Review of the Reserve Bank Act

Release Document – International Monetary Policy Frameworks – Developments between 2012 to 2016

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This document is an internal Treasury paper which informed the Treasury's analysis and advice on the Policy Targets Agreement.

International Monetary Policy Frameworks – Developments between 2012 to 2016

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Overview

This paper surveys some international reviews of monetary policy frameworks since the last Policy Targets Agreement (PTA) was agreed in 2012. The paper draws on several sources, including three in-depth reviews:

- The UK HM Treasury *Review of the monetary policy framework*, published in March 2013.
- The Marvin Goodfriend and Mervyn King *Review of the Riksbank's Monetary Policy 2010 – 2015*, published in July 2016.
- The review by the Bank of Canada ahead of the 2016 renewal of the inflation-targeting agreement.

The three conclusions drawn in this paper are that since 2012:

- No country has moved away from inflation targeting. This suggests that, internationally at least, for those countries targeting inflation it is still considered the best monetary policy framework, or at least that the costs and risks from changing to a different framework exceed the expected benefits.
- Some countries have made organisational and governance changes to the growing role for macro-prudential policies.
- In areas of both macro-prudential and monetary policy, transparency is advancing. In particular, there is a growing importance of minutes of committee decision-making meetings overseas as a communication device, whereas minutes are not released in New Zealand, reflecting the single decision-maker. For macro-prudential policy, having the same person making the decision (the Governor) means that the deliberative process of co-ordination (with associated public communication) that seems to be evolving overseas, is less formalised in New Zealand.

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[1] At the time of writing in mid 2016, the Bank of Canada Review was in progress. The paper was updated in January 2017 to reflect the completed Bank of Canada Review. Other sections of this paper have not been updated.

Introduction

1. Monetary policy has faced a new set of challenges since the last Policy Targets Agreement was agreed by the Minister of Finance and the Governor of the Reserve Bank of New Zealand in September 2012. Globally, policy rates set by inflation-targeting central banks are at historic lows, yet inflation is subdued. In New Zealand, while the official cash rate (OCR) is, as at the date of writing, materially above zero, it is also at an historic low.

2. This paper collects information from public material released by other inflation-targeting central banks and governments, to determine how institutions around the world have reacted to the changing environment. The objective is to see whether other countries have decided that the case for change is sufficiently strong that material changes have been made to those frameworks. Where changes have been made, the paper describes the reasons provided for those changes, and looks at whether the rationale applies to the New Zealand case. Equally, where changes have not been made and the rationale for no change is provided, the paper looks at whether the situation might be different in New Zealand.

3. The paper looks at the following three reviews in particular detail:

   - The UK HM Treasury *Review of the monetary policy framework*, published in March 2013.
   - The Marvin Goodfriend and Mervyn King *Review of the Riksbank's Monetary Policy 2010 – 2015*, published in July 2016.
   - The review by the Bank of Canada ahead of the 2016 renewal of the inflation-targeting agreement *(updated).*

HM Treasury Review of the monetary policy framework

Context

4. In the UK, the Chancellor of the Exchequer sends the remit to the Governor annually, but usually there is no or only minor change (e.g. sometimes the remit updates the Government's economic objectives). A more substantive review was undertaken in 2012/13 because:

   - It had been more than 20 years since inflation targeting was introduced to the UK, and understanding of the operation of monetary policy had evolved over that time.
   - Like many advanced economies, the UK had faced and continues to face challenges in securing sustained post-crisis recovery and rebalancing the economy "after a decade of growth built on unsustainable levels of debt". Further, the short-term nominal interest rate is at the effective lower bound

in several advanced economies – these challenges test the consensus on macroeconomic policymaking.

- The development of unconventional monetary policy measures across countries provided a broad range of interventions against which to consider the operation of monetary policy in the UK.

5. The other relevant context is that macro-prudential policy was relatively new at the time of the review. The Bank of England's Financial Policy Committee (FPC) was set up in 2010, first met in 2011, and was enshrined in legislation on 1 April 2013. Its primary objective is "identifying, monitoring and taking action to remove or reduce systemic risks with a view to protecting and enhancing the resilience of the UK financial system".[2] Its staff (aside from external members) are from the Bank of England, and it has overlapping membership with the Monetary Policy Committee (MPC) at the Bank of England.

Key findings

6. The remit for the independent MPC was updated in 2013 as a result of the review. No change was considered or recommended for the inflation target itself (2%). The results of the review were:

- The frameworks for monetary policy and macro-prudential policy, operated by the MPC and the Financial Policy Committee (FPC), should be coordinated.

- The flexibility of the policy framework is clarified by updating the remit to note that, in some circumstances, consideration may be given to financial imbalances. Further, in exceptional circumstances, where shocks are particularly large and with persistent effects, the remit clarifies that the MPC has flexibility with how quickly it aims to bring inflation back to target.

- Alongside the exchange of open letters between the Governor of the Bank of England and the Chancellor of the Exchequer that is mandatory if inflation moves away from the target by more than 1 percentage point in either direction, the Governor should send the minutes of the MPC meeting that followed the publication of the CPI data.

- Where the Bank of England is developing unconventional instruments involving interventions in specific markets or activities, with implications for credit risk or allocation, the Bank of England should include consideration with Government of appropriate governance and accountability arrangements.

- Using state-contingent intermediate thresholds for forward guidance (e.g. explaining to markets that policy will tighten if data reveals the economy

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2 http://www.bankofengland.co.uk/financialstability/pages/fpc/default.aspx

growing above a certain threshold) is a subject of MPC operational independence. The Government requested that the MPC provide an assessment of the approach in the August 2013 *Inflation Report*[3].

