of the Reserve Bank, to pursue a number of resolution options to resolve the bank, including indirectly ‘forcing losses’ on to creditors. However, if used without the benefit of OBR pre-positioning, it is likely that these powers would only enable a full resolution if access to the bank was restricted for a prolonged period, and as such, can be expected to carry a significant cost to the wider economy.

## **OBJECTIVES AND ASSESSMENT CRITERIA**

18. The framework for the supervision of registered banks in New Zealand is governed by Part 5 of the Act. Section 68 of the Act requires the Reserve Bank to exercise the powers conferred on it for the purposes of:
- promoting the maintenance of a sound and efficient financial system; or
  - avoiding significant damage to the financial system that could result from the failure of a registered bank.
19. Whilst the second part of section 68 directly addresses the issue of failure of a registered bank, both parts are relevant in considering the appropriate response to the risks and costs associated with bank failure. This is because there are two key ways to address the cost of bank failure. First, the Reserve Bank could seek to minimise the costs that are associated with the failure of a bank, and second, the Reserve Bank could seek to reduce the probability of a failure occurring. In principle, the most effective way to avoid the costs associated with bank failures would be to structure the financial system in such a way so as to make bank failures impossible or near impossible.
20. One simple option for achieving this would be to increase capital to a level where the risk of failure is reduced to, or very close to, zero. Under the Modigliani-Miller proposition<sup>3</sup> (MM1), where the capital structure of the firm has no impact on the cost of capital, this could be achieved at no extra cost to banks, as the respective costs of debt and equity would fall as the proportion of equity increased, off-setting the impact of holding more relatively expensive equity instead of debt funding. However, the MM1 proposition only holds if there

---

<sup>3</sup> See Modigliani. F, Miller. M (1958)

are perfectly efficient markets. Whilst the Reserve Bank does not accept that the cost of equity is fixed regardless of capital structure, it does not believe that capital can be increased at zero cost in the short-run. This implies that under some circumstances increasing capital will increase costs to banks, which will be passed on to New Zealand consumers.

21. As a result, adopting such an approach could result in an outcome that is inconsistent with the first part of section 68, as it is unlikely to promote the maintenance of an efficient financial system. A key question is whether sufficient capital can be added to effectively address the risk of bank failure at a reasonable cost.
22. The only other alternatives to increasing capital would be to either structure banks in such a way as to remove their exposure to failure risk, or by providing explicit guarantee arrangements. The first of these options will have a serious negative impact on the functioning of the economy, in terms of the availability of finance to support investment. The costs of this can be expected to exceed the costs of infrequent bank failure events. The second option raises concerns around moral hazard for bank owners and managers, and can be expected to seriously reduce incentives for a competitive and efficient market. Such an outcome would not prevent bank failure scenarios occurring (indeed the moral hazard is likely to increase the probability of failure) and it would simply transfer the cost of failure to the guarantor.
23. In light of these factors, the Reserve Bank does not consider that a framework that removes all risk of bank failures is likely to be appropriate. However, frequent bank failures have costs for those directly affected by them, and for the country as a whole in engaging with international markets. As such, the optimal solution will be one that strikes a balance between limiting the risk of failure (whilst minimising moral hazard), and reducing the cost to the economy of a failure event.
24. In assessing the options the Reserve Bank has adopted a form of cost-benefit analysis. It has sought to quantify the key elements using a structured scenario analysis. Ideally a cost-benefit analysis is populated with observable empirical data. In the case of financial crisis, where you are dealing with assumptions surrounding likely government decision-making, the available data on which to base a cost-benefit analysis is more limited. As such, there is a strong element of judgement required, which we have sought to identify clearly in the summary of the assessments below.

## **REGULATORY IMPACT ANALYSIS**

25. The Reserve Bank first began considering options for responding to bank failure following the 1997 Asian financial crisis. This work led to the development of the Open Bank Resolution (OBR) policy. More recently, the global financial crisis has increased the focus internationally on options for responding to troubled banks. Much of this work aligns closely with the OBR in terms of its high-level policy objectives, although there are differences internationally that reflect the legal framework and structure of the industry in specific jurisdictions.
26. In considering the appropriate response to the financial crisis, there are a number of broad options that could be pursued in New Zealand. These are:

- Option 1: the *status quo* (including adoption of Basel III to strengthen resilience of banks);
- Option 2: significantly enhanced capital requirements;
- Option 3: introduction of living wills; or
- Option 4: introduction of OBR.

27. Each of these options is described briefly below, followed by a section that outlines the Reserve Bank's assessment of the options and preferred approach. It is worth noting that these options should not be considered as discrete options, and in many jurisdictions a combination of options is being considered as part of the overall response to the global financial crisis. The assessment of the options below considers the options as a potential package.

