

Transparency and Communication in Monetary Policy: A Survey of Asian Central Banks

by

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## **I. Introduction**

Over the past decade or so, there has been increased emphasis on transparency and greater communication in the conduct of monetary policy among central banks in advanced industrial and emerging market economies alike. Indeed transparency and communication have increasingly taken on central roles in modern monetary policymaking, not least because they have been seen as integral parts of best practices in monetary policy. By all accounts, this transition to greater openness, from the days when secrecy was the norm rather than the exception to the publication of policy meeting minutes, is still a work in progress. Yet, by historical standards, considerable progress has already been made, and there is more room for improvement.

In many ways, the sea change in practices reflects the sea change in views about the strategic use of central bank communication in pursuit of monetary policy goals. Central banking has a long tradition of secrecy.<sup>1</sup> Central bankers around the world used to attach a certain “mystique” to their activities. They considered monetary policymaking an arcane and esoteric art that should be left entirely to the initiates; if not, as the consensus view held, public discussions would not only usurp the prerogatives of the insiders but would likewise undermine the effectiveness of monetary policy (Bernanke, 2004a).

During this earlier period, policy information was routinely employed to surprise the markets. Strategic disclosures were often confined to policy actions themselves, with little emphasis on explaining the reasoning that led to the decisions.

Guinigundo (2006) highlighted the following reasons for the trend toward greater transparency and better communication. First, the trend toward greater transparency and better communication was driven by monetary policymakers’ increasing recognition that their policy actions would be more effective if the market understood them better. As Ehrmann and Fratzscher (2005) observed, “Central banks have direct control only over a single interest rate, usually the overnight rate, while their success in achieving their mandate requires that they are able to influence asset prices and interest rates at all maturities.” Effective communication as much as credible policy actions is of fundamental importance for achieving central bank objectives.

Second, the emphasis on transparency and communication was also spurred by the growing interest in the greater accountability of central banks, as an increasing number of them were accorded independence from political authorities. The responsibility over money and banks by an unelected central bank could be established if it were to make its targets and policies better known to the general public.

Finally, the rising popularity of inflation targeting, with its emphasis on the transparency and accountability of the central bank, has also provided additional momentum towards improving the disclosure and openness of central banks. Inflation targeting as a framework attempts to establish an explicit link between monetary policy decisions and the central bank’s assessment of future inflation, and thus places an emphasis on the release of timely information about the views of the central bank on the inflation outlook.<sup>2</sup> Recent converts to inflation targeting, including the Philippines, have also adopted disclosure and transparency mechanisms along these lines.

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<sup>1</sup> See for example Goodfriend (1986) and Geraats (2007).

<sup>2</sup> As Fracasso, Genberg and Wyplosz (2003) argue, “merely announcing IT and publishing inflation forecasts is not enough: the benefits from IT only accrue to central banks that convince the public that their

This paper explores the nature of these developments in the context of Asian-Pacific central banks, reporting the results of a new qualitative self-assessment survey of communication practices in the region. In section II, we present a pedagogical framework of the communication process with which to interpret the responses of the survey. Section III reviews the survey responses and identifies several key themes. Section IV then examines how the more transparent monetary policy frameworks have acted to shape private sector expectations of inflation and economic activity. Sections V and VI review some policy implications and draw conclusions.

## **II. Communication and monetary policy**

Before reviewing the details of the survey responses, we sketch out a theoretical model of central bank communication. In addition to providing an interesting perspective on the communication process, it also serves as a means to organise and interpret the survey responses into a more digestible set of themes.

### *A model of central bank communication*

Conventional models of the monetary policy transmission mechanism (eg large-scale forecasting models, dynamic stochastic general equilibrium models) provide little guidance to central banks about their communication strategies. In large part, the information acquisition and transmission process is either non-existent or only obliquely tied to issues of credibility. The gulf between theory and practice does not necessarily reflect an oversight or a lack of appreciation but rather the conceptual difficulties in connecting theory to the real world of policymaking.

In practice, central banks devote considerable resources to sending the right signals at the right time to the various constituencies, such as other policymakers, government officials, financial markets and the general public. Anyone familiar with the public relations operations of a central bank knows that it is rather costly in terms of time and money. Moreover, it involves various complex tradeoffs that central bankers have to weigh. To highlight some of these complexities, we adapt a Shannon's (1948) simple model of signal transmission, originally proposed in the context of telecommunications, to the communication problem of central banks. In many ways, the desire to send useful and accurate information over a phone line is not too different conceptually from a central bank's aim to communicate clearly with the public.

### *A model of information transmission*

While admittedly simple and pedagogical, the Shannon model sheds light on various aspects of the communication channel of monetary policy. In a nutshell, the central bank starts by taking stock of the information about monetary policy that it wants to share with the public (left-hand side of Graph 1, point A). This would include information about the policy framework, the decision making process, the policy decision, assessments of the economy, likely future actions and so on.

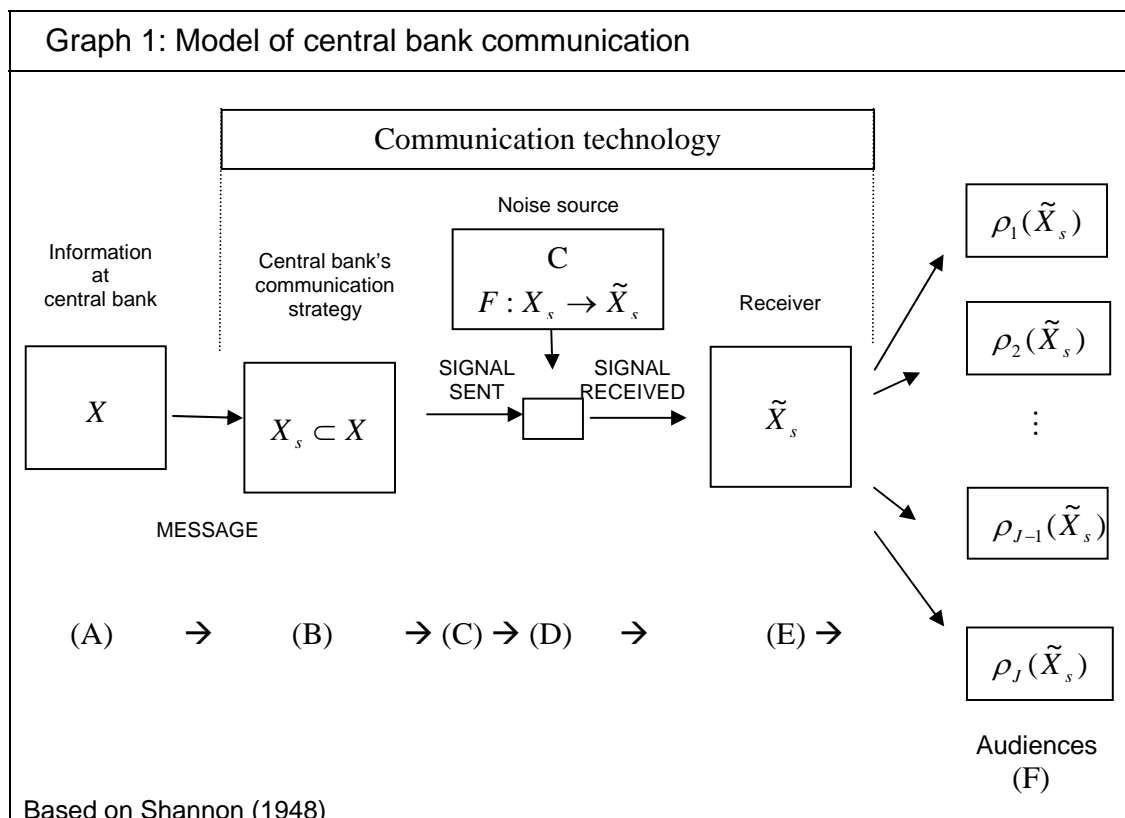
Given the huge volume of information, the central bank must then judiciously choose its communication strategy. First, it must decide what subset of information to

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decisions are rooted in the relatively tight constraints imposed by a process that starts with forecasts, considers the optimal responses and ends with decisions which, year after year, appear as derived from the same logic."

disclose at each point in time (point B). More information does not always improve the clarity of the message the central bank wants to send. Indeed, releasing too much information (even if perfectly accurate) may so overwhelm the recipients that the public might become more confused about the intentions of the central bank than otherwise.

Second, it must decide how the message (point C) is transmitted. In many monetary policy theories, information is transmitted from the central bank to the public almost magically. In practice, the modalities of information disclosure are numerous, including press conferences, release of minutes, speeches, interviews, written statements, reports, background documents and research working papers.



The middle box of the communication strategy diagram (point D) emphasises the possibility that no matter how carefully a central bank has crafted its message with respect to substance, timing and modalities, there is the potential for miscommunication. It can arise from a number of causes, not least being misstatements, bad timing and miscalibration of messages to different audiences. The bottom line is that there are limits to transparency from a practical perspective and the end result can be a serious muddling of the signals from the central bank.

Finally, misinterpretation of the signals by the intended recipients (points E&F) is always possible, especially when different groups of recipients are seeking different types of information. Moreover, differences in their abilities to absorb and interpret information and different levels of interest in the details of the conduct of monetary policy reduce the effectiveness of a one-size-fits-all communication strategy. Further complicating the process is the possibility that the recipients of the messages are not all passive consumers

and transmitters of information; some, such as the press, may have their own agenda when passing on the information to various audiences.

*Organising thoughts about central bank communication challenges*

From the perspective of this communication model, we briefly turn to some of the communication challenges that naturally arise, as a preface to the discussion of the survey results.<sup>3</sup>

One of the biggest challenges for a central bank is determining *what information* to release about the policy process and decisions. One possible, though thoroughly uninformative, answer is *all* relevant information. But, what exactly is the relevant information and for whom is it relevant?

The answers to these questions depend on, among other things, the particular aspect of the policy process about which the central bank wants to inform the public and the specific informational needs of the recipients. With respect to policy frameworks, many central banks in Asia, as well as elsewhere, have adopted inflation targeting frameworks which included enhanced disclosure of policy information. The information has included detailed descriptions of, among other things, inflation goals over a given time horizon, policy instruments and how assessments of financial and economic variables could influence policy decisions and risks. This extent of openness of course is not limited to inflation targeting frameworks, as the Bank of Japan's innovations to its framework in 2006 illustrated.<sup>4</sup>

One of the biggest disclosure changes in recent years has been the emphasis on greater transparency at the time of policy decisions. Efforts over the past two decades have led central banks to provide significantly more information about the decision itself and the reasons behind the decision. Currently, many central banks are actively looking for opportunities to become even more open, such as issuing more articulated statements that accompany policy decisions and publishing follow-up reports to provide more analytical information.

Other recent efforts underscore the difficulties involved in precisely calibrating the amounts and types of information that should be disclosed about the various aspects of the policy process. Part of the difficulty arises from the different audiences with different abilities and levels of interest. Thus, besides the costs of collecting, collating, editing and disseminating information, central banks have to expend resources to assess and continuously track the informational needs of the multiple audiences (eg financial markets and the general public), especially as those needs evolve over time. Moreover, given the potency of their actions, central banks need to be wary of being seen to favour one group over another. This naturally influences disclosure rules and rules on access to senior officials. Fairness issues also affect the scale and scope of outreach efforts at central banks.

Central banks also face the challenge of choosing the best means – the *hows* – by which the information should be transmitted. The two primary ways central banks

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<sup>3</sup> See Jordan and Rossi (2006) and Cuijsen and Eijffinger (2007) for recent reviews of the academic literature on communication and transparency in monetary policy.

<sup>4</sup> Bank of Japan (2006).

communicate are *actions* and (written and spoken) *words*.<sup>5</sup> Sometimes actions are stronger than words in transmitting policy intentions. During the high inflation periods of the past, actions often spoke louder than words. However, as the inflation fighting credibility of central banks in the region, as well as elsewhere, has strengthened, words have taken on increasing significance. Indeed, the past couple of decades have illustrated just how mutually reinforcing words and deeds can be in establishing the credibility of the central banks regarding price stability.<sup>6</sup> The record also indicates the importance of continuous review and innovation of communication strategies – refining practices as well as learning from the successes and mistakes of others.

With respect to how written and spoken words are presented, a central bank's communication strategy typically entails myriad decisions about various aspects of communicating with the general public. It includes choices of modalities such as press conferences, reporting of minutes and votes of policy meetings, periodically publishing inflation reports, choosing spokespersons for policy matters, speeches, press interviews, publishing forecasting models and forecasts, and on and on. A quick scan of the rich set of practices at central banks suggests that central bank communication strategies are very sophisticated and consume considerable resources.

This is particularly true at the time of policy meetings. At such times, information about decisions is news, and hence of high value: What was the decision? What was the reasoning? What do policymakers think about the future? Why? There is any number of questions of interest.

The challenge for central banks is to trade off the cost of detail that can be disclosed versus the cost of delay. There has been a trend in central banking over the past decade to reduce the time gap between policy decisions and the public disclosures of the decisions. As more emphasis has been put on detailed explanations for particular policy actions, central banks have been trying to find the right balance between the quantity of information and the time gap.

Central banks have generally become more open between policy meeting dates too, increasing the number of speeches and public appearances by senior central bankers and offering a greater range of public information. Often the information is meant to provide greater clarity about the monetary policy framework and evolving assessments by the central bank of ongoing economic and financial developments. While there is little controversy about the importance of an ongoing dialogue with the public, there still is no consensus about the right level of detail necessary to achieve clarity. Some suggest that a central bank should keep the messages simple and repeat them often to ensure there is little ambiguity across interested audiences about the central bank's motivations and intentions; ie transparency does not necessarily imply clarity. Others suggest that central banks should strive to provide even finer details about the policy process and justifications for action.<sup>7</sup>

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<sup>5</sup> Blinder et al (2001) and Fracasso et al (2003) emphasise the importance of both.

<sup>6</sup> Blinder (1998, 2000) argues central banks primarily derive credibility by doing what they say they will do rather than by following preset rules as the literature on dynamic inconsistency suggests.

<sup>7</sup> For the former view, see Mishkin (2004); for the latter view, see Eusepi and Preston (2007) and Woodford (2005, 2008).

Even the most carefully crafted and well-timed statements might be miscommunicated. In part, miscommunication is a function of the far-ranging interests of the various audiences and hence the effort it takes to parse information flowing from central banks. For example, financial markets typically focus on short-run policy rate implications in order to optimally hedge investments or to speculate. Consumers and investors tend to have a longer-term view and focus on protecting the real value of nominal assets and income flows. Other policymakers in the government may have policy objectives that may be at odds with those of the central bank and hence try to twist the messages to champion their own cause. As the world has become more globalised, audiences for central bank information are increasingly foreign – for many Asian central banks this has implications for issues such as translation of documents and the availability of staff to address inquiries from abroad.

Complicating the efforts of even the most credible central bank is the difficulty of keeping the attention of its various constituencies. Indeed, there may even be an information paradox that arises from the success of achieving price stability. The more successful a central bank, the lesser the reason for economic agents to devote resources to paying attention to the central bank, especially if “price stability is best thought of as an environment in which inflation is so low and stable over time that it does not materially enter into the decisions of households and firms.”<sup>8</sup>

Further complicating the challenges is the fact that the press is hardly a passive conduit of information. While this conduit can be very effective in disseminating the messages of the central bank, it can also prove to be counter-productive at times, especially when journalists have more interest in provocative headlines than objective reporting of the facts. Of course, the press can act as an ally in the information transmission process as they have a comparative advantage in translating the sometimes arcane world of monetary policy into reality for many in the general public. The press can also serve as a sounding board for a central bank. It may be easier for the central bank to receive feedback from the press than from the general public. Central bank officials can look at press articles and editorials to assess whether the message is being received accurately.<sup>9</sup> In the best of times, the press helps to translate the actions and words of the central bank in a way that tailors the message to various groups. In the worst of times, the press tries to sensationalise differences in views among those in policy committees or between branches of the government.

Finally, communication strategies have become an increasingly important part of a central bank’s tool box for managing expectations. The more open and credible a central bank, the greater leverage its dialogue with the public can have on achieving its policy goals. With respect to accountability, communication has been essential to clarifying what central banks intend to do and providing a public record with which their actions can be assessed. Clear, accountable central bank performance has reinforced the trend towards *de jure* and *de facto* central bank independence which, in turn, has bolstered credibility in a mutually reinforcing way. With respect to monetary policy decisions, communication has helped to shape the expectations of financial market participants and the general public, thereby fostering conditions that improve the

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<sup>8</sup> See Greenspan (2002).

<sup>9</sup> Bernanke and Woodford (1997) highlight this feedback channel and the importance of transparency.

allocation of consumption, saving, labour and capital. And, as the record of central banking over the past two decades generally attests, transparent and credible central banks are the cornerstones of price stability. Clear communication has been shown to enhance central bank independence and credibility in anchoring inflation expectations in many economies – both emerging market and advanced industrial economies.

### **III. Survey results of Asian-Pacific central banks on communication and monetary policy**

The survey of communication practices in the Asian-Pacific region was prepared in mid-2007, with feedback from each member central bank in the region, in response to a desire for a comparative study among the members of the BIS's Monetary Policy and Exchange Rate Research Network. The survey questions can be found in Appendix 5. For our purposes in this paper, the responses provide insights into four key issues of transparency and communication for monetary policy: (1) What information is communicated? (2) How is the information communicated? (3) Are there perceived limits to transparency? (4) What do central banks do to “manage” public expectations?

