

M Jackson

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Attn: Ian Woolford
Manager, Financial Policy
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Reserve Bank of New Zealand
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Dear Mr Woolford

Subject: Issues Paper: Review of the Capital Adequacy Framework for banks

Thank you for the opportunity to provide comments on the Issues Paper.

High Level Objective

The Reserve Bank of New Zealand (RBNZ) says in paragraph 134 that it is seeking from this capital requirements review to *“agree a capital regime that maintains a very high level of confidence in the solvency of the banking system, while avoiding unnecessary economic inefficiency.”*

The equivalent objective from the Federal Reserve is that *“banks maintain strong capital positions that will enable them to continue lending to creditworthy households and businesses even after unforeseen losses and during severe economic downturns.”* By comparison the deficiencies of the RBNZ goal would seem to be:

- The goal erroneously supposes that there is currently “a very high level of confidence” in the banking system to maintain: - as a depositor without deposit insurance and exposed to OBR, and seeing large volumes of easy credit being applied preferentially to unproductive investment, that is enabled by low capital requirements for banks, I fail to see how there is any “high level of confidence” to maintain;
- It suggests that solvency alone is an adequate outcome, whereas New Zealand will need banks which continue to function in their role of lending to productive businesses following an external shock. The capital required for continuation of function would be much higher.
- It suggests that there is some kind of economic inefficiency that is necessary or unavoidable.

In its assessment of the financial health of New Zealand’s financial system implicit in the RBNZ’s objective, the RBNZ seems to be signalling that it is looking at only a slight improvement in capital to support New Zealand’s banks. Such a slight improvement would fall significantly short of “unquestionably strong” that the APRA is seeking of Australian banks. Moreover, the IMF has suggested that New Zealand should adopt a standard that is somewhat higher than the APRA standard.

Nevertheless the RBNZ objective does focus on the banking system and seemingly does not limit itself to only examining the ability individual banks to remain solvent after “external shocks”. This is important because what may be adequate for an individual bank may not be adequate for system stability of the banking system as a whole. It is therefore somewhat disappointing that the Issues

Paper has not examined how the banks as a system can interact between each other to create a financial shock by themselves, endogenously, without any external shock required. We are seeing this system interaction at the moment, with credit growth growing unsustainably, which will lead to either self-induced financial crisis, or if we are fortunate perhaps we will only suffer economic stagnation. I provide my comments in this submission applying a system perspective and with that perspective it is apparent that current framework for capital requirements is flawed and inadequate to ensure financial stability and avoid stagnation, notwithstanding that the current framework may be adequate for survival of individual banks.

Response to Questions

RBNZ has invited responses to its four questions set out in its review on page 41. Accordingly, I provide in the four attachments to this letter my responses to those four questions.

Summary

The current requirements for capital structure of banks have incentivised and enabled excessive credit growth in unproductive sectors, particularly in the housing sector, and consequently the average depositor is exposed to risk he has not bargained for, and for which he is not compensated. Such lending creates system instability, and New Zealand is now at high risk of financial crisis and/or prolonged financial stagnation.

The IRB approach to assessing credit risk is fundamentally flawed and unreliable because of the “reflexivity” problem. As a result, for simplicity, transparency and economic efficiency a TLAC regime would seem more efficient, as follows:

- the level of the *minimum total capital ratio* (Total capital = CET1 + AT1 + Tier 2) should be set greater than 19%;
- minimum *leverage ratio* (CET1) should be set greater than 6%.

The economic efficiency benefits of Tier 2 capital have not been adequately considered by the RBNZ. Such efficiency will be realised in the circumstance where a sufficiently high *minimum total capital ratio* requires an individual bank to choose between increasing Tier 1 capital or increasing Tier 2 capital.

Thank you for consideration of my submission. I trust that the Reserve Bank will consider the interests of depositors in its future decisions on the capital adequacy framework.