7. Issues that were looked at in the review but resulted in no changes were:

- Shifting from a permanent framework to one that allowed temporary deviations (i.e. the scope for a framework not focussed on price stability to be introduced for a limited time in certain circumstances).
- Moving from flexible to strict inflation targeting.
- The introduction of a target range rather than a particular point target (currently 2%).
- Targeting an alternative measure of inflation (e.g. “core inflation”).
- Moving to an alternative framework, in particular:
    - Price level targeting
    - Nominal GDP growth targeting
    - Nominal GDP level targeting.

Rationale for material changes

Coordination of frameworks for monetary policy and macro-prudential policy

8. The review argues that although price stability and financial stability are separate objectives, there is considerable overlap between them. Similarly, the instruments that implement monetary policy and regulate macro-prudential lending interact with each other. That is, interest rates can affect credit growth (which may matter for macro-prudential reasons), and macro-prudential rules can affect credit conditions and therefore aggregate demand and inflation. The MPC and the FPC (which identifies and addresses systemic risks to financial stability) are both operated out of the Bank of England.

9. Coordinating the frameworks requires the MPC to have regard to the policy actions of the FPC. A symmetric request was subsequently made to the FPC. The Financial Services Act makes provision for joint meetings of the two Committees if required.

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3 That assessment can be found at: http://www.bankofengland.co.uk/publications/Documents/inflationreport/2013/ir13augforwardguidance.pdf

Considering financial imbalances in setting monetary policy

10. The paper reaffirms the view that macro-prudential tools are the "first line of defence" against "imbalances" that are a potential risk to financial stability. However, the remit now clearly states that the MPC may allow inflation to deviate from the target temporarily, "consistent with its need to have regard to the policy actions of the Financial Policy Committee".

11. This provides legitimacy for any "leaning against the wind" that the MPC may consider appropriate, in addition to any measures undertaken by the FPC to address imbalances.

Attaching minutes of the MPC meeting to the open exchange of letters

12. Since 1997, there has been a formal mechanism of transparency and accountability through an open exchange of letters between the Governor of the Bank of England and the Chancellor of the Exchequer in the event that inflation is more than 1 percentage point away from the target (currently 2%).

13. The updated remit now requires that the letter from the Governor is accompanied by the minutes of the MPC meeting that followed the publication of the CPI data. The justification for attaching the minutes is to "allow the MPC time to form and communicate its strategy towards returning inflation to the target after consideration of the trade-offs". The intent is to provide a stronger incentive for the MPC to be clear in its meeting (and its minutes) about why inflation is more than 1 percentage point from the target, and whether the trade-offs being made (inflation away from the target in return for less output volatility for example) are appropriate.

Considering appropriate governance and accountability arrangements when developing unconventional instruments

14. The use of unconventional instruments presents governance and accountability issues. The paper uses the example of a blurred line between monetary and fiscal responsibilities, in cases where instruments involve credit risk for the central bank's balance sheet, which ultimately affects taxpayers. Because of this blurred line, a system of governance and accountability that involves the Government is necessary.

Rationale for no changes

Temporary vs permanent frameworks

15. The Government considered the argument that exceptional macroeconomic conditions provided a case for a temporary change to the monetary policy framework, followed by a different longer-term framework once exceptional circumstances no longer prevail.

16. The HM Treasury report rejects that argument, arguing that temporary changes risk being viewed as permanent, and that this could be costly to future growth as inflation expectations are dis-anchored, resulting in a higher inflation risk premium.

Moving to from flexible to strict inflation targeting

17. The paper dismisses this suggestion as it would mean that during adverse supply shocks (for example, oil prices rising significantly), monetary policy would tighten just as output was falling and unemployment was rising. This is unlikely to be an optimal response, even though it might more faithfully meet a 2% annual inflation target.

Introducing a target range instead of a point target

18. The paper dismisses this suggestion, arguing that, in effect, a de facto “range” is already accepted through the open letter exchange system.[4] There is general public and market acceptance that inflation does not have to be always (or regularly) hitting exactly 2.0% for the Bank of England to be meeting its objectives.

Targeting an alternative measure of inflation

19. The remit retains the status quo of targeting the 12-month increase in the Consumer Prices Index. While moving to a measure of “core” inflation is canvassed, the paper dismisses this idea. The paper argues that headline inflation (the increase in the CPI) better reflects the cost of living, which resonates with the public and gives greater credibility to the discipline of price stability. Furthermore, it will always be difficult to settle on which core measure of inflation should be used instead of the CPI, with “a variety of statistical, econometric and subjective approaches available, all of which would potentially be subject to challenge.”

Alternative frameworks

20. The paper rejects price-level targeting (where a period of inflation too low to meet the price level is followed by “catch up” inflation to get back on track). The risk highlighted is that the impact of supply shocks is amplified:

> For example, a negative supply shock would push the price level above target at the same time as output is pushed below potential. Real interest rates would rise, tightening monetary conditions to bring the price index back to the target path, placing further downward pressure on output.

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4 The Governor of the Bank of England and the Chancellor of the Exchequer exchange letters if the inflation result is more than 1 percentage point away from the 2% target.

21. One advantage is that real interest rates might adjust automatically to offset demand shocks through inflation expectations acting pre-emptively. A second is that price-level targets would give greater certainty over long-term prices.

22. Ultimately, the paper decides against moving to price-level targeting for "both theoretical and practical reasons" including the difficulty of communicating price-level targeting, and the observation that no central bank has had an explicit price-level target in the post-war period.

23. The paper also looks at nominal GDP (NGDP) targeting, both in growth and level terms. NGDP targeting has an advantage in that it would allow a "better" response to supply shocks – as supply shocks tend to move inflation and output in opposite directions. Because of this, and the fact that NGDP is made up of real output plus inflation, the central bank would allow higher inflation if output contracted or slowed. Similarly, and as with traditional inflation targeting, if output was running above capacity, monetary policy would be tightened.

24. Difficulties include:

- Estimating the real growth rate of the economy and any changes to that growth rate over time.
- The fact that data delays and revisions of just what NGDP is, or even has been, would undermine efficiency, credibility and accountability.
- The ability for NGDP targeting to be easily understood by the public.