Previewing the results of our study, we find the following:

- The *whats* – Asian-Pacific central banks provide a considerable amount of policy-relevant information, though there is diversity in what central banks disclose. Those having adopted inflation targeting frameworks tend to be more open in terms of the provision of information.
- The *hows* – Asian-Pacific central banks rely on a mix of ways to communicate with financial markets and the general public.
- The *practical limitations* – While the RBNZ has in many ways led the region on transparency, others in the region could be characterised as being in the process of opening up. The inertia may reflect institutional history as well as the outcome of cost-benefit analysis.
- *Managing expectations* – Central banks have been putting considerable emphasis on not surprising markets but rather on guiding the markets in a more predictable way.

#### *What information is communicated?*

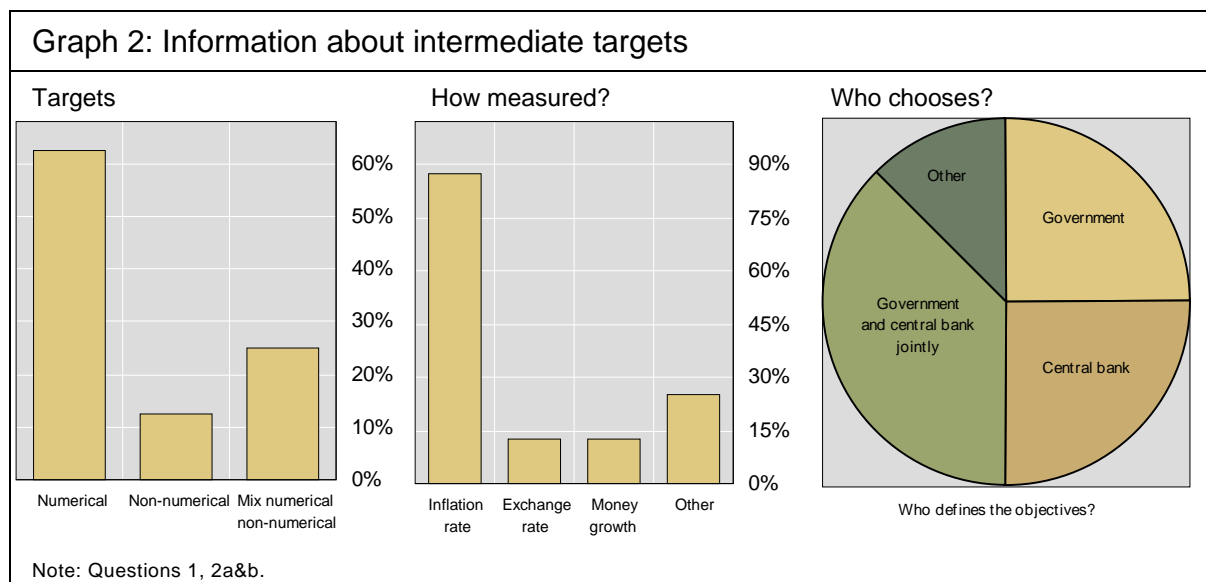
The survey provides two primary types of information about monetary policy: intermediate targets and policy decisions.

*Information about intermediate targets.* It should be no surprise that most central banks in the region now provide explicit numerical targets for inflation (Graph 2). The region's six inflation targeting central banks have made announcements of their inflation targets the cornerstone of their policy frameworks. Moreover, this is not to say that the other central banks in the region have no inflation objectives, but rather that the policy frameworks may include implicit inflation objectives and incorporate multiple objectives. These other stated objectives include monetary aggregate growth rates and exchange rates as intermediate targets. For instance, Hong Kong pegs their bilateral exchange rate with the US dollar while Singapore provides a target band for their nominal effective exchange rate.



As for the officials who define the objectives, there is much less uniformity. There is a mix of approaches to objective setting. Some objectives are set by the government; some by joint decisions between the central bank and government; some by the central bank itself.

The diversity of practices likely reflects, as in other parts of the central banking world, the tradeoffs between political accountability and issues associated with time consistency (ie the optimality of rules versus discretion in the pursuit of price stability). In theory, independent central banks would have the strongest incentives to stand up to political expediency in setting policy rates. But, being more removed from the direct control of the electorate (or their representatives) raises issues of accountability. The range of practices in the region, however, appears not particularly different from the range elsewhere. This likely reflects a lack of compelling evidence suggesting that one approach obviously dominates all others. In other words, the level of discipline with respect to the nominal anchor can come in various shapes and is likely to depend on the institutional, political and cultural traditions of each country.



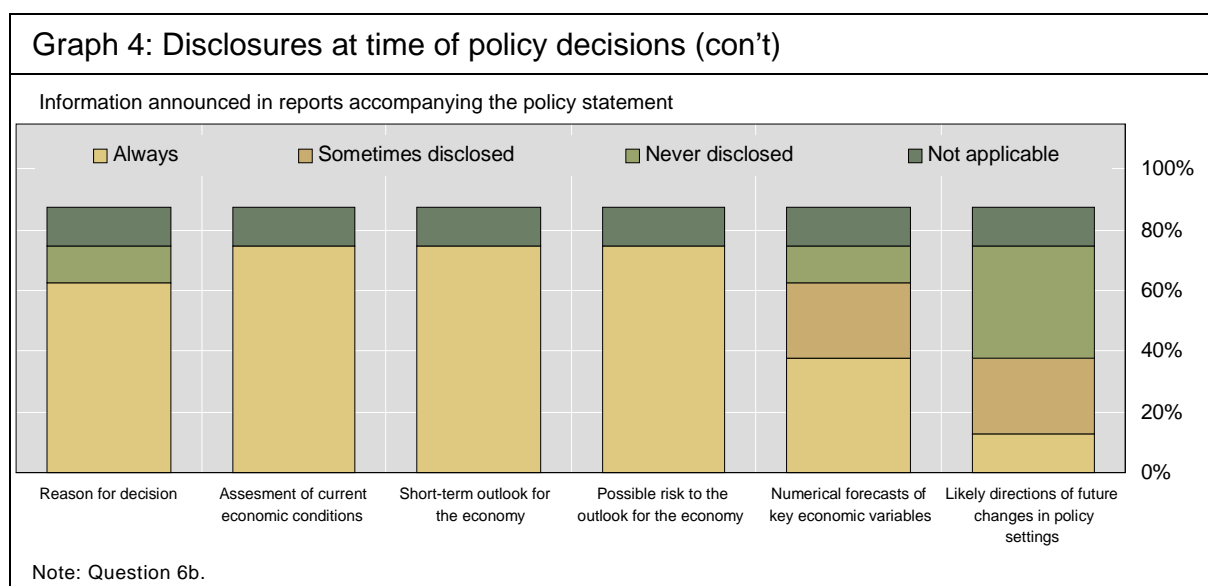
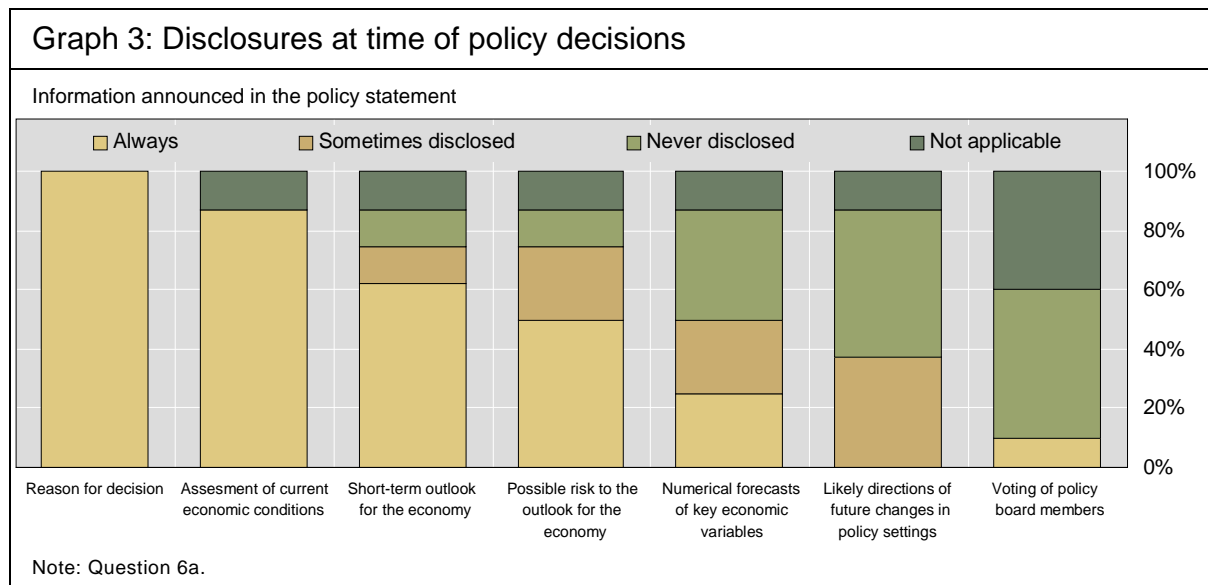
*Disclosures at the time of policy decisions.* While the emphasis on price stability in central banking is an important part of Asian-Pacific monetary policy frameworks, disclosure practices for different types of monetary policy information at the time of policy decisions differ widely (Graphs 3 and 4). This illustrates that there is more than one way to skin a cat, ie in the central banking context to achieve the goal of price stability. Moreover, the choice among the options generally reflects differences in views about the importance of disclosing various important types of information, such as the stance of monetary policy, the assessment of the state of the economy and description of the decision making process.

Assessing the reasons for the differences is complicated by the fact that many central banks in the region are still in the transition process to more transparent policy frameworks. Changes in transparency policies are typically slow. The gradualism may arise for various reasons.

First, as noted above, the communication process is quite complicated and multifaceted. There is a need to build up a clear understanding by all parties involved, ie by the central bank, financial markets and the general public, about the nature and objective of the change before the best results can be achieved.

Second, perverse reactions during the transition could set back efforts to build central bank credibility, even if the misunderstanding was the fault of the general public or financial markets. As a consequence of the learning process being adaptive, the pragmatic approach taken by most central banks seems reasonable.

Third, the preference for gradualism may also stem from concern that once certain types of information have been released it may be difficult to stop doing so even though a narrow cost-benefit analysis might justify stopping. Notable examples of this type of situation in the past include the use of hard to understand monetary conditions indexes and detailed analysis of the high frequency variation in the monetary aggregates.



Turning to the specific information released in the policy statements at the time of monetary policy decisions noted in Graph 3, we see that all central banks now provide explanations for the actions, usually against the backdrop of an assessment of current economic and financial conditions. While this may now seem an obvious approach, it is not so long ago that central banks would take actions without any explanation, and sometimes without informing the public that actions had been taken at all. The change points to an evolution in thinking about the role of secrecy in central banking. Namely, central banking practices have evolved in a manner consistent with the view that more is to be gained by explicitly managing the expectation process through an open dialogue than by routinely resorting to surprises.

Despite the greater willingness among central banks in the region to elaborate on forecasts which condition the policy decision, the survey shows that full forecast disclosure is not the norm. This difference may be one of the most controversial in light of growing support among academic policy economists that such disclosures should be the cornerstone of forward-looking monetary policy frameworks. We explore this issue in more detail below.

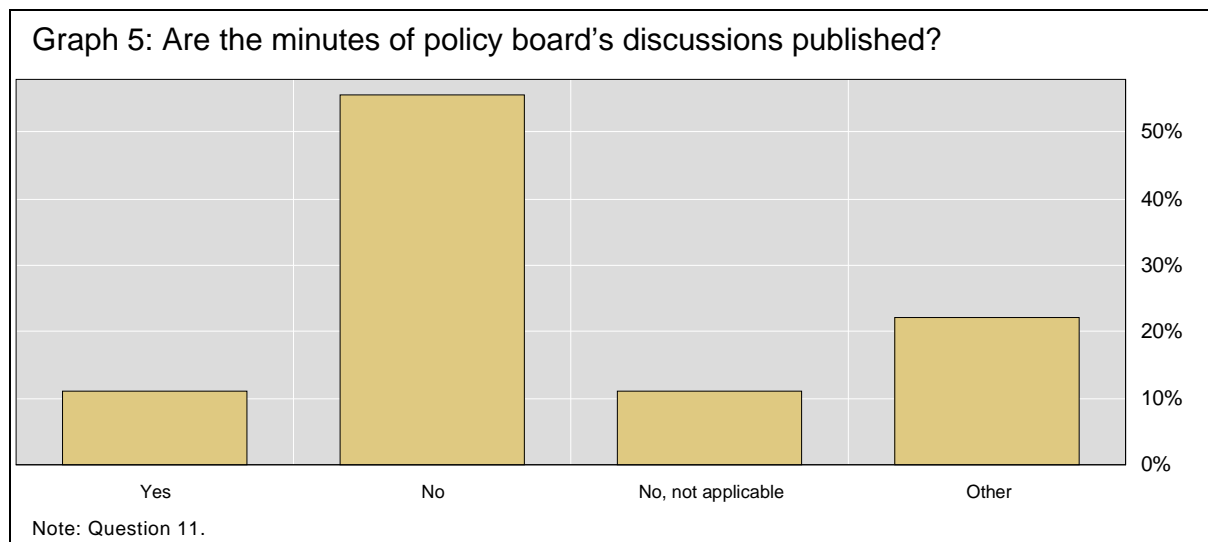
The differences in Graphs 3 and 4 indicate that central banks are somewhat more likely to elaborate on the outlook and the risks to the outlook in documents that accompany the policy statement, rather than the statement itself. On the one hand, this may reflect the desire to keep the statement focused on a small set of details in order to keep the main message clear. On the other hand, the accompanying documents may reflect the reality that such information was not drafted at the policy meeting but rather before the meeting.

These graphs also illustrate that while there has been a trend toward greater transparency in explaining decisions, there appears to be reluctance by Asian-Pacific central banks to disclose what goes on at policy meetings. One example of this is the decision not to generally disclose the vote by policymakers either at the time of the policy decision or at a later date. A clear exception to this practice in the region has been the Bank of Japan.

In the case of the Philippines, for example, although the decisions of the Monetary Board concerning monetary policy are determined by a majority vote, neither the press statement released after each policy meeting nor the more detailed highlights of the meeting (published four weeks later) disclose the views and votes of individual members of the Monetary Board of the BSP. Instead the emphasis in both documents is on portraying the policy decision as the result of a consensus among the members. Non-attribution of votes thus emphasises the collegial, consensus-based nature of the decision making process – that is also expected to be more open and frank.

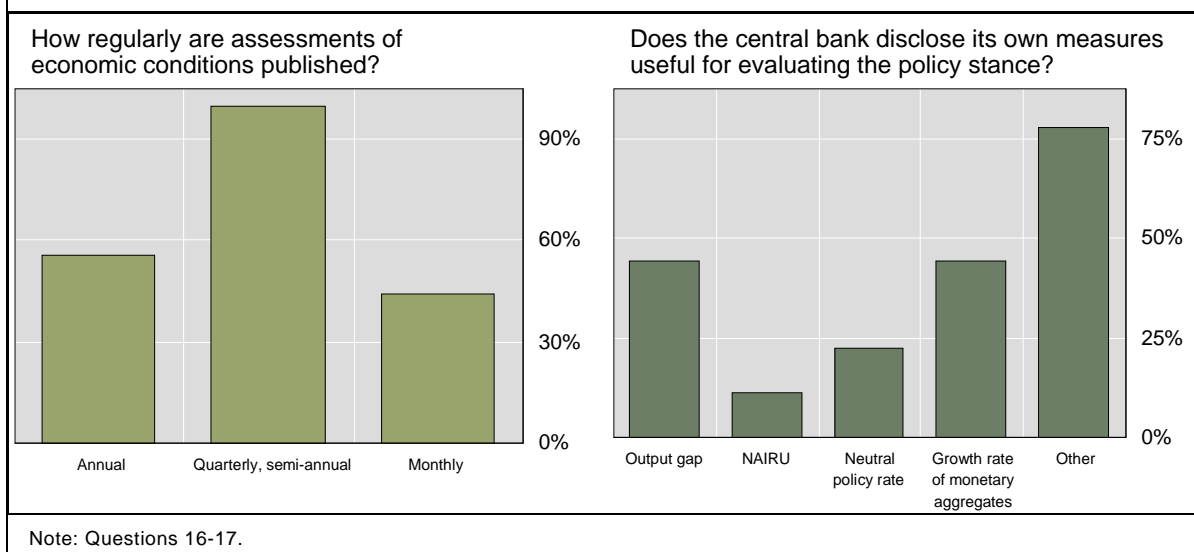
Moreover, central banks in the region still exhibit a reluctance to publish the detailed minutes of the policy board's discussions (Graph 5). Reporting on the exact line of reasoning during policy meetings might provide useful information to the public about the preferences of board members and the weights that each member assigns to various macroeconomic and financial indicators when assessing the state of the economy and the appropriate monetary policy stance. Minutes would provide a record from which the central bank could be evaluated about its accountability. More transparency along these lines might represent the logical next step.

The general reluctance inside and outside the region to publish minutes, especially verbatim ones, may show a deeper set of concerns that too much openness might indeed stifle the frank exchange of views during a meeting. Greater openness along this dimension of the policy process, which has in the past included the option of televising the proceedings, could naturally lead to more formal statements during meetings and more confidential but off-the-record discussions outside the meeting room. There are also concerns that the release of confidential materials might have a chilling effect on the willingness of the private sector contacts to provide a flow of anecdotal information. Finally, there may also be concerns about the ability of the public to appreciate fully the process through which monetary policy decisions are made. Raw transcripts of the give-and-take of a policy meeting could be taken out of context and blur the message of the central bank. This in turn could compromise the credibility of the central bank – underscoring the possibility that, just as in the case of the proverbial sausage maker, the process may generate more consternation than is warranted by the final product.



However, Asian-Pacific central banks have become more forthright about publishing policy benchmarks, such as internal measures of the output gap, NAIRU, neutral policy rates and others (Graph 6). All this information is useful for financial markets and the general public not only when assessing the state of the economy but also when forming expectations about the future.