Yours faithfully

M Jackson

Attachment: Question 1: Important topics relating to capital adequacy that have been left out

Reflexivity Problem is fatal for integrity of IRB approach to assessing credit risk

According to George Soros's theory of reflexivity, players' decisions influence market changes as much as market changes influence players' decisions. Reflexivity has been defined as "a nonlinear relation in which cause and effect are interdependent: the thoughts and actions of agents influence the operation of the system, which, in turn, influences the thoughts and actions of agents." The relevance of the reflexivity concept to financial stability is that if market data is applied to changing system parameters, those parameters then influence the incentives acting on players in the market, so changing their behaviour, which then undermines the relevance of the original data. Because of the reflexivity effect, risk management processes do not simply estimate risks, but can create risk, even to the extent they become systemic problems. In other words, because of the resultant distortions in the allocation of credit, what is assessed as safe ends up being more dangerous to the bank system than what is assessed to be risky. This is the type of phenomena identified by Minsky whereby financial stability, by inviting overconfidence, breeds instability.

As former Vice Chairman of the FDIC Thomas Hoenig observes in relation to risk weights:

- *"If risk weights could be assigned that anticipate and calibrate risks with perfect foresight, adjusted on a daily basis, then perhaps risk-weighted capital standards would be the preferred method for determining how to deploy capital. However, they cannot. To believe they can is a fallacy that puts the entire economic system at risk.";*
- *"An inherent problem with a risk-weighted capital standard is that the weights reflect past events, are static, and mostly ignore the market's collective daily judgment about the relative risk of assets."*

The reflexive nature of financial risk data used to derive risk-weights means that, while it may perhaps be useful for the banks themselves in managing their VaR, it is an inherently flawed and dangerous practice when applied for the regulation of a banking system. The reflexivity problem means that if the IRB approach is made available to banks it should be highly constrained and monitored, with adequate floors, particularly for lending at high loan-to-value ratios (LVR). Risk weight floors need to be selected by the RBNZ with the knowledge that there is risk on the financial stability of the entire system if the risk weights for residential lending are not set at adequate levels (e.g. based on consideration of such factors as the elasticity of housing supply, and the LVR of the originating loan).

The misapplication of statistics to circumstances where there are reflexive effects has already created three major financial crises (1987 Black Monday, 1998 LTCM bail-out, the 2008 Financial crisis): - the RBNZ should not allow New Zealand to make the same mistake.

Capital Requirements and economic welfare

There is a lack of discussion in the Issues Paper concerning economic welfare effects caused by credit booms. Credit booms are caused by inadequacy of bank capital because such inadequacy incentivises and enables rates of credit growth greater than the rate of growth in incomes.

As the RBNZ has previously identified:

- credit booms tend to skew the economy, diverting resources away from the tradables sector towards the more domestically-oriented parts of the economy (construction,

consumption and government spending).

- Productivity growth - the basis of sustained future income growth - is eroded during credit booms.

The levels of debt and housing prices relative to income makes the economy vulnerable, and has social impacts that the RBNZ seems disposed to ignore, such as:

- Disproportionate investment of intellectual capital toward property investment;
- Misdirection of the country's credit (and borrowed offshore funds) towards activity that is unsustainable and causing negative welfare effects, and away from productive enterprises;
- Losses to savers as a result of financial instability (whether by capital losses or lower interest rates imposed by the RBNZ).
- Reduces incentives for saving by rewarding speculation, leading to increased reliance on offshore funding by New Zealand banks with its attendant risks .

The balance sheet of New Zealand banks show an enormous imbalance in favour of lending to residential property over productive businesses¹. It is clear that incentives arising from current capital regulation settings (risk weightings) cause banks to prefer lending to the residential sector to the cost of the productive sector, resulting in lower productivity, and high levels of borrowing from overseas. The boom in private credit over the last three to five years is unsustainable and will lead to financial crisis or economic stagnation unless the perverse incentives of current capital regulation settings are corrected.