### **Option 1: The status quo**

28. Under the *status quo*, banks are subject to conservative supervision by the Reserve Bank that includes requirements to comply with capital and liquidity rules that are generally in line with, or tighter, than international benchmarks. Compliance with these requirements should therefore ensure that bank failures are infrequent events. In the event that a failure did occur, the primary tools for responding to that event, without public support, are the statutory management provisions that are summarised above.

29. In addition, the *status quo* is currently being enhanced by the introduction of capital requirements based on the Basel III framework. The Reserve Bank has consulted on its intention to implement at least the minimum standard for most of the new requirements.<sup>4</sup> Furthermore, the Reserve Bank is accelerating the implementation of the new requirements compared to the relatively lengthy transition periods envisaged by the Basel III framework. This will result in:

- an increase in minimum capital requirements;
- more conservative criteria for recognition of capital instruments for regulatory purposes;
- the introduction of a capital conservation buffer. This is a buffer of capital over the minimum ratio requirements that can be used to absorb losses during periods of financial and economic stress;
- the introduction of a capital counter-cyclical buffer which aims to ensure that banking system capital requirements take into account periods of excessive credit growth. This buffer is expected to be applied infrequently;
- requirements that ensure all forms of regulatory capital are capable of absorbing losses to support the viability of a distressed bank; and
- near full implementation of the Basel III framework from 1 January 2013, but with the conservation and countercyclical buffers applying from 2014, and a gradual phase-out of

---

<sup>4</sup> The Reserve Bank does not intend to implement a leverage ratio as it considers that this is a blunt tool that is not suited to the New Zealand financial system.

existing capital instruments that are not recognised under Basel III over the period to 2018.

30. Taken together, these new requirements should further strengthen the robustness of the New Zealand financial system at reasonable cost and reduce the risk of bank failure; however, they do not address the costs associated with any remaining failure risk.

### **Option 2: Increased capital requirements**

31. The Basel III minimum for total capital is 8% of risk-weighted assets (RWA) comprising: common equity tier 1 at 4.5%; total tier 1 of 6% and total capital at 8%.<sup>5</sup> One option for addressing the cost of bank failure is to increase the robustness of the system to shocks to such an extent that the probability of failure is reduced to zero or very close to zero. The simplest way of achieving this would be to significantly increase the level of capital that banks in New Zealand are required to hold. This would be done by setting minimum capital requirements well above the levels recommended in international standards. Capital would then be composed of the Basel III minimum requirements plus additional buffers (in excess of those listed above).
32. A number of countries have, or are considering, increasing capital ratios beyond the Basel III standard including Switzerland and the UK. Under the Swiss proposals, large domestic banks may be required to hold capital equivalent to around 19% of risk weighted assets.<sup>6</sup> The UK's Independent Commission on Banking (ICB) finalised its recommendations to introduce reforms that would improve stability and competition. The reforms included proposals on loss-absorbency and ring fencing, with the objective to raise banks' ability to absorb losses and make it easier as well as less costly to resolve failing banks, i.e. without taxpayer support.

### **Option 3: Living wills**

33. Living wills consist of recovery and resolution plans that can be used when a bank gets into financial difficulties. The top 30 global banks are being required to draw up living wills, as are many smaller institutions in various jurisdictions. While higher capital requirements reduce the probability of failure, living wills are designed to help restore a failing bank to health or to manage the adverse impact of a bank's failure.
34. Living wills are generally drawn up by the bank and the regulatory authorities. The recovery component of the living will is drawn up primarily by the bank while the resolution component is to be drawn up by the authorities. Resolution planning requires the involvement of authorities as capital and liquidity support may be needed in resolving the failing bank.
35. Under these living wills, various stress scenarios are developed and the appropriate responses or solutions identified, such as sale of parts of the business, management of systemically important functions that should be rescued or protected, and simplification of legal structures

---

<sup>5</sup> Basel III also includes proposals for additional buffers in the form of the capital conservation buffer and a countercyclical capital buffer.

<sup>6</sup> This would consist of 4.5% of risk weighted assets (RWA) as common equity, 8.5% of RWA as a capital conservation buffer (contingent capital) and a variable buffer of up to 6% of RWA.

to support the execution of the plans. The simplification of structures could ultimately lead to stand-alone subsidiaries of global banking groups with their own management, IT systems, payment platform, risk management, and internal controls.

36. Updating living wills would require massive amounts of data about assets, liabilities, counterparties, contracts, service providers, legal structures, IT systems, etc. The different treatment of depositors across a number of jurisdictions where a bank operates has to be addressed especially if the resolution involves cross border burden-sharing. The extent to which the subsidiary of a group would be able to tap resources from the other parts or members of the wider group would also have to be spelled out in the living will.