Graph 6: Assessment of economic conditions and policy stance



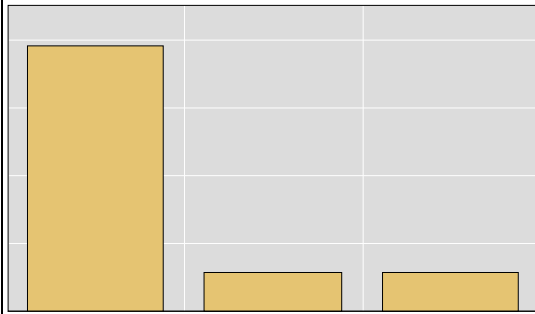
*Forecast disclosures.* Recent transparency debates have focused on whether central banks should be more forthcoming about internal forecasts and the assumptions behind them. Three basic options are pursued by central banks in the region, as described in Graph 7. Some central banks report private sector consensus forecasts about key policy variables such as economic growth and inflation. This is a very attractive option for a central bank which may not have an internal forecasting model that is “ready for prime time” and finds the consensus forecast to be fairly close to its own thinking. Some central banks report staff forecasts, which do not necessarily represent the views of the Governor or the policy board members. This leaves open the question of the relevance of the staff forecast to the thinking of the policymakers. The majority of the central banks in the region report the official central bank forecasts. Most of the forecasts are econometric model-based forecasts, and are reported quantitatively as point forecasts, interval forecasts and, in many cases, fan charts. The policy horizon tends to be two years or less.

In the case of the Philippines, the BSP announces inflation forecasts monthly and on an annual basis. This has been done since 2006. In addition, the central forecast path is presented to the public in graphical form, via a “fan chart” in the quarterly Inflation Report, whose publication is accompanied by a briefing for analysts and the media. The forecasts represent the Monetary Board’s view of the outlook for inflation, and external monetary policy communications through speeches, publications and other means, draw in large part on these central bank forecasts.

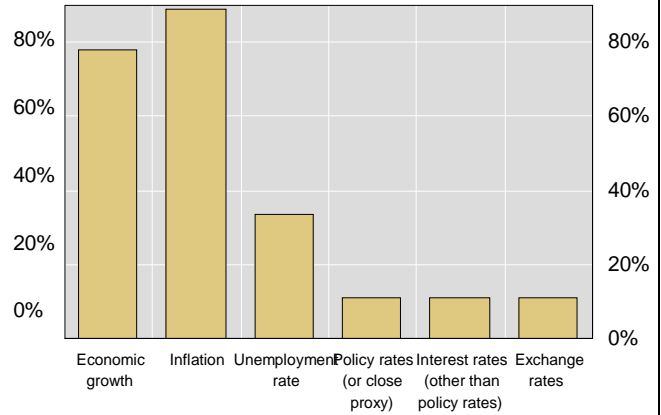
The main rationale for not publishing forecasts was to make it clear that policy decisions were not based solely on inflation forecasts, even though they carried a significant weight in the decision making. The Monetary Board generally took into account a wide range of information in formulating stance of monetary policy, such as output and financial market conditions. Given an appreciation of this aspect of the policy process by the public, there were reduced the risks of miscommunication via disclosures of fan charts.

Graph 7: Disclosures about central bank forecasts

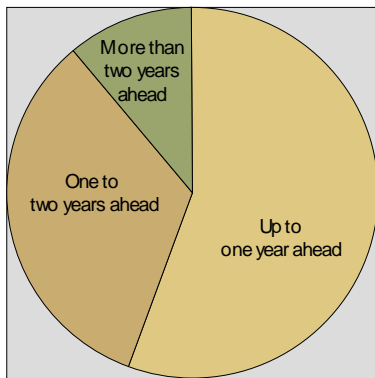
Does the central bank regularly disclose its forecasts of key economic variables?



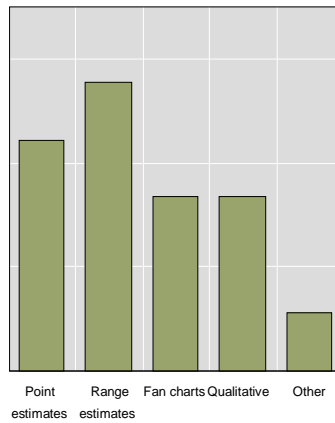
...for which variables?



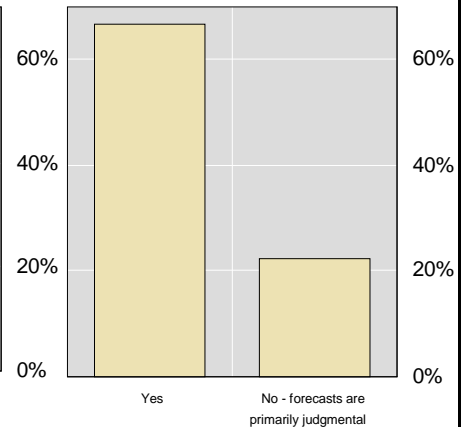
... for what time horizon?



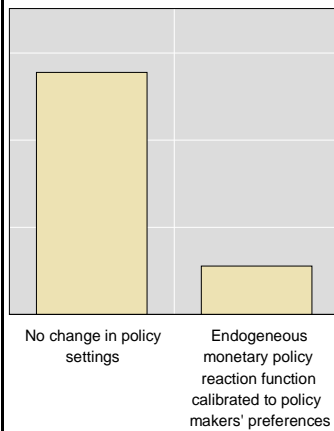
...numerical or qualitative?



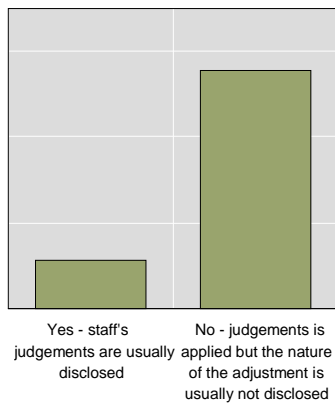
... primarily model-based?



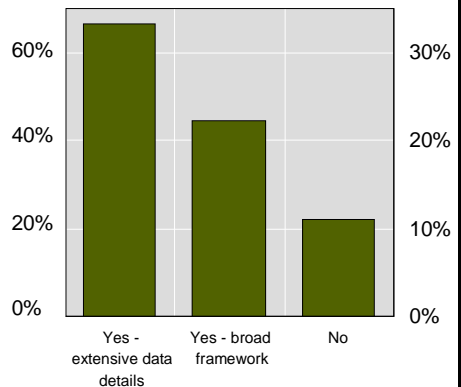
What monetary policy settings underlie the disclosed forecasts?



Are judgmental and ad hoc factors to the forecast disclosed?



Is information about the model made publicly available?



Note: Questions 18, 19a-d, 20a-c.

At this point, most central banks in the region refrain from detailed descriptions of policy forecasting models. For example, there is not much effort to describe the judgment built into the policy models. This naturally limits the ability of the more sophisticated central bank watchers to understand fully, and possibly synchronise, their models with that of the central bank.

From the central banks' point of view, the paucity of disclosed information may reflect the technical complexity of the current state of modelling and the costs in terms of time and other resources of informing the public. In some cases, it may reflect the fact that the central banks' models play only a minor role in the policy process, especially in economies with poor quality data sources and subject to economic developments that are difficult to model with a reasonable level of confidence. Optimistic signs can be seen as forecasting initiatives appear to be attracting more attention. DSGE modelling is being pursued by most central banks in the region. Moreover, in recent years, several central banks in the region have commissioned external reviews of their forecasting process. However, central banks have generally been reluctant to publish the findings.<sup>10</sup>

Another potential drawback of the disclosure rules for forecasts is that central banks in the region generally report policy simulations under the somewhat unrealistic assumption of an unchanged policy setting over the forecast horizon. This is not a unique practice in the central banking world by any means. But it is at odds with the cutting edge of academic monetary theory, which has focused on this issue of disclosing endogenous policy rate paths. Some central banks inside and outside the region have been grappling with this issue. On the one hand, such policy paths would be fully consistent with recommendations from monetary policy theorists to improve the effectiveness of monetary policy. On the other hand, the highly contingent nature of the path could be a source of practical concern. If the public were to perceive the path as a promise rather than simply being indicative of the likely direction, any deviation of the path could disappoint the public and, in turn, adversely affect credibility of the central bank.

Of course, there are limitations to the usefulness of endogenous policy rate paths. An endogenous policy rate path, while ideal in theory, would only be as accurate as the underlying model of the economy. While the newest frontiers in DSGE modelling hold out some hope, these models are still quite complex and would entail very technical and arcane discussions with the public about how the model works and about the links between the model and the forecast. Further efforts in the region to develop DSGE models may promote greater understanding and may allay such concerns in the future.

#### *How is the information communicated?*

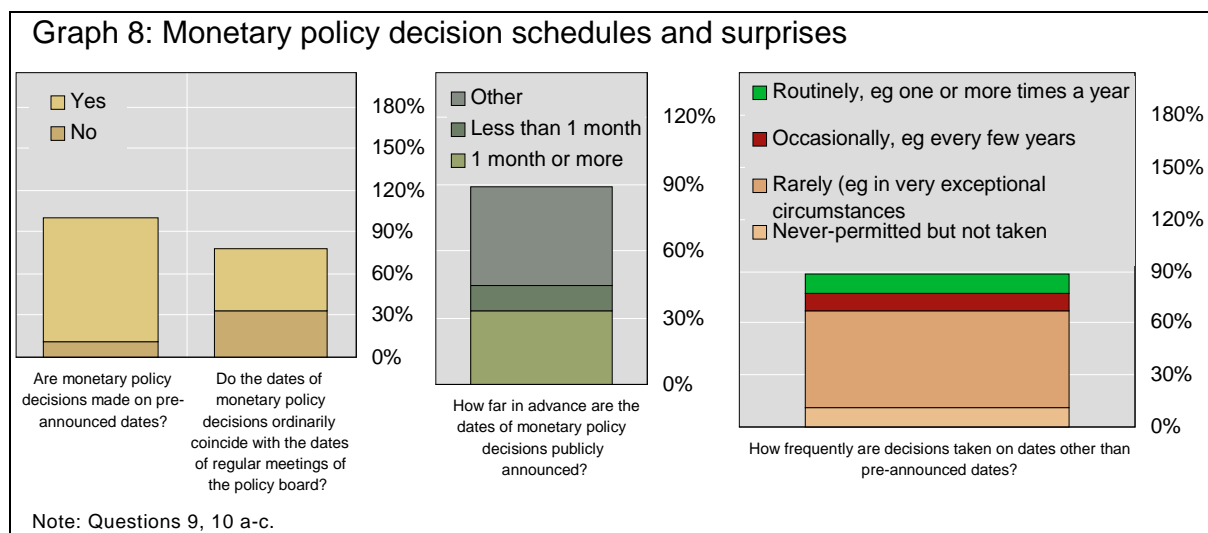
In addition to grappling with the issue of what information to communicate, central banks have the difficult task of coordinating how best to communicate it, and to whom. In contrast to conventional models of monetary policy where more information is always preferred to less, central banks face considerable costs and benefits in providing information. Gathering, collating and disseminating information is, of course, not without costs. It can require surveys, data analysis, printing and IT costs, etc. The back office costs alone can be quite high. Moreover, the marginal value of such statistics and reports

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<sup>10</sup> Question 20d asks whether an external review was commissioned and published.

may be questionable, especially if the public has only limited interest and a limited ability to understand the basis of the policy decisions and the process that led to particular actions. Further complicating the cost-benefit calculations of central banks are the concerns associated with fairness and accountability. Central banks have to communicate with several different constituencies, or audiences. With these issues in mind, we look at the responses from Asian-Pacific central banks to questions about the timing and types of communication modalities with the public.

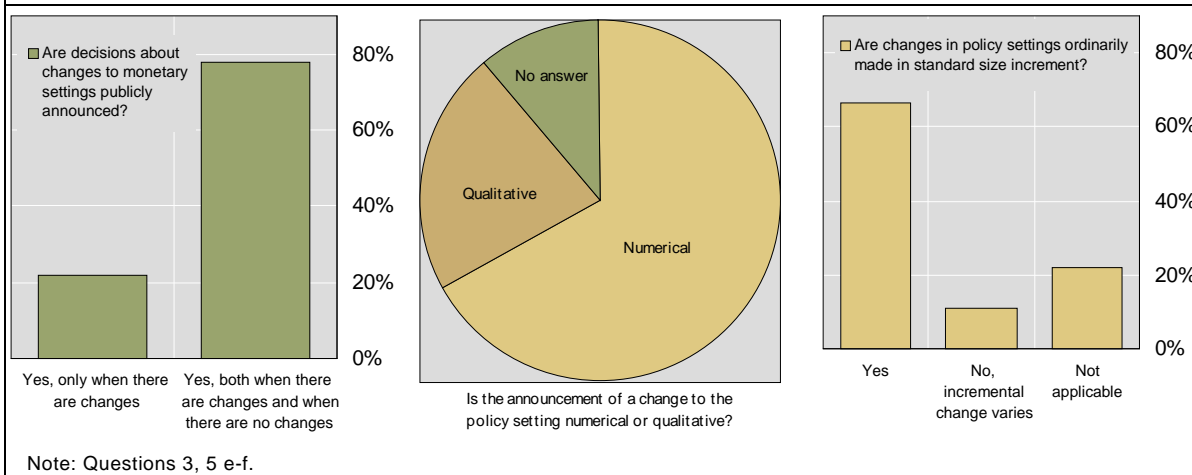
First, we consider the timing of policy meetings. Meeting too infrequently raises the risk that a central bank will fall too far behind the curve, thereby requiring large corrective movements in policy settings. Meeting too often raises the risk that the public will grow weary of non-informative public announcements. The optimal number trades off these risks. Moreover, as the survey shows, central banks in the region have a strong preference for decisions to be made on pre-announced dates (Graph 8). This reflects the perceived benefits of being predictable. The pre-announcements are generally one month or more ahead of time. However, central banks still value the option to “surprise” the markets by taking decisions on non-pre-announced dates – which underscores the fact that periods of economic and financial flux may dictate a more rapid response than during more quiescent periods. Recent policy actions by the Federal Reserve are a case in point.



Regarding the frequency of policy statements at the time of meetings, there appears to be a preference for announcements even in the case when there is no change in the policy setting (Graph 9). The recent decision of the Reserve Bank of Australia to adopt this practice suggests that markets and the public prefer assessments for actions and “non-actions”. In addition, announcements tend to be of a quantitative nature, where policy rate changes are ordinarily in standard-sized increments.

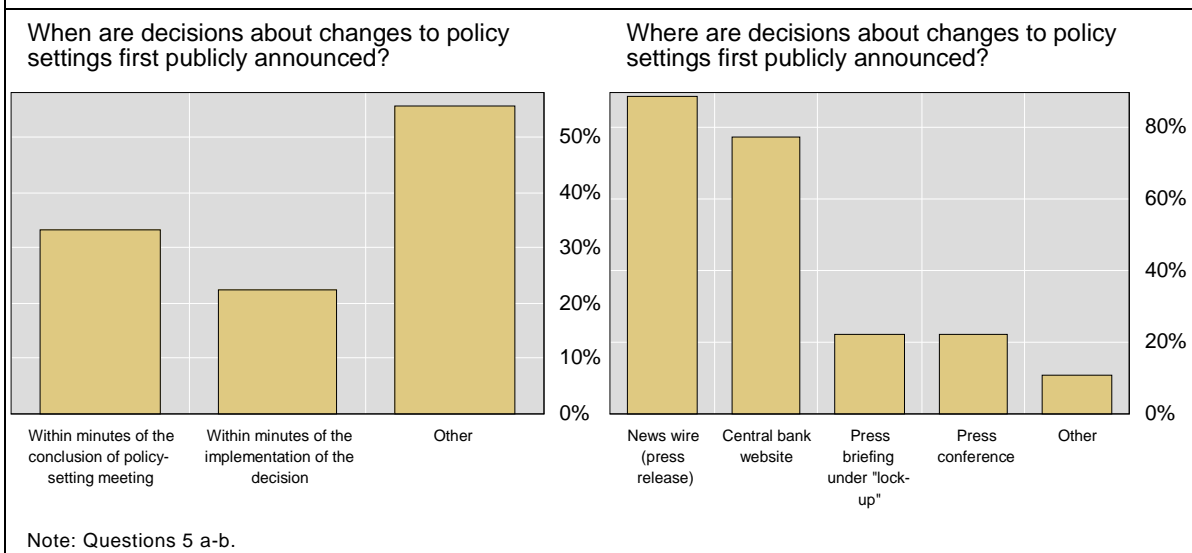


Graph 9: Monetary policy decisions

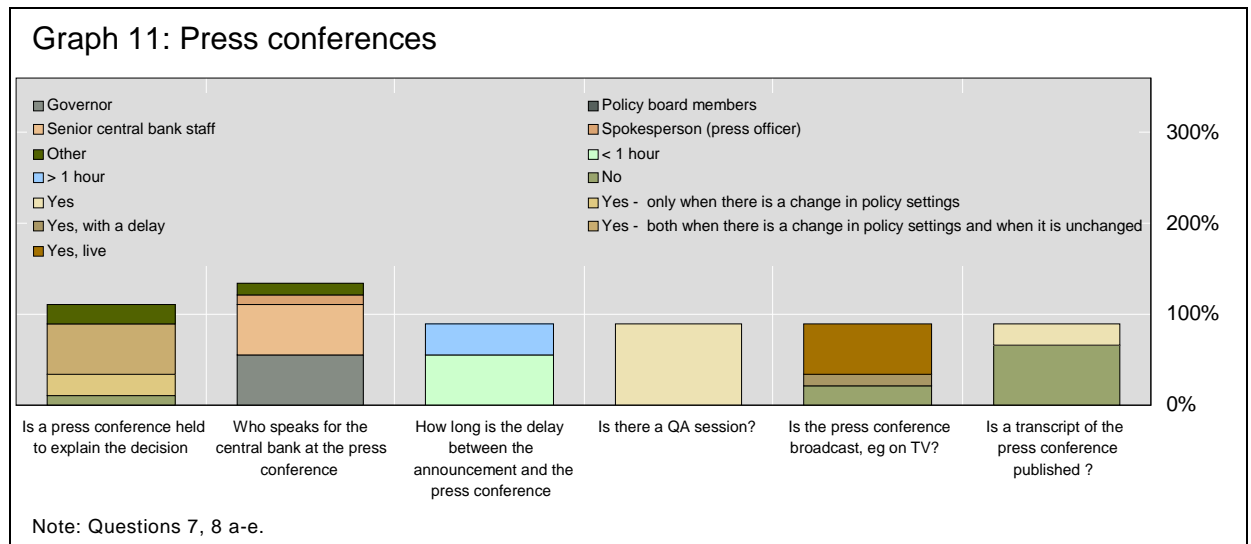


In recent years, the timing of the announcements after meetings and the choice of media outlets for the announcements have been big issues. Graph 10 indicates that the timing is not uniform. Some central banks prefer to announce near the conclusion of the policy meeting, others prefer to wait until implementation of the policy decision. As for the public announcements, central banks have, and do use, a wide set of options. The predominant approach is to make the announcement by newswire or press release. This disclosure procedure appears to ensure a level playing field for those who are most likely affected, ie those who might benefit or lose in the financial markets.

