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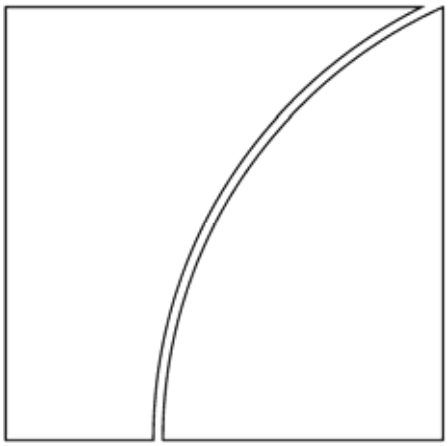

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Effectiveness of monetary policy communication in Indonesia and Thailand

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Effectiveness of monetary policy communication in Indonesia and Thailand

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Abstract

In this paper we investigate the effectiveness of Bank Indonesia's and Bank of Thailand's monetary policy communication. We focus on two channels of communication: monetary policy statements, and inter-meeting statements. Although the structure of Bank Indonesia's and Bank of Thailand's monetary policy statements have some differences, most of the statements contain policy inclination. In addition, during inter-meeting periods, members of their board of governors often convey statements that contain policy inclination. Our empirical results show that to some extent Bank Indonesia's and Bank of Thailand's monetary policy statements and inter-meeting statements move short-term interest rates effectively. We find that there is asymmetry in the effects of the statements, that is, the statements with loose policy inclination tend to be more effective relative to the statements with tight policy inclination.

JEL codes: E43, E52, E58

Keywords: communication, effectiveness, monetary policy, Bank Indonesia, Bank of Thailand.

[1] This paper was written while I was a visiting fellow at the Bank for International Settlements in Basel. I would like to thank Ramon Moreno, Christian Upper, William Nelson and Vongsinsirikul Sukpinnarat for helpful discussions and comments. I also thank seminar participants at the BIS and Bank Indonesia. The views expressed in this paper are those of the author and do not necessarily reflect the views of Bank Indonesia. All errors are my own. Email address: sahminan@bi.go.id.

Contents

1. Introduction

In the past ten years or so Bank Indonesia (BI)—the central bank of Indonesia—and Bank of Thailand (BOT)—the central bank of Thailand—have introduced monetary policy communication as an important part of their monetary policy implementation. In communicating monetary policy, the BI and the BOT have used various channels of communication, including press releases, publications, speeches, testimonies, and interviews.[2] Through those channels of communication, the BI and the BOT provide a wide coverage of information including economic and financial data, interpretation of data, research and policies.

There are a number factors contributing to this development. The mandate obtained by the BI and the BOT as an independent central bank is certainly one of the main factors.[3] As the BI and the BOT become more independent they need better accountability and transparency, and to achieve better transparency they need effective communication. Another important factor behind this development is the fact that the BI and the BOT have implemented inflation targeting and recognized that communication plays an important role in such a framework.

While the important role of communication in monetary policy has been widely recognized and communication has become an important part of monetary policy in many countries—including emerging market countries such as Indonesia and Thailand—the questions on the effectiveness of such communication to support monetary policy remain. The literature on monetary policy communication does not provide a conclusive result on which communication strategy that can be used effectively by a particular central bank. As recently pointed out by Blinder et al (2008), for example, whether or not there are better/worse ways a central bank communicates is still largely an empirical question.

The purpose of this paper is to examine the effectiveness of monetary policy communication in Indonesia and Thailand. The analysis will focus on two channels of monetary policy communication: monetary policy statements—referring to press releases delivered by the central bank immediately after monetary policy meetings; and inter-meeting statements—referring to the statements conveyed by members of the central banks' board of governors during inter-meeting periods. Many empirical studies on the effectiveness of monetary policy communication have shown the importance of monetary policy statements and inter-meeting statements.[4] These two channels of communication are watched closely by financial market participants in part because they often contain central bank views on the economic outlook and possible consequences for monetary policy in the near term.

To better understand the differences and similarities in the BI's and the BOT's communication strategies, we first examine the structure and content of the two central banks' monetary policy and inter-meeting statements. We then examine whether those two channels of communication move short-term interest rates. The availability of information on policy inclination, rather than just information on the actions taken, allows us to examine whether or not communication moves interest rates in the central banks' intended direction. We expect that effective communication will move interest rates in a manner consistent with

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[2] Filardo and Guinigundo (2008) provide a comprehensive survey on recent developments in communication practices in central banks in the Asia Pacific region.

[3] In Indonesia, as pointed out by Goeltom (2007), before the BI became an independent central bank in 1999, the BI was 'kept quiet' and its roles and functions were communicated in line with government policy implementation.

[4] See, for example, Guthrie and Wright (2000), Kohn and Sack (2003), and Ehrmann and Fratzscher (2007).

the stated policy inclination. Of course, the effectiveness of communication in moving short-term interest rates is not a sufficient condition for the successful of the communication in moving long-term interest rates. But given that policy implementation is based on the control of short-term interest rates, it is quite unlikely that the communication is effectively influencing long-term interest rates without effectively influencing short-term interest rates. Another advantage of using short-term rates in testing the effectiveness of monetary policy communication is that they are more measurable. In fact, many empirical studies on the effectiveness of monetary policy communication choose to test predictability at short-term horizon due to the difficulty in measuring long term predictability (Blinder et al, 2008).

The paper proceeds as follows. In section 2 we provide a literature review on central bank communication. In section 3 we briefly discuss monetary policy decision-making process in Indonesia and Thailand. In section 4 we analyze the BI's and the BOT's monetary policy statements and inter-meeting statements. In section 5 we present an empirical analysis of the effects of monetary policy communication on interbank interest rates. Finally, the paper concludes with Section 6.