#### **Option 4: Open Bank Resolution (OBR)**

37. Authorities should have resolution tools to resolve financial institutions without causing systemic disruptions and without taxpayer support. For the Financial Stability Board (FSB), a core area of reform is reducing the moral hazard posed by systemically important financial institutions (SIFIs). The FSB's attributes of an effective resolution regime include providing authorities with tools "to act safely and quickly to resolve a firm in a manner that ensures the continued performance of essential financial functions and uninterrupted access of insured depositors to their funds, without causing a panic or destabilising the financial system, and without exposing the taxpayer to the risk of loss".
38. Undesirably, bailouts protect shareholders and quasi-equity holders from suffering full losses. OBR is an example of a creditor loss sharing mechanism and puts in place systems to enable creditors to share the losses associated with resolving bank failures, in addition to shareholders assuming the burden of first loss.
39. Under OBR, a bank would be open for (full-scale or limited) business within one business day from occurrence of an insolvency event and be able to provide depositors with full or partial access to their accounts and other bank services. Conceptually this is a straight-forward, however there are operational obstacles to make OBR work. Many of these operational issues are addressed through prepositioning the IT functionality to enable OBR to be executed within the necessary timeframe. Operational prepositioning is therefore a critical component of OBR.
40. From a broader perspective, a number of prudential requirements have led to structural changes during the past decade (e.g. the local incorporation and outsourcing policies), which support the operation of the OBR policy. For example, banks that take a significant level of retail deposits and/or come from countries with legislation giving home country depositors a preferential claim in a winding up, were required to incorporate. The policy is intended to help manage a crisis affecting systemically-important banks.<sup>7</sup>
41. With a branch, distinguishing the New Zealand business from other parts of the operation can be difficult. With a locally incorporated company it is clear which assets relate to the New Zealand business. Local incorporation also means that legislation in a bank's home country giving preference to depositors in that country would not apply here in the event of a failure.

---

<sup>7</sup> Whilst this policy was conceived with an eye ultimately on the future implementation of a creditor loss sharing mechanism, it would also represent an important element in any living will process that might be required in New Zealand.

42. Prior to the adoption of the outsourcing policy, several systemically-important banks had outsourced key management and IT functions to their foreign parent banks. The outsourcing policy was therefore designed to ensure that essential failure management capacities would be available to a statutory manager in NZ. The policy provides that the New Zealand bank board maintains the necessary legal and practical ability to control outsourced functions so that the bank can continue to provide critical services in a crisis situation.
43. The key processes of OBR can be broken down into the following phases:
- imposition of statutory management;
  - closure of access channels and freezing liabilities;
  - freezing a portion of pre-positioned customer accounts and freezing all other creditors' claims in full (overnight process);
  - bank re-opens for core transaction business and allows customers to access the non-frozen portion of their funds;
  - release of an equivalent portion of all other liabilities in due course;
  - release of additional frozen funds, if available, following more accurate assessment of losses; and
  - decisions on the bank's final resolution.
44. A bank can exit statutory management in several ways. They can be:
- restructured to become a stand-alone bank with creditor shareholders or under temporary public ownership;
  - sold to new owners;
  - 'repurchased' by the parent; or
  - liquidated.
45. The outcomes sought to be achieved under OBR are similar to the bail-in within resolution regime currently being operated<sup>8</sup> or discussed in other jurisdictions. Bail-in within resolution allows for creditor recapitalisation via an exchange of claims for equity in the distressed firm, or transferring certain assets and liabilities and other viable operations to a bridge institution or a 3rd party entity. The latter can be complemented by an exchange of claims against the failed bank for equity in the bridge/3rd party entity. The power to trigger bail-in and the extent of the bail-in are vested in the relevant public authority.
46. In the case of the United States, the Federal Deposit Insurance Corporation (FDIC), in its capacity as receiver of failed banks, has an OBR-like mechanism whereupon on the event of failure, banks have processes that would:
- allow automatic posting of provisional holds on liability accounts, including deposits, in any percentage specified by FDIC on the day of failure;
  - allow automatic removal or release of the provisional holds; and

---

<sup>8</sup> See for example, the FDIC arrangements in the US and the new framework operating in Denmark.

- provide the FDIC with deposit account data in standard format.
47. Provisional holds, once posted, allow access to remaining balances the day following failure, yet guard against the possibility of an uninsured depositor or unsecured general creditor receiving more than allowed under the deposit insurance or depositor preference statute. (The FDIC may immediately distribute receivership proceeds representing advance dividends at failure, based on the expected recovery to uninsured depositors).
  48. Under OBR, unsecured liabilities that rank equally among themselves (including deposits) will have a portion frozen. There is therefore a large base, which eventually could be used to recapitalise the bank. The initial freeze represents the portion of the claim that is expected to be required to cover losses plus a conservative buffer. However, the final losses to creditors only crystallise at the end of the resolution process, for example through transfer of the business to a bridge bank or another entity or when the bank or its bad assets are liquidated. The statutory manager cannot directly and immediately impose the losses on creditors. The final resolution of the bank ultimately determines the extent of the burden-sharing imposed on creditors.
  49. The freezing of unsecured creditors' funds would only be exercised if imposing full losses on equity, quasi-equity capital holders and subordinated creditors was considered unlikely to generate sufficient funds to cover all losses with a sufficient buffer. The scope for application of the freeze should ideally be as wide as possible to achieve the widest distribution of losses among unsecured creditors that rank *pari passu* with each other.

