

Central Bank of Chile's Monetary policy decision-making process, communication and transparency Review and recommendations

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I was asked to review the system for monetary policy decision-making and communication at the Central Bank of Chile. I find that the (new) system is well in line with practice at leading inflation targeting central banks. The changes that will be introduced from 2018 are well received and generally well chosen. But there is still room for improvements. The most obvious improvement would be to publish the policy rate path behind the bank's forecasts. But before doing that – and before doing other changes – the Board might make an explicit choice on how it wants to do policy analysis and decision-making. Only then can the bank make the best choices for communication and transparency.

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Summary

I was asked to review the system for monetary policy decision-making and communication at the Central Bank of Chile. I focus on the system that will be in place from January 2018. I also give recommendations.

In terms of target attainment the system seems to work well. Average inflation is on target. I do not see the high inflation volatility as a sign of something not functioning, rather on the contrary. Inflation volatility is natural for a small open economy exposed to large and frequent external shocks and where monetary policy reacts appropriately. It would be very costly in terms of output volatility and unemployment if monetary policy should focus on always bringing inflation quickly back to target. Such a policy is not optimal.

The changes to the system that will be introduced from 2018 are timely and for the most part well chosen. They will bring the system up to international best practice. The main deviation is that there is a one-night lag between the publication of the monetary policy decision and the monetary policy report. In terms of the standard measure of transparency, the Bank lags behind leading central banks because it has no regular reviews and because it is quite salient about expectations and plans for future monetary policy.

External analysts are satisfied with the system and the changes that will be introduced. But they would like more information about the policy rate path and the discussions in the Board.

I find it problematic that the Bank does not publish its policy rate path. The inflation forecast is in itself not very useful. It always goes smoothly back to the target at the horizon. What is interesting, however, are the reasons for why inflation goes back to target. The policy rate path behind the forecasts provides that information. Experiences from other countries show that it is fine to publish policy rate paths; they are not received as promises and central banks change the paths when needed. If the Board nevertheless finds that it cannot publish its own assessment of the appropriate policy rate path, I recommend that it bases its forecasts on an exogenous policy rate path that can be published. Alternatively, the Bank can publish staff forecasts only.

But before taking any additional steps I recommend that the Board reconsiders its decision-making system. There are essentially three alternatives. Under the first alternative, "the Swedish system", the Board together finds a policy rate path that gives forecasts for the target variables that a majority finds looks good and set the policy rate according to this published path. Under the second alternative, "the British system", the Board together produces forecasts based on an exogenous policy rate path and may or may not set the policy rate according to this published path. Under the third alternative, "the Czech system", the Board has no common forecasts, but it receives and publishes staff forecasts. Which alternative the Board chooses has bearings for the internal processes and how the Board shall communicate and be transparent.

Under the two first alternatives, especially the first, it is strange to have a very long and elaborate monetary policy meeting at instances with a monetary policy report. At these instances everything will be more or less finished and done already before the meetings and a short decision-making monetary policy meeting should suffice.

The monetary policy framework and strategy as it is spelled out in Central Bank of Chile (2007) and partly also in the Preface to the monetary policy report need revisions and updating. The current formulations suggests that the Bank stabilize inflation at target as fast as possible. In practice the Bank aims at bringing inflation back to the target within the two year horizon. This gives some flexibility and the bank should define some criteria and methods for choosing among different policy alternatives. The two year forecasting horizon is too short when the horizon for when inflation should be back at target is two years. Finally, the range around the inflation target is too narrow. But rather than widening the band I think you should just take it away.

Transparency is not sufficient for accountability. There will also have to be someone who actually reviews the policies. Some central banks therefore, on their own initiative or at the behest of their governments, undergo a detailed evaluation of monetary policy by outside experts. I think such a mechanism should be instituted also for the Central Bank of Chile.

In summary, my recommendations are the following:

- Publish the policy rate path
- Make an active choice on what alternative for group decision-making the Board shall use
- Make the internal process with the policy report explicitly step-wise and create ownership
- Refine Monetary Policy Report (add a box with strategy, publish data behind diagrams, etc.)
- Update the document describing the monetary policy framework
- Reconsider the format/length of the monetary policy meeting when there is a report
- Remove the range around the inflation target
- Prolong the forecasting horizon to 3 years
- Institute a bi-annual review of monetary policy
- Publish all monetary policy related documents in English at the same time as in Spanish
- Update the Bank's web pages on monetary policy
- Make sure minutes are anonymized (if they are meant to be anonymized)

1. Introduction

I was asked to review the system for monetary policy decision-making, communication and transparency at the Central Bank of Chile. The purpose the review was twofold (see terms of reference in Appendix 1). First, I should compare the Bank's monetary policy decision-making process on several dimensions with respect to other leading central banks. Second, I should consider the communication of monetary policy, paying special attention to the publication of the interest-rate path inherent in the Bank's forecasts. I could propose amendments and improvements to each dimension. An aim should be to identify aspects in which the communication of monetary policy decisions may be improved upon.

In September 2017 the Bank announced some changes to its decision-making process and communication. These changes are included in my review, and I focus on the system that will be in place from January 2018.

I prefer to reserve the term 'communication' for central banks' active use of transparency as a means of influencing agents' expectations. In the review I also look at transparency as a means for achieving accountability and good incentives. I have therefore included the term 'transparency' in the review title.

When preparing the review I have read previous monetary policy reports, press releases, minutes and the latest documents describing the Bank's approach to monetary policy.² I have had bilateral meetings with all members of the Board, the management of the Research division, the Financial Markets Division and external analysts.³ I visited the Bank October 16 – 20 2017 and sat in at the monetary policy meeting on October 19.

Looking at the system from the outside has the advantage that I can see things with an outside perspective. But, it may also mean that some of my comments and suggestions are based on misunderstandings and a superfluous foundation. I nevertheless choose to give my honest views, knowing that you will extract "signals from noise".

I start the report by presenting a list of objectives that the system for monetary policy decision-making, communication and transparency shall fulfill. The list is useful when evaluating the system. I then present a simple framework for thinking about monetary policy decision-making in groups. The framework shows what the alternatives generally are, and in particular what the alternatives are if the group that wants to publish a common policy rate path. I then look at the international practice. The review starts in section 6, and my recommendations are found in section 7. The review and recommendations can be read without having read the previous sections and therefore also contain some repetition from the previous sections.

I find that the (new) system is well in line with practice at leading inflation targeting central banks. The changes that are introduced from 2018 are well received and generally well chosen. But there is still room for improvements. The most obvious improvement would be to publish the policy rate path behind the banks forecasts. But, before doing that and other changes the Board should make an

² Central Bank of Chile (2007).

³ I met the following external analysts: Mario Arend S. (BTG Pactual), Vittorio Corbo (CEP, Former Governor), José de Gregorio (Universidad de Chile, Former Governor), Luis Oscar Herrera B. (BTG Pactual), Miguel Ricaurte (ITAU), Rodrigo Vergara (CEP, Former Governor).

explicit choice on how they want to do policy analysis and decision-making. Only then can the bank make the right choices when it comes to communication and transparency.

A few words on terminology. I use “committee” when I talk about a group that makes monetary policy decisions more generally. When I talk about the Board at the Central Bank of Chile, I use the term “Board” with capital “B”. I use the abbreviation CBC for Central Bank of Chile. To simplify I focus on policy rate paths, but the term “policy rate paths” can be understood as “plan for monetary policy” including things like quantitative easing etc.

2. The Big 5 objectives of the system

In this Section I present a list of objectives that the system for monetary policy decision-making, communication and transparency shall fulfill. The list is useful when reviewing the system at the CBC, but also when I look at alternative systems more analytically in section 3. The title of this section is borrowed from the evocative title in Warsh (2014). My first 4 objectives resemble his Big 4 objectives.

The first objective is, of course, that **the system shall produce good decisions**. How can we get good monetary policy decisions? Apart from ensuring good inputs from the staff, the literature essentially points at two things. First, the committee members should work hard and make decisions in accordance with the mandate for monetary policy. Second, members should talk with each other (and the staff) in the right way. Monetary policy is made under uncertainty and limited information. It requires good judgment and all stones should be turned. There are many examples when groups have made bad decisions because the members have not listened to each other or to outsiders, or because they have all polarized on specific views and solutions and closed their eyes to important facts and better options.⁴ There must be a culture of inquiry, genuine deliberation, mutual respect and integrity, both in the committee and in the staff.⁵ The literature therefore suggests that the central banks shall be open and transparent. That facilitates outside examination and gives the right incentives.⁶

The second objective is that **the system shall manage expectations effectively**. Effective management of expectations is key to successful inflation targeting. By anchoring inflation expectations on target, the target becomes easier to achieve because pricing and wage determination becomes consistent with the inflation target. Smaller changes in the nominal interest rate are then needed to get a given change in the long term real rates. Furthermore, if agents understand the central bank’s reaction pattern they will react in accordance with the bank’s policy when shocks and new information comes along. Policy is more effective if it influences long term interest rates which in turn depend on monetary policy expectations.

Central banks can influence economic agents’ expectations by good *communication*. By announcing an inflation target and pursuing a policy that is seen as consistent with the target, the bank anchors

⁴ See for instance Bénabou (2013) and references therein.

⁵ “*Inquiry* (...) is a very open process, designed to generate multiple alternatives, foster the exchange of ideas, and produce a well-tested solution” (Garvin and Roberto, 2001, p. 110). *Genuine deliberation* is “the process by which participants not only share information but also learn from and influence each other” (Warsh (2014), p. 22).

⁶ See e.g. Sibert (2006) and Maier (2010). The literature also suggests that the group shall not be relatively small and have external members – but that is not an issue for this review.

agents' medium term inflation expectations at the target. The bank can influence the expectations of future monetary policy by giving forward guidance. The bank can influence economic agents' expectations of future economic development by publishing its forecasts. Furthermore, the bank can manage the expectations regarding the bank's future reaction pattern by being open how it thinks and go about when deciding monetary policy.

Another important objective is that **the system shall facilitate strong accountability**. Central banks are responsible for monetary policy, a large part of the overall economic policies of a country. They must therefore be accountable to the parliament or government and to the general public. It must be possible to see if the decision-makers are doing their job and if they are doing it well. That is important in its own right, but – as explained above – it also gives the right incentives.

Accountability requires *transparency*, but transparency alone is not sufficient for accountability. Too much untailored information may obfuscate matters. Central banks must therefore think through how to be transparent. Furthermore, we also need someone who actually checks if the decision-makers are doing a good job.

The fourth objective is that **the system shall be 'researchable'**. In the motivation for publishing transcripts from the monetary policy meeting (Central bank of Chile, 2017), the Central Bank of Chile writes that publication of the transcripts will "contribute to study the country's economic history and will provide a better understanding of the decisions from a historical perspective." Warsh (2014) writes that "the Bank (...) has a duty to be transparent to economic historians, a responsibility to create a record of its policy discussions and judgments. Central bankers today are still wrestling with the lessons from the successes and failures of our predecessors. A more robust historic record should be conveyed to future policymakers so that they can deliver better on their objectives."

I subscribe to this objective, but I think researchability requires insight beyond just minutes and transcripts. This is especially the case at central banks where the monetary policy meetings are just formal endpoints to a longer process of meetings and carving out of policy. In order to learn from the past and especially from past mistakes we need insight into the whole process, not only the discussions at the final formal meetings. This kind of insight is important even for proper accountability. I will come back to this point below.

The final objective is obvious, but deserves to be mentioned explicitly. **The system shall be cost efficient**. Central banks are government bodies, essentially financed by tax-payers money. Like any taxpayer financed institution even the central banks should be cost efficient. But central banks must think about efficiency also at the receiving end. Bombarding the market and the public with information may require much work on their side. That is not cost efficient from a macroeconomic perspective.

3. Alternatives when decisions are made by a group

How can a monetary policy committee reach a decision and how can it reach agreement on the policy rate path? Should it reach an agreement on the policy rate path? How shall it communicate? In this section I provide a simple framework for thinking about these questions.

It is useful first to remember that inflation targeting is forecast targeting. It is forecast targeting because monetary policy works with lags. Changing policy today will not influence inflation today or in the nearest future. It can only influence inflation beyond the nearest future. We should therefore look at forecasts when deciding on policy and ask the following question: “Which policy alternative gives the best forecasts for inflation and the other target variables?”

3.1. Step-wise decision-making

A stepwise procedure is natural under the forecast based approach to inflation targeting. First the decision-maker should make a judgment on everything that is of relevance for the forecasts, but which monetary policy cannot influence. Then she should take these judgments as *exogenous inputs* and find a policy rate path that gives forecasts for the target variables that “look good” in terms of target attainment.⁷ Finally, she should set the policy rate (or vote for a policy rate) according to the path. This procedure is described in somewhat more detail in Box 1.

Notice that the stepwise procedure generates a complete *story* that fully explains the decision (or the vote). It consists of the exogenous inputs, the policy rate path, the reasons for choosing this path, and the associated forecasts for inflation and other target variables.

When there is only one decision-maker, this story gives the best possible basis for assessing if the policy maker is doing a good job (strong accountability) and for understanding how she thinks and goes about (effective management of expectations), see Box 1.