25. The paper recognises theoretical benefits of NGDP level targeting in particular, but assesses the risks and uncertainty of practically applying it outweigh those benefits.

26. The following table sets out the issues considered, the conclusion of the review, whether a change was recommended, and brief comments on the relevance of the issue or reasoning as applied to the New Zealand case.

Table: HM Treasury review decisions as compared with current NZ arrangements

Issue considered	Review assessment	Change?	Relevance to New Zealand
Coordination of frameworks for monetary policy and macro-prudential policy	Because of overlap, coordination is important.	Yes – MPC must have regard to the policy actions of the FPC, and vice versa.	Any decision on macro-prudential intervention is taken by the Governor, as is the case for monetary policy decisions. Memorandum of Understanding (MoU) notes "in most instances macro-prudential instruments will reinforce the stance of monetary policy". In this sense there is co-ordination, because it's the same person making both decisions.
Considering financial imbalances in setting monetary policy	Although macro-prudential policy is the "first line of defence", monetary policy can play a role.	Minor – clarifies that the MPC may allow inflation to deviate from the target temporarily where doing so to be consistent with policy actions of FPC.	Since 2012, the PTA has explicitly allowed asset price and financial system development considerations in monetary policy.
Attaching minutes of the MPC meeting to the open exchange of letters	Minutes of the MPC meeting following the publication of the CPI data should accompany the letter from the Governor to the Chancellor if inflation moves more than 1 percentage point away from 2%.	Minor - minutes to be attached.	Minutes of MPC meetings are currently not published in New Zealand, and we do not have an "open letter" system.
Considering appropriate governance and accountability	Because of blurred lines between monetary and fiscal responsibilities, governance and accountability issues	Yes – remit includes an expectation that the MPC works with Government to	MoU exists between Reserve Bank Governor and Minister of Finance on macroprudential policies, which notes

Issue considered	Review assessment	Change?	Relevance to New Zealand
arrangements when developing unconventional instruments	arise with unconventional instruments.	ensure appropriate governance and accountability arrangements	“any additional macro-prudential instruments will be undertaken in consultation with the Treasury, given the Treasury’s role in advising the Government on risks to the Crown’s balance sheet”.
Temporary vs permanent frameworks	No convincing reason to shift to a new framework temporarily, despite the exceptional nature, magnitude and persistence of shocks to the economy.	No	Governor-General (under advice from Minister of Finance) can direct the Governor of the Reserve Bank to temporarily move away from price stability under s 12 of the RBNZ Act. Has never been used. No current reason to consider it in NZ.
Moving to from flexible to strict inflation targeting	Would have negative impact during adverse supply shocks.	No	Some commentators consider current inflation is too far from the midpoint or range, but moving to a strict framework would be overkill given negative impact during adverse supply shocks. New Zealand has moved to more flexible inflation targeting over time.
Introducing a target range instead of a point target	Limited use when there is a de facto band and not on overzealous focus on the point target.	No	New Zealand has a target range “with a focus on” the midpoint.
Targeting an alternative measure of inflation	Does not recommend a change as would reduce credibility, and no single alternative stands out.	No	Similar considerations may apply in New Zealand as in UK, but there are

Issue considered	Review assessment	Change?	Relevance to New Zealand
			fundamental differences in the economies that would need to be considered.
Alternative frameworks	Potential advantages do not outweigh the risks.	No	Similar considerations may apply in New Zealand as in UK, but there are fundamental differences in the economies that would need to be considered.

27. Surveying the above table, the most relevant difference seems to be the role of minutes as a transparency and accountability tool as part of the open exchange of letters. The HM Treasury Review makes clear that this is designed to allow more scrutiny 2of the Monetary Policy Committee's decisions, when it is choosing to allow inflation fall outside the de facto 1 – 3% range implied by the open exchange of letters trigger points (1 percentage point away from 2% in either direction).

28. One theme to be drawn from the paper is that the institutional arrangements and governance that sit behind macro-prudential policy is not yet completely settled. The changes to the remit are an attempt to better situate the responsibilities and accountabilities of macroprudential policy with the most suited institution and committee, while still providing decision makers with the relevant information from other institutions and committees.

Goodfriend and King Review of the Riksbank's Monetary Policy 2010 – 2015

Context

29. The 2010 – 2014[5] period is described by the terms of reference of the Goodfriend and King Review as:[6]

> characterised by the aftermath of the acute stage of the international financial crisis, a crisis in large parts of the European banking system and sizable fluctuations in the development of the real economy. The period is also characterised by extensive stability measures and an ensuing broad debate on the central banks' goals, means and responsibility for financial stability. In Sweden the debate has, among other things, focused on how monetary policy can, or should be used to control high debts in the household sector.

30. Goodfriend and King characterise monetary policy during 2010 – 2015 in six phases, which concisely suggest the macroeconomic context and monetary policy actions during the period:

- Recovery and tightening, February 2010-July 2011.
- Pause for thought, September 2011-October 2011.
- Disappointment and easing, December 2011-December 2012.
- Another pause for thought, February 2013-October 2013.
- Going to zero, December 2013-December 2014.
- Going negative, February 2015-October 2015.

31. The terms of reference describe the purpose of the review as being to examine the implementation of monetary policy, and its outcomes, as well as the experiences for monetary policy that can be drawn from the financial crisis. The evaluation also aims, "in the light of the financial crisis, to derive new knowledge, on a scientific basis, of the framework and formulation of Sweden's monetary policy". Mervyn King and Marvin Goodfriend published this review (the Goodfriend and King Review) in January 2016.

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5 The period was later extended by King and Goodfriend to include 2015.