## ASSESSMENT OF OPTIONS AND PREFERRED APPROACH

50. As outlined above, the *status quo* has been assessed on the basis of Basel III capital enhancements being put in place in a timely manner. These changes can be expected to have an impact on the stability of the financial system by reducing the probability of a bank failure. However, despite these changes, there will remain a small, but real risk that a New Zealand bank may fail.
51. Whilst the current legal arrangements provide all the necessary powers to be able to respond to a bank failure in principle, under most circumstances this is likely to result in significant costs to the economy. As a result, under the *status quo* there is likely to continue to be circumstances where there will be strong pressure on the government to provide support, either directly, or indirectly to facilitate a solution. For this reason, the *status quo* does not adequately address the problems associated with bank failures, particularly the moral hazard arising from the expectation of public support.
52. Option 2 seeks to address this issue by minimising the risk of failure to such an extent that the government will be content to bear the risk of being exposed to those pressures in the reduced number of circumstances in which failure might occur.
53. The Reserve Bank has assessed the costs and benefits of tightening its capital requirements to the Basel III standard. This analysis concluded that the marginal net benefits of increasing capital decline as capital levels rise and that increasing capital beyond the Basel III minimums would deliver only relatively modest benefits. Moreover as modelling in this area is subject to considerable uncertainty it is not clear that these modest benefits would be realised.

54. The diminishing marginal returns from adding more capital means that the optimal probability of failure is unlikely to be zero. As a result, the government would continue to be exposed to pressure to provide public support should a bank failure event occur. A low-cost mechanism to apply losses to owners and creditors will therefore continue to be necessary.
55. Whilst option 2 (increased capital requirements) reduces the probability of failure, option 3 (living wills) is primarily intended to help manage and reduce the adverse impact of a failure, by increasing authorities' understanding of the structure and operations of the bank, streamlining the structure where appropriate, and identifying pre-determined actions to be taken to address a stress and the triggers for initiating those actions.
56. An effective living will process can therefore be expected to simplify the process of dealing with a failing bank. However, these benefits are maximised for globally significant banks with complex structures and cross-border interactions. Most New Zealand banks either operate as stand-alone domestic institutions, or as subsidiaries of Australian banking groups. The benefits from living wills (in the form proposed for the globally significant banks) are therefore likely to be smaller in New Zealand than in some other jurisdictions. This is reinforced by a number of policies previously introduced in New Zealand including outsourcing and governance, which were designed to ensure that banks in New Zealand were robust and capable of operating as stand-alone entities, as might be expected under a living will approach.
57. Where there are potentially further benefits from living will arrangements is in the identification of trigger points that act as early warning indicators that a bank may be getting into difficulty. The process would require the bank's owners and managers, and the regulatory authorities, to jointly develop key performance triggers and monitor against those. In addition to providing early warning, such arrangements might also be expected to strengthen incentives on banks to avoid getting into distress in the first place.
58. Whilst there can be expected benefits from the living wills process, it alone cannot provide an effective solution to the challenge of resolving a failed entity. One important element in living will planning is to identify parts of the business that can be sold to stabilise and strengthen the entity. However, bank failures can be expected to occur during times when the economy is weak, therefore it is unlikely that a distressed entity will be able to realise full value for any assets that it seeks to sell under its living will. Whilst this will have the effect of shrinking the institution, it would therefore also risk magnifying the problems with the remaining assets.
59. Whilst options 2 and 3 may have some merit as part of a wider prudential supervision framework, neither is designed to ultimately address the costs and risks that are associated with the failure of a bank on their own. Failing to address this issue will result in the continuation of the implicit guarantee that has been assumed to apply to banks in the past, with the resulting moral hazard issues that are associated with it. On that basis, the Reserve Bank considers it essential that the necessary arrangements are put in place to implement option 4 (OBR).
60. Ultimately, the most important question in any bank failure event is who bears the losses that have been incurred. From a theoretical perspective, losses should rightly fall on those that have opted to invest in the firm, and enjoyed the benefits of any past good performance. During the financial crisis many governments took the decision to provide guarantees or

direct support to troubled financial institutions. This was motivated by a number of concerns, but it was, in part, a symptom of the lack of a robust mechanism through which losses could be quickly and efficiently allocated to the appropriate parties. Whilst shareholders have incurred significant losses during the financial crisis, one of the outcomes has been that the risks that depositors and wholesale lenders (including those with subordinated claims) should rightly have borne have fallen instead on taxpayers. Creditor loss sharing mechanisms such as OBR seek to ensure that this is not the case.