What should be published if the decision-maker uses this procedure? The first best would be to publish the story that explains the decision, including the policy rate path. But, some central banks find that publishing this kind of policy rate path is difficult or dangerous. Some resort to publishing everything except the policy rate path. I find that problematic as the forecasts for inflation (and other variables) are of limited value in and of themselves. The reason is simple. If the inflation forecast is always based on a policy rate path that brings inflation back to target at the horizon, then the inflation forecast will always go back to target at the horizon. Seeing that forecast is not very useful. What is useful are the reasons why inflation will go back to target. The policy rate path gives that information. There might be more information in the inflation forecast if the horizon is more flexible. But, the main point remains: Under an inflation targeting regime and forecasts based on a policy rate path that brings inflation back to target there is very limited information in the inflation forecasts per se. Thus, if the decision-maker does not publish the policy rate path behind its forecasts it is withholding the key piece of information (Svensson, 2017). Accountability, researchability and the management of expectations is severely weakened. I will return to this issue below.

⁷ The term ‘look good’ is from Lars E. O. Svensson. I am not sure when he first introduced the term, but it is found in several places, latest in Svensson (2017). A more formal exposition is found in Svensson (2010).

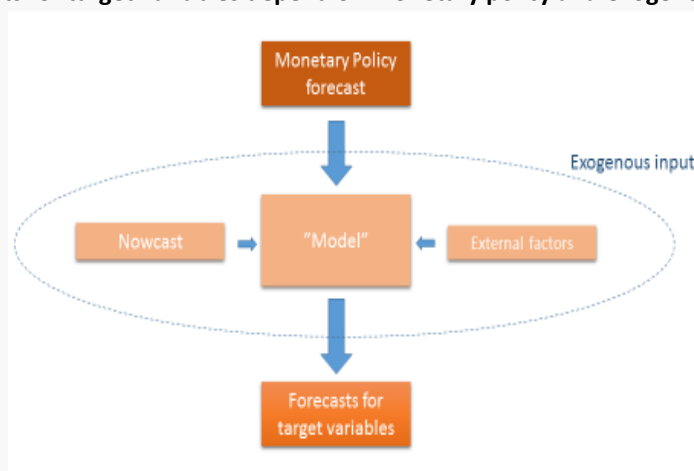
Box 1. The stepwise procedure

Step 1. Decide the *exogenous input*. Make a judgement/estimates of everything that is of importance for the forecasts for the target variables but which monetary policy cannot control; the current economic situation and the near future (*'the nowcast'*), the transmission mechanism for monetary policy (*'the model'*), and all other things that are of importance for the forecasts for the target variable but which monetary policy cannot control (i.e. price of copper and energy, fiscal policy, world inflation and growth, etc. – *'the external factors'*). The judgment on these issues serve as a given *exogenous input* when working on the forecasts in the next step.

Step 2. Decide the policy rate path and the *baseline scenario*. Select a policy-rate path that (given the exogenous input) results in forecasts for inflation and other target variables that look good in terms of target attainment.⁷ The resulting *baseline scenario* consists of (a) the exogenous input from the first step, (b) the policy rate path and (c) forecasts for the target variables. As the policy rate path determines the policy rate today the baseline scenario determines and explains the decision with a complete 'story' of the following type: "I/We find that the policy rate should be raised/lowered/kept unchanged. The reason is the following. I/We judge the exogenous input to be 'so and so'. Given that, I/we find that the policy rate path in the baseline scenario gives forecasts with the best target attainment. The policy rate path implies a higher/lower/unchanged policy rate."

Step 3. Publish the decision and explain. Publish the decision and the justification in the form of a shorter press release and a monetary policy report with the baseline scenario including the policy rate path and motivation for the choice of policy rate path, i.e. the story behind the decision.

Forecasts for target variables depend on monetary policy *and* exogenous input



The stepwise procedure is not only natural, it is arguably also the best – at least if decisions are taken by a single individual. The procedure takes seriously that the task of the policymaker is to find the policy that gives the best target attainment. It provides a complete story that fully explains and justify why the decision-maker finds a certain level of the policy rate today to be the best. It shows the full analysis in a relatively simple way. It makes it possible for outsiders to scrutinize the justification for the view/decision. Outsiders can check if it builds on a good foundation; good forecasts, good analysis, if it is in line with the mandate for monetary policy, and so on. That provides for strong accountability. As I see it, no other procedure does that to the same extent. The story will also enhance the outsiders understanding what the decision-maker has planned for and how she thinks and go about when analyzing monetary policy. That provides for effective management of expectations. The procedure is cost efficient and researchable.

3.2. Group decision-making

The stepwise procedure was described in terms of a single decision-maker. What if decisions are made by a committee? We can distinguish three alternatives.

Alternative 1 is that the committee together finds a policy rate path that gives forecasts for the target variables that a majority finds look good. Even in this case it is natural to follow the stepwise procedure, but this time the decision-makers do the steps together. The committee starts by deciding on the exogenous inputs. This can be done by a majority vote or by consensus. In the next step they take the exogenous inputs as given and find a policy rate path that gives forecasts for the target variables that at least a majority of the members believes looks good. This becomes the committee's *baseline scenario*. In the third step the committee sets the policy rate according to the policy-rate path in the baseline scenario and announces and explains the decision. The decision-making procedure at the Riksbank resembles this alternative (see Appendix 5).

In practice the decision-making process may not be as step-wise as above. The key here is that the committee together finds a policy rate path that gives forecasts for the target variables that a majority finds look good. However, I think there are gains from doing it as step-wise as possible.

With this alternative the committee has one complete story that fully explains the decision. It is the common baseline scenario and the reasons for choosing the policy rate path in the baseline. Thus, this alternative generates a policy rate path for the committee as a whole.

Alternative 2 is that the committee together produces forecasts that are based on a policy rate path that does not necessarily give forecasts that look good for the majority. It is natural to think in terms of a stepwise procedure even here. The committee starts by deciding on the exogenous inputs. This can again be done by a majority vote or by consensus. In the second step the members only do "half of the job" together; they add an exogenous policy rate path (fixed policy rates, market rates, etc.) or a policy rate path that follows from some simple rule/reaction function and produce a baseline scenario with forecast for the target variables. These forecasts need not look good in the eyes of the individual group members. The majority may therefore, in the third step, vote for a policy that is not consistent with the policy-rate path in the baseline scenario.

This alternative is used by the Bank of England (exogenous path) and used to be very common among inflation targeting central banks. Another variant of this alternative is the one where the group has a report with a description of the current situation and the past, but no forecasts.

With this alternative the group will have a single complete story that fully explains the decision only in the cases when a majority finds that the forecasts in the baseline scenario look good. In all other cases there will be no single story that explains the decision. The decision will then be explained by individual votes/stories and the voting rule. This alternative cannot be used if the committee wants to always have a policy rate path that gives forecasts for the target variables that look good in the eyes of the majority.

Alternative 3 is that the committee has no common forecasts. The committee members meet to share information and discuss, but in the end they just vote on policy. There is no common judgment on the exogenous inputs and no common forecasts. To arrive at a preferred policy each member individually may use the stepwise procedure, a more intuitive approach, the Taylor rule, or some

other procedure. As an input the group may also receive a report with forecasts from the staff or the Governor/chairman. This alternative is used by the ECB and the Fed. The alternative is also used by some smaller central banks like the Czech National Bank and Norges Bank, at least formally.⁸

Neither under this alternative is there a common baseline. Thus, there is no single complete story that explains the decision. The decision is instead explained by all individual stories and the voting rule. Obviously, this alternative cannot be used if the committee wants to have a policy rate path that gives forecasts for the target variables that look good in the eyes of the majority.

Thus, if the committee wants to always have a policy rate path that gives forecasts for the target variables that at least the majority of the committee supports and which is consistent with the policy decision, they have to use Alternative 1.

3.3. Is there a normative benchmark?

Which of the three alternatives shall the committee use? I think it is fair to say that there is no obvious answer to this question. There is no empirical literature to guide us, and theory is quite limited.

One thing to notice is that the specific institutional setting matters for the choice of alternative. Yellen (2012, p. 21), for instance, suggests that the FOMC cannot choose alternatives with common forecasts as it is a very large group. Here I would like to add that most FOMC members have their own staff. I believe alternative 1 or 2 is more natural when the committee members only have common staff.

For small in-house committees, like at the CBC, there is much that speaks for Alternative 1, i.e. the alternative where the committee together finds a policy rate path that gives forecasts for the target variables that a majority finds looks good. The main argument is that this gives one single and complete story that explains the decision. That gives strong accountability, researchability and potential for effective management of expectations. It is also cost efficient as it reduces double work and it is the most cost efficient at the receiving end. Another argument is that it makes it possible for the committee to use a very explicit stepwise procedure. The stepwise procedure is reminiscent to using a so-called premise based decision-making procedure. Theory suggests that the premise-based procedure produces the best decisions and the best explanations when decisions are made by a group.⁹ The stepwise procedure also helps in structuring the discussions and highlights that there is a difference between forecasting the next few months when monetary policy has no effect and forecasting the medium term when monetary policy has an effect. It makes clear what elements in the analysis is 'pure forecasting' and what is monetary policy analysis. A third argument for Alternative 1 is that it makes it sensible for the committee to spell out the common criteria that will guide the committee in its choice between different policy rate paths.¹⁰ Such criteria creates

⁸ At the Czech National Bank the board receives an inflation report from the staff. At Norges Bank the board receives a monetary policy report from the governor. These reports are published together with the monetary policy decisions, but not underwritten by the boards. However, I am somewhat hesitant to put Norges Bank under the first approach. There the forecasts are explicitly discussed by the Board beforehand and it is my impression that they have a say when the report is carved out. See Appendix 6 for a description of the system in Norway.

⁹ See Claussen and Røisland (2015).

¹⁰ Very few central banks are very explicit about their criteria. An exception is Norges Bank, see Qvigstad (2005) and separate box with "criteria for appropriate interest rate path" in Norges Bank monetary policy reports. Notice that the Norges Bank criteria has changed and – arguably – become somewhat weaker over time.

predictability, makes life easier for the staff and helps in structuring the discussions in the committee.

The arguments against Alternative 1 are in my opinion weak. One possible argument against Alternative 1 is that it might be more vulnerable to free-riding and shirking than the other alternatives. Members might not find it worthwhile to put in a lot of effort under this alternative as accountability is primarily on the committee as a whole. I do not see this as a strong argument, first of all because I do not think any committee member will underwrite a decision and forecasts that she does not feel confident with. Furthermore, it is possible to add features that strengthen individual accountability. Examples are attributed votes, minutes, hearings of the individual committee members, transcripts, and so on.¹¹ Another questionable argument against Alternative 1 is that it forces everyone to “think in the same way”. People that use simple rules or more intuitive approaches will not fit in this alternative. As I see it, that could also be considered a benefit as inflation targeting has to be forward looking and should build on proper and replicable analysis. Furthermore, proper analysis will also entail robustness checks against simple rules, market rates, etc.¹² A third argument that may be raised against this alternative is that the committee will be “captured” by the staff as the staff will do most of the ground work, will know the details and in many ways acts as the agenda setter in the process. I agree that this is a danger, but I think that this danger will be just as big, if not even bigger under the alternatives where the board is less involved in the crafting out of forecasts, especially when committee members do not have their own staff. A committee that takes explicit ownership of the forecasts has to make sure they are not “captured”. Using an explicit stepwise procedure is a remedy against capture. A practical challenge with Alternative 1 is that it requires some willingness to compromise. Members will have to have a ‘close enough’ approach and accept stories and decisions that deviate somewhat from their most preferred ones. But this seems not to be a problem in practice. For instance, Apel et al (2015) find that there is a close enough approach at the Riksbank.

Committees using Alternative 1 should publish the policy rate path, not only the forecasts for inflation and other target variables. The reason is, as explained in Section 3.1., that the inflation forecast in itself is not very interesting. It will always reach the target when it is based on a policy rate path that brings it back to target. The key information is what policy is required to bring inflation back to target, not the inflation forecast in it selves.

In my view the main arguments against publishing policy rate paths have either proven to be wrong or miss the point.¹³ First, the public does not take policy rate paths as promises. Market expectations often differ from the policy rate paths and often with a great margin, see for instance Sveriges Riksbank (2017). Second, the central banks are not hesitant to deviate from a previously announced path, see Figure 1. Third, publishing the path has nothing to do with fine-tuning. It has to do with doing proper and replicable analysis and explaining the decisions well. It is obvious that we cannot fine-tune. But if we believe that monetary policy must be forward looking, any decision on monetary policy must explicitly or implicitly involve the selection of a policy-rate path, a forecast of the future

¹¹ Free-riding, shrinking and so on are discussed in the literature on monetary policy decision-making in groups. The solution is, according to the literature, to add strong individual accountability. See e.g. Sibert (2006) and Maier (2010).

¹² In the literature having external members on the committee is suggested as a remedy against groupthink and polarization, see e.g. Sibert (2006) and Maier (2010). But having external members is not a topic for this review.