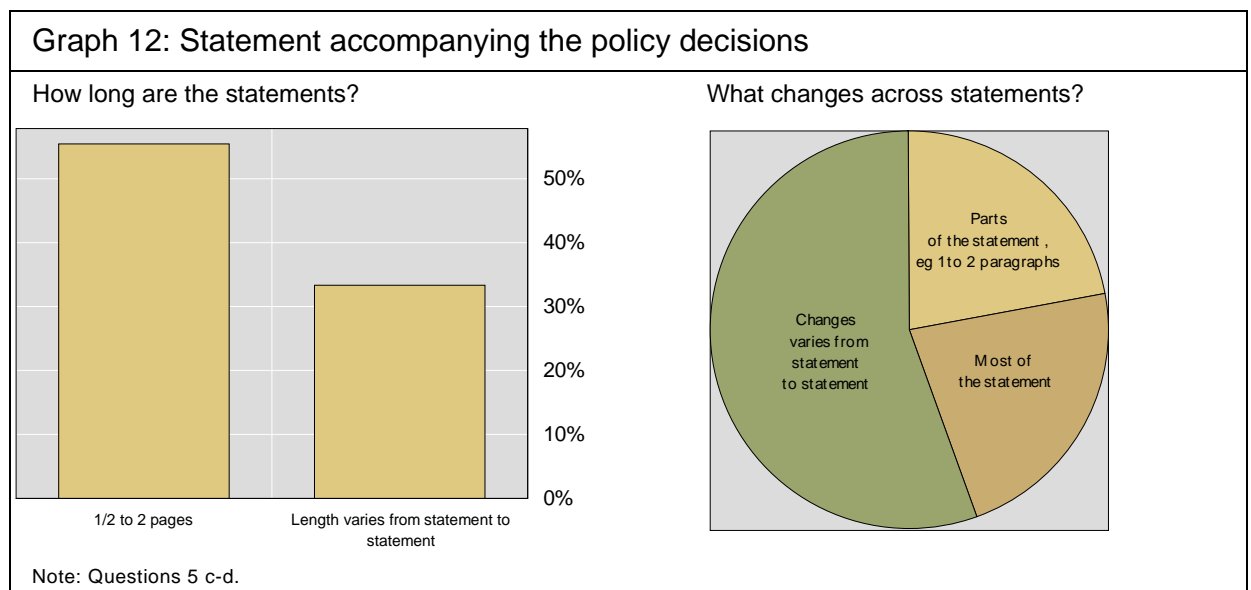
Graph 10: Public announcements of policy decisions



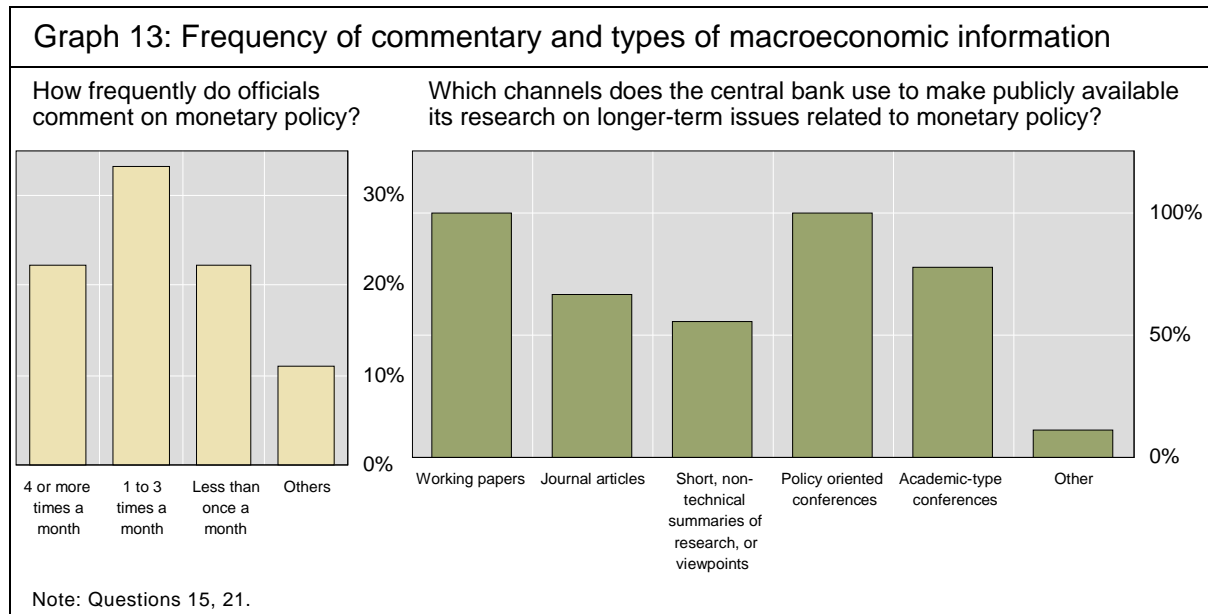
Press conferences have also become important for many central banks in the region. As is evident in Graph 11, press conferences are often held regardless of the policy decision – to change or not to change the policy stance. The official speaking for the central bank is either the Governor or a senior central banker. The event is usually held live or soon after the public announcement of the policy action. And, while it usually includes a question-and-answer session, verbatim transcripts are rarely published.



The policy statements that accompany the policy decisions are usually short, in part to reflect the brief time delay between the policy decision and the release of the statement (Graph 12). The majority keep the statement to fewer than 2 pages with the changes from one statement to another varying, depending on the changing conditions and reasons for the policy decision. However, by their very nature, the statements do have a similar structure from one meeting to another.



Along with the decision and discussions at policy meetings, other relevant information is provided to the public in the form of official commentaries, assessments of the state of the economy and the stance of monetary policy (Graph 13). The days of relative central bank silence are long gone as senior policy officials regularly contribute to the flow of information. As well, staff at central banks publish assessments of economic and financial conditions, mostly on a quarterly basis but may also do so monthly and annually depending on the institution. All this goes a long way to inform the public about monetary policy in the interim periods between meetings.



*Are there perceived limits to transparency?*

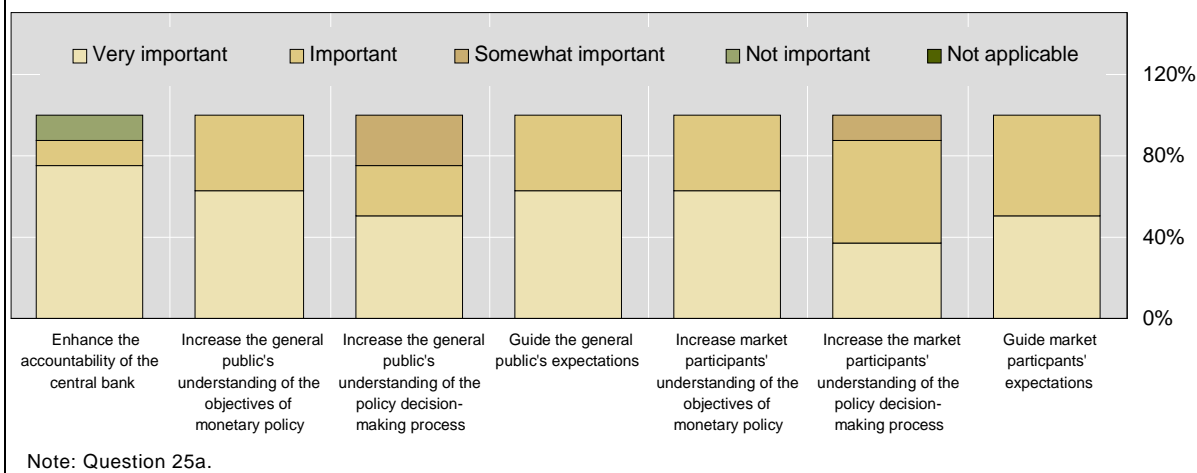
To investigate the nature of the limits to transparency in central banking, the survey offers qualitative responses that shed some light on such concerns. Graph 14 enumerates the reasons for increasing transparency; Graph 15 the reasons for decreasing it.

In most cases, the reasons for increasing transparency are multifaceted. Nearly all central banks rank the various enumerated reasons as being either important or very important. These include issues of accountability, public and financial market awareness of policy objectives, clarity about the policy decision process and the desire to manage the expectation channel.

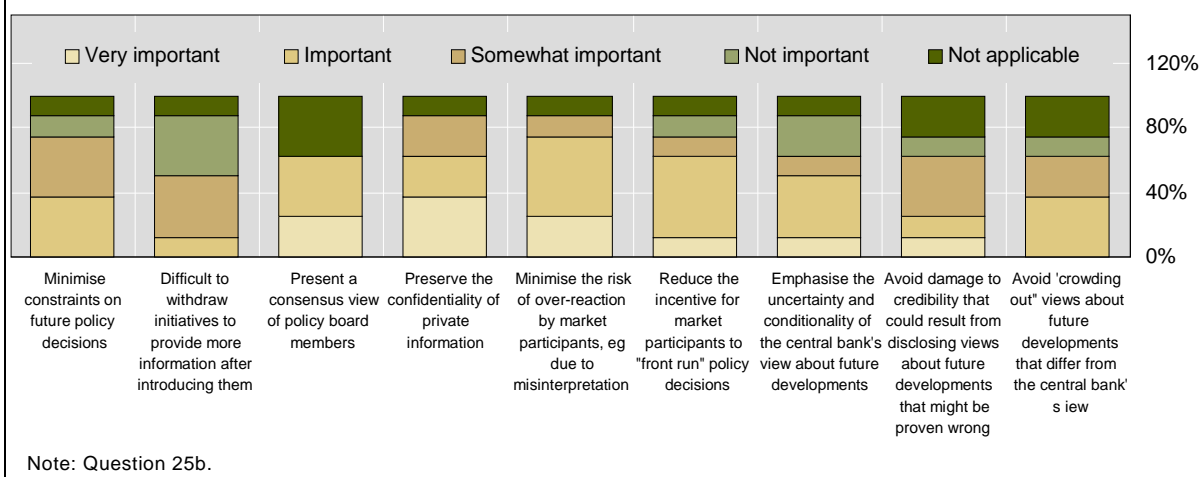
The reasons for limiting disclosure elicited a wider range of responses. The least relevant reason was concern about having to undo transparency reforms. The most important reason appears to arise from the desire to present a consensus view of policy board members.

Some of the concerns about forging a consensus view among the policy board members include the politicising of the monetary policy process. Opportunistic journalists and politicians might use reasonable disagreements among board members to their own advantage. In doing so, the public and market participants may find it more difficult to infer the stance of monetary policy, the state of the economy or the likely direction of policy in the future. In such an environment, one can imagine that central bank credibility could be adversely affected.

Graph 14: Reasons for increasing disclosure



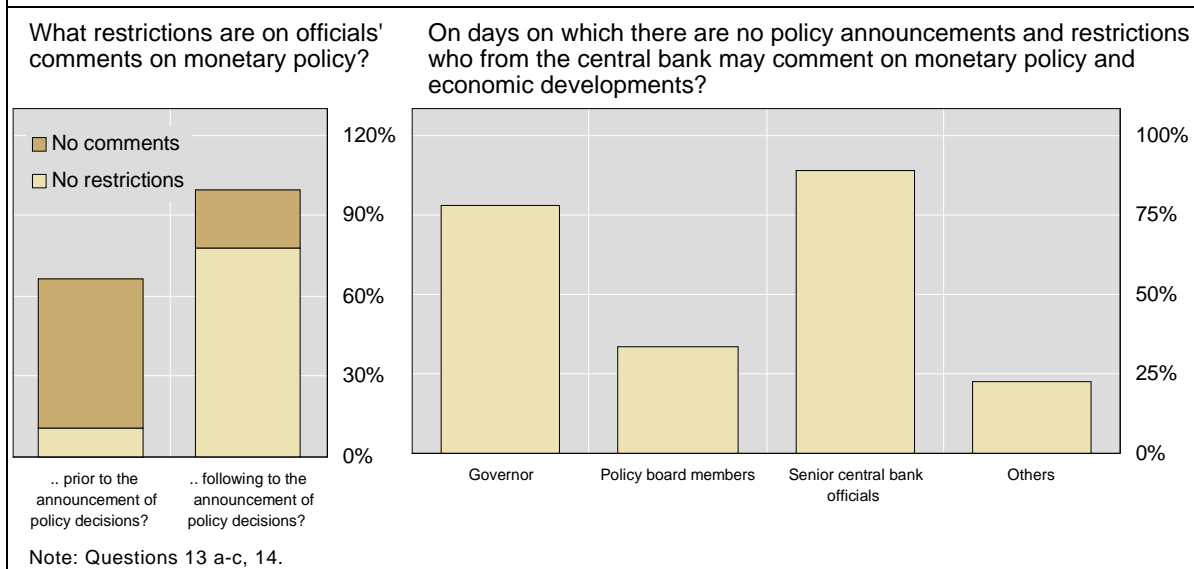
Graph 15: Reasons for limiting disclosure



One way to control the expectation process is for the central bank to provide a clear communication channel. As in the case of the Philippines, an important reason for restricting officials' comments on monetary policy is to ensure signal clarity, ie to avoid sending mixed signals to market participants and the public. Having the decision-making body speak with one voice (ie the Governor's) ensures that economic agents will not have divergent interpretations of policymakers' intentions. Graph 16 indicates who may speak for policymakers and restrictions about when they may do so. There is a tendency for more restrictions on speeches just prior to policy announcements than afterwards.

There are deeper questions about why the restrictions are in place. If there is a divergence of views, it might seem important to disclose such differences. Voting records can provide insights about the strength of a policy board's consensus. Disagreements might also signal the likely direction of policy rates.

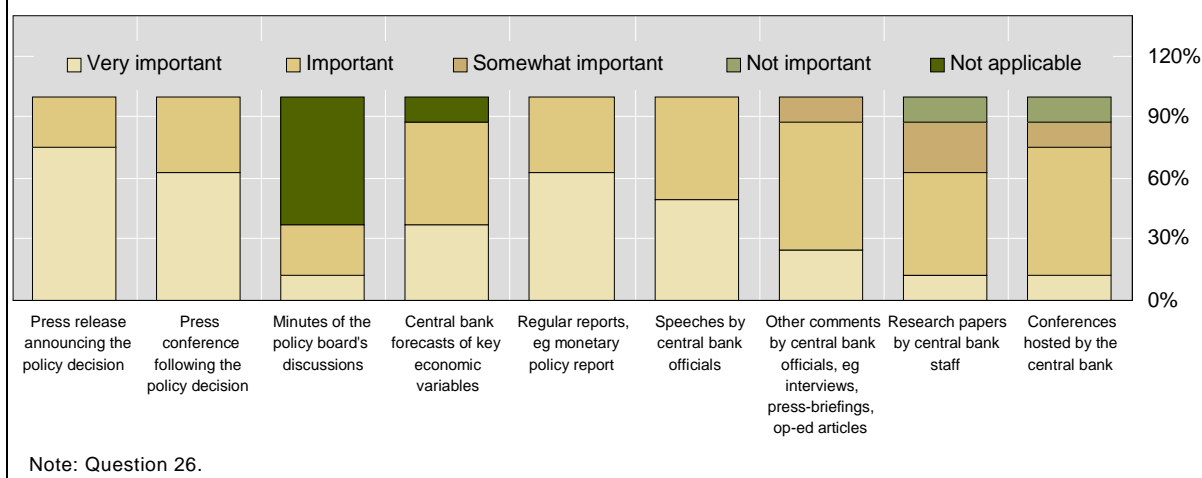
Graph 16: Periods of restricted central bank communication



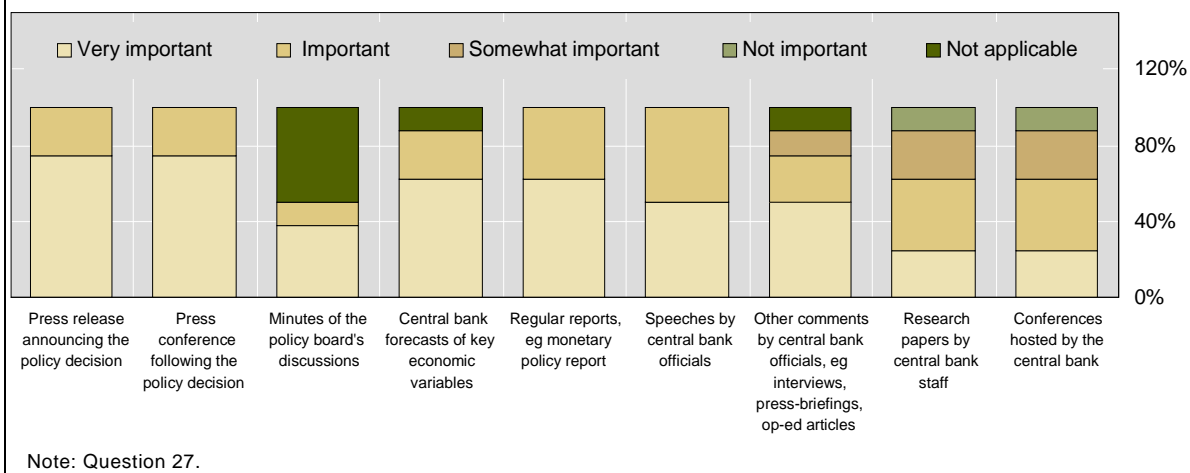
*What do central banks do to “manage” public expectations?*

In large part, communication strategies are used to manage public expectations – whether those of the general public or market participants. The survey suggests that managing the expectations channel is a multifaceted challenge. As there are many ways in which the central bank communicates with the public, there are several ways to shape expectations. The most important ways include the information provided at the time of policy decisions, such as press releases, press conferences, minutes of the policy board’s discussions and related reports on the macroeconomy and financial markets. One can add speeches, interviews, op-ed articles, research papers and conferences. Graphs 17 and 18 highlight the relative value of these various factors to the central banks in the region. There is surprisingly little difference in central bank responses about the general public and market participants.