¹ More than 60 percent of bank lending is to the household sector.

Attachment: Question 2: Important and relevant issues that have been omitted.

Inefficient Intermediation between Depositors and Banks

The role of banks is typically depicted as being intermediaries because they resolve the “adverse selection problem”. Adverse selection is the problem that arises for a lender when the lender has difficulty assessing the creditworthiness of a prospective potential borrower. Typically the bank in the role as intermediary facilitates borrowing and lending by: lowering transaction costs, by having expertise in assessment of credit risk, and by reducing risk by diversification with scale.

However there is another problem with adverse selection and that is between depositors as lenders of funds to the banks themselves. Depositors cannot easily gauge the quality of a bank’s assets² nor readily ascertain the adequacy of their capital. In addition, depositors are unable to negotiate interest rates that reflect the risk of lending against the banks assets. As explained in the following, this inability arises because banks borrow money from depositors in a process that is very different from the way any other firm can borrow money.

A bank accepts loans in the form of deposits from its customers in two main ways. The primary way and most well-known is by attracting and accepting transfers of deposits from other banks. This is a transfer of existing liability between banks (that operates together with transfer of rights to matching liquid assets by the payments system).

But there is an important second way, and that is a bank may authorise a loan for a borrower, and with the creation of that asset with its promise of interest payments to the bank, the borrower receives from the bank an asset in the form of a deposit being a liability to the bank.

There is no difference in the status of the deposit in either case except that, in the first case, the bank has attracted the deposit and associated liquid assets against which it may write a matching loan, and in the second case, the bank has attracted a lending opportunity against which it writes a matching deposit.

It is the second mode of acquiring debt, when combined with the payments system, that puts banks in a position that is highly advantaged relative to any other firm. When a bank increases its leverage, which it can do by the simple act of paying itself higher dividends or writing new loans, every depositor must accept the increased risk. Unlike other lenders lending to other firms, in the second mode of acquiring debt, there is no point that the depositor can require priority or negotiate pricing terms that reflect his risk. In fact, in the second mode where the bank creates a new deposit, the new depositor is not interested in negotiating terms of his lending by deposit, he is focused on the terms of his borrowing.

The result for the system is that depositors are not compensated for the riskiness of a banks assets. This effect is profound and leads to systematic underpricing of financial risk in the whole system, and incentivises banks to maximise their leverage. Unless bank capital requirements are modified, this underpricing of risk in the intermediation between lenders and borrowers is highly inefficient for the national economy.

² New Zealand banks are not required to disclose their loan underwriting standards, and the evidence suggests their underwriting standards are grossly inadequate: - see the RBNZ’s May Financial Stability report of continuing high rates of lending by banks at very high DTI ratios, to the extent that RBNZ has said that it poses a risk for financial stability and consequently DTI limits may need to be applied.

Finally, for reasons outlined above, because of mispricing of risk, I believe the high rates of credit growth in New Zealand are reflective of the inefficiency of intermediation and the underpricing of risk.

TLAC Approach will increase Intermediation efficiency

To increase intermediation efficiency between depositors and banks, capital requirements must be structured such that at some point in the process of a bank increasing its leverage there is the opportunity for at least some lenders to the bank, at least at the margin, to negotiate fair arms-length commercial terms to reflect the risk of their position. Such a dynamic could be developed by requiring the minimum *total capital ratio* to be set much higher than the minimum *Total Tier 1 capital ratio* which could be set by “mainstream” conventional methods. A bank could then choose as to whether it wanted to fund the difference by (CET1) equity or by Tier 2 capital. Holders of Tier 2 instruments have powerful incentives to closely scrutinize the risks of their investments, and would seek adequate risk pricing. While having to borrow in this more conventional way could constrain the growth of banks, such constraint will be efficient and apply a market discipline by a contestable process that ordinary depositors simply cannot achieve under the current capital framework.