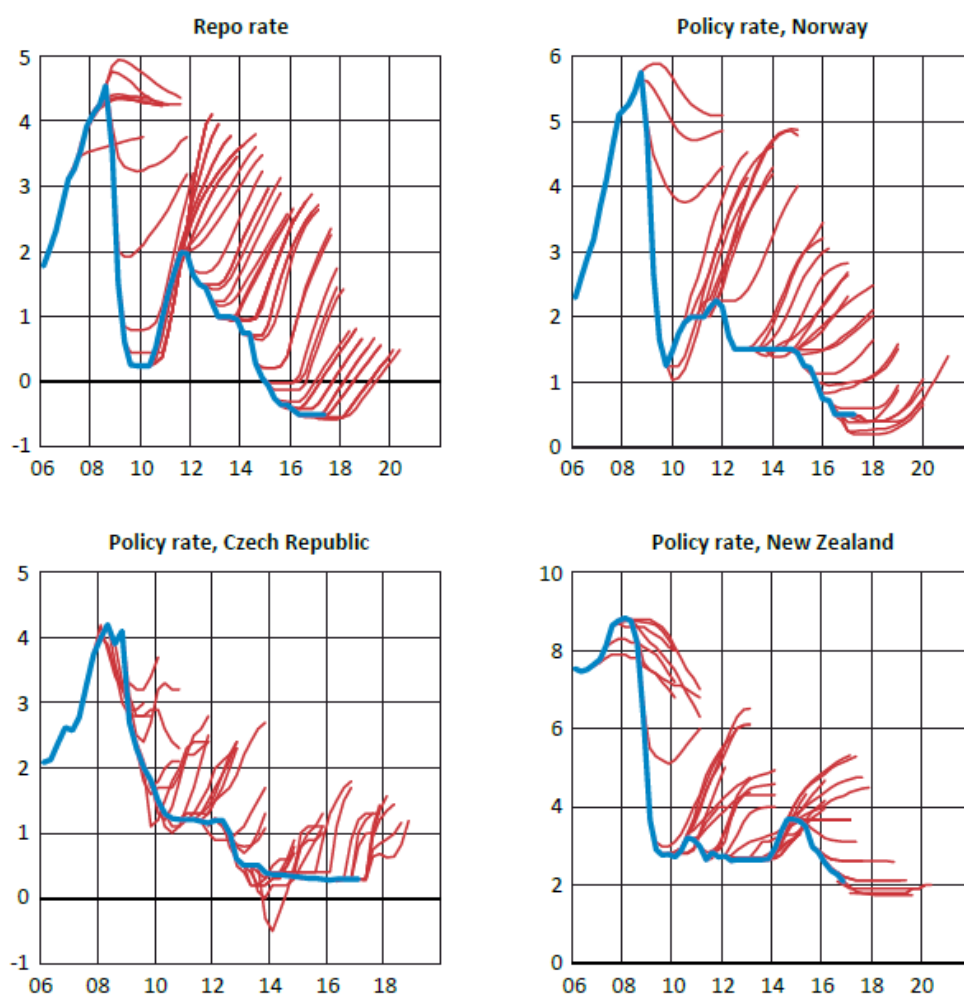
¹³ For references to the discussion, see Sveriges Riksbank (2017).

policy rate. Not to discuss and select a policy-rate path is in my view an incomplete analysis, no matter whether you can fine-tune or not.

My conclusion is therefore: A small in-house committee should use Alternative 1 and publish its own policy rate path. If it cannot publish its own policy rate path it should use Alternative 2 and publish the exogenous or model based policy rate path.

Notice that the IMF seems to recommend publishing staff projections (Clinton et al, 2015).

Figure 1. Central Banks policy rate forecasts over time



Source: Sveriges Riksbank (2017)

Let me end this subsection by saying a few words about the number of meetings, intermediate meetings, minutes, and so on.

Four monetary policy reports per year is sufficient, and it fits well with the releases of quarterly national accounts data. Producing forecasts and doing monetary policy analysis is demanding and time consuming. The staff needs time also to develop their tools and methods. At the same time there is little value added in producing new forecasts very often. There is even a risk that frequent forecasts become pure updates leaving many stones unturned. It is better to have fewer full rounds start with fresh eyes each time.

It is reasonable to have four lighter intermediate meetings. These meetings should not be full forecasting rounds, but meetings to just check if the developments are roughly in line with the previous report. If the deviations are large, there can be a need for updating the forecasts and assess if there is a need for policy changes. However, in normal times decisions about changes in monetary policy will not be made at intermediate meetings. Normally, there is no need for press conferences. If a situation with the need for a press conference occurs, it can be announced in the press release with the decision that there will be a press conference.

Box 1 summarizes the conclusions from this subsection in what I call the normative benchmark. However, I would like to note that the benchmark represents my subjective view.

I do not to include minutes in the normative benchmark. Minutes may enhance accountability and improve communication. But minutes may also obfuscate communication, put committee members under outside pressure and incentivize opportunistic behavior. Furthermore, if the group publishes the minutes, the full justification for its decisions communication is clear and accountability for the board as a whole is strong. With the publication of transcripts also the individual accountability and researchability is good. However, committee members may need an outlet where they can express nuances and motivate their vote externally. There may also be information in the minutes that convey the level of uncertainty, and so on. Thus, there are arguments both for and against minutes. It is not obvious to me that they tilt for or against publishing minutes, and they are therefore not included in the normative benchmark for small in-house committees.

Box 2. My normative benchmark for small in-house committees

Policy meetings

- 8 pre-scheduled and announced meetings per year
 - 4 with a report and 4 “intermediate” without a report
 - Press release with explanations published shortly after the decision
 - Press conferences at least at the meetings with report
- Stepwise procedure for forecasting and monetary policy analysis

Report

- Owned and underwritten by the board
- 3 years forecast horizon
- Forecasts based on a policy rate path gives target variable forecasts that look good in the eyes of a majority of the committee
- The policy rate path is published
- Justification for the choice of policy rate path in the report

4. International practice

What do the systems look like internationally?

Table 1 summarizes some relatively easily observable features of the systems at leading inflation targeting central banks. In the upper part are central banks with relatively small committees. In the

middle part are banks with large committees and in the lower part are banks with only internal members.

A general observation is that there is no clear international norm when it comes to the features in the table. The systems differ between countries, even between leading inflation targeting central banks.

But there are some common features. The overwhelming majority has 8 monetary policy meetings per year and at 4 of these meetings they publish an inflation/monetary policy report. At meetings with a report both the decision and the report is published simultaneously and there is a press conference. All of the banks publish a press release with some explanations for the decision at all meetings. A large majority of the banks publish minutes in some form.

In the other areas the systems differ and it is hard to see any common features. There are as many that publish votes as there are banks that do not. Less than half publish transcripts, but there are still quite a few that does. Half of the banks have a forecast horizon of two years and half have a forecast horizon of three years.

When it comes to policy rate paths, forecast ownership, and publication there are many differences.

An interesting observation is that banks with a committee-owned endogenous policy rate path forecast do not publish the policy path. Banks that publish endogenous policy rate paths have forecasts that are owned by the majority of the committee (Riksbank), the staff (CNB and Israel) or the governor (Norway). Another interesting observation is that small banks typically produce forecasts based on an endogenous policy rate path while the large ones do not.

There are more common features if we limit the sample to banks with small in-house committees. They tend to publish votes and do so with a short delay. Half of them publish transcripts. Half of them have forecasts based on an endogenous path owned by the committee or a majority of the committee.

Table 1. Decision-making, communication and transparency at leading inflation targeting central banks

	Type, size ⁹⁾	Meetings							Report			
		#	# with reports ⁴⁾	Press release	Press conference	Minutes ⁵⁾	Attributed votes ⁵⁾	Transcripts ⁶⁾	Ownership	Horizon	Policy path ³⁾	Path published
Island	E, 5	8	4 (0)	Always	Always	14	Long ⁸⁾	No	Board	3	Endogenous	N
Israel	E, 6	8	2 (-1)	Always	n.a.	14	No	n.a.	Staff	2	Endogenous	Y
Norway	E, 8	8	4 (0)	Always	Report	0	0	No	Governor	3	Endogenous	Y
South Korea	E, 7	8	4 (0)	Always	Always	14	No	n.a.	n.a.	1 ½	n.a.	N
Australia	E, 9	11	4 (3)	Always	No	14	No	No	n.a.	2-3	Market	N
Euro Area	E/I, 19	8	4 ¹⁾ (0)	Always	Always	30	No	No	Staff	2	Market	N
Japan	E, 9	8	4 (0)	Always	Always	30	0	10	Board	3	n.a.	N
UK	E, 9	8	4 (0)	Always	Report	0	0	8	MPC	3	Cnst./Mrkt	N
USA	E/I, 12	8	4 ²⁾ (0)	Always	Always	21	0	5	No report	No report	Dot plots	(Y)
Canada	I, 6	8	4 (0)	Always	Report	No	No	No	Board	2	Endogenous	N
Chile	I, 5	8	4 (0.5)	Always	Report	14	0	10	Board	2	Endogenous	N
Czech Republic	I, 7	8	4 (0.5)	Always	Always	8 – 14	8 – 14	6	Staff	2	Endogenous	Y
Sweden	I, 6	6	6 (0)	Always	Always	14 ⁷⁾	0	No/Y ⁷⁾	Majority	3	Endogenous	Y
Switzerland	I, 3	4	4 (5)	Always	2	No	No	No	Staff ¹⁰⁾	3	Constant	Y
New Zealand	I, 1	7	4 (0)	Always	Always	n.a.	n.a.	n.a.	Governor	3	Endogenous	Y
Feature for more than 50%		8	4 (0)	Always	Always	≤14	0-14	No	..	2/3	Endogenous	N
In-house ex Chile		8	4(0)	Always	Always	≤14	NO	No	Gov/staff	3	Endogenous	Y

1) ECB Staff projections

2) Summary of Economic projections

3) Endogenous means a path that is generated by a model, a reaction function or a more judgmental one that leads to good looking forecasts for target variables. Cnst./Mrkt. means Constant and Market.

4) Inflation/monetary policy report with forecasts. Publication lag (days) relative to publication of decision in brackets

5) Approximate publication lag in days if not stated otherwise. “minutes” include what some central banks call “accounts”.

6) Publication delay in years if not stated otherwise

7) The minutes are almost transcripts

8) Votes are published in the bank’s annual report

9) “E” stands for committee with external members, “I” stands for committee with internal members only. The number gives the total number of committee members

10) “Report for the attention of the Governing Board” (p. 4) I interpret that as a staff report.

Sources: Central bank of Chile (2017), Warsh (2014) and central bank web-pages.

When it comes to **the decision-making process and the question of how committees arrive at a common policy rate path**, I only have detailed knowledge of the system at the Riksbank and Norges Bank.

The Riksbank publishes a monetary policy report together with the decision at all pre-scheduled monetary policy decisions. The process with the decision-making committee (the Executive board) starts approximately five weeks before the monetary policy meeting with a short meeting where recent developments are presented. Then there is a large meeting – two to three weeks before the monetary policy meeting – where recent developments, a draft main baseline scenario, alternative scenarios and in-depth analyses are presented in detail. The policy rate path in the draft baseline reflects the Executive board’s typical reaction pattern. The aim of this meeting is to prepare the Executive board for their discussions on the baseline scenario and the monetary policy decision. Shortly after the Executive board meets again with the aim to arrive at a majority supported baseline scenario. Sometimes the Executive board asks the staff for additional scenarios. If so, these are presented the next day at a follow-up meeting. At this point the Executive board usually manage to arrive at a majority supported baseline scenario. About a week before the monetary policy meeting the Executive board meets to make a preliminary decision on the baseline scenario and the alternative forecasts in the monetary policy report. At an editorial meeting thereafter the Executive board makes a preliminary decision on the monetary policy report. The monetary policy meeting usually begins with short updates and summaries by the staff. Thereafter the Executive board members read the motivation for their votes. Often there is no discussion. After 1-2 hours the meeting ends. A more detailed description of the process is found in Appendix 5.

It is not straight-forward to say how the members of the Executive board manage to arrive at a common policy rate path. The Riksbank has no fixed method or criteria for how to choose among different policy rate paths. A box on the inside of the monetary policy report gives a very broad description of the strategy, but apart from that there is nothing. There are no internal unpublished criteria or formal methods being used. Some years ago the bank used the “mean squared gaps” method described in Svensson (2010) and documented the analysis in the monetary policy report.¹⁴ But this method is not used any more. To the best of my knowledge, the main reason was that it did not incorporate all the mechanisms and tradeoffs that board members found relevant. In particular, it did not incorporate risks associated with rapid household debt accumulation.¹⁵ However, an important explanation as to why the Executive board manages to arrive at a majority on the path is probably that members find it worthwhile to show unanimity and therefore accept the path if it is reasonably close to their own assessment, see Apel et al (2015).

The Norges Bank publishes a monetary policy report at 4 of their 8 monetary policy meetings (from 2018). Three weeks before the final decision there is a series of meetings with the Governor and the two deputy governors where the staff present new information and new forecasts including a first forecast for the policy rate. One and a half weeks before the final decision the draft report is sent to the Executive board for the first time. One week before the final decision there is a longer seminar with the Executive board where new information, forecasts and suggestions for monetary policy decisions are presented and discussed. Key sentences for the press release and Executive board

¹⁴ See for instance the Riksbank monetary policy reports from October 2009

¹⁵ See for instance Ingves (2011).

assessments are discussed. A preliminary monetary policy decision is made. The draft report and other material related to the decision are sent to the Executive board the Friday before the monetary policy meeting which typically is on a Wednesday. The board members can call in comments to the drafts during the weekend. At the policy meeting the Governor typically presents background information and the new forecasts in the report, including explanations for changes in the policy rate path if there has been any. References are also made to the fact that the substantive discussion had taken place at the Executive board seminar a couple of weeks earlier. There can be a brief discussion after the presentation, but typically all Executive board support the proposed decision.