Graph 17: How important are these in managing expectations of the general public?

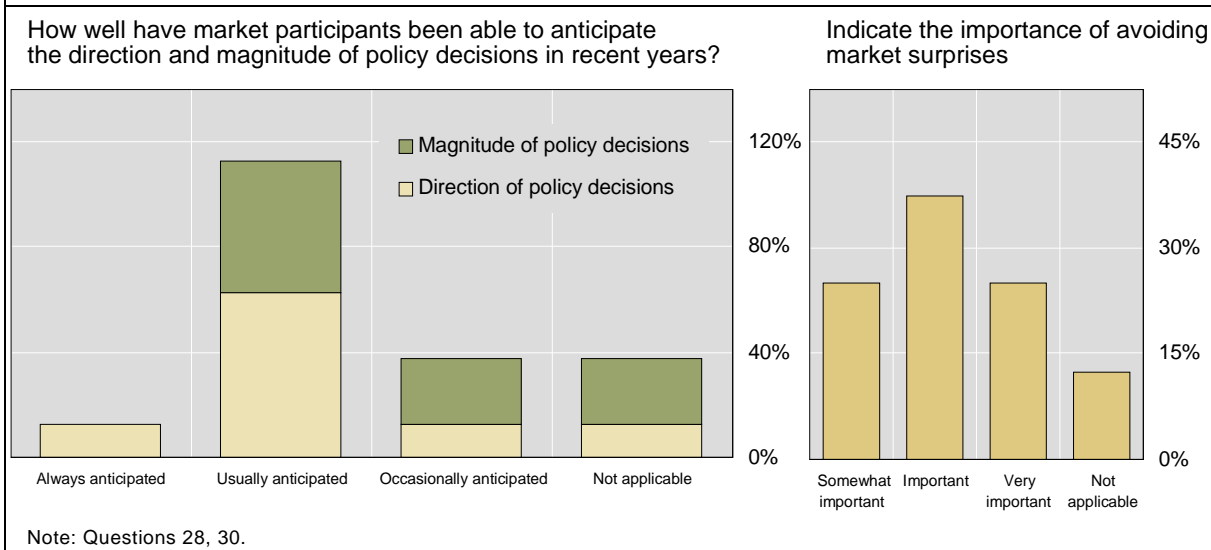


Graph 18: How important are these in managing market expectations?

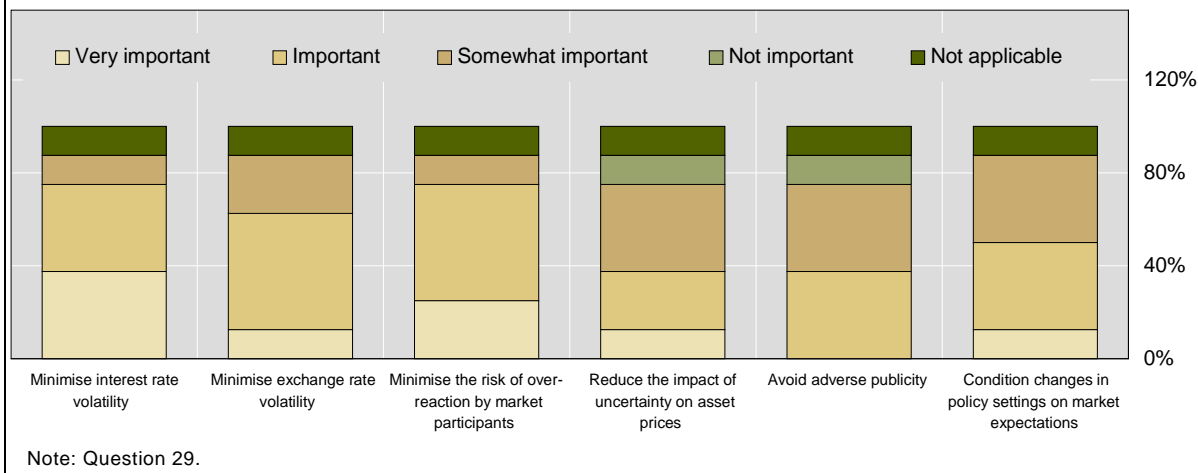


Finally, the survey provides some detail about the ability of central banks to manage expectations without having to resort to surprise moves. Most central banks perceive themselves as being very predictable. Graph 19 shows that market participants are seen to generally anticipate the magnitude and direction of policy moves. Moreover, central banks now feel that it is important not to surprise the markets. In part, the concern is most commonly felt with respect to minimising financial market volatility on interest rates and exchange rates; the impact on asset prices appears to be seen as less of a concern (Graph 20).

Graph 19: Markets and policy surprises

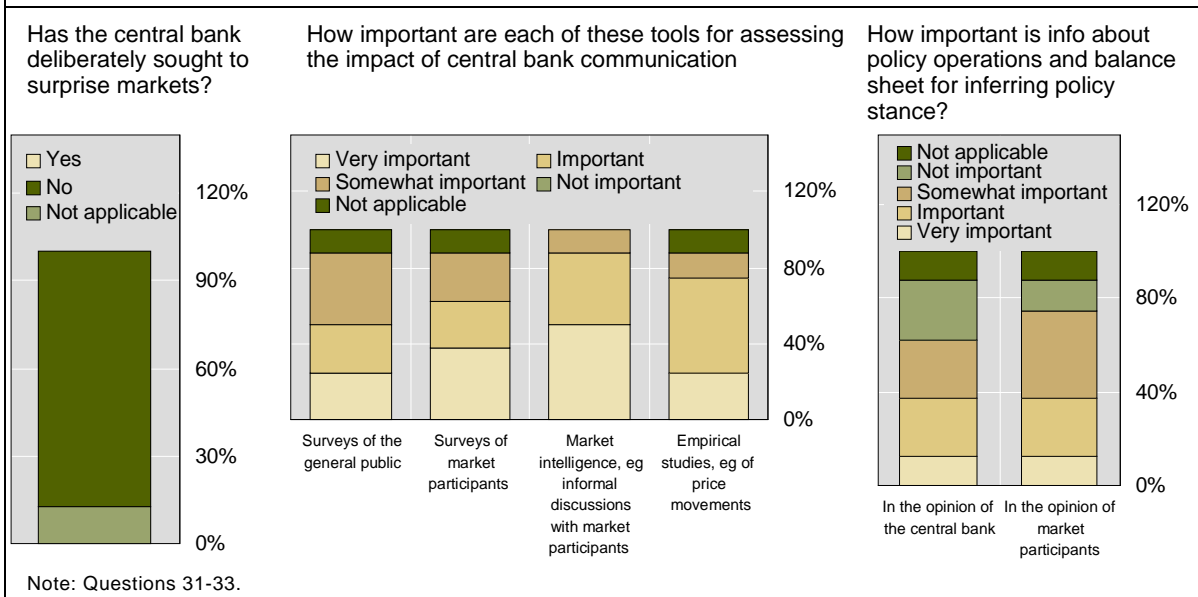


Graph 20: What are important reasons for avoiding changes in monetary policy settings that surprise markets?



Central banks prefer not to surprise markets but this does not mean that central banks slavishly follow markets. Communication is truly a two-way street. Clear communication from the central bank helps to condition public expectations. At the same time, the central bank receives feedback from the public. In the best case scenario, the central bank assesses the state of the economy and chooses the stance of monetary policy that is appropriate. To accomplish this level of consistency, central banks need to assess the expectations of the public. Graph 21 indicates that central banks value various sources of information about public expectations, such as surveys, anecdotal evidence and research studies.

Graph 21: Surprises, feedback from the public and central bank operations



#### IV. Evidence on evolving inflation and output expectations

The survey of Asian central banks reveals a fairly sophisticated set of communication strategies in the region. To be sure, there are differences, and opportunities to become more transparent. But compared to communication strategies two decades ago, there is little doubt that central banks in the region have become more transparent and credible. In this section, we explore the consequences of the more transparent monetary policy for price stability – exploiting time-series and cross-sectional perspectives.

A conventional way to measure price stability trends is to observe the time-series behaviour of inflation, economy by economy. In this respect, the evidence is clear. Inflation in the region has fallen and has become more stable over time, especially since the Asian crisis in 1997-8 (Table 1). The decline in the mean inflation is no surprise for the countries adopting inflation targeting regimes. Inflation rates have generally gravitated toward the stated inflation targets, though with some notable short-term deviations over the past few years (Appendix 2). The exceptions were typically associated with large price surprises due to food and energy prices.

A less conventional way to measure price stability is to observe the cross-sectional distribution of inflation expectations at a given point in time. One readily available and consistent dataset for the region comes from Consensus Economics. Since at least the mid-1990s, Consensus Economics has published monthly forecasts from professional forecasters. One would expect that, all else the same, greater central bank transparency would lead to less disagreement (increased sharpness) over time about inflation among forecasters, in part because the inflation intentions of the policymakers would become clearer.

Table 1: CPI inflation trends in the Asia-Pacific region

Country	Mean				Time-series standard deviation				Cross-sectional standard deviation	
	80's	90-95	96-00	00-07	80's	90-95	96-00	00-07	96-00	00-07
Australia	8.42	3.31	1.93	3.10	2.21	2.27	1.75	0.98	0.49	0.28
China	14.93	11.47	1.83	1.53	8.39	8.23	3.72	1.70	1.50	0.83
Hong Kong	7.77	9.62	1.47	-0.57	3.24	1.12	4.73	1.99	0.94	0.69
Indonesia	9.66	8.74	20.00	9.62	4.10	1.53	24.99	3.82	3.31	1.14
India	9.18	10.24	7.65	4.45	2.60	2.83	4.20	1.24	1.11	0.86
Japan	2.53	1.65	0.31	-0.30	2.27	1.31	1.04	0.48	0.36	0.26
Korea	8.44	6.62	3.99	3.07	8.97	2.02	2.48	0.83	0.82	0.43
Malaysia	3.66	3.74	3.14	2.05	2.96	0.81	1.36	1.01	0.91	0.46
New Zealand	11.89	2.77	1.45	2.62	5.08	1.95	1.12	0.65	0.46	0.34
Philippines	15.03	10.52	6.25	5.24	14.68	4.25	3.85	2.07		
Singapore	2.80	2.71	0.90	0.73	3.43	0.80	1.06	0.82	0.49	0.39
Thailand	5.84	5.00	4.29	2.60	5.80	1.19	3.26	1.67	1.25	0.54
<i>Average</i>	8.35	6.37	4.43	2.84	5.31	2.36	4.46	1.44	1.06	0.57
<i>Weighted average<sup>1</sup></i>	9.60	7.60	5.23	2.89	5.60	4.03	6.65	1.68	1.42	0.69

<sup>1</sup> 2000 PPP GDP weights.

Sources: Consensus Economics, national data, BIS calculations.



We find a general tendency for this to be true. Graph 22 illustrates that nearly all central banks in the region have seen a shift as well as a considerable narrowing of the cross-sectional dispersion of inflation expectations. During the Asian crisis in the late 1990s, some countries experienced setbacks. But over the past seven years, inflation has generally been low and stable, even when compared to the mid-1990s.<sup>11</sup>

The paper utilizes the *Kullback-Leibler (K-L) divergence* statistic to analyse in more detail the changes in the sharpness of distribution, in order to infer the consequences of greater central bank transparency. The choice of this statistic is attractive owing to the fact that the K-L divergence is a useful way to economise on the information contained in the large dataset of cross-sectional distributions of inflation forecasts, both over time and across countries. This allows us to convert the graphical shapes in Graph 22 into this summary statistic and to use this information in a panel regression analysis.

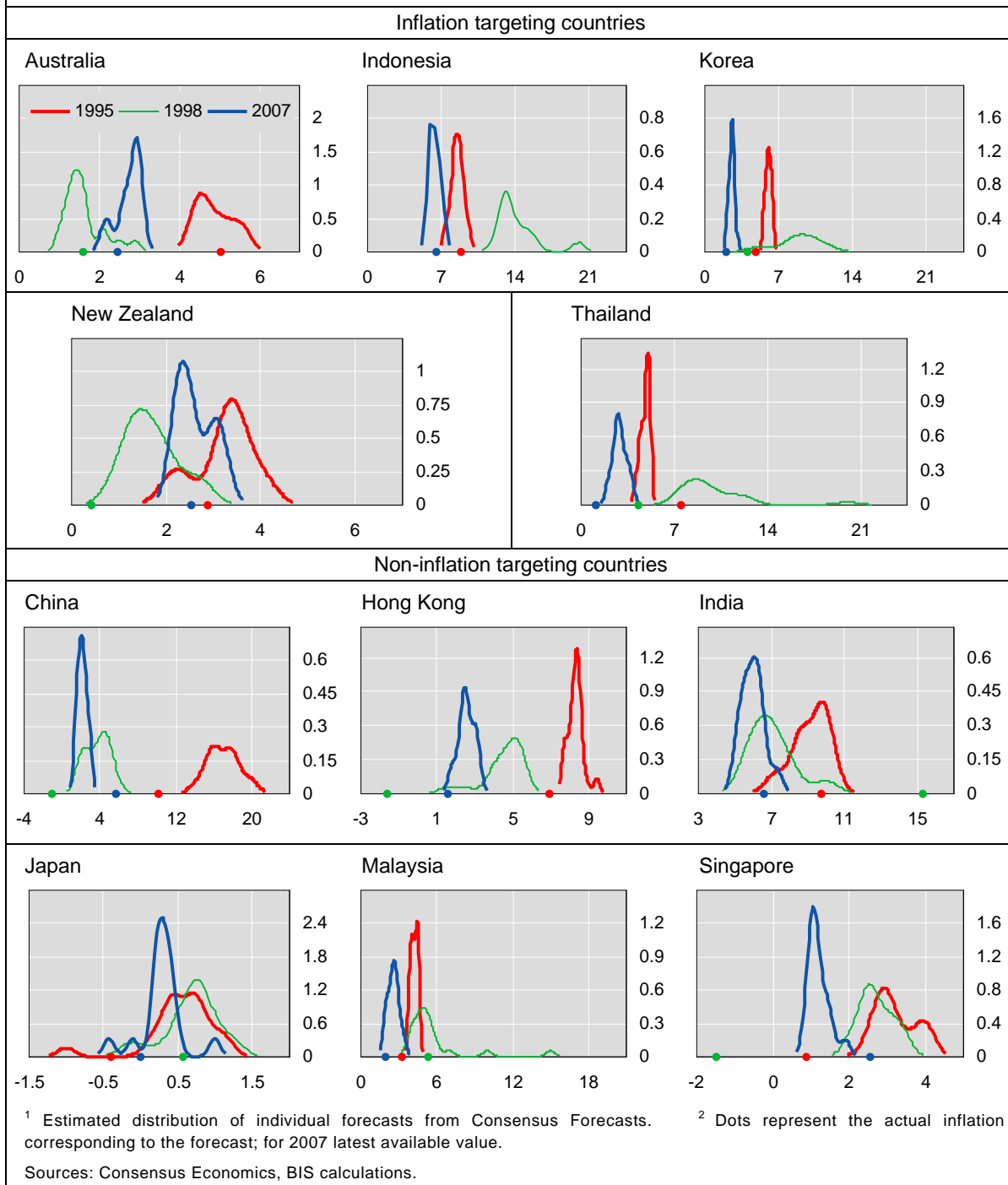
To preview the main findings, we find a consistent increase in the average values of the K-L statistic for inflation targeters, which reflect a general sharpening of inflation views by professional private sector forecasters. We find some more modest improvements for the non-inflation targeters. This may suggest that while there has been a greater focus on price stability in the region as a whole, progress on the inflation front for these central banks may take longer precisely because inflation is not the predominant policy variable of interest. These findings bolster the case supporting the view that central banks in the region have tried to increase their effectiveness in communicating with the public, and they have at least been successful in influencing private sector expectations.