6 Terms of Reference of the Review, Review of the Riksbank's Monetary Policy 2010-2015.

32. In contrast to the HM Treasury review, the Goodfriend and King Review canvasses (in a very detailed way) the monetary policy experience of the Riksbank over the period, delving into the minutes and the disagreements of decision makers. As a result of that, many of the recommendations are not relevant from a New Zealand perspective, as they respond to very specific concerns relating to the operation of the Riksbank.

Key findings

33. The recommendations that are more interesting from a New Zealand perspective relate to financial stability. In general, those recommendations could be described as better delineating the governance and accountability in developing and using macro-prudential instruments.

34. The full set of resulting recommendations were:

Monetary Policy

- The inflation target should be specified by the Riksdag (the Swedish parliament). King and Goodfriend recommend 2% a year.
- The mandate should be to maintain price stability, as defined by the inflation target, "with regard to the long run sustainability of the path for the level and composition of output and its implications for inflation." The Riksbank should explain its reasoning if it considers it is appropriate to deviate from targeting inflation two years ahead, and it should defend that reasoning in front of the Finance Committee of the Riksdag.
- The Riksbank should re-examine its forecasting methods, and explain in better detail its assumptions in its Monetary Policy Report.
- The Riksbank should review its experience with the announcement of a future path for the repo rate (overnight rate), and include a "post-mortem" on the substantial deviation of market expectations from its published forecasts over the 2010 – 2015 period.
- Whenever market expectations differ from the Riksbank's published repo rate path, the Riksbank should publish in its Monetary Policy Reports an analysis of why in its view there is a divergence between the two, and the implications for the setting of monetary policy.
- The Sveriges Riksbank Act should be amended to make clear that the mandate to meet the inflation target is subject to the Government deciding that the exchange rate should float freely.

Financial Stability

- The Government should ensure that Finansinspektionen (Financial Supervisory Authority) has the legal powers and range of macro-prudential instruments appropriate to its role in promoting financial stability.

- A joint Prudential Policy Committee of the Riksbank and Financial Supervisory Authority should be established to meet quarterly to discuss the setting of the main macro-prudential policy instruments, and to from time to time make recommendations to the Riksdag on whether the set of instruments delegated to the Financial Supervisory Authority should be expanded or contracted.

- The Sveriges Riksbank Act should be amended to clarify the role of the Riksbank in financial stability, whether limited to participation in the proposed Prudential Policy Committee (see above) or more extensive if macro-prudential powers gravitate to it. The mandate of the Riksbank should include financial stability, and the Riksbank must have some formal powers to enable it to achieve its objective.

- In 2020 the Government should ask a small group of experts to carry out a review of the allocation of responsibility for macro-prudential policy between the Financial Supervisory Authority and the Riksbank.

Accountability of the Riksbank

- The Finance Committee of the Riksdag should hold three sessions of evidence a year with the Riksbank Executive Board following publication of the Monetary Policy Reports.

- The minutes should attempt to record the differing points made at the meeting and not a sequence of individual formal presentations. Longer analyses by particular members should be made available publicly in speeches.

- The Riksbank should augment the current minutes with minutes of the meetings where the Main Scenario is decided – at the First or Second Large Monetary Policy Group Meetings and also the Executive Board Forecast Meeting. Those minutes could then be released to the public together with the current minutes two weeks after the Monetary Policy Meeting.

Organisation of the Riksbank

- The Executive Board should become the Monetary Policy Board comprising three executive members of the Riksbank, the Governor and two deputy governors with responsibility for monetary policy and financial stability respectively, and three non-executive members.

- The Finance Committee of the Riksdag should invite the General Council of the Riksbank to submit recommendations for amendments to the Sveriges Riksbank Act.

35. Overall, the recommendations focus on clearer transparency and accountability, with a direction to the Government to set out a clearer and more authoritative structure for macroprudential policy (in the report the authors refer to the "dithering of the Government in introducing a clear regime for macro-prudential policy").

36. Goodfriend and King describe the purpose of the Minutes of the Monetary Policy Meetings as "providing individual accountability for each Board member's contribution

to the policy deliberations". Separately, the authors highlight the importance of transparency as an accountability tool in the context of deviations from target:[7]

> In other words, if the Riksbank believes that circumstances justify deviating from targeting inflation two years ahead in order to prevent major swings in output and employment later on, then, rather than pretending otherwise, it should explain why it has chosen to deviate from the target, and be prepared to defend itself in front of the Finance Committee. It is precisely in circumstances where there is room for reasonable disagreement about the immediate challenges facing monetary policy that it is important to expose the thinking of the Riksbank, as well as that of outside commentators, to regular and informed constructive criticism. It is in this area that transparency is so important. The Sveriges Riksbank Act also sets out responsibilities in terms of the transparency of the Riksbank. Chapter 6 article 4 states that "the Riksbank shall submit a written report on monetary policy to the Riksdag Committee on Finance at least twice a year". There is no doubt that the Riksbank provides a great deal of information to the public on its understanding of the economy, its own internal deliberations, and its decisions. It is one of the most transparent central banks in the world. But the process of accountability could be improved, and we return to this below.

37. And later:[8]

> In addition to our recommendations for amendments to the Sveriges Riksbank Act, we feel some improvement in the accountability of the Riksbank to the Riksdag merits consideration. The accountability of the Executive Board for monetary policy decisions is rightly not to the General Council but to the public and the Riksdag. We would encourage the Finance Committee to cross-question all members of the Executive Board in somewhat greater depth than at present. If such sessions of evidence on the votes of individual members of the Executive Board are to be productive and increase public understanding of the challenges to and decisions about monetary policy in Sweden, then there will need to be a degree of self-restraint on the part of members of the Finance Committee that is not entirely characteristic of politicians, at least outside Sweden. The Committee on Finance is conducting a review of "the modalities for the evaluation of Swedish monetary policy". The current practice was introduced in 2007/2008. At present, the Committee holds three open hearings with the Governor and one Deputy Governor (who rotates) each year and the Committee publishes an annual evaluation based on a submission from the Riksbank. By inviting all members of the Executive Board to appear more regularly, the minutes of the Monetary Policy Meetings might play a more useful role in explaining the arguments for and against the actions that were taken.