The main aim of the meetings without a report, the intermediate meetings, is to see if there is a need to deviate from what was said at the previous meeting with a report. No new forecasts are produced and there is limited analysis being done. The process is shorter and less involving at the intermediate meetings. The publication of the decision and the material is in the morning the day after, as in the case when there is a report. There is no press conference at the intermediate meeting. Appendix 1 gives a more detailed description of the process at Norges Bank.

5. The system at the Central Bank of Chile

In this section I briefly describe the system for decision-making, transparency and communication at the Central Bank of Chile.

Monetary policy decisions at the Central Bank of Chile are made by the Board of the Central Bank (the Board). The Board has 5 full time in-house members. Members are appointed by the President, with the prior approval of the Senate. One member is appointed Governor and one is appointed Vice-Governor. Members hold office for a term of 10 years and their appointments may be renewed. A member that is appointed Governor holds the position for 5 years, and may then complete the remainder of his ten-year term as a Board member. All members are appointed in a staggered fashion, generally every two years, and have various backgrounds; from academia, international organizations, ministries etc. They have their offices in the same hallway of the Bank.

The Board is responsible for monetary policy and the supervision and administration of the bank. Responsibilities are shared among the Board members, and no member is assigned a particular responsibility for monetary policy. No members have separate staff assigned to them, except for an adviser that assists with research interests, speeches, presentations, and other day-to-day activities.

The Research Division supports the Board in the monetary policy process and with monetary policy communication and transparency.

In September 2017 the Central Bank of Chile announced some changes to its monetary policy decision-making process and to its monetary policy communication and transparency. The changes will take effect as of January 2018. The description below covers the new system. The old system is described in Appendix 2.

From 2018 the Board will have 8 monetary policy meetings a year, one every six to eight weeks.

Under the new format there will be three sessions at each monetary policy meeting, which will last over one and a half days. During the first session, on the afternoon of the first day, information collected since the last monetary policy meeting will be examined. On the morning session of the

second day, staff will present and discuss updated forecasts that take in to account the developments presented the previous afternoon, also analyzing monetary policy alternatives. Later that day, in the afternoon session, the Board will vote and each member will substantiate her/his decision. After the vote, the press release will be reviewed and approved, and it will be published at 6:00 p.m.

Participation differs between the three sessions, with wider staff participation at the first two sessions. The Minister of Finance will have the right to participate at the monetary policy meetings as a Board member with the right to speak, but not to vote.¹⁶

The speaking order when the members substantiate their vote at the final decision-making session will be as before; starting with the most junior member in terms of Board membership and ending with the governor.

Under the current (pre 2018) system the Board receives a 'background minutes', a document describing the economic developments since the last monetary policy meeting two days prior to the monetary policy meeting. I assume they will receive something similar at meetings without a monetary policy report under the new system. I assume the Board will receive a draft monetary policy report before the meeting with a report.

A key question is what policy alternatives that should be brought to the monetary policy meetings and discussed there. Under the current (2017-system) the Board receives a written note from the head of the Research Division, generally with two policy options on the morning of the day of the monetary policy meeting. The day before, the head of the Research Division has had bilateral meetings with the Board members about the policy alternatives. I have no information on how this will be done under the new setup.

The press release with the monetary policy decision will be more comprehensive than today. It will provide more details on the economy's performance and the rationale for the Board's decision. Even the vote count with the names will appear in the press release. There will be no press conference at the time when the press release is released, but there will be a press conference when the monetary policy report is published, see below.

The minutes from the meeting will contain detailed information on the issues discussed during the meeting, the monetary policy options that were considered, and the main arguments justifying the Board's decision. In addition, the minutes will include the information currently published in the background minutes and the main charts of the presentation delivered by the Research Division at the monetary policy meeting; the background statement and the presentation will no longer be published separately. These changes are supposed to strengthen the minutes and should provide economic agents with additional useful information that may be relevant for a better understanding of the Bank's decisions. The minutes will continue to be published eleven bank working days after the corresponding monetary policy meeting.

¹⁶ There is broad participation at the monetary policy meeting. In addition to the 5 members of the Board, more than 15 members of the staff participate. Many of them are, according to the Internal Rules, entitled to express their opinion at the meetings. The Minister of Finance has the right to participate at the monetary policy meetings as a Board member with the right to speak, but not to vote. The Minister often participates and speaks at the first session of the meeting. He/she also express his/hers preferred policy choice. Votes are cast in the order of seniority at the board, starting with the most junior and ending with the governor.

The Monetary Policy Report (MPR) will (from 2018) be published on the morning of the day after the monetary policy meetings of March, June, September, and December. My impression was that the report and the process of preparing the report will be more or less as before even after 2018. The report gives the Board's view of recent and expected economic developments.¹⁷ It is a comprehensive report that contains two-year ahead forecasts for inflation, GDP and other variables. The policy assumption underlying the forecasts, the policy rate path, is not published.

As it is today (2017) the Board interacts with the research division at three main meetings during the process.

At the first meeting, roughly 3 weeks prior to the publication of the report, new short-term judgments and forecasts, international forecasts and medium term forecasts for inflation and GDP are presented by the research division and discussed by the Board. Issues for box articles are also discussed at this meeting. The Board can suggest changes to the forecasts, but my impression was that that does not happen at this meeting. After this meeting the staff prepares a first draft of the monetary policy report which is sent to the Board before the second meeting on the monetary policy report.

The second meeting on the monetary policy report takes place two weeks prior to the publication of the report. At this meeting the staff presents updated forecasts and more details on the forecast with details on the components of GDP, the labor market, disposable income, etc. More specific issues are also discussed at this meeting. I got the impression that the Board mostly "listen" also at this meeting, and do not ask for changes to the forecasts. There is no discussion of monetary policy at this meeting.

The third meeting, the "drafting meeting", takes place roughly a week before the publication of the report. At this meeting the Board goes through the first chapter of the report, the "summary", sentence by sentence and carves out a common text.

At a fourth meeting, which takes place one day after the drafting meeting the text is formally approved. The report is published 4-5 days after this meeting.

In summary, my impression was that there was not much active involvement of the Board when it comes to the forecasts in the monetary policy report and to the text in most of the report. Board members, at least some, seem to think of the report as mostly a staff product. Their focus was on the text and main messages in the summary.

However, in my bilateral meetings with the Board members several members highlighted the 'Thursday meetings' as important for the process. At these meetings, which takes place every Thursday, the staff present the latest economic developments to the Board. The Board discusses the information and the consequences for the forecasts and monetary policy. I got the impression that there is genuine deliberation at these meetings. These meetings seemed important in the process of

¹⁷ The main objectives of the Monetary Policy Report are, according to the Bank web-site: (i) to inform and explain to the Senate, the Government and the general public the Board's view of recent and expected inflation trends and their consequences for the conduct of monetary policy; (ii) to publicly explain the medium-term framework used by the Board of the Central Bank to formulate monetary policy; and (iii) to provide information that is useful in the formulation of economic agents' expectations regarding future inflation and output trends.

carving out forecasts and policy. I also noticed that the staff found the Thursday meetings demanding in terms of resources.

The monetary policy report will be presented at a press conference at the bank in the morning the day after the monetary policy meeting.

As far as I have understood, the forecasts in the monetary policy report will continue to be based on a “technical” assumption for monetary policy. In the reports the assumption is typically described as follows: “As a working assumption, the baseline scenario assumes that the MPR will follow a trajectory like the one that can be deduced from the various expectations indicators.” This is normally accompanied with a diagram showing the expectations. The exact policy rate path that the forecasts are based upon are not drawn out or quantified in any way.

The bank will publish the transcripts from the monetary policy meetings covering all three sessions of the monetary policy meetings with a ten-year lag. The transcripts contain detailed information and opinions on issues that were discussed by participants in each monetary policy meeting. Their release are supposed to meet several objectives. On the one hand, they shall further strengthen the accountability of the decision-makers and enhance public transparency. On the other hand, they shall contribute to study the country’s economic history and provide a better understanding of the decisions from a historical perspective. Transcripts will be released annually every March. Transcripts for monetary policy meetings that took place between the years 2000 through 2007 will be published in March 2018.

6. Review

6.1. The system works and changes are well received

A natural starting-point for the review is to look at the target attainment. Has the system produced price stability?

Average inflation over the period from October 2000 to October 2017 is 3.3 per cent, very close to the target. If we take out 2008-2009 – years when external shocks were particularly large – the average is 3.0 per cent, exactly on target. However, inflation variability is quite high. Over the period from 2000 the mean squared error (MSE) is 1.5 percentage points. Thus, inflation has on average missed the inflation target with one and a half percentage point. If we abstract from 2008-2009, the MSE is 1.1 percentage point, still large – in particular given the +/- 1 percentage point band around the target. During the period from 2000, inflation has been outside the band as often as it has been inside.

I do not see the relatively large inflation volatility as necessarily being a sign that the system is not working or that it is not safeguarding sufficient focus on inflation stabilization. Rather on the contrary. I suspect that the volatility is a result of Chile being exposed to large and frequent external shocks and monetary policy reacting appropriately. If monetary policy should focus on always bringing inflation quickly back to target it would be very costly in terms of volatile output and unemployment. Such a policy is not optimal.

But a deeper investigation is needed to find the reasons for the high inflation volatility. One of my recommendations is to institute a regular external review of monetary policy, forecasting and target attainment. Such reviews would have to find the reasons for the high volatility and assess if it is the result of a good or a bad monetary policy. Furthermore, the fact that inflation is outside the band so often suggests that it is time for the bank to reconsider the band.

It is also my impression that the internal process in preparing the monetary policy decisions and the monetary policy report works quite well. But I did notice that some board members seem to take a limited ownership of the forecasts in the report. That is problematic as it is a Board report. Here I should add that my insight into the internal process is superfluous. I never followed the whole process of producing a report.

During my week in Santiago I had talks with analysts outside the bank. They thought the system had worked well, although was not perfect. They endorsed the Bank for improvements over the years and they were happy with the changes that will be introduced from 2018. They found them timely and well chosen. An interesting observation was that the analysts I talked with seemed to know which Board member is behind the different statements in the minutes. Apparently it follows from the speaking order and is something that previous CBC employees know. I think it is important that the bank's communication gives the same information to all. It is not good if people that have previously worked at the central bank have an information advantage. This is something that the Bank should have in mind when writing the minutes.

Some other suggestions and comments that came in the meetings with the external analysts were the following:

- They would like to see more of the Board discussion in the minutes
- They would like the data for the diagrams easily accessible on the Bank's webpage
- They were in favor of publication of the Board's policy rate path
- Live web-casts from the press conferences is absolutely essential
- There should be English translations of the press release, the governor's speech and the monetary policy report available at the same time in English as in Spanish.

6.2. The system is in line with the international practice

In terms of the features in table 1, only one thing sticks out as different at the CBC; the monetary policy report will be published with a one-night lag relatively to the monetary policy decision. Internationally it is the most common to publish the monetary policy report at the exact same time as the monetary policy decision. This deviation is a small, albeit unnecessarily and somewhat problematic in that it opens for speculation and market volatility. I recommend that you remove it.

For central banks with an endogenous policy rate path it is common not to publish the policy rate path. Thus, the CBC does not stick out here. However, as I have argued above, it is problematic not to publish this path, simply because the inflation forecast is in it selves not very interesting. Thus, the international practice is problematic on this issue.

When it comes to the decision-making process and the question of how the committees arrive at a policy rate path, I can only compare with the Riksbank and Norges Bank. Compared to these two banks the process at the CBC differs, especially compared to the process at the Norges Bank. But, at

the Norges Bank the Board has many external members and the monetary policy report is the governor's report. The main difference compared to the Riksbank is that the CBC process seems to have less focus on finding the common policy rate path and building a common Board ownership of the whole report. However, a caveat here is that I only have superfluous knowledge of the details of the process at the CBC.

Neither the Riksbank nor the CBC have spelled out criteria or explicit methods to use when choosing among different policy rate paths. I do not know how it is at other central banks where the committee has a common policy rate path (published or not). But the Norges Bank has explicit criteria, something I will come back to below.

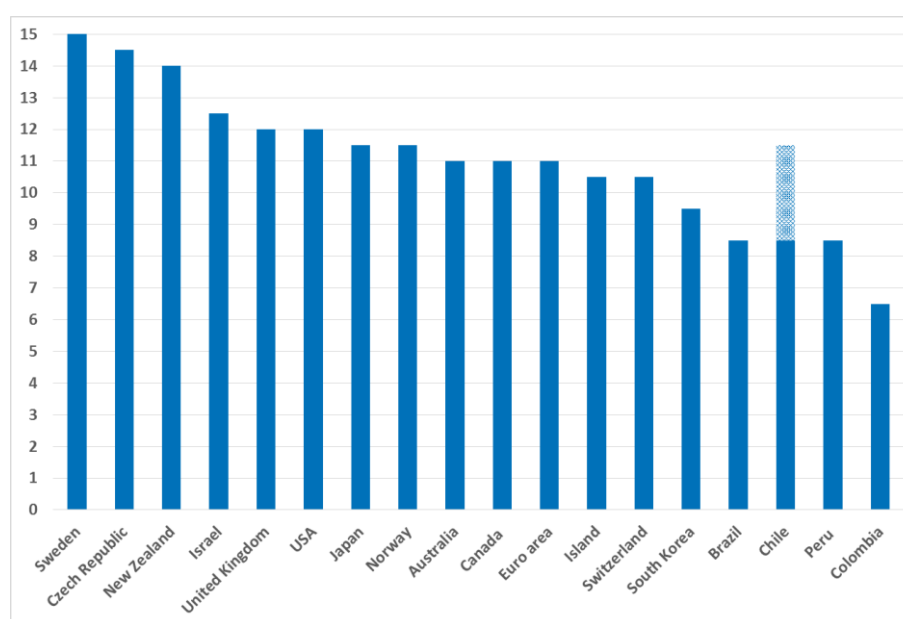
Another point of reference in international comparisons is the Eijfinger and Geraats (2006) transparency index (the 'EG index').¹⁸ This index is based on Geraats (2002) conceptual framework for transparency and reflects the different stages of the decision-making process. It distinguishes five aspects of transparency. *Political transparency* is transparency regarding the objectives for monetary policy. *Economic transparency* is transparency regarding the economic information used for monetary policy. *Procedural transparency* is transparency about the way monetary policy decisions are made. *Policy transparency* is transparency about policy decisions. *Operational transparency* is transparency about the effects of monetary policy and unanticipated disturbances.