Technically, the K-L divergence, as described in Appendix 3, measures the change in the sharpness of a distribution relative to a benchmark distribution which, in this paper, is taken to be a uniform distribution. An increase in the value of the K-L divergence means a greater difference between the uniform, or uninformative, distribution and the cross-sectional distribution of inflation expectations from Consensus Economics. Most of the data for the Asia-Pacific region is available only from 1995, which does present some limitations. But the time period covered is sufficiently long to allow us to examine how well inflation expectations have become anchored and, in particular, to examine whether greater putative transparency has translated into sharper views and whether those central banks that have adopted inflation targeting have performed better.

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<sup>11</sup> The results are consistent with those of D'Amico and Orphanides (2006) for the United States. They find that higher inflation is positively correlated with higher inflation uncertainty and greater disagreement about the inflation outlook. Chortareas, Stasavage and Sterne (2002) also find that higher inflation is correlated with less detail provided by central banks about published forecasts.

Graph 22: Cross-sectional distribution of current year inflation expectations<sup>1,2</sup>



Graph 23 illustrates the general tendency for improved sharpness of views in the region. For the inflation targeters, there has been a consistent increase in the average value of the K-L statistic. This reflects not only a general sharpening of views but also a more rapid convergence of inflation views over the year. This is all consistent with the motivations for adopting inflation targeting frameworks, namely to communicate more precisely how the central bank assesses the state of the economy and to be more transparent about the central bank's goals and likely actions to achieve those goals.

In the bottom of the graph, the K-L statistics are shown for the non-inflation-targeting central banks. In general, the improvement in performance since 2000 has not been as impressive. Nonetheless, there has been improvement. This suggests that in the region the movement toward greater transparency has led to less disagreement about the inflation outlook. Notably, central banks that have put more weight on exchange rate predictability have seen less progress on the inflation front. This, of course, does not suggest that one approach to nominal anchors is superior to another but does suggest that, in terms of communication, there is no free lunch. Theory would suggest that focusing on the stability of the exchange rate would naturally lead to a greater inflation uncertainty and hence greater potential disagreements about inflation prospects, all else the same.

Graph 23 also reveals the potential drawbacks of the level of the K-L statistics alone to chart the progress of central bank communication. In the case of the 1990s, some countries appear to have achieved high K-L divergences, which subsequently fell off during the Asian crisis as uncertainty jumped upwards. Part of the story was the importance of administered prices in the region. In countries, such as Indonesia, with a substantial portion of consumer prices determined administratively, inflation expectations from year to year were determined by government fiat than by market developments. Reforms following the Asian crisis, however, appear to have led to a steady-state ratcheting down of K-L divergences. Another drawback is that the K-L divergence is only an *ex ante* assessment of the sharpness of the dispersion of inflation expectations. The credibility of central banks with respect to the nominal anchor also depends on the *ex post* accuracy of the inflation assessments.

#### *Panel estimation*

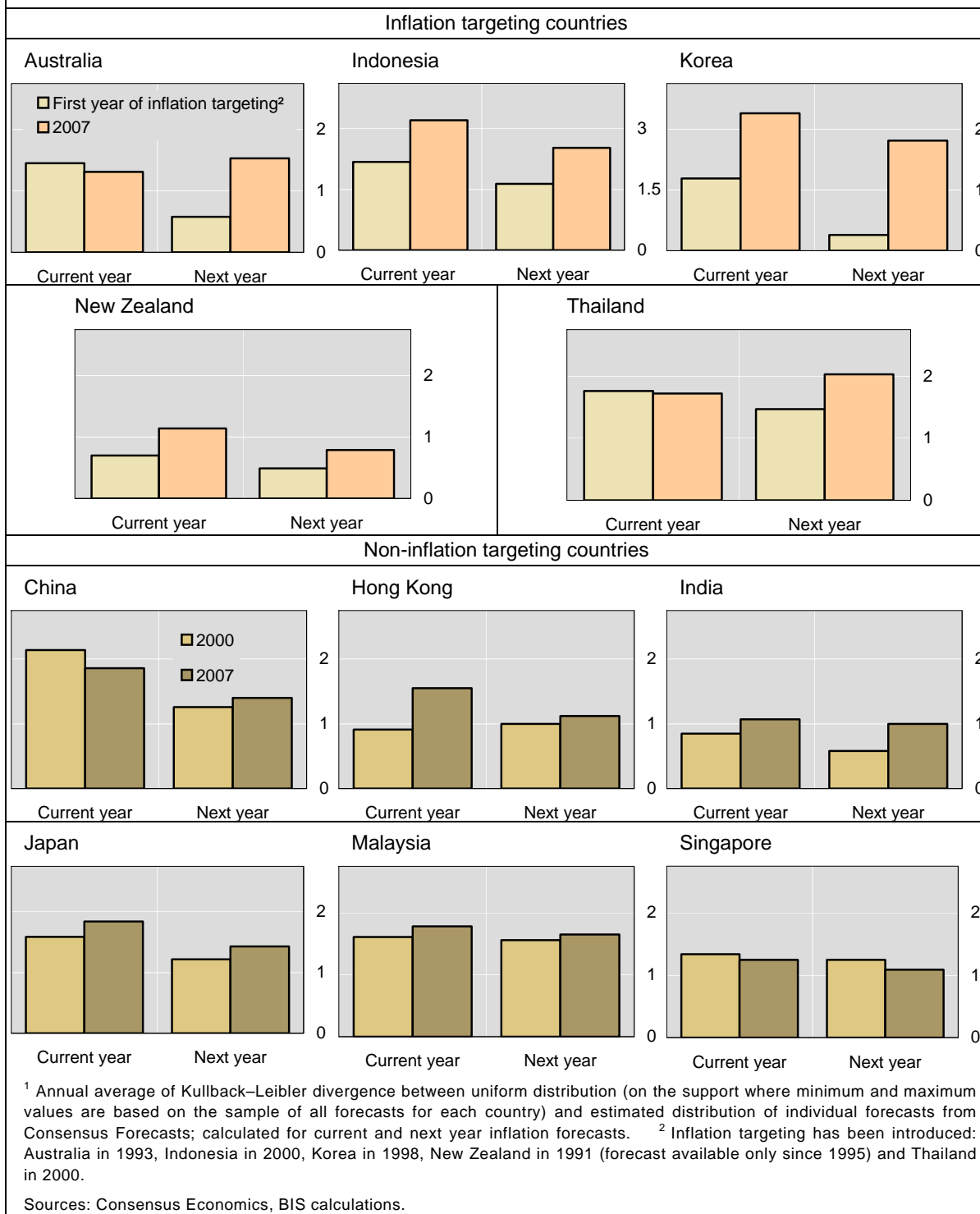
To explore some of the more subtle factors driving the K-L divergences, we use panel regression analysis (with fixed effects) to examine the relationship between information in the K-L divergence and the adoption of more transparent monetary frameworks oriented toward price stability.

The panel regression estimates corroborate the general view that greater emphasis by Asian-Pacific central banks on price stability has resulted in less dispersion of inflation expectations (Table 2). The estimated equation is

$$KLN_t^i = C + \sum_{j=0}^3 \beta_j KLC_{t-j}^i + \gamma_I I_t^i + \gamma_A \sum_{n=1}^{11} I_t^n + e_t^i,$$

where  $KLN$  is the K-L divergence statistic that applies to the “next year’s” inflation forecasts (as of January of the current year),  $KLC$  is the similar statistic for the current year,  $I_t$  is a dummy variable for whether a country has adopted a formal inflation targeting regime at time  $t$ .

Graph 23: K-L divergence in Asia-Pacific<sup>1</sup>



Before interpreting the estimated coefficients, it is useful to note that *KLC* acts as a control variable which proxies for the changing macroeconomic environment over time. A more uncertain macroeconomic environment is likely to increase the dispersion of inflation forecasts in the current and following years. Controlling for the macroeconomic shocks in this way reduces the likelihood that the inflation targeting dummy variables are picking up spurious relationships in the panel dataset.

The coefficient estimates have the intuitively plausible signs, and standard statistical diagnostics indicate a good fit. The positive and statistically significant sign on *KLC* suggests that the more predictable the current year inflation rate, the more predictable the inflation rate one-year-ahead. This reflects the fact that uncertainty about the macroeconomic environment is fairly persistent from year to year.

The inflation targeting variables are also statistically significant. If a country is an inflation targeter (*I-Target*), one-year-ahead inflation expectations are, on average, distributed with less dispersion, as might be expected.

Possibly more interesting is the evidence that the cumulative number of inflation targeters in the region (*All I-Target*) is also of the correct sign and statistically significant. Indeed, in alternative specifications of this panel regression (not shown), the statistical significance of the *All I-Target* variable was more robust than that of the *I-Target* variable. This might suggest that inflation targeting credibility has been shared by central banks in the region, at least in the eyes of the professional forecasters who contribute to the Consensus Economics survey.

This finding may help to extend the basic results of Ball and Sheridan (2003), who found improved monetary policy outcomes in OECD economies, to the Asian Pacific context. Their conclusion was generally consistent with greater emphasis on price stability, but not the adoption of inflation targeting per se.<sup>12</sup> Results in the table suggest that greater attention to price stability is important, whether it is explicit or implicit. Moreover, this evidence is consistent with the view that the resolve within the central bank community to establish an effective nominal anchor can help individual central banks convince the private sector of its commitment.

While the use of dummy variables has its inherent limitations, the panel results appear sufficiently strong to underscore the basic point that central banks in the region have been effective in getting out their message about price stability, and in the process have had an important impact on private sector expectations. In turn, private sector expectations arguably have been supportive of the central banks' price stability goals. Further research is needed to establish more subtle and possibly intricate inter-linkages among changing central bank communication strategies, private sector expectations and macroeconomic stability. This might include using information in the central bank survey to explore which methods of communication appear to be more effective than others.

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<sup>12</sup> Also see Bernanke (2003). Moreover, such evidence is also consistent with the findings of Eijffinger and Geraats (2006) that remarkable enhancements of public communication during the period of 1998-2002 among central banks from advanced industrial economies were achieved without significant changes in formal disclosure policies in central bank legislation.

Table 2: Factors associated with the dispersion of inflation expectations

	$KLN_t^i = C + \sum_{j=0}^3 \beta_j KLC_{t-j}^i + \gamma_I I_t^i + \gamma_A \sum_{n=1}^{11} I_t^n + e_t^i$		
	<b>Coefficient</b>	<b>Standard error</b>	<b>t-statistic</b>
<b>Constant</b>	-.29**	.13	-2.35
<b>KLC</b>	.43**	.08	5.67
<b>KLC(-1)</b>	-.11	.07	-1.58
<b>KLC(-2)</b>	.06	.05	1.11
<b>KLC(-3)</b>	.12**	.05	2.30
<b>I-Target</b>	.17**	.08	2.18
<b>All I-Target</b>	.13**	.02	6.41
Adjusted R <sup>2</sup>	.87		
D-W statistic	2.16		
Number obs.	93		
Notes: Panel (EGLS) estimates using cross-sectional weights and White diagonal standard errors (with a degree of freedom correction). The sample excludes the first year of the Asian crisis and excludes outliers whose squared deviations are greater than 80 for any particular year. * and ** indicate statistical significance at the conventional 10% and 5% levels, respectively.			

### *An Asian Great Moderation?*

The term “great moderation” – ie the decline in the volatility of inflation and output in most industrial countries in the past two decades – has received considerable attention from policy researchers.<sup>13</sup> Researchers have come up with plenty of potential explanations for the decline in economic fluctuations in these developing countries.

Bernanke (2004b) attributed the drop in macroeconomic volatility to three main factors: structural change, improved macroeconomic policies and “good luck”. Of these factors, Bernanke emphasised the role of macroeconomic policies, particularly monetary policy, hinting that improved monetary policy served as a link between greater price stability and greater output stabilization. In particular, he postulated that monetary policies that moderated inflation could (1) help stabilize the structure of the economy; (2) affect the size and frequency of shocks hitting the economy; (3) change the sensitivity of pricing and other economic decisions to exogenous shocks; and (4) stabilize inflation expectations, which by themselves, can be an independent source of economic volatility. His conjecture on the role of monetary policy in reducing macroeconomic volatility squares well with an earlier paper by Taylor (1998). Taylor noted that greater focus on price stability had led to decreased inflation volatility. Such monetary policy, according to Taylor, had eliminated the tendency for the large run-ups of inflation that had preceded past recessions in the United States and thereby had exacerbated the problem of the boom-bust cycle in the US economy.

<sup>13</sup> The use of the term dates back to a paper by Stock and Watson (2002).

Is there evidence of a great moderation in Asia-Pacific? The inflation trends in the Asia-Pacific region shown in Table 1 (see above) provides clear evidence that inflation has declined and stabilised over time, especially since the 1997 Asian crisis. Moreover, Table 3 indicates a marked decline in output volatility, on average, across Asia-Pacific economies since the year 2000 (with the exceptions of China, India and Singapore) and a decline in the standard error of the forecast error for all. This illustrates that real GDP growth has become more predictable. Such evidence is at least consistent with the view that greater central bank emphasis on price stability and transparency has yielded tangible results consistent with a Great Moderation.

Table 3: Real GDP growth in the Asia-Pacific region

Country	Real GDP growth				Standard Deviation				Standard deviation of the forecast	
	80's	90-95	96-00	00-07	80's	90-95	96-00	00-07	96-00	00-07
Australia	3.36	2.56	4.18	3.06	2.66	2.31	1.00	0.94	0.15	0.06
China		11.10	8.20	9.43		1.10	1.19	1.44	0.58	0.27
Hong Kong	7.56	4.74	2.77	4.73	5.19	2.02	5.45	3.41	0.56	0.17
Indonesia	6.57	8.04	1.08	4.96	2.45	1.63	8.31	1.22	3.78	0.53
India			5.59	7.14			1.17	2.58	0.32	0.26
Japan	3.71	2.15	1.00	1.58	1.62	2.06	2.05	1.39	0.12	0.10
Korea	8.16	7.74	4.61	4.65	4.65	2.33	6.39	1.41	0.66	0.15
Malaysia		9.40	5.02	4.96		1.64	7.08	2.24	1.00	0.11
New Zealand	2.45	2.48	3.13	3.14	3.51	3.19	1.69	1.36	0.13	0.07
Philippines	1.89	2.44	3.98	4.83	4.78	2.29	2.77	1.67		
Singapore	7.53	8.94	6.44	5.12	4.31	2.64	4.68	4.69	0.23	0.10
Thailand		9.17	0.67	5.01		2.36	6.78	1.65	1.18	0.15
<i>Average</i>	5.15	6.25	3.89	4.89	3.65	2.14	4.05	2.00	0.79	0.18
<i>Weighted average<sup>1</sup></i>	5.10	7.37	4.32	5.77	2.52	1.66	3.29	1.49	1.04	0.25

<sup>1</sup> 2000 PPP GDP weights.

Sources: Consensus Economics, national data, BIS calculations.

Moreover, the resilience of the Asia-Pacific economies to external shocks of late also points in this direction toward increased macroeconomic stability in the region that can be attributed to monetary policy's role in moderating inflation and output volatility. The Asian Development Bank (2007) attributes the region's buoyant economic performance to better economic policies and strengthened institutional frameworks as a result of successful reforms in the ten years since the 1997 Asian crisis. These reforms include improved macroeconomic policy frameworks such as more flexible exchange rate regimes compared with pre-crisis period for the five-year crisis-affected economies in the region<sup>14</sup> and a shift to inflation targeting by four of the five crisis-affected economies (bringing the number of inflation-targeting central banks to six out of the 12 central banks included in the survey). While increased exchange rate flexibility has increased monetary policy manoeuvrability, the adoption of inflation targeting has helped to promote macroeconomic stability and has strengthened monetary policy credibility. This has been facilitated by, among other things, a key element in inflation targeting frameworks –

<sup>14</sup> The five crisis-affected countries are Indonesia, Malaysia, Korea, Philippines and Thailand.

enhanced transparency. As highlighted by Petursson (2004), transparency makes monetary policy more predictable, thereby contributing to less financial market and exchange rate volatility.<sup>15</sup> It also reduces the cost of disinflation and boosts the incentives to achieve price stability.<sup>16</sup>

## **V. Communication as a central bankers risk management tool**

As central banks have become more willing to provide forward-looking information about the stance of monetary policy, they have increasingly looked to communication strategies as a means to manage expectations of future policy actions. This section highlights various intellectual frameworks that serve as a backdrop for central bank thinking about the role of communication as a risk management tool, and may help to explain why the approaches found in the survey appear to be so varied.

It is well established that the expectation channel is very important in monetary policy. There are various potential risks that emanate from it. For example, if economic agents are too optimistic or pessimistic, economic cycles may arise. In the extreme, such expectational dynamics are thought to underlie boom-bust behaviour (Minsky, 1982). In less extreme cases, relative price shocks can lead to higher entrenched inflation if wage and inflation expectations (ie second round effects) drift upwards. In such contexts, communication strategies take on particular importance as tools to manage policy risks.

The survey showed that most central bankers provide some forward-looking information in terms of qualitative directions based on assessments of economic and financial conditions; some central banks even regularly publish the expected policy rate path. Currently, central banks are exploring the pros and cons of more explicit forward-looking statements about the stance of monetary policy in order to achieve even greater control over private sector expectations that may affect consumption, labour, investment and saving decisions. The merits of the case depend heavily on the central bank's degree of confidence in the public's understanding of conditionality.

The intellectual framework underlying views about how best to influence private sector expectations also matters. At least four broad frameworks have helped to shape central bank views over time of how best to communicate with the public: central bank secrecy as a strategic tool in which actions are the dominant form of communication, the rational expectations approach where words and deeds both play roles, a sticky information approach which emphasises the role of information processing and the importance of reiterating key policy messages to the public, and the behavioural finance approach which underscores the importance of choosing the right words and crafting public statements in light of the public's frame of "mind".