38. The analysis above leads to the recommendation that the Finance Committee of the Riksdag should hold three sessions of evidence a year with the Riksbank Executive Board following publication of the Monetary Policy Report, and that at each session, in addition to the Governor, three deputy governors should appear "to explain and defend his/her votes on monetary policy decisions".

39. Obviously such an arrangement cannot be directly translated to New Zealand, where there is a single decision maker, and the monetary policy committee minutes are not published. However, publishing of minutes in New Zealand might allow members of FEC (who are able to question the Governor 4 times a year, after each Monetary Policy Statement, despite the Act only requiring 2 Monetary Policy Statements per year), a greater insight to the internal debate and reasoning behind each decision. An

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7 Pp 97-98

8 Pp 101-102

alternative view is that this information is already encapsulated in the Monetary Policy Statement itself.

40. As with the HM Treasury review of the Bank of England, it is this area (the publication of minutes and the transparency and accountability that this provides), that is most different to New Zealand's current arrangements. It is not clear whether the benefits of moving to such a system outweigh the costs, but this is an area where New Zealand stands apart from developments in two other inflation-targeting central banks.

41. A useful report in this regard is Kevin Warsh's 2014 Review *Transparency and the Bank of England's Monetary Policy Committee*. That review has a good discussion of various types of transparency and the various reasons why transparency is considered beneficial. This note does not discuss that review in any detail, as it does not address monetary policy itself or alternative frameworks.

42. Another similarity with the HM Treasury review of the Monetary Policy Framework is on the struggle to best situate macroprudential policy within the most appropriate institution. In the case of the King and Goodfriend review, the recommendation is that the Financial Supervisory Authority should have macroprudential policy responsibilities, but that the Riksbank and the Financial Supervisory Authority meet quarterly to discuss the issue. Even then, the recommendation is not absolute – another recommendation is that the Sveriges Riksbank Act should be amended to clarify the role of the Riksbank in financial stability, and suggests it be substantive than its role in quarterly meetings if more extensive if macro-prudential powers gravitate to it.

Canadian review

Context

43. Every five years the Bank of Canada and the Government of Canada review their Agreement on the Inflation-Control Target. The Bank of Canada undertakes a public research agenda ahead of each renewal. In the 2011 review (much of which was published after the Treasury had substantively finished work on New Zealand's 2012 PTA), the Bank of Canada found:

- There are even greater benefits from reducing inflation below 2% than previously thought, although the risks of doing so are also higher than had previously been appreciated. In particular, a lower inflation target would increase the risk of more frequent and more severe encounters with the zero lower bound.
- There are theoretical advantages of price-level targeting, but those benefits do not clearly outweigh the costs and risks with switching to such a regime.
- A "key virtue" of Canada's inflation-targeting framework is its flexibility, and that flexibility allows monetary policy "to play an occasional role in supporting financial stability".

44. The 2016 review looked at three key questions:
    - Should the 2% inflation target be increased?
    - How should core inflation be measured and used?

- How should monetary policy take into account financial stability?

Key findings

45. Key findings of the 2016 review include:

- There is insufficient evidence to change the 2% inflation target. A higher target could alleviate problems with the effective lower bound (ELB) of monetary policy, but gains are small after accounting for the use of unconventional monetary policy (UMP). A target change could undermine accumulated credibility as well as incur distortions from higher inflation.
- The intermediate operational measure of (core) inflation should be replaced with three complementary core inflation measures. These measures more accurately capture the persistent domestically-generated inflation pressures that are under the influence of monetary policy. The use of multiple measures highlights uncertainties in core inflation estimation and usage in monetary policy deliberations as an operational objective.
- Inflation should remain the core objective of monetary policy. Financial regulation and macroprudential policy are generally better suited to address financial vulnerabilities. Recent developments in these policy areas have reduced the burden for explicit monetary policy support to financial stability. Except in exceptional circumstances, a central banks' monetary policy contributes to financial stability via the public communication of its system-wide assessment of macroeconomic risks.
- The review highlighted the Bank of Canada's risk-management approach to conducting monetary policy. Under this approach the Bank conditions the speed of return of inflation to target on upside/downside risks to its policy path (based on probability and cost). The risk of inflation falling below the 1% minimum of the inflation target range is seen as more costly than inflation exceeding the 3% maximum, based on ELB constraints.
- The review also flagged issues for ongoing research. Assessing the effectiveness of conventional and unconventional monetary policy will help to inform whether UMP has a place in the standard monetary policy toolkit. The implications of financial stability-related reform on monetary policy will be further investigated. The BoC will also explore communication of how financial stability considerations are incorporated into monetary policy decisions.

Should the 2% inflation target be increased?

46. Given that the current inflation target has been so successful over a long time period, the review considered that the bar for change should be high. The review finds that there is insufficient evidence to justify a change in the 2% target. The overall benefits from raising the inflation target above 2% are insufficient to offset the associated transition and structural costs. A higher target may alleviate some problems associated with the ELB, but these benefits are relatively minor after accounting for the scope for the use of UMP at the ELB. The potential costs on hard-won policy credibility could be

high. Raising the target could lead to monetary policy uncertainty, generate distortions through higher inflation, re-distribute wealth, and create more inflation persistence.

47. The review found that the main benefit of raising the target would be to provide greater scope to ease conventional monetary policy via lower interest rates before hitting levels where further cuts are ineffective in providing additional stimulus (the "effective lower bound" (ELB)). As such, a higher target could reduce the likelihood and frequency that monetary policy encounters (drops to) the ELB. A higher target could also yield modest (albeit material) economic performance benefits once the ELB of conventional monetary policy is reached. The way these benefits would occur are as follows:

- A higher inflation target would raise the average level of nominal interest rates, providing more capacity to cut official interest rates in large and persistent negative demand shocks. This increased capacity would reduce the probability that official rates (i.e. conventional monetary policy) reach the ELB.