Compared to other leading inflation targeting central banks, CBC receives a lower score, see Figure 2. The Bank loses points on procedural transparency, policy transparency and operational transparency.¹⁹

¹⁸ In the index, there are three explicit questions for each aspect. For each question countries receive a score of 0 or 1 (6 questions), or 0, ½, or 1 (9 questions), depending on whether they satisfy certain criteria. For all questions, see the appendix in Dincer and Eichengreen (2014). The total index score is the unweighted sum of the five sub-indexes and has a maximum score of 15.

¹⁹ The scores on the sub-indexes are from the dataset of Dincer and Eichengreen (2014). My judgment is that the total score is the same in 2017 as it was in 2010. The explanations for the total score should therefore also be the same.

Figure 2. Eijffinger-Geraats Transparency Index Scores



Source: Scores for 2014 collected from Barry Eichengreen's web-page on December 2, 2017. As far as I know there has not been any changes in the transparency of the Central Bank of Chile in the period 2014 to 2017 that would influence the index score.

However, the coding of the underlying scores in the index is judgmental, and I think the Bank should have a higher score. For instance, differently from Eichengreen, I find that the Bank has “comprehensive minutes (...), including a discussion of backward- and forward-looking arguments”. Furthermore, the CBC mistakenly does not get a point for publishing voting records. If we adjust for these “mistakes” and a few more, the CBC would receive 3 additional points, as shown by the shaded area in the Figure. With 11.5 points the Bank would be at par with many other leading central banks in terms of EG index scores.

Unfortunately, the improvements in the CBC transparency from 2018 will not influence the Bank's EG index score.²⁰ But here I would like to add that the EG index is quite crude and does not measure all aspects of transparency equally well. It can even be misleading, see Claussen (2008).

If the Bank should get more points on the EG index it will have to

- disclose an explicit policy inclination after every policy meeting or an explicit indication of likely future policy actions (at least quarterly) and specify the assumptions about the policy instrument behind the forecast (conditional or unconditional forecasts).
- regularly evaluate to what extent its main policy operating targets (if any) have been achieved, regularly provide information on (unanticipated) macroeconomic disturbances that affect the policy transmission process including a discussion of past forecast errors (at least annually) and regularly provide an evaluation of the policy outcome in light of its

²⁰ The new 2018 bank of Chile system will make monetary policy and decision-making more transparent. By coordinating the report with the decision it becomes easier to see the rationale for the decisions and it makes it easier to evaluate monetary policy for people outside the central bank. Earlier publication of votes is also improving transparency. I also find that the changes to the press release and the minutes will be improvements in terms of transparency. The publication of transcripts will presumably also improve transparency.

macroeconomic objectives with an explicit account of the contribution of monetary policy in meeting the objectives.

In summary, the new system at the Central Bank of Chile is in line with the international practice. The exception is the one-night delay in the publication of the monetary policy report. The scores on the Eijffinger and Geraats transparency index would improve if the bank publishes its policy rate path and institute regular evaluations of monetary policy.

6.3. Remaining issues

It is problematic that the policy assumption behind forecasts is not explicit

To make some use of the forecasts in the report outsiders need to at least know what kind of monetary policy rate path the forecast builds upon. Suppose, for instance, that the inflation forecast overshoots the target for some period. Is that intended and follows from the preferred path or does it follow from an exogenous policy assumption?

I find it hard to see what kind of policy rate path the forecasts in the monetary policy report build upon. In the report it says that the forecasts build upon a “working assumption” that is “consistent with what can be inferred from various expectations indicators.” (p. 37, MPR June 2017.) I interpret that as some sort of average of the market expectations, i.e. an exogenous path. According to page 22 in the document describing the monetary policy framework the policy rate path follows from a reaction function (Central Bank of Chile, 2007), i.e. a model based but endogenous path. Finally, the fact that the inflation forecasts always move smoothly back to target at the two year horizon suggest that policy rate path is more massaged, i.e. that it is an endogenous (preferred) policy rate path.

To make full use of the forecast in the report outsiders need to know even the policy rate path in it selves. The Bank’s inflation forecast in it selves is of limited interest. It always goes smoothly back to the target at the horizon. What is interesting are the reasons for why inflation goes back to target. The policy rate path behind the forecasts provides that information. But that is not published. The Bank does give some qualitative statements on the policy rate path. But in my view these statements are too general. By not publishing the path the Bank is withholding the interesting part of the forecasts.

The Monetary Policy Report and the forecasts therein become more important as communicational tools under the new system. But it will not function as an effective communication-tool unless you also publish the explicit policy rate path. It is even more so for accountability; outsiders will have to know the policy path underlying the forecasts in order to make a proper evaluation of the forecasts and of policy.

The current description of the monetary policy strategy is vague and potentially misleading

In the preface to the monetary policy report the Bank writes the following about its monetary policy strategy: “To meet [the inflation target], the Bank focuses its monetary policy on keeping projected inflation at 3% annually over a policy horizon of around two years.”

To me this sounds like the Bank aims at stabilizing inflation at target as fast as possible and keeping it there. However, from the talks I had at the bank, and by looking at your forecasts, it is clear that the Bank has a more flexible approach. It aims at bringing inflation back to the target within the two-year

horizon (or maybe even exactly at the 2 year horizon), not necessarily stabilizing it at the target as soon as possible.

This more flexible approach implies that the bank will have several alternative policy rate paths to choose from when it makes forecasts and decides on monetary policy. It can, for instance, choose to stabilize inflation quickly, or allow it to take longer. I guess the Bank could even allow inflation to reach the target within or at the horizon and then over/undershoot the target for a while. Such a strategy can be theoretically optimal and both effective and necessary if the policy rate has reached its lower bound.

However, from my talks at the bank I got the impression that it was unclear both to the staff and the board how to choose among the alternatives. There was description of how to do it. This is less of an issue if the forecasts are fully based on an external policy rate path, but it becomes a real issue when it is based on an endogenous one, in particular one which shall be owned by the Board.

In reality it may be hard to spell out very concrete criteria or methods for how to choose among different alternatives, especially when decisions are made by a committee. But I think it is worth trying. Criteria and methods will make monetary policy and forecasting more robust, it leaves less discretionary power to the staff, it makes monetary policy more predictable and it improves accountability.

The two central banks I know the best, the Norges Bank and the Riksbank have chosen different approaches.

At the Riksbank there is essentially no fixed method or criteria for how to choose among different policy rate paths. A box on the inside of the monetary policy report gives a very broad description of the strategy, but apart from that there is nothing. There are no internal unpublished criteria or formal method being used, and the choice of alternative is judgmental. For some years the bank used the “mean squared gaps” method described in Svensson (2010) and documented the analysis in the monetary policy report.²¹ But this method is not used any more. I guess the main reason was that it did not incorporate all the mechanisms and tradeoffs that board members found relevant. In particular, it did not incorporate risks associated with rapid household debt accumulation.²²

The Norges Bank publishes explicit criteria that the bank uses when choosing among alternative policy rate paths. The first version of the criteria were published in 2005 and explained in Qvigstad (2005). I have copied the first set of criteria and some of the motivation in Box 3 below. The criteria have changed over the years but have always been published in a separate box in the monetary policy reports. When there has been changes to the criteria they have been documented and explained externally, see for instance Evjen and Kloster (2012). Descriptions of how the criteria were used in the monetary policy analysis and incorporated into the models at Norges Bank is found in Holmsen, Qvigstad, and Røisland (2007) and Holmsen et al (2008).

I would also like to add here that having a fixed horizon for the inflation target is not in line with optimal monetary policy. Under such an approach the horizon will vary depending on the shocks and preferences of the decision maker, see e.g. Svensson (2010). Most inflation targeting central banks

²¹ See for instance the Riksbank monetary policy reports from October 2009

²² See for instance Ingves (2011).

nevertheless have a relatively fixed horizon. I understand that a fixed horizon is sometimes considered important to anchor inflation expectations at the target. But it might be worth reconsidering.

Box 3. Criteria for an appropriate policy rate path (Qvigstad, 2005, p. 3-4)

“According to modern macroeconomic theory, developments in output, employment, income and inflation are affected by current interest rates and expectations about future interest rates. To the extent that the central bank can influence these expectations, they play a key role in monetary policy. Expectations regarding the future path of the interest rate must be based on the assumption that monetary policy keeps inflation close to the target over time and contributes to stabilising developments in output and employment. Often several interest rate paths may produce these results, and it may be difficult to assess precisely which future interest rate path yields the preferred balance between the different considerations. Economic theory provides some guidelines, but they are not easy to apply in practice.

The following criteria may be useful in assessing whether a future interest rate path appears reasonable compared with the monetary policy objective.

Criteria for a “good” interest rate path

- 1. If monetary policy is to anchor inflation expectations around the target, the interest rate must be set so that inflation moves towards the target. Inflation should be stabilised near the target within a reasonable time horizon, normally 1-3 years. For the same reason, inflation should also be moving towards the target well before the end of the three-year period.*
- 2. Assuming that inflation expectations are anchored around the target, the inflation gap and the output gap should be in reasonable proportion to each other until they close.² The inflation gap and the output gap should normally not be positive or negative at the same time further ahead. If both gaps are positive, for example, a path with a higher interest rate would be preferable, as it would bring inflation closer to the target and contribute to more stable output developments.*
- 3. Interest rate developments, particularly in the next few months, should result in acceptable developments in inflation and output also under alternative, albeit not unrealistic, assumptions concerning the economic situation and the functioning of the economy.*
- 4. The interest rate should normally be changed gradually so that we can assess the effects of interest rate changes and other new information about economic developments.*
- 5. Interest rate setting must also be assessed in the light of developments in property prices and credit. Wide fluctuations in these variables may constitute a source of instability in demand and output in the somewhat longer run.*
- 6. It may also be useful to cross-check by assessing interest rate setting in the light of some simple monetary policy rules. If the interest rate deviates systematically and substantially from simple rules, it should be possible to explain the reasons for this.*

The forecasting horizon is too short and the range around the target too narrow

In order to see if the inflation forecast stabilizes on the target the forecasting horizon has to be sufficiently long. With a two-year horizon for the inflation target, a two-year forecasting horizon is too short. It might be that you internally look at forecasts stretching further out, but such information is also useful for outside observers.

According to the monetary policy framework of the Central Bank of Chile inflation shall be within the range “most of the time” (Central Bank of Chile, 2007, p. 17). As I noted above, that has not been the case in reality. During the period from 2000 inflation has been outside the band as often as it has been inside. If we look at the period from October 2007 to October 2017 inflation has been outside the range 63 per cent of the time.

As I mentioned above, I think this is what we can expect in a small open economy. The volatility in inflation can very well be a result of Chile being exposed to large and frequent external shocks and monetary policy reacting appropriately. If monetary policy should focus on always bringing inflation quickly back to target it might be too costly in terms of volatility in output and unemployment. Such a policy is not optimal. I therefore think it is better to take away the target band.

The Riksbank had a similar problem in 2010. At that time inflation had been inside the ± 1 percentage point band half of the time. The Riksbank decided to take away the interval arguing that “the tolerance interval has become obsolete: There is considerable understanding for the fact that inflation commonly deviates from the target and that the deviations are sometimes larger than 1 percentage point. Inflation can thus be outside of the tolerance interval without threatening the credibility of the inflation target. Such deviations have proved to be a natural part of monetary policy. (...) Removing the tolerance interval should thus have no consequences for the inflation target as such, or for the way in which monetary policy is conducted and communicated.” (Sveriges Riksbank, 2010)

I also think it is problematic that you call the band a “tolerance band”. The word “tolerance” gives the impression that you do not tolerate deviations outside the band. For a general and analytical discussion of costs and benefits of intervals see Apel and Claussen (2017).

In 2017 the Riksbank introduced a new type of band around the inflation target. This was done as the inflation target was redefined in terms of a less volatile inflation index. The new “variation band” is a communicative tool intended to illustrate, in a simple way, the fact that the development of inflation is always uncertain (Sveriges Riksbank, 2017). Personally I believe this band is confusing and not necessary. The interpretation outside the bank has been that the band was introduced to open for more flexibility, an interpretation which is wrong.