Because a requirement for banks to choose between Tier 1 and Tier 2 capital will be conducive to financial efficiency, any increase of TLAC from current levels will have zero welfare cost to the economy. It has zero welfare cost because it does not require that bank shareholders raise equity, rather it need only require that existing creditors exchange one form of debt (deposits) for another (e.g. subordinated debt): - there is no increase in creditor risk given constant Tier 1 equity, and any increase in return to creditors would simply be reflective of the Tier 2 holders being able to obtain a fair market-based return for the risk they are exposed to.

For example, if a requirement to meet total capital requirements (TLAC) of 19% is put in place, banks will have the choice of meeting this requirement by choosing between Tier 1 and Tier 2 capital, whichever they perceive as lower cost (that is whether the cost of issuance is lower than their perceived marginal cost of equity). In exercising this choice there will be improved efficiency of intermediation between creditors and banks, because creditors will be able to obtain a fair risk premium for their exposure. Currently, the price of credit to banks is undervalued, this is not only inefficient but because it represents underpricing of risk on one of the largest assets in the economy it also means that risk is underpriced through the entire economy. The current underpricing of risk is surely a major issue for financial stability.

In short, with the banks required to optimise between Tier 1 and Tier 2 “ risk will have been *identified* by all parties it affects, *priced* by those able freely to choose to bear it, *allocated* to those who are best placed to bear it, and *managed* by those parties in the most efficient manner.” This is the precondition for financial stability, as the RBNZ has previously observed.

Benefits of Tier 2 Debt

The RBNZ has gone to some length in the Issues Paper to express its reservations about Tier 2 subordinated debt, but it omits the major economic advantage of Tier 2 debt in that it provides the mechanism to reduce risk to depositors at low cost, and increases welfare by increasing the efficiency of financial intermediation.

The main reservation about Tier 2 seems to relate to a concern that the Government of the day will be irrational and will be unable to prevent itself from bailing out the holders of Tier 2 debt. Of

course, it would not be appropriate that the RBNZ should make such a supposition of the Crown's judgment. But more particularly, any such issues can be managed by proper specification of the required terms of Tier 2 debt, so as to make the triggering of Tier 2 writedowns a mechanical process contingent on an objective circumstance or reported data rather than a process which requires politicised discretion.

OBR does not justify lower capital requirements

The Issue Paper states (p31) that the open bank resolution framework (OBR) is designed to reduce some of the social costs associated with bank distress events, and states that this is an argument for having generally lower capital requirements than would be justified if there was no OBR framework.

I believe the RBNZ must firmly reject this disquieting argument. The OBR framework was justified on the basis that it was a better mechanism in the view of the RBNZ than deposit insurance. It cannot be used as a justification to impose yet more risk (and cost) on depositors, particularly when such wealth transfer is predominantly away from New Zealand resident deposit holders to large Australian firms. As set out above, depositors are already inadequately compensated for the risks their banks expose them to, the RBNZ should not be disposed to make this situation worse.

Attachment: Question 3: information that is relevant to the issues

Does an Optimal Capital Ratio exist?

The Issues Paper suggested that the RBNZ considers that mainstream studies indicate an optimal capital ratio, and that ratio is about 14%, (with a range of 5-17%).

It is apparent there is no sound theoretical or empirical evidence to support that level of capital. The fact that such a ratio might be “mainstream” should not be assumed by the RBNZ to be a basis for any confidence. It is mainstream banks through misapplication of statistics which has led the world into the enormous losses of the GFC, and quite apparently “mainstream” capital frameworks are now leading us into further crisis and/or stagnation by enabling very high growth in private debt.