61. OBR allows authorities to eliminate shareholders interests, and freeze a proportion of unsecured creditors' claims to be available to bear losses. Whilst liquidation would also ultimately achieve this, the pre-positioning element ensures that access to the unfrozen portion of claims is restored within hours, maintaining liquidity in the financial system and mitigating the scale of potential spill-over effects to the wider economy.

### **Assessment of the impact of OBR pre-positioning**

62. The Reserve Bank has analysed the potential impacts of OBR to assess the costs and benefits of the policy. The following sections summarise that analysis, outlining the key parameters that have been modelled, the high-level modelling approach, the model inputs and the outputs generated by a central case scenario.
63. In any modelling exercise there are judgements to be made on the specification of the model and the inputs that feed into it. These challenges are enhanced when the model assesses unobservable events such as those modelled in this exercise. However, the Reserve Bank considers that the model that it has developed is well specified and built on solid theoretical foundations. The input assumptions draw on conclusions from international literature and existing Reserve Bank models, and where available, direct cost estimates from banks.
64. While it is not possible to predict with any certainty a precise dollar value impact of the policy, the Reserve Bank is satisfied that the outputs generated by the model are sufficiently robust to support the implementation of the policy.

### Key parameters

65. Implementing the OBR policy can be expected to have an impact on the cost of crises through a number of channels. Specifically the model seeks to identify the scale of the reduction that OBR can be expected to have on the following factors:
- The impact of banking crises on GDP;
  - The probability of a banking crisis occurring;
  - Transfers to bailout foreign depositors/investors;
  - The cost of recapitalising banks; and
  - The cost of government debt funding from foreigners after a crisis.
66. These impacts, taken together, result in a net reduction in the cost of banking crises, which will represent the primary benefit from the introduction of the OBR policy. Against these benefits, introducing the OBR will result in a number of costs, including:

- Build costs for pre-positioning the required functionality;
- The costs of maintaining OBR capability; and
- Increased bank funding costs from foreigners.

### Model structure and assumptions

67. The high-level objective of the model is to analyse the impact of requiring banks to pre-position for OBR. It does not attempt to provide any assessment of the appropriate policy response to a particular, specific crisis event. Instead, it analyses the potential costs of failure under two scenarios, first when government chooses from a range of options that does not include OBR, and second when the range of options available includes OBR. It is the net of these two assessments that represents the output of the model.

### *Banking system structure*

68. It is assumed that there is a single bank, or that if there is more than one bank they are perfectly homogenous (i.e. if there is a failure, they all fail at the same time). However, the model is equivalent to a heterogeneous banking system model if the loss given crisis is proportionate to the proportion of banks in a failure situation.

### *Policy response options and loss given crisis (LGC)*

69. The OBR is intended to represent an option for the government to use in a failure event if it is considered the appropriate response, rather than as a default option. As a result, the model recognises that there a range of policy options available, and that these include options that will, with hindsight, be proven to be good or bad choices.
70. The model generates an estimate of the net benefit (measured on a net present value basis) generated by implementing OBR by calculating an overall cost of bank failure with and without OBR available and subtracting one from the other. It does this by attaching probabilities to each possible policy response. These probabilities are necessarily judgement-based, but in setting the inputs, consideration was given to the following factors:
- There is a higher probability of a parent or market support with the OBR option available because it gives the New Zealand government another credible alternative to bailout, thus strengthening incentives for a private sector solution;
  - There is a higher probability that the government will choose OBR (if it is available) rather than ordinary statutory management, as OBR should ‘buy time’ for the government to constrain the impact on markets and the wider economy of the failure situation;
  - The proportion of good OBRs (i.e. where OBR reduces the cost of crisis) to bad OBRs (i.e. where the cost of crisis is the same as under an ordinary statutory management) is judgement based, but is relatively high assuming that preparedness and execution by the Reserve Bank and other government agencies is good.