Parts of the large monetary policy meeting with a report seems superfluous

The role of the monetary meetings with a monetary policy report depends on what decision-making alternative the Board uses. If it uses Alternative 3, where the monetary policy report is not owned by the whole Board, I think the meetings are fine as you have planned them. But if the Board uses decision-making under Alternatives 1 or 2, where they have some kind of common monetary policy report, I cannot see why you need to have such long meetings. When preparing the report you will already have gone through new information, developments abroad, made forecasts for the developments abroad, and so on (i.e. the ‘exogenous inputs’ defined in Section 2.). If you use

Alternative 3 the Board has also done the monetary policy analysis and pretty much decided on policy.

Having long meetings repeating everything that you have already been through when producing the report is superfluous and not cost efficient. I also think this raises some issues regarding your transparency. What will be done at these meetings if most is already discussed and settled? Will the transcripts give a fair representation of the discussions in the board if they actually took place in the process when you prepared the monetary policy reports? Arguably, the transcripts are somewhat pro-forma if the Board uses decision-making under Alternatives 1 or 2.

This is another reason why I think you have to be clear and make an active choice about what alternative for decision-making the board is actually using.

At the intermediate meetings without a monetary policy report the issues raised above may not arise. If these meetings are more like updates where it is checked whether everything “is on track” relative to the decision that was made at the previous meeting with a report, the action takes place at the actual monetary policy meeting. But, even here I am tempted to ask if these intermediate meetings actually have to be as long and elaborate as you have planned. Do you really plan to have new full forecasts at these meetings?

There are no regular reviews of monetary policy and forecasting

In order for a central bank to be accountable someone have to actually check what the central bank is doing and that it is doing it well. As far as I know there are no regular evaluations of monetary policy in Chile. The CBC also received a lower score on the Eijffinger Geraats transparency index because there are no regular evaluations of policy and policy outcomes (section 6.2).

At the Norges Bank there is an external review of monetary policy by a committee of independent economists every year. The Ministry of Finance partly funds the review, which contains useful information and analyses for the Ministry’s evaluation of monetary policy presented each year in a White Paper to Parliament.²³

In Sweden the Riksbank does its own review every year. The review is handed over to the parliament and serves as an input to its yearly examination and assessment of the monetary policy conducted by the Riksbank. The review is published at the Riksbanks web-page.²⁴ In addition to these internal and annual reviews there is an external review by international experts commissioned by the parliament every 5 years.²⁵

A related issue regards the researchability of the process. Researchability requires insight beyond just minutes and transcripts. This is especially the case at central banks where the monetary policy meetings are just formal endpoints to a longer process of meetings and carving out of policy. In order to learn from the past and especially from past mistakes we need insights into the whole process, not

²³ The reports are found here: <https://www.bi.edu/research/find-departments-and-research-centres/research-centres/centre-for-monetary-economics/norges-bank-watch/>

²⁴ Earlier reviews are found here: <http://www.riksbank.se/en/Press-and-published/Published-from-the-Riksbank/Monetary-policy/Account-of-monetary-policy/> The names and formats of the reviews have changed over the years. I personally find the ones from the years 2010 -- 2012 to be the best examples.

²⁵ The latest review is found here http://www.riksbank.se/Documents/Rapporter/%C3%96vrigt/utvardering_penningpolitik_2010_2015_eng.pdf

only the discussions at the formal final meetings. A key element here is filing of the different inputs during the process. I have no information on how it is done at the CBC, but I would like to mention this point as well here.

A recent example from Sweden can illustrate why documentation during the process is important. In 2016 the external reviewers claimed that the Riksbanks forecasts and policies were too influenced by forecasts coming from “models developed by Riksbank staff” (Goodfriend and King, 2016, p. 7, 90.). The reviewers drew the conclusion that the Riksbank should put less weight on the models in the future. But this claim is wrong. If the reviewers had used information filed during the process they would have seen that the model forecasts were actually better than the published ones (Lindé and Reslow, 2017). Thus, the right conclusion is that the bank should rely more on the models, not less. But it would be hard to see that without having filed key inputs during the process.

Unusual use of English terminology. When reading through different material I sometimes came across unusual use of terminology. For instance, in the monetary policy reports you use “estimates” when you mean “forecasts”. The term “flexible monetary policy” which you use in the press releases is normally used for a policy that also takes the development in the real economy into account, and not only inflation. It might be worthwhile going over some of the terminology used in the English translations.

Some key information is hard to find. Effective management of expectation and strong accountability and even outside the bank cost efficiency require that key information describing the inflation target and the interpretation of the mandate, the decision-making system, monetary policy meetings and publication dates, and so on is easy to find. I think it should be possible to find this information on the monetary policy page of the central banks web pages, but also in the monetary policy report.

7. Recommendations

Publish the policy-rate path

The inflation forecast in it selves is of very limited interest when it always goes smoothly back to the target at the horizon. What is interesting and ought to be communicated are the reasons for why inflation goes back to target. The policy rate path behind the forecasts provide that information.

If the Board finds that it cannot publish its own assessment of the appropriate policy rate path, I recommend that you let your published forecasts be based on an exogenous policy rate, or that you only publish staff forecasts.

Make an active choice on what alternative for group decision-making the Board shall use

The choice of forecast type and ownership (recommendation above) is essentially a question of how the Board shall do its monetary policy analysis and make its decisions. I recommend that you make an active choice here. Three alternatives to choose from are described in Section 3.2.

In Section 3.3. I argued that small in-house committees should choose the alternative where the members together find the policy-rate path that gives forecasts that look good. They should do so by using an explicit step-wise decision-making procedure. This alternative gives the best fulfillment of the objectives of the system. However, I recognize that this conclusion is arguable. My main

recommendation is therefore that you reconsider what alternative you want to use and make an active choice.

Make the internal process with the monetary policy report explicitly step-wise and create ownership

If you use an alternative for Board decision-making where the members do some of the analysis together you should make the process explicitly step-wise (see Section 3.). The stepwise procedure is natural under a forecast based approach to inflation targeting. It simplifies the process of creating ownership and common stories. It also opens for a clear structure of responsibilities and documentation of the internal process. Finally, it is useful for creating ownership of the forecasts.

Refine the monetary policy report

The monetary policy report is the key communicational tool at the CBC as at many other inflation targeting central banks. The report will become even more important as a communicational tool when it is published together with the monetary policy decisions.

In order to enhance the report as a tool for communication and transparency I recommend the following:

- Publish the policy rate path underlying the forecasts for the target variables in the report (as recommended above).
- Put a box with the goals for monetary policy, the CBC's approach to inflation targeting, and the decision making procedure at the beginning of the report, see for instance the boxes in the reports of the Bank of Canada, Norges Bank and the Riksbank.
- Make the data in the diagrams easily available on the web
- If the board decides to use decision-making alternative 1 (section 3.2.), a chapter with the monetary analysis – i.e. the reasons for the choice of the policy rate path – should be added to the report.
- Look at the English terminology used in the translations (do so even for other documents)

Update the document describing the monetary policy framework

The document describing the CBC monetary policy framework (Central Bank of Chile, 2007) needs to be updated.

Reconsider the format/length of the monetary policy meeting with a report

Having a long and elaborate meeting repeating everything that you have already done when producing the monetary policy report is superfluous and not cost efficient. I therefore think you should reconsider the format of these meetings. Will it suffice with a shorter meeting? Also here will the answer depend on how the Board shall do its monetary policy analysis and make its decisions.

Remove the range around the inflation target

The current band is too narrow and redundant. Inflation has been outside the band as often as it has been inside. People understands monetary policy cannot fine-tune inflation and that the deviations are sometimes larger than 1 percentage point. Such deviations have proved to be a natural part of monetary policy.

Prolong the forecasting horizon to 3 years

You need forecasts that stretch longer than the horizon for the inflation target in order to see if inflation stabilizes at the target.

Institute a bi-annual external review of monetary policy

Transparency is necessary, but not sufficient for accountability. There will also have to be someone who actually checks that the bank is doing what it is supposed to do and that it is doing it well.

Not all can do a proper evaluation of a central bank and its monetary policy. Some central banks therefore, on their own initiative or at the behest of their governments, undergo a detailed evaluation of monetary policy by outside experts. I think such a mechanism should be instituted also for the Central Bank of Chile. If you are worried about such evaluations being influenced by domestic politics it should be performed by experts living abroad. I think it suffices to have evaluations every two years. Their evaluation report should be public and provided to the parliament.

In order to facilitate proper evaluation and researchability, key inputs to the different stages in the decision-making process should be filed.

Publish in English at the same time as in Spanish

English is the main language of the global financial markets. If you want the Chilean financial markets to be fully integrated into the global financial market, I think the non-Spanish speaking market participants should have access to the information at the same time as the Spanish speaking. I therefore recommend that you publish English translation of all documents related to monetary policy decisions and the monetary policy report at the same time as in Spanish.

Upgrade the monetary policy web-page

Effective management of expectation and strong accountability and even outside the bank cost efficiency require that key information describing the inflation target and the interpretation of the mandate, the decision-making system, monetary policy meetings and publication dates, and so on is easy to find. I think it should be possible to find this information on the monetary policy page of the central banks web pages, but also in the monetary policy report.

Make sure minutes are anonymized (if they are meant to be)

Analysts I talked with seemed to know which Board member is behind the different statements in the minutes. Apparently it follows from the speaking order and is something that previous CBC employees know. I think it is important that the bank's communication gives the same information to all. It is not good if people that have previously worked at the central bank have an information advantage. This is something that the Bank should have in mind when writing the minutes.

Appendices

Appendix 1. Terms of Reference of the Review (June 5, 2017)

Background Information

The Central Bank of Chile (Bank) is an autonomous organization, of constitutional rank, whose purpose is to provide price stability, to promote the stability and efficacy of the financial system, and the normal functioning of the internal and external payment systems. In doing so, the Bank generates a predictable environment for decision-making of economic agents, thereby contributing to smoother business cycles, and thus providing a solid basis for the economy's long-run sustainable growth path.

Since the end of 1999, the Bank has adopted an inflation targeting (IT) approach to monetary policy, complemented by a free floating exchange rate regime. The explicit monetary policy objective is for inflation, measured by the annual variation in the consumer price index, to remain close to the inflation target of 3% most of the time, with a tolerance range of 2-4%. In order to achieve the inflation target in practice, the Bank adjusts the level and path of interest rates across the term structure so that inflation expectations two-years ahead remain anchored at 3%.

On balance, several criteria point to the Bank's overall positive performance over time. However, in the context of discussions on the Bank's upcoming Strategic Plan, an increasing interest has developed on the need to evaluate certain aspects of the monetary policy process. Separately, several leading IT central banks of the world have also recently performed important evaluations of different dimensions of the monetary policy framework. As a result, the Bank believes an external peer review of certain aspects of the monetary policy process would be of great value.

Purpose

The purpose of the review is twofold. First, ideally the peer review would compare the Bank's monetary policy decision-making process on several dimensions with respect to other leading central banks. We are particularly interested in comparing how other entities reach an agreement on the path for monetary policy rate. Second, the evaluation should touch upon certain aspects of the communication of monetary policy, paying special attention to the publication of the interest-rate path inherent in the Bank's forecasts.

The evaluator may propose amendments and improvements to each dimension.

Overall Guidelines

On the decision-making process

Monetary policy decisions at the Bank are voted on by the Central Bank Board (Board), composed of five full-time members, at a previously announced date at a monthly frequency. The staff plays a crucial role in the process leading up to the monetary policy meetings as well as in the meeting itself supplying analytical briefing material, updated macroeconomic forecasts, as well as several policy options to be considered by the Board.

The Bank is interested in further strengthening its monetary policy decision-making process. The review should focus on procedural aspects of the monetary policy decision-making process, such as the frequency of formal interest-rate setting meetings, their synchronization with meetings related to the quarterly monetary policy report (IPoM), and the structure of the actual monetary policy decision meeting. Regarding the latter, if at all possible, this part of the review should include a comparison of the Bank's underlying context of the vote with respect to other peer central banks.

On the communication of monetary policy

The communication of monetary policy plays a crucial role in the IT framework. Rather than refer to the broader communicational aspects of monetary policy, the review should hopefully focus on the communication of monetary policy decisions, the published interest rate path, and the interaction between these two aspects.

Currently, the overall stance of monetary policy is outlined in the IPoM, along with updated medium-term macroeconomic projections, and risk scenarios. In each report, the Bank publishes an interest-rate path consistent with its baseline scenario, which is explicitly characterized as similar to survey-based measures or market-implied interest rates.

Then, on a month to month basis, the Board meets to assess the interest-rate decision outlined in the IPoM. Monetary policy decisions are announced immediately after each monetary policy meeting in a brief statement, in which economic agents pay attention to the “bias” of the statement that may signal the most likely interest-rate move in the short term.

In this context, the evaluation may help us identify aspects in which the communication of monetary policy decisions may be improved upon.

On Working Methods & Reports:

The review should ideally start as soon as the evaluator has availability.

The evaluator will have Bank staff assistance as needed, and will have access to the meetings related to monetary policy upon request.

The Bank agrees to cover any related expenses.

Appendix 2. The pre 2018 system at the Central Bank of Chile

Currently, the Board decides on monetary policy 12 times a year at monthly monetary policy meetings. Each meeting is performed over the course of a day in two sessions. In the morning session, recent domestic and external economic and financial developments, as well as their effects on the projections, are presented by the Research Division and discussed by the board. In the afternoon session, monetary policy alternatives are discussed and, subsequently, each Board member vote and justifies their decision. Once the voting process is concluded, the official press release is reviewed and approved.