At the heart of this issue is the question of how information influences expectations and risk assessments. When central bank secrecy was the norm, policy information was used often as a strategic tool to surprise markets. Policy disclosure practices were often limited to the policy actions themselves, with little emphasis on explaining the reasoning that led to the decisions. And so as not to tie the hands of

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<sup>15</sup> These findings are consistent with new studies by Drew and Karagedikli (2008) and Garcia-Herrero and Remolona (2008).

<sup>16</sup> Also see BIS (2004).



policymakers, so it seemed, there was little interest in providing forward-looking information about policy.

The rational expectations movement in macroeconomics, especially the rules versus discretion literature, provided a theoretical basis for greater openness. Kydland and Prescott (1977) showed clearly that discretionary policy actions used to surprise economic agents were actually counterproductive for a central bank focused on price stability. Economic agents would anticipate the possibility of discretionary inflation surprises and would naturally take actions that protected themselves. This literature suggested that central banks should be clear and realistic about their policy goals and that central banks should not systematically try to surprise markets. This perspective lent itself to the view that clear, transparent rules were more conducive to achieving optimal outcomes and, in fact, provided more room for manoeuvre in the face of temporary supply shocks than otherwise (ie enhanced ‘constrained discretion’ as discussed by Bernanke and Mishkin, 1997). Faust and Svensson (2001) also pointed out that policy actions that reveal a central bank’s goals and intentions without formal communication may provide an alternative criterion for assessing transparency. A recent literature has highlighted the possibility that there are limits to transparency owing to the tendency of the public to overweight the signals provided by the central bank (Amato, Morris and Shin, 2002). A more pragmatic argument about limits emphasising the differences between transparency and clarity has been put forward by Mishkin (2004).

More recently, advances in theoretical modelling have yielded better characterisations of learning and information processing. These models are highly theoretical and stylised, and a detailed discussion goes well beyond the scope of this paper.<sup>17</sup> But these modelling efforts have implications for the debate about central bank disclosure policies. These models tend to emphasise the costs of processing information and the slow diffusion of information across economic agents and across time. They provide a *raison d’être* for central banks to expend resources to ensure clarity of messages and the need to do so on a regular basis.

Additional communication challenges arise from consideration of the issues associated with the field of behavioural economics. While still in its infancy as an academic field and with only limited research applied to macroeconomic problems (Akerlof, 2006), it nonetheless suggests that not only does the amount of information matter but also the way the information is framed matters, too. There is still much to do before the full extent of the implications for monetary policy can be explored. While somewhat speculative, some conjectures might be reasonable.

Early research by Tversky and Kahneman (1986) investigated the way in which economic agents responded to similar economic propositions that were worded (ie framed) differently. The responsiveness of economic agents to various factors, such as the particular choice of words, the contextual basis and complexity of the propositions,

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<sup>17</sup> See, for example, Mankiw, Reis and Wolfers (2003) in which deviations from the rational expectations benchmark lead to persistent forecast errors and insensitivity to macroeconomic news. Sims (2005) offers a different approach to capturing the information channels that influence expectation formation and hence macroeconomic dynamics.

appears to matter. These theories might eventually prove useful in thinking about the wording of policy statements and the use of “code words”.<sup>18</sup>

Behavioural economics sheds some light on the panel regression results too. As noted above, the empirical results are consistent with the view that professional forecasters put weight on the price stability intentions of the central bank. In this context, one might argue that inflation targeting rhetoric has come to serve as a “norm” that has helped to frame inflation risks. This type of framing might explain why new inflation targeting countries have appeared to have achieved such rapid success. Of course, words and deeds must be consistent over time. While pure lip service to price stability might succeed in the short run, it is likely to adversely affect central bank credibility in the long run.

This section has emphasised that secrecy, deeds, words and wording all matter in central bank communication. While central banks have made progress to greater transparency, uncertainty about the “true” theoretical rationale for transparency suggests that a prudent central bank might adopt a range of communication practices. Certainly, the survey evidence is consistent with this view.

## **VI. Conclusions and policy implications for the region**

The survey of Asian central banks reveals a fairly sophisticated set of communication strategies in the region. This reflects the greater conscious effort within the policymaking circle to clearly communicate policy-relevant information to financial markets, the media and the public at large. Greater transparency and communication, in turn, have not only allowed financial markets and the public to better anticipate the direction of monetary policy, but have also made the task of explaining the stance of monetary policy and the rationale behind it, easier for monetary authorities. This paper has provided evidence that the move toward greater transparency has indeed led to less disagreement about the inflation outlook.

Nevertheless, there continues to be plenty of room for improvement in the communication strategies of the central banks in the region. For one, increasing the level of economic literacy in the population at large would definitely go a long way in helping central banks better communicate with the public. As pointed out by Carpenter (2004), “the major benefit of transparency seems to come from the public understanding the central bank’s goals and the central bank’s interpretation of the economy, both current and future.”<sup>19</sup>

There is no doubt central banks in the Asia-Pacific region recognize the importance of transparency and communication in monetary policy. Questions about what, how, and to what extent central banks should communicate with the public in the future remain open. Clearly, in central bank communications, it is not the case that ‘one size fits all’.

It might be instructive to reflect on the ideas of Bernanke (2004a) with respect to deciding what and how central banks should communicate with the public: “The central bank should do what it can to make information symmetric, providing the public to the

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<sup>18</sup> Also see JPMorgan (2007) for a cross-country analysis of the length and content of central bank policy statements.

<sup>19</sup> For a recent policy discussion, see Iwata (2008), Kohn (2008) and Woodford (2008).

extent possible with the same information that they have in making their monetary policy decisions.” Since the decision of central banks to disclose more information is complicated by the theoretical uncertainty about how information is processed by various individuals and groups in the economy, the key question should be whether the additional information would improve the public’s understanding of the central banks’ objectives, economic assessments, and analytical framework, thus allowing them to make better inferences about how monetary policy is likely to respond to future developments in the economy. Bernanke argues that communication that meets this criterion would lead to better monetary policy and better economic performance.

Central banks in the Asia-Pacific region can continue to learn from the experiences of more established monetary authorities who invest a great deal in explaining their views about their economic outlook, focusing on the outlook for potential supply and demand and for inflation. In the near future, transparency efforts at central banks in the region will likely continue to focus on strengthening price stability frameworks, not least the disclosure of greater detail about their inflation forecasts and the processes used in making such forecasts as well as the evaluation of the desirability of publishing more forward-looking statements about monetary policy.

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## Appendix 1 – Policy setting in the Asia-Pacific region

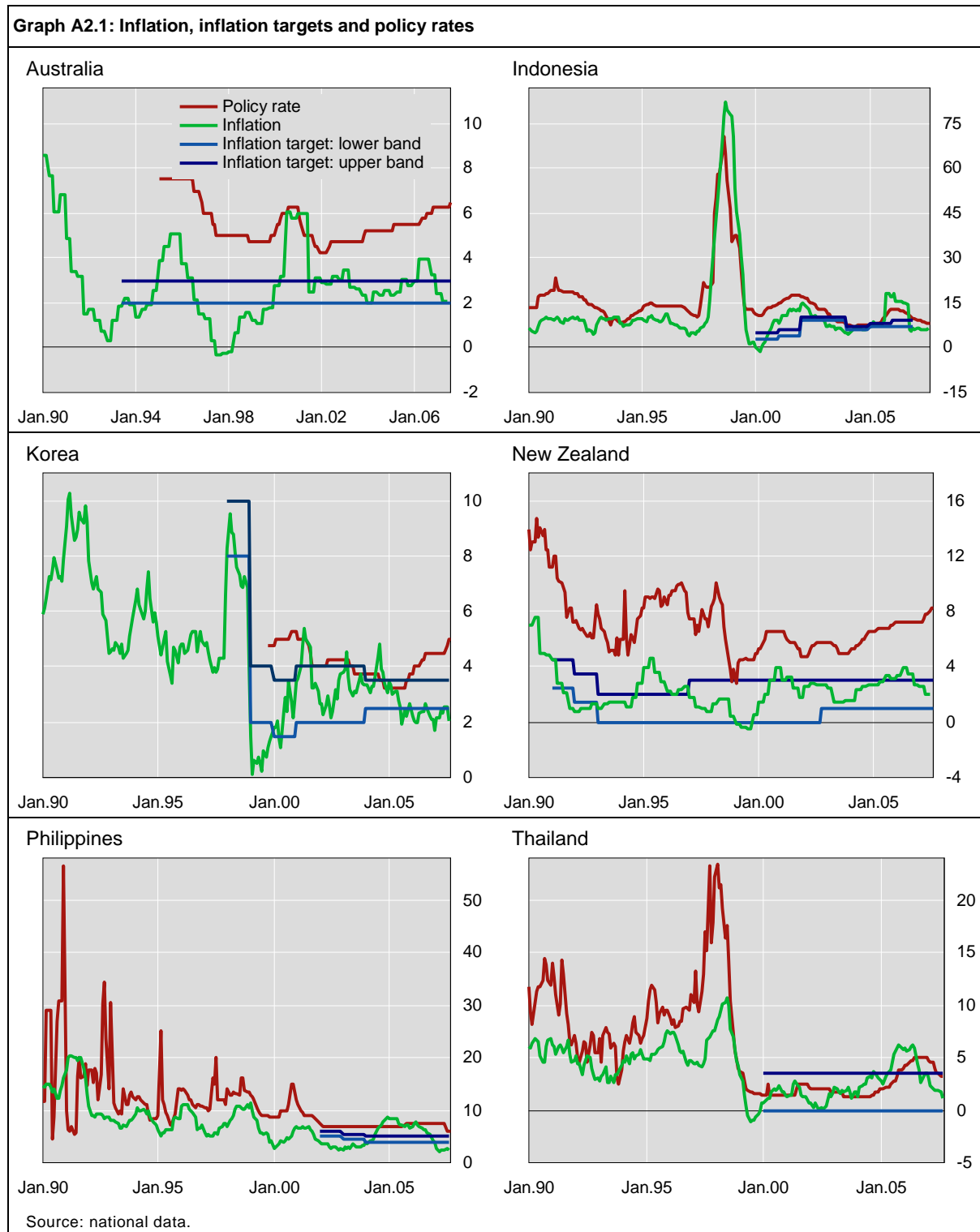
**Table 1: Institutional setup of monetary policy decision and operation**

	<b>Basic frequency of policy announcement</b>	<b>Formal policy rate</b>	<b>Formal operating target</b>	<b>Memo</b>
<b>Australia</b>	Monthly	Target Cash Rate (=O/N rate target)	O/N cash rate	Inflation targeting
<b>China</b>	As and when required	1-year deposit and loan reference rates	Excess reserves	Ref. to M-growth targets
<b>Hong Kong</b>			USD/HKD spot rate	Currency board
<b>India</b>	Quarterly	1-day Repo and Reverse Repo Rates	No formal target	
<b>Indonesia</b>	Monthly	BI Rate (= target rate for 1-month SBI)	1-month SBI rate	Inflation targeting
<b>Japan</b>	Up to twice a month	Uncollateralized O/N call rate target	O/N call rate	
<b>Korea</b>	Monthly	O/N call rate target	O/N call rate	Inflation targeting
<b>Malaysia</b>	8 times a year	Overnight Policy Rate (=O/N rate target)	Average O/N interbank rate	
<b>New Zealand</b>	8 times a year	Official Cash Rate (=O/N rate target)	O/N cash rate	Inflation targeting
<b>Philippines</b>	Every 6 weeks	O/N Repo and Reverse Repo Rates	No formal target	Inflation targeting
<b>Singapore</b>	2 times a year	Policy band for S\$ NEER	Singapore dollar NEER	NEER-based regime
<b>Thailand</b>	Every 6 weeks	1-day Repo Rate	1-day Repo rate	Inflation targeting

Source: Ho, "Implementing monetary policy in the 2000s: operating procedures in Asia and beyond"

Note: as of March 2007

## Appendix 2 – Chronology of inflation targeting in the Asia-Pacific region





### Appendix 3 – Kullback-Leibler (K-L) divergence and survey inflation expectations

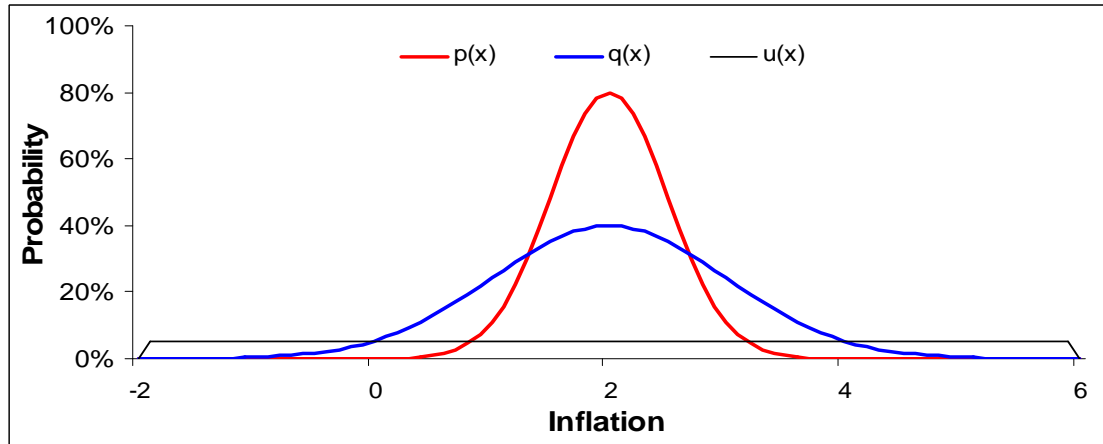
We use the Kullback-Leibler divergence to assess the evolution of cross-sectional inflation expectations in the Asia-Pacific region. Formally, the K-L divergence measures the difference between two probability distributions. For our set of economies, instead of using a country-specific benchmark distribution we chose a uniform distribution.

The K-L divergence is defined as

$$D_{K-L} = \int_{-\infty}^{\infty} p(x) \log \frac{p(x)}{u(x)} dx \quad (\text{A.3.1})$$

Graphically, the K-L divergence measures the information gained about  $x$  when using the  $p(x)$  distribution rather than the  $u(x)$  distribution, as shown in Graph A.1.  $D_{K-L}$  is a measure of distributional sharpness, in the sense that a higher value indicates greater sharpness. For instance, in Graph A3.1, the tighter  $p(x)$  distribution than  $q(x)$  would correspond to  $D_{K-L}(p(x), u(x)) > D_{K-L}(q(x), u(x))$ .

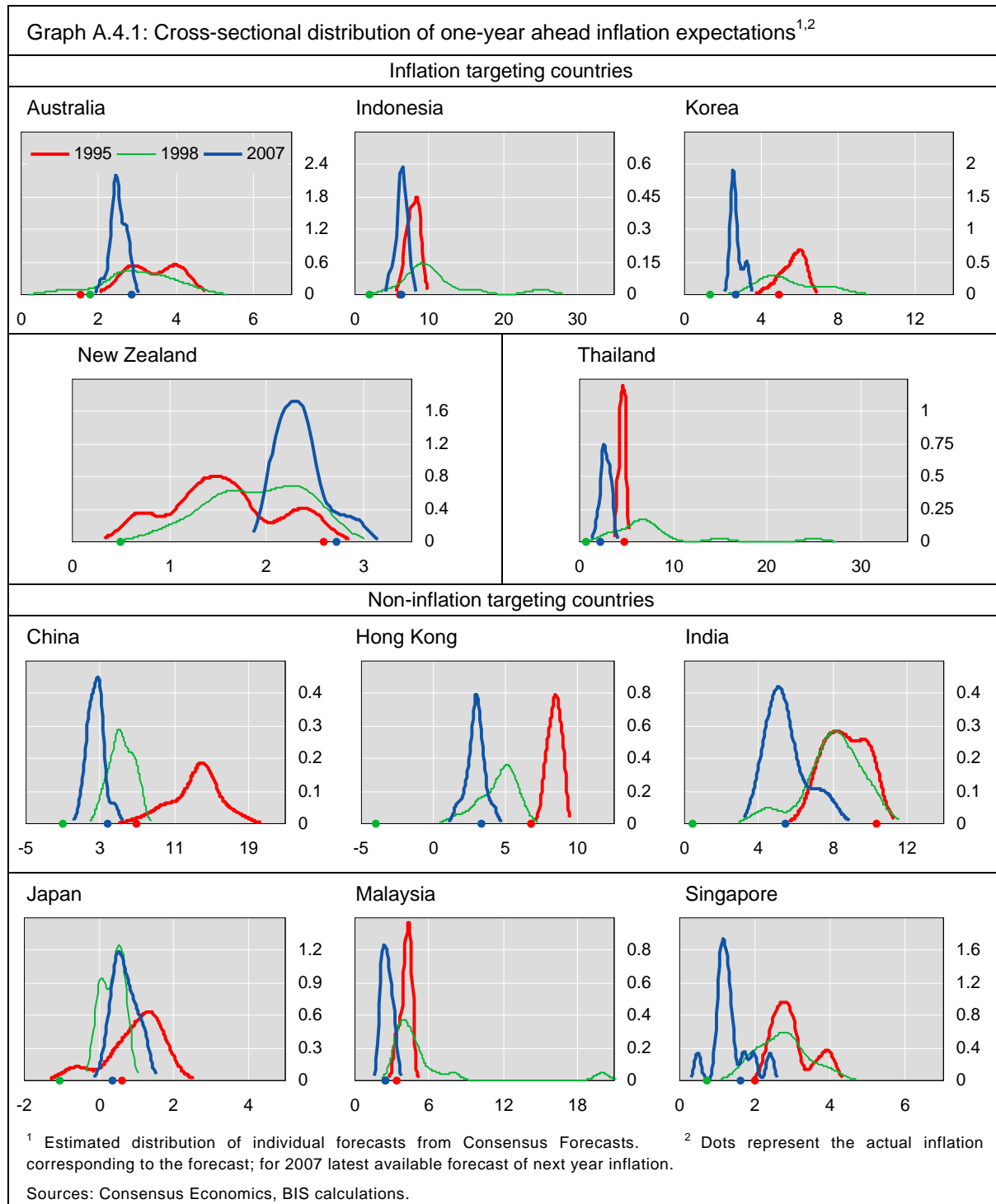
**Graph A3.1: K-L divergence and distributional sharpness**



In our analysis, the  $p(x)$  distribution is approximated using the information about the cross-sectional inflation expectations distribution available from consensus economics. The consensus economics survey provides a histogram of inflation expectations for each economy each month. The histogram can be thought of as a finite sample of the true cross sectional distribution,  $p(x)$ . To recover the key features of the continuous distribution,  $p(x)$ , we use a normal kernel estimator. With the estimate  $\hat{p}(x)$ ,  $D_{K-L}(\hat{p}(x), u(x))$  can be evaluated for each country at each point in time.