- The proportion of good bailouts<sup>9</sup> (welfare positive) and bad bailouts (welfare negative) varies depending on the availability of OBR. This reflects the assumption that with credible alternatives, the government is likely to be in a position to make better investment decisions (i.e. be less likely to pursue a bad bailout).
71. Each of the policy responses has a different loss-given-crisis associated with it. The central input for this parameter is calibrated to be broadly aligned with the figures used in the Reserve Bank’s model for calculating optimal capital estimates under Basel III.<sup>10</sup> It is assumed that a financial crisis will have an impact equivalent to 20 percent of GDP as a base case. This is consistent with the lower end of estimates for the cost of crisis currently seen in the international literature on optimal capital.<sup>11</sup> Were we to take higher estimates of the impact on GDP, this would increase the benefits of implementing OBR under the model.
72. From this central input, the cost of crisis is assumed to be sensitive to the kind of crisis and the way it is managed (i.e. the policy responses outlined above). The central input has been adjusted to reflect the following considerations:
- Market solutions: The incipient crisis will still have an impact on GDP, although this will be reduced if the bank manages to raise new capital to avoid an outright failure event. The risk appetite of banks and customers will be affected and there is likely to be a hangover effect from the conditions that preceded the crisis. In addition, smaller crises are likely to be more amenable to market solutions. Overall, the GDP impact will be materially lower than the base case assumption;
  - Interventions: Good bailouts are assumed to have a smaller impact on GDP than bad bailouts. OBRs (even good ones) are assumed to have a negative GDP impact at least as high as a bad bailout given that OBR is likely to be more disruptive to markets than a bailout. A bad OBR is assumed to have the same costs as liquidation through an ordinary statutory management.
73. Table 1 summarises the crisis response options and their associated impacts on GDP under the Bank’s central case.

---

<sup>9</sup> A good bailout occurs if there is a relatively small hole in the banks’ balance sheet, preserved franchise value, and a reduction in the damage to GDP as a result of the bailout (versus failure) that outweighs the moral hazard and investment costs associated with the bailout.

<sup>10</sup> The Basel III cost benefit analysis adopts a range of 10 and 20 percent of GDP depending on the size of the crisis. As the central case here relates to a failure event, the model adopts the top of this range.

<sup>11</sup> See for example BCBS (2010) “An assessment of the long-term economic impact of stronger capital and liquidity requirements”

**Table 1: Crisis resolution options**

Outcome		Probability	GDP impact (%) <sup>12</sup>
No OBR	Market recapitalisation	0.30	12.5
	Bailout (Good)	0.20	17.5
	Bailout (Bad)	0.40	20
	Statutory management	0.10	25
With OBR	Market recapitalisation	0.40	12.5
	Bailout (Good)	0.15	17.5
	Bailout (Bad)	0.10	20
	OBR (Good)	0.275	20
	OBR (Bad)	0.075	25

### *Moral hazard and probability of default*

74. The implementation of OBR can be expected to have a number of impacts on moral hazard. First, it can be expected to sharpen *ex ante* incentives to act prudently, thus reducing the probability of a crisis occurring. In addition, there will be further impacts arising *ex post* depending on the government's response to a failure event occurring when OBR is available.
75. These impacts have been modelled by adjusting the probability of default (PD) assumption (in the context of this model probability of default means probability of failure). The base assumption for PD is 0.75 percent. This draws on estimates of PD from the Reserve Bank's Basel III capital model. The *ex ante* impact captures the effect that the knowledge that the OBR is in place would have on the bank's risk appetite. This has been modelled by decreasing the PD by 0.05 percent for the model runs where OBR is available.<sup>13</sup>
76. The secondary impacts on the default rate relate to behavioural changes that might be expected after a failure event. If OBR were used, this can be expected to further sharpen incentives, resulting in another small reduction to the PD. On the other hand if OBR is not used and there is a bailout, this can be expected to change the perception of the likelihood of future bailouts, increasing the PD. This effect is also likely to be relatively muted as any bailout can be expected to be accompanied by a further tightening of regulatory requirements.

<sup>12</sup> The model multiplies the economic cost of a failure by a factor which is intended to reflect society and government's risk aversion, whereby increased protection against deep economic downturns can be seen as a form of insurance which society is prepared to purchase even when the premium exceeds the expected dollar payout because of the risk reducing impact of those payouts. Worse outcomes are multiplied by a higher factor as they represent more disruptive events. This is consistent with the revealed preference in the New Zealand life insurance market where average premiums are over twice expected payouts to policyholders for low probability but high impact events.

<sup>13</sup> The impact is assumed to be small, reflecting the fact that Basel III is assumed to be substantially binding and effective, thus the potential for additional, voluntary tightening of credit standards is assumed to be relatively minor.

### *Bank funding costs*

77. To date, there has been no observable increase in bank funding costs that can be directly associated with the implementation of the OBR policy.<sup>14</sup> However, theory suggests that funding costs should increase slightly to reflect the increased expected losses being borne by investors due to the lower probability of bailout and a higher chance of losses under OBR. This has been modelled by making a judgement on the increased expected losses that investors might face as a result of the lower probability of bailout, which can be expected to be priced into bank funding costs.<sup>15</sup>
78. The additional cost is only applied to the proportion of funding that is assumed to come from overseas, as increases in domestic funding costs represent a transfer payment.