Two days prior to the monetary policy meeting the Board receives 'background minutes', a document describing the economic developments since the last monetary policy meeting. On the morning the day of the monetary policy meeting, the board receives a written note with two policy options that the head of the Research Division present at the afternoon session of the monetary policy meeting. The day before writing the proposals the head of the Research Division have had bilateral meetings with the Board members.

In my bilateral meetings with the Board members several members highlighted the 'Thursday meetings' is an important meetings in the process. At these meetings, which take place every Thursday, the staff present the latest economic developments to the board. The board discusses the information and the consequences for the forecasts and monetary policy. I got the impression that there is an open atmosphere and much discussions at these meetings. I also noticed that the staff found the Thursday meetings demanding in terms of resources.

As the publication of the quarterly monetary policy report follows a schedule different from the monetary policy meetings, the board may either have a fresh or a draft monetary policy report at the monetary policy meeting. (The process related to the monetary policy report is described below.)

There is broad participation at the monetary policy meeting. In addition to the 5 members of the Board, more than 15 members of the staff participate. Many of them are, according to the Internal Rules, entitled to express their opinion at the meetings. The Minister of Finance has the right to participate at the monetary policy meetings as a Board member with the right to speak, but not to vote. The Minister often participates and speaks at the first session of the meeting. He/she also express his/hers preferred policy choice. Votes are cast in the order of seniority at the board, starting with the most junior and ending with the governor.

The monetary policy communication related to the monetary policy decision consists of several documents published at the Bank web page after the meeting. There is no press conference after the meeting. The decision is communicated in a short press release, which is released at 18.00. The press release (the communiqué) is published in Spanish and in English, but sometimes the English version is published with a short time lag. The votes are not published at this point.

The background minutes are published on the bank's web-page at market closure on the bank working day before the Monetary Policy Meeting, in Spanish only.²⁶ The main charts of the

²⁶ Except when Monetary Policy Reports are issued after the corresponding Monetary Policy Meeting

monetary policy meeting, including charts with policy options presented by the Research division are published the day after the monetary policy meeting, in Spanish only.

The minutes of the monetary policy meetings are published 11 working days after the monetary policy meeting. The first part of the minutes contains a staff presentation of the developments since the last monetary policy meeting and policy options for this meeting. The second part contains the arguments and issues raised in the discussion among the Board members and the final policy decision. The minutes are not attributed, but votes are.

The monetary policy report is published four times a year, in March, June, September and December. The report is published at dates different from the monetary policy meetings, although sometimes report is published right before or right after a monetary policy meeting.

The report gives the Board's view of recent and expected economic developments.²⁷ It is a comprehensive report that contains two-year ahead forecasts for inflation and GDP. The policy assumption underlying the forecasts, *the policy rate path*, is not published. This path is, however typically described in the report as close to the market expectations.

During the preparation of the report, the Board interacts with the research division at three main meetings. In the first meeting, roughly 3 weeks prior to the publication of the report, new short term judgments and forecasts (nowcasts), international forecasts and medium term forecasts for inflation, GDP and headline inflation are presented by the staff and discussed by the Board. Issues for box articles are also discussed at this meeting. This meeting often takes place right before a monetary policy meeting. The Board can suggest changes to the forecasts, but my impression was that that does not happen at this meeting. After this meeting the staff prepare a first draft of the monetary policy report which is sent to the Board before the second meeting on the monetary policy report.

The second meeting on the monetary policy report takes place two weeks prior to the publication of the report, typically right after a monetary policy meeting. At this monetary policy report meeting the staff presents updated forecasts and more details on the forecast with details on the components of GDP, the labor market, disposable income, etc. More specific issues are also discussed at this meeting. I got the impression that the Board mostly "listen" also here, and do not ask for changes to the forecasts. There is no discussion of monetary policy at this meeting.

The third meeting, the "drafting meeting", takes place roughly a week before the publication of the report. At this meeting the Board goes through the first chapter of the report, the "summary", sentence by sentence and carve out a common text.

At a fourth meeting, which takes place one day after the drafting meeting the text is formally approved. The report is published 4-5 days after this meeting.

In summary, my impression was that there is little active involvement of the Board when it comes to the forecasts in the monetary policy report and to the text in most of the report. Board members, at

²⁷ The main objectives of the Monetary Policy Report are, according to the Bank web-site: (i) to inform and explain to the Senate, the Government and the general public the Board's view of recent and expected inflation trends and their consequences for the conduction of monetary policy; (ii) to publicly explain the medium-term framework used by the Board of the Central Bank to formulate monetary policy; and (iii) to provide information that is useful in the formulation of economic agents' expectations regarding future inflation and output trends.

least some, seem to think of the report as mostly a staff product. Their focus was on the text and messages in the summary.

Appendix 3. Summary of bilateral talks

During my week in Santiago I had individual meetings with all five members of the CBC Board, former governors and market analysts.²⁸ They were all supportive of the changes and found them timely and well chosen. But they also had some more specific worries, comments and suggestions.

The Board

Board members were all supportive of the new system.

I got the impression that the degree to which members take ownership of the forecasts in the report vary. Some find that there is strong Board influence while others find it quite limited.

Some Board members raised the issue of variability in inflation and the band around the inflation target. As inflation has varied a lot it has been outside the band more often than it has been inside, despite on average being close to the target. Is that a problem and what should be done about it?

Also the question of how to choose between different paths for the policy rate was raised. As there are many that will bring inflation back to target, how should one choose between them?

Another issue that was raised relates to the policy options and monetary policy communication. Currently the policy options are presented by the staff at the monetary policy meeting. Should the Board have any say in producing these options? Over time the alternatives may have become signals. That may restrict the staff when producing options and even the Board.

I also asked the Board members of their view on attributed minutes. No one seemed supportive of the idea despite that many Board members thought people outside the bank already know who says what in the minutes. Several Board members were strongly against attributed minutes. It would create noise to the market, put the Board members under external pressure and erode the “collectiveness” of the current Board.

Former governors and analysts

They all found the **minutes** useful. The market analysts would like to see more of the discussion in the Board; “more color would not hurt”. They sometimes find the minutes confusing. It can be hard to grasp the view of the Board from the minutes and some thought “it would be easier if the minutes stated who said what”. One analyst suggested to let the Board vote also on the policy “bias”. One of the previous governors found that the minutes were too “telegraphic”. He suggested that the Bank should have minutes that were more like the FOMC minutes.

Many said they know which Board member is behind the different statements and views in the minutes. Apparently it follows from the speaking order, and this is something that (only?) people that have previously worked at the Bank know.

Some also argued strongly against attributed minutes. They were afraid that it would put the Board under political pressure and be detrimental to the monetary policy discussions.

²⁸ Besides from all members of the Board I met the following outside the bank: Mario Arend S. (BTG Pactual), Vittorio Corbo (CEP, Former Governor), José de Gregorio (Universidad de Chile, Former Governor), Luis Oscar Herrera B. (BTG Pactual), Miguel Ricaurte (ITAU) and Rodrigo Vergara (CEP, Former Governor).

When it comes to the **monetary policy** report the market analysts found the summary and the inflation scenarios to be the most important. “The rest we already know as we follow the economic development on a daily basis”. The boxes are very useful for the market analysts, and several noticed that the quality had improved over the years.

Regarding readability, one analyst suggested to put keywords in the margins of the report to highlight things. It was also suggested that the report becomes clearer on “what matters” for the forecasts. A very concrete suggestion was to make the data for the diagrams easily accessible on the Bank’s webpage.

The market analysts were all in favor of publication of the Board’s **policy rate path**, arguing that it would make communication clearer, especially in the cases when the Board does not validate the market path. It was also suggested that the Bank publish alternative scenarios based on alternative assumptions. One market analyst suggested that the bank should publish dot-plots like the FOMC as that would convey the uncertainty in the path.

Also the previous governors were in favor of publishing the policy rate path. One said that previously the main concern was that the path would be thought of as a promise and be “binding” for the Board; “but now everyone knows that it is a forecast”. However, one thought the bank should wait until global rates rise before publishing the policy rate path.

One analyst said that the **interviews** with Board members can sometimes be confusing as it was hard to know if they represent themselves or the whole Board. “Board members should use “I” instead of “us” and an internal rule is needed.”

They were all satisfied with 8 meetings and the structure with 4 meetings with a report and a press conference and 4 meetings without. The market analysts said that live web-casts from the press conferences would be absolutely essential. The analysts also found that there should be English translations of the press release, the governor’s speech and the monetary policy report available at the same time in English as in Spanish.

The horizon for the inflation target was brought up by one of the previous governors who thought it was time to become more flexible as now the Bank has even greater credibility.

Appendix 4. Summary from the monetary policy meeting

I was present at the two sessions of the monetary policy meeting on October 19 2017. At the beginning of the first session the staff delivered presentations on the most recent economic development in Chile and elsewhere. In addition inflation forecasts based on several alternative paths for the key policy rate was presented. The Board asked questions during the presentations, and presentations were sometimes interrupted by discussions. After the presentations followed more questions from the Board and a discussion. The committee had just received a new CPI-figure that was much lower than expected and the discussion focused on its causes and consequences. I found that in the first session there was a vibrant discussion, even of the monetary policy alternatives. The discussion was free and open, and as far as I could see, members did not have any pre-written statements or speeches at this session. I was later told that there had been more discussion than usual at this session, presumably because of the surprisingly low inflation figure for September that came the day before the meeting. One Board member even mentioned this explicitly. After the session there was a break for lunch. The Board members went to their rooms to prepare their statements for session 2.

Session 2 had a quite different format and style. At the beginning of the meeting the head of the Research Division read the memo with policy alternatives that was sent to the Board earlier in the morning. Thereafter the head of the Financial Markets Division explained his analysis of market expectations and how the decision could influence the expectations. Finally the Board members read prewritten statements to substantiate their view, starting with the most junior Board member and ending with the governor. One Board member said that the discussion during the morning session had changed his/her view, but only marginally. Interestingly, after they had all read their statements one of the members that had a dissenting view in the prewritten statement decided to vote with the majority. I got the impression that this was not because he/she had changed his/her mind. It was rather because he/she found it better that there should be a common decision. When the decision was made, Board members took off their jackets and literally rolled up their sleeves to carve out the press release.

In addition to the two sessions at the monetary policy meeting the Board has several meetings with the staff in the process of carving out the monetary policy report. Furthermore, there is a scheduled meeting every Thursday where new developments and monetary policy is discussed by the Board. I have not been present at any of these meetings. Several Board members highlighted these meetings as very important in the monetary policy process. One member said that “this is where the heated discussions take place”.

Appendix 5. The Riksbank's system

At the Riksbank monetary policy decisions are made by the Executive board. The Executive board has six members and is directing and managing the bank. The Executive board is an in-house full-time executive board, similar to the Board at the central bank of Chile. One of the members is appointed governor and one first deputy governor.

The Executive board makes monetary policy decisions at separate monetary policy meetings six times a year. Decisions are determined by a majority vote, and the governor has the casting voice in case of a tie. The monetary policy decision together with a monetary policy report supported by a majority of the members is published in the morning the day after every monetary policy meeting.²⁹ The monetary policy report has a policy rate path and accompanying forecasts for the target variables and many other variables. The monetary policy report and the decision is crafted out in tandem and the decision on the policy rate is consistent with the policy rate assumption in the forecast.

The members of the Executive board express their individual views in minutes, speeches and interviews. The votes are published with the monetary policy decision. Attributed minutes, which are in fact very close to being transcripts, are published two weeks after the monetary policy meeting.

Decision-making process

The process of crafting out a report and a decision on the policy rate takes approximately six weeks. At a first meeting, approximately 5 weeks before the monetary policy meeting, calendars, recent economic developments and thoughts on the forecasts and boxes in the report are discussed with the Executive board.

Thereafter follows a period of two weeks when the staff prepares the main scenario, and sometimes alternative scenarios. The resulting policy rate path shall reflect the Executive board's normal, historical behavior, and is not a recommendation from the staff. The forecasts are judgmental with inputs from the models, but not model forecasts. Towards the end of this process there is a short meeting with the Executive board where the staff presents and get feedback mainly on the nowcasts and the external factors.

Two to three weeks before the monetary policy meeting there is a large meeting with broad participation from the staff. Here recent developments, the draft main scenario, alternative scenarios and in-depth analyses are presented in detail. The aim of this meeting is to prepare the Executive board for their discussions on the main scenario and the monetary policy decision.

On the same day, or the day after, the Executive board meets again. Staff participation is now very limited to allow the Executive board to discuss the issues between themselves more openly. The Executive board discuss and express opinions on the main scenario, alternative scenarios and the appropriate monetary policy. The aim is to arrive at a majority supported main scenario. Sometimes the Executive board ask the staff for additional scenarios. If so, these are presented the next day at a follow-up meeting. At this point the Executive board usually manage to arrive at a main scenario.

Shortly thereafter the Executive board meets to make a preliminary decision on the main scenario and the alternative forecasts in the monetary policy report. The editorial work on the Monetary

²⁹ Monetary policy decisions can also be made at unscheduled meetings, but such meetings are very rare. At unscheduled meetings the report has not been accompanied by monetary policy reports.

Policy Report is a parallel process and the text is regularly checked in editorial meetings at the department. The members of the Executive board also get opportunities to give their input to the report at the meetings where the forecasts are discussed. At an editorial meeting with the Executive board one week before the monetary policy meeting the Executive board makes a preliminary decision on the monetary policy report.