- This capacity could be of particular benefit when neutral real interest rates (inflation-adjusted policy rates consistent with on-target inflation and output at potential, ex-cyclical factors) are low and declining. This trend is apparent in Bank of Canada research for Canada.[9] However, financial regulatory reform post-Global Financial Crisis (GFC) has likely provided an offsetting reduction in the probability of reaching the ELB. This reform has strengthened banking system resilience, and thereby reduced the probability (and likely severity and longevity) of the more severe downturn episodes typically associated with banking crises. Such changes thus provide an offsetting drop in the probability that the ELB is reached, and that the transmission of conventional monetary policy breaks down.

- A higher inflation target would also likely anchor inflation expectations at a higher level, making real interest rates more negative (more stimulative) at the ELB. This extra stimulus would help to reduce the severity and persistence of negative demand shocks, thereby reducing the likelihood of prolonged period of below-target inflation.

48. The benefits associated with reducing the adverse growth/inflation impacts of the ELB are reduced when alternative UMP tools are available. After taking UMP into account, a higher inflation targets is estimated to yield only small benefits in Canadian macroeconomic performance.[10]

49. These UMP tools include forward guidance in policy (conditional policy statement to influence long term interest rates), large- scale asset purchases (reducing interest rates/increasing the price of financial assets) and funding for credit (lending-linked funding to banks).

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[9] The Bank of Canada estimates that neutral real interest rates in Canada are just 1.25% p.a., having more than halved over the past decade. However, Bank of Canada estimates of the ELB itself have also fallen from 0.25% to -0.5%, providing a partial offset.

[10] A further potential benefit could be in reducing the incidence of downward nominal wage rigidity .However, the Bank of Canada find little evidence that low inflation inhibits labour market adjustment in Canada.

50. The effectiveness of UMP is difficult to assess at this stage given data limitations and economic developments since the GFC. However, available evidence suggests that UMP has generally been effective at influencing interest rates and asset prices at the ELB. The Bank of Canada believes that the Canadian system could cope with modest negative nominal interest rates, as has been seen in some other jurisdictions post-GFC. There are unanswered questions about the effectiveness of UMP on growth and inflation in the medium to long term (e.g. the impact of exit from UMP).

51. In terms of costs, the review found that changing the target could incur both one-time and ongoing costs:

- Transition costs could include wealth re-distribution from lenders to borrowers as higher inflation reduces the real value of nominal debt. The government sector (a net nominal borrower) would benefit at the expense of the household and foreign sectors (net nominal savers, particularly older-aged households).[11] A change in the target could also undo hard-won policy credibility, injecting uncertainty as to the long-term inflation target and marking a departure from international norms. Inflation expectations could drift above the new target on expectations of further policy changes in the future, requiring tighter monetary policy (and slower growth) than would otherwise be required. Alternatively, inflation expectations may remain near the old target, requiring more stimulative policy than would otherwise be required and possibly exacerbating any financial imbalances.

- Ongoing costs from higher inflation levels include less efficient allocation of resources (as relative price signals become less effective) and rising tax distortions (e.g. tax bracket ‘creep’). Owners of assets whose prices are not fully adjusted for inflation will also see a deterioration of real wealth over time, such as owners of highly liquid assets (e.g. cash). These distortions are all likely to result in re-distributive impacts. For example, older retired households are likely to hold a relatively large proportion of assets in cash-like liquid assets whose real value is likely to deteriorate more rapidly with higher inflation. Higher inflation may also change wage and price setting behaviour as inflation expectations adjust upwards, leading to more inflation persistence. For example, indexation of wage contrasts may become more common.

50. Given the above, the overall net benefits of raising the inflation target are difficult to estimate and are highly uncertain. The Bank of Canada judges that there is insufficient evidence on balance to justify a change after weighing the benefits against the structural and transition costs, particularly in light of the availability of UMP once conventional monetary policy has reached the ELB.

How should core inflation be measured and used?

51. Core inflation is presented by the Bank of Canada as an intermediate operational guide towards the achievement of its formal inflation target. The Bank of Canada decided to replace its existing core measure of inflation with three new measures. The decision reflects communications and empirical issues encountered by the Bank of Canada with its existing core inflation measure. The use of multiple measures is designed to transparently manage the risks associated with the use of any single indicator. Using

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[11] The ultimate welfare implications will depend on how the government uses its windfall.

multiple indictors also highlights the uncertainties in both core inflation estimation as well as use in monetary policy deliberations and economic projections.

52. From an empirical standpoint, the Bank of Canada's CPIX core inflation measure has deteriorated as a measure of operational guide to policy in recent years. In particular, the statistical link between the output gap and inflation has weakened. This weakening reflects unusually high CPIX volatility (as some sub-component prices have been unusually volatile, e.g. electricity) and countercyclical movements of some prices (e.g. autos).

53. From a communications standpoint, the Bank of Canada's practice of publishing CPIX projections has led to a misperception that core inflation is the bank's actual target, rather than an operational target. This perception has been reinforced to the extent that the Bank of Canada describes how sector-specific factors in the CPIX are discounted in policy deliberations.

54. The Bank of Canada evaluated a wide variety of potential alternatives to CPIX, considering international central bank practice. To be judged effective, a core measure needed to (i) closely track long-run movements in the total CPI basket (i.e. be unbiased), (ii) be less volatile than total CPI inflation while capturing persistent movements in inflation, (iii) be strongly related to the output gap, iv) be insensitive to sector-specific factors and (v) be easy to understand and communicate to the public.

55. CPI-common (common changes in categories in the CPI), CPI-trim (ex-upside/downside outliers) and CPI-median (median rate across CPI components) were selected based on these Bank of Canada criteria. Multiple measures were selected, reflecting the fact that each individual measure has its own limitations and the fact that any single measure should not be used mechanistically to infer monetary policy implications/projections.