### *Government borrowing costs*

79. In principle, government borrowing costs should be reduced following the implementation of OBR prepositioning by banks, to reflect the reduced risk of a bailout. The precise impact is likely to be marginal, and is therefore difficult to model accurately. The model does not include any *ex ante* impact on government borrowing costs. This represents a conservative assumption. Were we to include a reduction in baseline government debt costs, this would result in an increase to the benefit of implementing OBR.
80. The model does include an impact on government borrowing costs that would be incurred following a bailout. It is assumed that the money to fund a bailout would be borrowed offshore, resulting in an additional external debt burden going forward, with a marginal increase in the government's borrowing rate<sup>16</sup> to reflect the risk associated with an increase in indebtedness. This creates a benefit under the model due to the reduced probability that bailout will be adopted as the policy response when OBR is available as an alternative.

### *Build and maintenance costs*

81. Build and maintenance costs have been estimated with reference to the consultation submissions provided by banks and subsequent engagement. The model assumes an initial investment of \$20 million to pre-position the required system changes to implement the OBR functionality across the industry.<sup>17</sup>
82. Under the OBR policy, banks will be required to demonstrate on-going compliance with the requirements. This means ensuring OBR readiness forms part of banks' on-going business continuity programme. The costs of this are expected to be low. Furthermore, there may be

---

<sup>14</sup> The OBR policy has been factored into ratings assessments to some extent, but the impact has been negligible. For example, Moody's removed any assumed government support from its ratings of subordinated debt, but currently retained it for senior unsecured debt.

<sup>15</sup> This calculation includes a risk multiplier to reflect increased rewards for unexpected loss or risk taking. This has the effect of reducing the benefit of implementing the OBR in the model.

<sup>16</sup> The base scenario assumes a very small increase of 0.5 basis points. Adopting a higher figure would have the effect of increasing the benefit of implementing OBR under the model.

<sup>17</sup> The model assumes that OBR applied across the industry. The build cost assumption is based on the costs for pre-positioning a large subset of the industry, however we have based the assumption on the top end estimates provided by the banks that are being required to pre-position. As such, it can be expected to adequately reflect the cost of implementing OBR in the form modelled in this exercise.

some ancillary benefits to banks from gaining a greater understanding of their internal systems from the business continuity planning perspective. Overall, a net cost of \$1 million per annum for on-going maintenance has been assumed.

### Key outputs

83. The model calculates an overall estimate for the impact of implementing OBR by comparing the estimated cost of failure without the OBR regime in place with the estimated, cost with the OBR regime in place. Table 2 presents the net impacts of implementing the OBR. All figures are presented in NPV terms (\$m).<sup>18</sup>

**Table 2: Impact of implementing OBR**

<b>Factor</b>	<b>Status Quo</b>	<b>OBR available</b>	<b>Difference</b>
Economic cost	5492	4764	728
Bailout cost	1703	693	1010
Government debt service cost	413	172	241
Bank funding cost	282	936	-653
Maintenance cost	0	10	-10
Build cost	0	20	-20
<b>Overall NPV</b>			<b>1294.5</b>

### Conclusion

84. As noted above, there is uncertainty around the estimates of cost and benefit for the OBR policy, given the judgement required to determine input values. However, the Reserve Bank considers that the model provides a robust representation of the directional impact that the introduction of the OBR can be expected to have, and the relative scale of the projected benefit provides a strong argument that the implementation of OBR will have a positive net impact on the New Zealand economy. Based on a plausible scenario analysis, it is estimated that the benefits could exceed \$1bn in net present value terms.

85. The outputs generated by the model display a reasonably strong level of stability to changes in input values. While the projected NPV is sensitive to the input assumptions, the model generates positive benefits from the implementation of OBR under all plausible combinations of input.

## **CONSULTATION**

86. The Reserve Bank has carried out extensive consultation during the course of the development of the OBR policy. This has taken the form of both formal public consultation, and extensive private engagement with the industry. The key elements of the consultation process can be summarised as follows:

<sup>18</sup> The net present value is calculated using a discount rate of 10%.