Even assuming that optimisation of financial risk is a valid calculation (e.g. by assuming financial risk is more a Gaussian distribution than the more likely Taleb Distribution), there are many other expert analyses that point to higher levels of bank capital. For instance:

- IMF Staff Discussion Note No. SDN/16/04d states that:
 - *“capital in the range of 15–23 percent of risk-weighted assets would have been sufficient to absorb losses in the vast majority of historic banking crises in advanced economies.*
- Sheila Bair, Former Chairman of the FDIC, et al., letter to the Board of Governors of the Federal Reserve System (Mar. 30, 2012):
 - *Banks “should be required to have ratios of 20% of common and preferred equity and subordinated debt to total (non-risk weighted) consolidated assets and 30% of total equity and unsecured long-term debt to such assets”.*
- Federal Reserve Board paper 2017-034
 - *“Using a range of empirical estimates, we find that optimal bank capital levels in the United States range from just over 13 percent to over 26 percent”.*
 - *“We find that optimal capital levels are uncertain, but likely range between roughly 13 percent to over 25 percent”*

The levels of capital indicated in the citations above are the result of considering a potential tradeoff of the higher cost of equity supposedly causing a potential higher cost of credit, reducing productive investment, thus leading to a decreased equilibrium level of GDP. However, corollary to this view is that if the lending is not related to productive investment then there is no economic cost to higher equity requirements. It is now readily apparent in New Zealand that lending to allow the sale and purchase of existing houses is not productive investment, and therefore capital requirements can be increased substantially in respect to lending to that sector without welfare cost.

Evidence that current capital requirements are inadequate

The outcomes from the current “capital requirements framework” are not of a standard that can inspire confidence in any depositor, and has clearly created “unnecessary economic inefficiency”. New Zealand stands out as having a significant housing bubble by comparison with other similar countries³:

- House Prices against rents: 214% above long term average
- House Price to income: 160% above long term average

³ See: <http://www.economist.com/blogs/graphicdetail/2017/03/daily-chart-6>

- Price to income in Auckland of 9.8, implying a DTI of 7.8 for a LVR limit of 80%;

However, the main concern is private debt: - the current ratio of household debt to household income is now 168%. Even more alarming are the recent trends in this ratio:

- Over the last 5 years: the ratio of incremental household debt to incremental household income has been 292%
- Over the last 4 years, the ratio has been 323%;
- Over the last 3 years, the ratio has been 347%.

These alarming and recent increases in the private debt-to-income ratio show that New Zealand is at risk of economic stagnation. The use of credit has intensified, and currently the growth of credit is not on a sustainable path. The attraction of banks toward lending for existing homes and real estate, as a consequence of the risk-weightings attributed to that sector, combined with supply constraints (low elasticity of supply for housing and land), has led to a ballooning of house prices and high debt levels.

The household debt-to-income ratio will continue to grow unless productivity grows, but that will take efficient investment. Allowing the banking sector to continue directing more than 60% of lending toward the domestic sector, mainly for existing housing, is neither efficient nor productive. Because of the low elasticity of supply in the housing sector (land and existing houses), borrowing by that sector acts as an amplifier, leading to much higher house and land prices than can be justified by underlying incomes. Increased bank capital requirements for residential housing will assist in dampening the cycle where self-reinforcement effect of rising house and land prices, creates higher valuations, so enabling debt to be raised, so causing house prices etc.

RBNZ must put in place a capital requirement framework that arrests the longstanding trend where household debt has been rising faster than household income as a result of *easy credit* supplied by banks to that sector.

Attachment: Question 4: Particular areas of the review that should be prioritised

Owing to the unsustainably high growth of private sector debt relative to incomes in recent years, the bank should prioritise the following:

- The countercyclical buffer should be implemented by an automatic trigger process, such as whenever the rate of growth in private debt is greater than the rate of growth in household incomes.
- Increase minimum risk-weights for residential lending on existing houses, particularly at high LVRs (e.g. increase such that the risk weight to lending to investors on existing housing should be increased to over 400% when LVR is above 60%, i.e. apply the same risk weights that are required for equity holdings). Settings for risk weights should reflect the house market's elasticity and supply, and the higher risk of lending at higher LVRs.