How should monetary policy take into account financial stability?

56. The Bank of Canada maintains that monetary policy should only be used in exceptional circumstances to address financial vulnerabilities.[12] The primary objective of monetary policy in Canada is the inflation target. Financial regulatory and supervisory frameworks, utilising appropriate prudential tools, are typically better suited to address financial vulnerabilities.

57. However, monetary policy decision-makers incorporate financial system developments into their deliberations because the transmission of monetary policy occurs through the financial system. A central banks' monetary policy can contribute to financial stability via the public communication of a system-wide assessment of macroeconomic risks. These public risk assessments help promote responsible borrower and lender behaviour, and encourage appropriate regulatory and supervisory responses to emerging financial stability risks. In addition, there may be circumstances where the central bank adjusts the horizon over which it attempts to achieve its inflation target

[12] Where financial system vulnerabilities pose a significant economy-wide threat, are being exacerbated by monetary policy settings, and where other tools cannot effectively mitigate the vulnerabilities in a timely manner.

after incorporating a financial stability risk assessment (see the Bank of Canada's 'risk management approach' below).

58. A clear assignment of policies and responsibilities helps authorities achieve their separate monetary and financial stability objectives. Given that monetary and financial stability-related policies have a comparatively greater influence on their respective targets (inflation and financial vulnerabilities/resilience), there may be no need for agencies to formally coordinate polices. However, they should share information to account for spillovers.

59. The Bank of Canada judges that episodes of tension between monetary and financial stability will be less common than previously thought (in most situations the two areas are complementary). Such episodes will likely be confined to situations where policy interest rates are held very low for an extended period. The Bank of Canada's reassessment is based on recent improvements in financial system resilience, the development of macroprudential tools, and a developing understanding of the relationships between monetary policy and financial stability.

60. Monetary policy settings can impose a variety of costs and benefits on financial system risk, with impacts varying across the short and medium term. For example, decreases in interest rates can reduce financial stability risks in the short term by lowering financial stress (via stronger income growth and employment). But these same reductions may also increase financial stability risk in the medium term (by increasing average levels of leverage) and increase the macroeconomic costs of financial stress episodes when they occur (in terms of lower unemployment and income growth). The converse applies for increases in interest rates.

61. The Bank of Canada considers interactions between monetary policy and financial stability via its comprehensive framework for assessing risks. Firstly, this system identifies 'vulnerabilities'. These are pre-existing conditions that could amplify and propagate shocks throughout the financial system. These vulnerabilities are either interest-rate sensitive (e.g. leverage by households) or structural (e.g. interconnectedness amongst financial institutions) in nature. New vulnerabilities can also emerge as a result of financial innovation or as an unintended consequence of regulatory reform. Financial system risks (outcomes that could threaten the ability of the financial system to perform its core function) occur when these 'vulnerabilities' interact with 'triggers/shocks' to cause stress in the financial system. These risks are characterized by their probability and potential impact should they occur.

62. Financial stability policies address these risks by both mitigating vulnerabilities and by increasing the resilience of the financial system to shocks. Monetary policy influences both the impact and likelihood of trigger events. The analytical framework weighs the costs and benefits of using monetary policy to contain financial system risk (considering the short and long run factors as described above). The system considers both the impact of monetary policy on vulnerabilities and the impact of monetary policy settings on the probability of trigger events. This analysis utilises ongoing research into the interactions between monetary and financial stability policy.

63. Bank of Canada research on monetary and financial stability interactions initially focussed on the "clean vs. lean" debate as to the appropriate response of monetary

policy to elevated asset prices (and attendant financial stability risks). Early work largely focused on the 'clean' side of the debate. This work indicated that trigger events associated with asset price corrections in the absence of excessive leverage had a smaller impact on the financial system and economic activity. As a follow-up, subsequent research examined the benefits of pre-emptive monetary policy tightening to rising household leverage (the 'lean' side of the debate). A key conclusion of this follow-up work was that flexibility over the time horizon over which inflation is expected to return target is important given that the economic effects of financial vulnerabilities can manifest themselves over a long period. Sacrificing some inflation performance over the usual policy horizon can lead to greater financial, economic and price stability in the long run.

64. Subsequent research focussed on the sources of financial instability as well as developing an analytical framework for assessing vulnerabilities and risks (as above). This research finds that post-GFC financial regulatory reform has lessened pressures on monetary policy to reduce financial vulnerabilities/risks to financial stability. These reforms/measures are designed to control systemic risks in market based financial intermediation. They include areas such as bank capitalisation and supervision, financial derivatives, and financial institution resolution planning. The implementation of new macroprudential tools (such as down-payment requirements) has also mitigated vulnerabilities and increased financial system resilience to shocks.

65. Given the evolving role of financial reform and macroprudential policy, the Bank of Canada now suggests that monetary policy should play a narrower role in financial stability. The central objective of monetary policy should remain the inflation target, except in extreme circumstances (described above). Monetary policy is generally too blunt a tool to be used as the principal method to reduce financial system vulnerabilities. These vulnerabilities can now be more directly addressed with financial system regulation and prudential policies/supervision.

Issues identified for future research

66. The Bank of Canada identified the following issues for further research, reflecting ongoing developments in the operating environment of monetary policy:

- The ability of monetary policy to stimulate the economy. This work will focus on the effectiveness of both conventional and unconventional monetary policy in small open economies.
- The role of unconventional monetary policy in the standard toolkit. A complete assessment of the effectiveness of unconventional monetary policy process, including lessons from (upcoming) exit experiences.
- Central bank communication. Covering central banks' interaction with stakeholders and contribution to public economic debates. Particular focus on managing communication as financial stability considerations are incorporated into monetary policy.

- Effect of regulatory and macroprudential policy changes. Focus on the implications of these changes for monetary policy. Also examine the optimal mix of monetary, macroprudential and fiscal policies including interactions and coordination.