- Initial engagement with banks in 2000 to discuss options for responding to a bank failure event and to develop the initial thinking on the OBR model;
  - In 2003/04, the Reserve Bank engaged one of the major banks in New Zealand to undertake a pilot exercise, funded by the Reserve Bank, to explore further the practicalities and costs of implementing a policy such as OBR. This exercise acted as a proof of concept, and established that bank systems could be enhanced to provide the necessary functionality at a reasonably low cost;
  - In the period between the identification of the OBR policy, and the recent work on implementation of pre-positioning requirements, the Reserve Bank put in place a number of related policies that would support the introduction of an effective bank resolution framework, including outsourcing and governance requirements, and the local incorporation policy. Each of these developments was accompanied by its own detailed consultation process;
  - In March 2011, the Reserve Bank published a consultation document on the pre-positioning for OBR, seeking feedback on the introduction of system changes that would be necessary to facilitate the full implementation of the OBR policy. The Reserve Bank extended the deadline for responding to this consultation from 30 June 2011 to 30 September 2011 to allow the industry more time to consider the implications of the proposed changes;
  - Between May 2011 and December 2011, the Reserve Bank hosted multiple industry-wide seminars and workshops in Wellington, Auckland and Sydney to provide further detail to the industry on the requirements of the OBR policy and to allow a forum for discussing industry-wide technical concerns to be aired and addressed;
  - In November 2011, the Reserve Bank wrote to all affected banks to provide more detail on the sorts of material that banks were expected to provide in their implementation plans. At this time, in response to feedback from the industry, the Bank also announced an extension to the deadline for providing implementation plans from mid-January 2012 to end of February 2012 to facilitate the development of robust plans; and
  - Between November 2011 and March 2012, the Reserve Bank held at least one bilateral discussion with each bank to discuss any institution specific concerns that were arising during the development of their implementation plans.
87. The engagement with industry has been instrumental in refining what is a relatively simple high-level concept into the detailed technical specifications that will be required to deliver the necessary outputs. This process of engagement will continue throughout the implementation process (described below) with extensive engagement expected to continue between the Reserve Bank and affected banks, both bilaterally and on an industry wide basis.
88. There has been general acceptance among the industry that the proposed approach is consistent with the direction of global regulatory developments. The primary concerns from industry have centred on the need to ensure effective communications around the policy, the challenge of implementing complex system changes under relatively tight timeframes, and the importance of having all banks implement OBR at the same time.

89. The Reserve Bank has acknowledged the importance of communication and has initiated the process of informing the investment community in New Zealand and overseas. To date, this has included the publication of the consultation document, detailed Q&A material on the policy, a bulletin article and progress updates in its bi-annual Financial Stability Report. The Reserve Bank is continuing to engage with banks to identify options for enhancing the communications on OBR, particularly for international wholesale investors. In response to a suggestion in one industry wide forum, the Reserve Bank has undertaken a detailed mapping of the OBR policy against the FSB principles for effective resolution.<sup>19</sup> This assessment will be published in due course and is designed to act as a reference document for New Zealand banks when they engage with international investors.
90. The Reserve Bank has accepted that there is a strong case for having all banks complying with the OBR policy at the same date to avoid any unintended implications for competitive neutrality. It has also recognised that some banks have legitimate reasons for having difficulty in meeting the original project deadline. For these reasons it has provided an extension to the deadline for compliance. This is discussed in the next section.

## **IMPLEMENTATION**

91. The OBR policy is being implemented in two stages. The first stage involved the preliminary design work, culminating in the submission of implementation plans to the Reserve Bank at the end of February 2012. One important element of these plans was an assessment of the implementation cost that has informed the cost benefit analysis for proceeding to stage two. In stage two, the banks will undertake detailed design work, implement system changes and carry out the necessary tests to ensure that they are able to carry out an OBR according the requirements specified by the Reserve Bank.
92. The Reserve Bank initially proposed a twelve month transition period for completing stage two of the implementation. As noted above, a number of banks indicated that they would not be able to meet the proposed deadline. In light of the importance attached to aligning the implementation of OBR across the industry, the Reserve Bank has extended the deadline to 30 June 2013. This extension should benefit the overall robustness of the framework by providing all banks with more time to develop and test their solutions.
93. The Reserve Bank has also sought to minimise implementation risks through the high profile that is being attached to the policy. OBR has been identified as a key strategic priority for the Reserve Bank with a designated working group and steering group established to manage and oversee the implementation. On-going bilateral discussions will be held with all banks throughout the implementation process to discuss progress and issues any technical arising.
94. Whilst the implementation will involve systems investment for all affected banks, the Reserve Bank has sought to minimise costs where possible by seeking to accommodate existing upgrade plans within the implementation timetable and allowing for bespoke solutions. The Reserve Bank has not insisted on specific system solutions; rather it has identified the high-level core performance requirements and allowed banks to identify solutions that fit best with their existing system configuration.

---

<sup>19</sup> [http://www.financialstabilityboard.org/publications/r\\_111104cc.pdf](http://www.financialstabilityboard.org/publications/r_111104cc.pdf)

**MONITORING, EVALUATION AND REVIEW**

95. Ultimately, the OBR policy will be implemented by requiring banks to attest to compliance with the policy as part of their conditions of registration. This is likely to include a requirement to demonstrate on-going compliance as part of an annual business continuity process to ensure enduring compliance. Each banks process for introducing new products will also need to include a step for assessing the product against the requirements of the OBR policy to ensure that the liability has the appropriate treatment in the event of a failure.
96. The policy will be reviewed consistent with the regulatory impact analysis requirements in section 162AB(1)(b) of the Act.