The monetary policy meeting usually begins with a brief update on the financial markets, including market's expectations of monetary policy since the editorial meeting a few days earlier. This is followed by a summary of the main elements in the Monetary Policy Report. Thereafter the members of the Executive board reads the motivation for their votes. Normally, there is no discussion and the meeting ends. The meeting typically lasts 1 – 2 hours. At times there has been more discussion at the monetary policy meeting. Note also that the Executive board may change both forecasts in the report and their vote at this meeting. If that should happen, there is time as the report is published in the morning the day after the monetary policy meeting.

After the formal monetary policy meeting, the Monetary Policy Report and the press release are finalized.

Communication

The monetary policy decision is published in a **press release** at 9.30 the day after the monetary policy meeting. The press release contains the most important reasons for and the considerations behind the decision. It includes the votes, one or more paragraphs explaining the dissenting votes, and the Riksbank's forecasts for headline and core inflation, GDP, unemployment and the key policy rate up to 3 years ahead. The **monetary policy report** is published at the same time. An example of what is communicated in connection with the meeting is found here: <http://www.riksbank.se/en/Monetary-policy/Forecasts-and-interest-rate-decisions/Repo-rate-decisions/2017/Repo-rate-decision-on-19-December-2017/> .

Several activities follows during the day, se Figure A5.1. At 9.45 there is a 15 minutes information meeting with the staff. Here one deputy governor and a staff member presents the key messages and it is thereafter opened for questions. At 10 o'clock the **chat function** opens on the banks web-page and people can write questions. At 11 o'clock there is a **press conference**. The press conference is streamed live on the Riksbank's web-page. At the press conference the governor or the first deputy governor holds an introductory presentation with slides. The head of the monetary policy department or a deputy head is also present and can answer questions. After the conference the governor may give interviews. Later on the day the Governor answers questions on the chat, first on the Riksbank web page, and later on one of the major newspaper's webpages. Usually one of the deputy governors and the director of the monetary policy department present the report at a commercial bank, for invited guests. Executive board members even "go on tour" and present the report and explain the decision around the country.

Figure A5.1. Riksbank activities at the publication day



Approximately 2 weeks after the monetary policy meeting the **minutes** are released. They are attributed and almost fully replicates what was said word by word; I have been present at many meeting and I think the minutes can be considered transcripts.

In the period after the minutes are released and up until two weeks before the next monetary policy meeting the Executive board members are free to give **speeches and interviews** where they can explain their views.

Transparency and accountability

The forecasts in the monetary policy reports are based on the (explicit) policy rate path that the majority find gives forecasts for the target variables that looks good. Arguably, the whole story behind the decision is not there as there is no explicit monetary policy analysis in the report. The minutes gives more details of the individual members' views. Here the reservations are explained.

An important publication of the Riksbank is the yearly **Account of Monetary Policy**.³⁰ This report is handed over to the Riksdag Committee on Finance every spring and serves as an input to the committee's assessment of the Riksbank's performance in terms of monetary policy. The account is a basis for assessment - not an assessment in itself. However, it is not a pure compilation of figures. The account contains analyses of outcomes, forecasts and sequences of events. The Riksbank considers that those who assess the monetary policy should also have access to the Bank's interpretation of the material and the conclusions drawn by the Bank. It is then up to the Committee on Finance, and others who wish to assess the material, to concur with the Riksbank's conclusions.

The accounts are quite unique self-assessments. I do not know of any other central banks that publish such comprehensive assessments. They are very frank, especially when it comes to forecast assessments. The format of the Account has varied over the years, and last year the forecast evaluation was lifted out and is published in a separate publication.³¹

I would also like to mention that the Riksbank governor together with one of the deputy governors (rotating) meet at the Finance committee at the Parliament 4 times a year for **live broadcasted**

³⁰ The accounts are found here: <http://www.riksbank.se/en/Press-and-published/Published-from-the-Riksbank/Monetary-policy/Account-of-monetary-policy/>

³¹ It is found here: http://www.riksbank.se/Documents/Rapporter/Riksbanksstudie/2017/rap_riksbanksstudie_170502_eng.pdf

hearings. This is not instituted by law, but is something that the Riksbank and the finance committee has agreed to do.

In addition to these internal and annual reviews there is an external review by international experts commissioned by the parliament every 5 year.³²

Experiences

The Riksbank has recently released a report on the experiences with publishing policy rate forecasts (Riksbank, 2017). In the summary of the report, the Executive board writes:

“The Riksbank started publishing its own forecasts of the repo rate in 2007. This was largely connected with the problems associated with the assumptions that had previously formed the basis of the Riksbank’s forecasts of inflation and the real economy: a constant repo rate over the forecast period and a repo rate developing in line with forward rates. In addition, the publication of its own repo rate forecasts formed part of a general development in the direction of more openness around the material used to make monetary policy decisions. Being able to influence market rates with longer maturities provided a further reason for the Riksbank to start to publish its own repo rate forecasts.

The Riksbank’s experiences of making its own repo rate forecasts have been good. The repo rate forecasts have improved internal analysis, among other means by facilitating the use of alternative scenarios in which the effects of different monetary policy alternatives can be analysed and illustrated. The cooperation of members of staff and the Executive board has also been deepened in that the forecasts and monetary policy deliberations are now connected more clearly than previously. In addition, the publication of repo rate forecasts has given the general public greater insight into monetary policy and improved possibilities for evaluation and accountability.

Many of the concerns linked to the publication of repo rate forecasts that existed 10 years ago have not materialised. For example, there was a concern that the repo rate forecast would be interpreted as a binding promise. But, as the Riksbank has amended its repo rate forecasts at more or less every monetary policy meeting since 2007, this concern has proved to be unfounded. Another concern was that the six members of the Executive board would fail to agree on a repo rate forecast. Even though reservations have been entered against the repo rate forecast relatively often, it has been possible to unite a majority of the members for a specific repo rate path at the time of every decision. One explanation for this is that the individual members have had a certain tolerance of deviations from their own preferred paths under a ‘close enough’ principle.

Even if experiences have been good on the whole, there have been challenges. One of these has been that the repo rate forecasts have not been particularly accurate. However, this has been a common characteristic of equivalent forecasts in other countries and among other analysts over the last decade. Possible explanations of this include the trend decline in global real interest rates that has occurred in recent decades and the large negative shocks to which the global economy has been exposed since 2008 in the form of both the global financial crisis and the European sovereign debt crisis.

³² The latest review is found here

http://www.riksbank.se/Documents/Rapporter/%C3%96vrigt/utvardering_peningpolitik_2010_2015_eng.pdf

Another challenge arose from the periodically large deviations between the Riksbank's repo rate forecasts and expectations of the repo rate as reflected in the pricing of short and long-term market rates. However, it is difficult to estimate such expectations using market rates. Long-term rates are not just determined by expectations of future short-term rates, but also by different 'premiums' that can, for example, reflect how fixed-income investment over various maturities is linked with various risks or liquidities. There are indications that these premiums may have played a part in the discrepancies between the Riksbank's repo rate forecasts and the estimated repo rate expectations based on market rates.

However, there are indications that the Riksbank's adjustments of its repo rate forecasts have influenced market rates in the same direction, even if the effects have primarily been on short maturities and are not 'one-to-one'.

Against the background of these predominantly positive experiences, there are few reasons for the Riksbank not to continue to publish repo rate forecasts. Two things for the Riksbank to continue to ponder, however, are how the accuracy of repo rate forecasts can be improved and how actual changes of the repo rate should be compared with changes of the repo rate forecast when monetary policy needs to be made more or less expansionary." (Riksbank, 2017, p. 5.)

When it comes to the rest of the system there is no official view that is written down. My own assessment is as follows.

- 6 full reports are too many. Often there is not much happening/news between the reports. Producing 6 full reports is demanding on the staff and leaves little time for the staff to develop tools and systems for forecasting and policy analysis.
- Even at the Riksbank it is a little bit unclear how to understand the forecasts. Some Executive board members seems to consider them more as "just forecasts" than representing the majority's view of what policy makes the forecasts for the target variables look good.
- The Riksbank's inflation forecasts and policy rate forecasts have at times been worse than the forecasts from other major forecasters in Sweden. That might reflect that the Riksbank's forecasts for the policy rate path has been influenced by financial stability concerns, meaning that the policy rate path has been lifted without making adjustments to the inflation forecast which has always ended up at two per cent at the 2 year horizon.

Appendix 6. Norges Bank's system

At the Norges Bank, monetary policy decisions are made by the Executive board. The board has eight members and is responsible for directing and managing the bank. The Governor is Chair and the two Deputy Governors are First Deputy Chair and Second Deputy Chair of the Executive board. The other five members are external part-time members and keep their ordinary jobs while serving on the Executive board. Two alternates for the external members attend and have the right to speak at Executive board meetings.

Starting from 2018, the Executive board will make monetary policy decisions 8 times a year at pre-scheduled meetings. Previously it made monetary policy decisions 6 times a year.

The Executive board has been a collegial board where the governor seeks a consensus decision. In June 2017 the Executive board started to publish both the minutes and the votes on monetary policy. However, these minutes are very brief and so far there has been no dissents. In addition to the short minutes, the Executive board publishes a summary of its assessment after each monetary policy decision.

At 4 of the 8 monetary meetings there is also a monetary policy report. The report has a policy rate path and accompanying forecast for key economic variables, including the target variables. The Executive board's assessments are reported in a separate "foreword" to the report. This assessment is approved by the Executive board, but the rest of the report is not – at least not formally. The Governor is the editor of the report, and it is not stated anywhere that the report and the forecasts therein are the Executive board's. This differs from the Riksbank where there is always a majority behind the whole report. However, in the foreword of the Norges Bank report the Executive board often refers to the forecasts in the report.

Decision-making process and communication

At the Norges Bank the preparation of the Monetary Policy Report spans over a period of 5 weeks. Approximately 3 weeks before the final decision there is a series of meetings with the Governor and the two deputy governors where the staff present new information and new forecasts including a first forecast for the policy rate. Thereafter follows a few days when the first forecast is crafted out more in detail and the first draft of the report is crafted out. During these days the staff and the Governor works tightly together. On the Friday 1 ½ week before the final decision the draft report is sent to the whole Executive board. One week before the final decision there is a longer seminar with the Executive board where new information, forecasts and suggestions for monetary policy decisions are presented and discussed. Key sentences for the press release and "Executive board assessments" are discussed. A preliminary monetary policy decision is made. After this meeting the staff revise forecasts and the written drafts if necessary and they are then sent out to the Executive board the Friday before the meeting which typically is on a Wednesday. The Executive board members can call in comments to the drafts during the weekend. Monday and Tuesday the staff prepares everything before the final Executive board meeting on monetary policy.

At the policy meeting the Governor typically presents background information and the new forecasts in the report, including explanations for changes in the policy rate path if there has been any. References are also made to the fact that the substantive discussion had taken place at the Executive board seminar a couple of weeks earlier. There can be a brief discussion after the presentation, but typically all Executive board support the proposed decision. In total, around 20 people are present at

the part of the Executive board meeting when monetary policy decisions are made. This includes staff from the Monetary Policy Department, the Financial Stability Department and the Communications Secretariat.³³

After this meeting, which normally takes place in the morning, the staff do the revisions that were needed after the meeting and prepare everything for publication.

At meetings when there is a monetary policy report the monetary policy decision is published in a **press release** at 10.00 the day after the meeting together with the monetary policy report. The press release is very brief and contains the most important reasons for the decision. At the same time the Executive Board' assessment – a type of minutes going through the main arguments and assessments behind the decision –, the charts presented at the meeting and the latest outcome of the nowcasting models are published. The same material, but not the monetary policy report is presented at intermediate meetings.

At meetings with a monetary policy report there is a **press conference** at the bank 45 minutes after the publication of the press release. The press conference is streamed live on the bank's web-page.

The main aim of the meetings without a report – the intermediate meetings – is to see if there is a need to deviate from what was said at the previous meeting with a report. No new forecasts are produced and limited analysis is being done beforehand. The process is shorter and less involving at the intermediate meetings. It starts two weeks before the decision-making meeting with a 1 ½ hour meeting with the Executive board where new information is presented and discussed in light of the previous decision. After this the staff prepares the Executive board assessment and a press release in close collaboration with the Governor. This material is then sent to the Executive board the Friday before the decision-making meeting. They have the possibility to call in comments over the weekend, but it is not discussed in the Executive board before at the final decision-making meeting. The publication of the decision and the material is in the morning the day after, as in the case when there is a report. There is no press conference at the intermediate meeting.

Transparency and accountability

At Norges Bank there is an external review of monetary policy by a committee of independent economists every year. The Ministry of Finance partly funds the review, which contain useful information and analyses for the Ministry's evaluation of monetary policy presented each year in a White Paper to Parliament.³⁴

Experiences

As far as I know, the experiences with publishing the policy rate path has been good in Norway as well, see e.g. Holmsen and Røisland (2012).

³³ The monetary policy decisions are only one of many items of the executive board meetings. For instance, at their meeting on June 21 2017 the board made decisions on compensation issues and many issues related to the banks investment management.

³⁴ The reports are found here: <https://www.bi.edu/research/find-departments-and-research-centres/research-centres/centre-for-monetary-economics/norges-bank-watch/>

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