67. The Review also provides an overview of monetary policy developments in inflation targeting countries in the article "Monetary Policy Frameworks: Recent International Developments", and usefully provides this table:

Table 1: Monetary policy frameworks in selected advanced economies

Central bank	Date inflation targeting adopted	Current inflation target	Target variable	Changes since Spring 2012 Review article (May 2012)
Reserve Bank of New Zealand	March 1990	2 per cent midpoint (since 2012) in 1–3 per cent range (since 2002; several previous adjustments)	Consumer price index (CPI)	Inflation target focuses on the 2 per cent midpoint (since September 2012)
Bank of Canada	February 1991	2 per cent midpoint in 1–3 per cent range (since end of 1995, following a transition period from 1991)	CPI (operationally use core CPI)	No significant changes
Bank of England	October 1992	2 per cent (since 2004, following previous adjustments) (±1 percentage point, but not a target range)	CPI	No significant changes
Swedish Riksbank	January 1993	2 per cent (since 1995, following a transition period) (±1 percentage point tolerance interval removed in 2010)	CPI (emphasis on underlying measures of inflation)	No significant changes
Reserve Bank of Australia	March 1993	2–3 per cent, on average, over the business cycle (since initial adoption in 1993 and formal endorsement in 1996)	CPI	No significant changes
European Central Bank[a]	January 1999	Below, but close to, 2 per cent (since initial announcement in 1999 and confirmation in 2003)	Harmonised Index of Consumer Prices (HICP)	No significant changes
Swiss National Bank[a]	January 2000	Less than 2 per cent (since 2000)	CPI	No significant changes
Norges Bank	March 2001	Approximately 2.5 per cent (since 2001) (±1 percentage point, but not a target range)	CPI (emphasis on a core measure of the CPI)	No significant changes
US Federal Reserve[b]	January 2012	2 per cent (since January 2012)	Personal consumption expenditure price index (PCEPI)	No significant changes
Bank of Japan	February 2012	2 per cent target (since January 2013)	CPI (emphasis on a measure of CPI that excludes fresh food)	Target introduced January 2013; previously 1 per cent goal since February 2012; previously undefined but generally interpreted to be 0 per cent

a. The European Central Bank and the Swiss National Bank do not consider inflation targeting the goal of their monetary policy regimes.
b. The Federal Reserve does not use the word "target" to describe its inflation objective. Rather, it has stated that 2 per cent inflation is "most consistent over the longer run with the Federal Reserve's mandate for price stability and maximum employment."
Sources: Lavigne, Mendes and Sarker (2012); central bank websites

68. The table above illustrates that there have been two relatively minor target changes in Japan and New Zealand. In addition to these, the Bank of Korea has lowered its annual inflation target to 2% (from 2.5% - 3.5%) for three years starting 2016. Apart from those target changes, there have been some changes to give more flexibility for unconventional monetary policy. There have been no fundamental monetary policy framework changes.

Developments in other countries

69. Adherence internationally to inflation targeting has arguably been strengthened over the last five years. In particular, the United States explicitly acknowledged that it is an inflation targeting bank in January 2012, and described its price stability objective as 2% increases in the price index for personal consumption expenditures:

> The Committee judges that inflation at the rate of 2 percent, as measured by the annual change in the price index for personal consumption expenditures, is most consistent over the longer run with the Federal Reserve's statutory mandate.

70. While there was a general consensus that the US Federal Reserve was targeting inflation (reinforced by earlier speeches by Bernanke and other Chairs[13]), the release is notable because, within its statutory mandate, the Federal Reserve has wide discretion to define the way it goes about its objectives, which are also broadly defined. The decision to stick with - and in fact reinforce through explicit acknowledgement - its flexible inflation-targeting framework suggests that the Federal Reserve saw little benefit in committing to an alternative.

71. Comments from recent Reserve Bank of Australia Governor Glenn Stevens have reinforced the RBA's commitment to inflation targeting. Glenn Stevens described inflation targeting as "easily the best monetary policy framework we've ever had and we've tried most of them actually over the long run." He continued:[14]

> We've tried a whole bunch of different things, different arrangements with the currency, monetary targeting, no particular target. We've tried all these things and this set-up has worked well and I think will keep working well into the future. So with appropriate good sense and flexibility and I think the framework has all that I'm sure that the Bank can continue to succeed.

Conclusion

72. No central bank that was targeting inflation since 2012 has moved away from inflation targeting. This suggests that for those countries targeting inflation, it is still considered the best monetary policy framework, or at least that the costs and risks from changing to a different framework exceed the expected benefits. In this regard it is particularly worth considering that since 2012:

- the HM Treasury review explicitly looked at frameworks that did not involve inflation targeting and did not find the case convincing,
- the US Federal Reserve explicitly confirmed what had been implicit for some time – that it was an inflation-targeting central bank,
- the Governor of the Reserve Bank of Australia described inflation targeting as the best monetary framework "we've ever had".

73. Countries have made organisational and governance changes to the growing role for macro-prudential policies.

In areas of both macro-prudential and monetary policy, transparency is advancing. In particular, there is a growing importance of minutes of committee decision-making

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13 In particular, *The Effects of the Great Recession on Central Bank Doctrine and Practice*, Ben Bernanke, October 18, 2011, at the Federal Reserve Bank of Boston 56th Economic Conference, Boston, Massachussets

14 Remarks by Glenn Stevens, Governor, at the Trans-Tasman Business Circle boardroom briefing – Sydney. http://webcasting.brrmedia.com/broadcast/5743d91a3efb368650c48f54

meetings overseas as a communication device, whereas minutes are not released in New Zealand, reflecting the single decision-maker. For macro-prudential policy, having the same person making the decision (the Governor) means that the deliberative process of co-ordination (with associated public communication) that seems to be evolving overseas, is less formalised in New Zealand.