In the case of inflation expectations, the time series of  $D_{K-L}^{\pi^e}$  provides a measure of sharpness of views about inflation by private sector forecasters in each month of the survey. More transparent monetary policy frameworks, all else the same, would tend to reduce disagreements about the inflation outlook and lead to an increase in  $D_{K-L}^{\pi^e}$ . One difficulty in interpreting the  $D_{K-L}^{\pi^e}$ , however, is that forecasters may feel confident in the point estimate of inflation, ex ante, but may be mistaken, ex post. This suggests that sharpness and accuracy must be jointly assessed to fully evaluate the effectiveness of central bank communication.

## Appendix 4 – Distribution of one-year ahead inflation forecasts



## Appendix 5 – The survey

# Communication of monetary policy by central banks in Asia

## Questionnaire for a survey by the Asian Central Bank Research Network for Monetary Policy

### Part 1: Instruments and channels of communication

1. Is the intermediate objective or target of monetary policy publicly disclosed? For the purposes of this questionnaire, “intermediate” refers to an objective more specific and more easily targeted than the statutory or ultimate objective but less specific than an operating target.
- |  |  |
|--|--|
| <input type="checkbox"/> Yes – numerical target, eg explicit inflation or exchange rate target | <input type="checkbox"/> Yes – mix of numerical targets and non-numerical objectives |
| <input type="checkbox"/> Yes – non-numerical objective, eg low and stable rate of inflation    | <input type="checkbox"/> No (go to Q3)   |
2. If the answer to Q1 is yes (intermediate objective or target of monetary policy is publicly disclosed):
- (a) What is the objective or target referred to in Q1? Please tick all that apply.
- |   |  |
|---|--|
| <input type="checkbox"/> Inflation rate | <input type="checkbox"/> Growth rate of a monetary aggregate |
| <input type="checkbox"/> Exchange rate  | <input type="checkbox"/> Other (please explain)              |
- (b) Who defines this objective or target?
- |                                       |  |
|---------------------------------------|--|
| <input type="checkbox"/> Government   | <input type="checkbox"/> Government and central bank jointly |
| <input type="checkbox"/> Central bank | <input type="checkbox"/> Other (please explain)              |
- (c) Who announces changes to this objective or target?
- |                                       |  |
|---------------------------------------|--|
| <input type="checkbox"/> Government   | <input type="checkbox"/> Government and central bank jointly |
| <input type="checkbox"/> Central bank | <input type="checkbox"/> Other (please explain)              |
3. Are decisions about changes to monetary policy settings, eg to policy rates, publicly announced?
- |   |   |
|---|---|
| <input type="checkbox"/> Yes – only when there is a change in policy settings   | <input type="checkbox"/> No                     |
| <input type="checkbox"/> Yes – when there is a change in policy settings as well as when policy settings are left unchanged | <input type="checkbox"/> Other (please explain) |

4. If the answer to Q3 is no, to whom outside the central bank are decisions about changes to monetary policy settings conveyed? Please explain (and go to Q6).
5. If the answer to Q3 is yes (decisions about changes to monetary policy settings are publicly announced):
- (a) When are decisions about changes to policy settings first publicly announced?
- Within minutes of the conclusion of the policy-setting meeting       Within minutes of the implementation of the decision
- With a delay of            hours / days       Other (please explain)
- (b) Where are decisions about changes to policy settings first publicly announced? Please tick all that apply.
- News wire (press release)       Press conference
- Central bank website       Other (please explain)
- Press briefing under "lock up"
- (c) How long is the statement announcing a change to the policy setting?
- Up to ½ page (1-2 paragraphs)       More than 2 pages
- ½ to 2 pages       Length varies from statement to statement
- (d) Apart from the change to the policy setting, how much of the remaining content of the policy statement ordinarily changes from statement to statement?
- Very little, eg 1 to 2 sentences       Most of the statement
- Parts of the statement, eg 1 to 2 paragraphs       Extent of the changes varies from statement to statement
- (e) Is the announcement of a change to the policy setting numerical or qualitative in nature?
- Numerical, eg precise value for a change in the operating target       Qualitative, eg direction of change in the operating target
- (f) Are changes in policy settings ordinarily made in a standard size increment, eg a 25 basis point change in the policy rate?
- Yes       Not applicable
- No, the incremental change varies from decision to decision       Other (please explain)
6. Please indicate what other information the central bank discloses at or around the same time that decisions about changes to policy settings are announced and whether this information accompanies every policy decision or only some decisions. Q6(a) asks about information disclosed in the statement announcing a change to the policy setting and Q6(b) asks about information disclosed in any reports that closely accompany the policy statement. Questions about information disclosed in reports whose publication date is not explicitly linked to the announcement of policy decisions come later in the survey (see Q16).

(a) Information disclosed in the policy statement:	Always disclosed	Sometimes disclosed	Never disclosed	Not applicable
Reason for the decision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number of policy board members who voted in favour of the decision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Likely direction of future changes in policy settings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assessment of current economic conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Short-term outlook for the economy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Possible risks to the outlook for the economy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Numerical forecasts of key economic variables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please explain)				

(b) Information disclosed in a report that closely accompanies the policy statement, eg a report on economic conditions:	Always disclosed	Sometimes disclosed	Never disclosed	Not applicable
Reason for the decision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number of policy board members who voted in favour of the decision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Likely direction of future changes in policy settings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assessment of current economic conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Short-term outlook for the economy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Possible risks to the outlook for the economy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Numerical forecasts of key economic variables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please explain)				

7. Is a press conference held to explain the policy decision?

- |   |   |
|---|---|
| <input type="checkbox"/> Yes – only when there is a change in policy settings   | <input type="checkbox"/> No (go to Q9)          |
| <input type="checkbox"/> Yes – when there is a change in policy settings as well as when policy settings are left unchanged | <input type="checkbox"/> Other (please explain) |

8. If the answer to Q7 is yes (press conference is held to explain the policy decision):
- (a) Who speaks for the central bank? Please tick all that apply.
- Governor  Spokesperson (press officer)
- Policy board members  Other (please explain)
- Senior central bank staff
- (b) How long is the delay between the announcement of the policy decision and the press conference?
- Less than one hour  More than one hour
- (c) Is there a question and answer session?
- Yes  No
- (d) Is the press conference broadcast, eg on television?
- Yes, live  No
- Yes, with a delay
- (e) Is a transcript of the press conference published?
- Yes  No
9. Are monetary policy decisions ordinarily made on pre-announced dates?
- Yes  No (go to Q11)
10. If the answer to Q9 is yes (monetary policy decisions are ordinarily made on pre-announced dates):
- (a) Do the dates of monetary policy decisions ordinarily coincide with the dates of regular meetings of the policy board?
- Yes  No
- (b) How far in advance are the dates of monetary policy decisions publicly announced?
- A month or more  Other (please explain)
- Less than a month
- (c) How frequently are decisions taken on dates other than pre-announced dates?
- Never – not permitted  Occasionally, eg every few years
- Never – permitted but not yet taken  Routinely, eg one or more times a year
- Rarely, eg in very exceptional circumstances

11. Are the minutes of the policy board's discussions published?
- Yes  Not applicable / no policy board exists (go to Q13)
- No (go to Q13)  Other (please explain)
12. If the answer to Q11 is yes (minutes of the policy board's discussions are published):
- (a) Are the views and votes of individual policy board members identified?
- Neither views nor votes are identified  Only views are identified
- Both views and votes are identified  Only votes are identified
- (b) How long is the delay between the policy board meeting and the publication of the minutes?
- 4 weeks or less  Other (please explain)
- Greater than 4 weeks
13. Are there any restrictions on central bank officials' comments on monetary policy and economic developments:
- (a) In the days prior to the announcement of a policy decision?
- No restrictions  No comments \_\_\_\_\_ days prior to a decision
- (b) In the days following the announcement of a policy decision?
- No restrictions  No comments \_\_\_\_\_ days prior to a decision
14. On days on which there are no policy announcements and the restrictions referred in Q13 do not apply, who from the central bank may comment on monetary policy and economic developments, eg through presentations, speeches or press briefings? Please tick all that apply.
- Governor  Senior central bank officials
- Policy board members  Other (please explain)
15. Approximately how frequently do central bank officials comment on monetary policy and economic developments? Please include all comments by central bank officials for which transcripts are made publicly available, eg presentations, speeches and press briefings.
- Four or more times a month  Less than once a month
- One to three times a month  Other (please explain)

16. Does the central bank publish a regular assessment of economic conditions, such as a monetary policy report or an economic bulletin?

- Yes  No

Please indicate the name of the report(s) and the frequency of publication:

(i)

(ii)

17. Does the central bank disclose its own estimates of measures useful for evaluating the stance of monetary policy? Please tick all that apply.

- Output gap  Other (please explain)  
 NAIRU  
 Neutral policy rate  No measures are disclosed  
 Growth rate of monetary aggregates

18. Does the central bank regularly disclose its own forecasts of key economic variables?

- Yes – official central bank forecasts, agreed by the Governor or policy board members  No – but market or consensus forecasts are redisseminated, without necessarily being endorsed (go to Q21)  
 Yes – staff forecasts, which do not necessarily represent the views of the Governor or policy board members  Forecasts are not disclosed (go to Q21)

19. If the answer to Q18 is yes (central bank regularly discloses its own forecasts of key economic variables):

(a) For which variables are official or staff forecasts disclosed? Please tick all that apply.

- Economic growth  Policy rates (or a close proxy)  
 Inflation  Interest rates (other than policy rates)  
 Unemployment rate  Exchange rates

(b) For what time horizon are forecasts disclosed?

- Up to one year ahead  More than two years' ahead  
 One to two years' ahead

(c) Are the disclosed forecasts numerical or qualitative in nature?

- Numerical – point estimates  Qualitative, eg likely direction of future changes  
 Numerical – range of estimates  Other (please explain)  
 Numerical – fan charts

(d) Are the disclosed forecasts primarily based on explicit econometric models?

- Yes  No – forecasts are primarily judgmental (go to Q21)



20. If the answer to Q19(d) is yes (disclosed forecasts are primarily based on explicit econometric models):
- (a) What assumptions about changes in monetary policy settings underlie the disclosed forecasts?
- |   |  |
|---|--|
| <input type="checkbox"/> No change in policy settings                                   | <input type="checkbox"/> Endogenous monetary policy reaction function calibrated to policy makers' preferences                                 |
| <input type="checkbox"/> Market expectations of policy settings, eg from futures prices | <input type="checkbox"/> Endogenous monetary policy reaction function <u>not</u> calibrated to policy makers' preferences, eg Taylor-type rule |
- (b) Are judgemental or ad hoc adjustments to the forecasting model's estimates disclosed (over and above those adjustments that are normal in the course of forecasting)?
- |   |  |
|---|--|
| <input type="checkbox"/> Yes – policy board members' judgements are usually disclosed | <input type="checkbox"/> No – judgement is applied but the nature of the adjustment is usually not disclosed |
| <input type="checkbox"/> Yes – staff's judgements are usually disclosed               | <input type="checkbox"/> No – judgement is not applied   |
- (c) Is information about the forecasting model made publicly available?
- |   |   |
|---|---|
| <input type="checkbox"/> Yes – extensive details, eg equations and parameters | <input type="checkbox"/> No                     |
| <input type="checkbox"/> Yes – broad framework                                | <input type="checkbox"/> Other (please explain) |
- (d) Has the central bank published, within the past five years, an external review of its forecasting model?
- |   |  |
|---|--|
| <input type="checkbox"/> Yes  | <input type="checkbox"/> No – commissioned an external review but did not publish it |
| <input type="checkbox"/> No – but planning to publish an external review in the near future | <input type="checkbox"/> No – never commissioned an external review                  |
21. Which channels does the central bank use to make publicly available its research on longer-term issues related to monetary policy? Please tick all that apply.
- |  |  |
|--|--|
| <input type="checkbox"/> Working papers  | <input type="checkbox"/> Policy-oriented conferences |
| <input type="checkbox"/> Journal articles  | <input type="checkbox"/> Academic-type conferences   |
| <input type="checkbox"/> Short, non-technical summaries of research, or viewpoints | <input type="checkbox"/> Other (please explain)      |
|  | <input type="checkbox"/> No research is published    |

22. Does the central bank have any special initiatives for communicating about monetary policy with people who have limited access to the internet, television and other modern media?

Yes  No

Please briefly explain the types of initiatives:

23. Have there been any revisions to the central bank law, within the past three years, which have resulted in changes in the instruments, channels or frequency with which the central bank communicates about monetary policy?

Yes  No

24. Please briefly summarise any major changes, within the past three years, in the instruments, channels or frequency with which the central bank communicates about monetary policy. Please identify changes arising from revisions to the central bank law as well as changes made voluntarily by the central bank.

## Part 2: Strategy behind communication

25. Please indicate how important each of the considerations listed on the next page is in deciding what and how much information about monetary policy to publicly announce. Q25(a) seeks to identify the most important reasons for increasing disclosure. Q25(b) seeks to identify the most important reasons for limiting disclosure. For most institutions, the decision about what information to disclose and how detailed this information should be will reflect a balance of the considerations identified in Q25(a) and Q25(b).

(a) Reasons for increasing disclosure:	Not important	Somewhat important	Important	Very important	Not applicable
Enhance the accountability of the central bank	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase the general public's understanding of the objectives of monetary policy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase the general public's understanding of the policy decision-making process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Guide the general public's expectations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase market participants' understanding of the objectives of monetary policy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase market participants' understanding of the policy decision-making process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Guide market participants' expectations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please explain)					

(b) Reasons for limiting disclosure:	Not important	Somewhat important	Important	Very important	Not applicable
Minimise constraints on future policy decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Difficult to withdraw initiatives to provide more information after introducing them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Present a consensus view of policy board members	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preserve the confidentiality of private information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Minimise the risk of over-reaction by market participants, eg due to misinterpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reduce the incentive for market participants to "front run" policy decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Emphasise the uncertainty and conditionality of the central bank's view about future developments
- Avoid damage to credibility that could result from disclosing views about future developments that might be proven wrong
- Avoid "crowding out" views about future developments that differ from the central bank's view
- Other (please explain)

26. How important are each of the following communication channels for guiding the general public's expectations?

	Not important	Somewhat important	Important	Very important	Not applicable
Press release announcing the policy decision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Press conference following the policy decision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Minutes of the policy board's discussions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Central bank forecasts of key economic variables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regular reports, eg monetary policy report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Speeches by central bank officials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other comments by central bank officials, eg interviews, press briefings, op-ed articles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Research papers by central bank staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conferences hosted by the central bank	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please explain)					

27. How important are each of the following communication channels for guiding market participants' expectations?

	Not important	Somewhat important	Important	Very important	Not applicable
Press release announcing the policy decision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Press conference following the policy decision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Minutes of the policy board's discussions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Central bank forecasts of economic variables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regular reports, eg monetary policy report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Speeches by central bank officials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other comments by central bank officials, eg interviews, press briefings, op-ed articles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Research papers by central bank staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conferences hosted by the central bank	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please explain)					

28. Please indicate what importance the central bank ordinarily places on avoiding changes in monetary policy settings that surprise market participants:

	Not important	Somewhat important	Important	Very important	Not applicable
Avoid unexpected monetary policy decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please explain)					

29. Please indicate what importance the central bank ordinarily places on the following reasons for avoiding changes in monetary policy settings that surprise market participants:

	Not important	Somewhat important	Important	Very important	Not applicable
Minimise interest rate volatility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Minimise exchange rate volatility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Minimise the risk of over-reaction by market participants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reduce the impact of uncertainty on asset prices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Avoid adverse publicity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition changes in policy settings on market expectations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please explain)					

30. How well have market participants been able to anticipate the direction and magnitude of policy decisions in recent years?

	Always anticipated	Usually anticipated	Occasionally anticipated	Rarely anticipated	Not applicable
Direction of policy decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Magnitude of policy decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please explain)					

31. Have there been any times in the past when the central bank deliberately sought to surprise market participants with a change in monetary policy settings?

Yes  No

Please give an example:

32. How important are each of the following tools for assessing the impact of the central bank's communications?

	Not important	Somewhat important	Important	Very important	Not applicable
Surveys of the general public	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Surveys of market participants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Market intelligence, eg informal discussions with market participants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Empirical studies, eg of price movements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please explain)					

33. How important is information about the implementation of monetary policy, or movements in the central bank's balance sheet, for inferring the stance of monetary policy?

	Not important	Somewhat important	Important	Very important	Not applicable
In the opinion of the central bank	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the opinion of market participants (if known to the central bank)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please explain)					