2. Literature Review

Recently there have been a large number of studies focusing on the role of communication in monetary policy. The theoretical literature assumes that monetary policy only has direct effects on short-term interest rates; the effects on long-term interest rates and other asset prices are channelled through expectations (Blinder 1998). Communication is believed to help reduce uncertainty facing economic agents due to the presence of asymmetric information between monetary policy makers and other economic agents (Geerats, 2002). Through the expectation channel, central bank's communication plays an important role in influencing long-term asset prices that are important for the economy.[5]

Although the theoretical literature recognizes the importance of central bank communication, some theoretical studies show that a more transparent monetary policy is not necessarily desirable. A widely-cited study by Morris and Shin (2002) explains conditions under which more public information may reduce welfare. They show that the economic effects of public information arise from its role in conveying fundamental information and in serving as a focal point for coordination. Public information can cause damage because private agents may over-react to such information and suppress their own information.

Svensson (2006) has challenged the results of Morris and Shin (2002), showing that only under very special circumstances does more public information results in lower welfare. Even with a conservative benchmark—when the quality of private information equals the quality of public information—social welfare is still higher than social welfare under the situation without public information. Svensson shows that public information can only be welfare reducing if private information contains at least eight times the precision[6] of public information. Woodford (2005) argues such a condition is very unlikely and it is implausible that public information provided by a central bank based on its best guess could reduce welfare as implied by Morris and Shin's model.

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[5] The literature on monetary policy provides a variety of explanations on how communication affects short-term interest rate expectation, long-term interest rate and the economy. See for example, Blinder et al (2008).

[6] Precision of the information is measured in terms of the noise in the signal: the higher the noise the lower is the precision.

If communication is desirable for the effectiveness of monetary policy, the question is what type of information needs to be communicated publicly by a central bank. Woodford (2005) proposes four items: (1) interpretation of economic conditions, (2) content of policy decisions, (3) strategy that guides decision, and (4) outlook of future policy. While all these issues might be of the interest to the public, the extent to which transparency can help achieve stabilization goals can vary. As Woodford pointed out, communicating the interpretation of economic conditions and content of policy decisions are the least controversial, and have been put into practice by many central banks. There is less agreement on the extent to which central banks should communicate its future policy decisions. A traditional argument against transparency (which has become less accepted among central bankers), is that central bank intervention will be effective only to the extent that it surprises the markets. Another argument is that there are possible disadvantages to public information provision. A central bank has limited information that market participants wish to know about, and bad information provided by central banks could harm market participants and public in general. Notwithstanding the preceding arguments, many believe transparency and communication in monetary policy are important. The result is a great deal of heterogeneity in the practices of communication among central banks.

To address this issue, many empirical studies have attempted to examine strategies and the effectiveness of monetary policy communication implemented by particular central banks. Guthrie and Wright (2000) analyze the effects of communication by the Reserve Bank of New Zealand (RBNZ) on interest rates, and they find that the RBNZ has used communication systematically and effectively in controlling short-term interest rates. Demirlap and Jorda (2002) examine the extent to which the announcement of a change in the Federal Fund rate affects term structure of Treasury securities, which is a key ingredient of monetary transmission mechanism in the US. They find that with the announcement of the policy decision and the FOMC schedule, markets can better anticipate timing and nature of policy moves. Kohn and Sack (2004) show that statements by the Federal Open Market Committee (FOMC) and testimony by Chairman Greenspan significantly affect market interest rates in the US. In particular, they find that monetary policy statements significantly affect short-term interest rates while a statement on asset valuation has a less important effect.

A number of cross-country studies assess the effectiveness of monetary policy communication under different strategies. Connolly and Kohler (2004) examine the effects of news related to the expected path of monetary policy on interest rate futures in six developed countries: Australia, Canada, the Euro area, New Zealand, the UK and the US. They find that both macroeconomic news and policy news significantly affect interest rate expectations. Commentary with rate decisions, monetary policy report, and parliamentary hearings are the channels of communication that have large influences on interest rate expectations in all six countries. On the other hand, other channels such minutes of meetings have significant effects only in some countries.

Ehrmann and Fratzscher (2007) examine the strategies and the effectiveness of monetary policy communication undertaken by the Federal Reserve, the European Central Bank (ECB), and the Bank of England. They show that the Fed tends to use an individualistic[7] communication strategy while the ECB and the Bank of England tend to use a collegial communication strategy. Notwithstanding these differences in communication strategies, the predictability of policy decisions and financial market responsiveness to communication by the Fed and the ECB are equally successful in their effectiveness.

[7] Individualistic communication strategy refers to a strategy in which what the individual committee members say have a high degree of dispersion.

While many studies have analyzed the effects of monetary policy communication in developed countries, only a few studies have examined the effectiveness of monetary policy communication in emerging market countries. Rozkrut et al (2007), for example, study how central banks' communication in Czech Republic, Hungary and Poland affect financial markets. They find that central banks' communication strategies in those three countries are quite different, and the effectiveness of communication in influencing monetary policy predictability depends on the central banks' monetary policy structure and communication strategy.

Recently, Garcia-Herrero and Remolona (2008) examine the effectiveness of monetary policy communication in Asia and the Pacific. For that purpose, they propose and use two different methodologies, that is, a test on the efficiency hypothesis of the term structure of interest rates, and a test on whether a surprise due to the presence of policy statements is larger than a surprise due to the presence of macroeconomic data releases. They find that to some extent the yield curve provides information on the future policy rate, and relative to macroeconomic news, policy statements contain a larger element of surprise.

This paper contributes to the empirical literature on central bank communication in two important ways. First, this paper provides an analysis of the structure and content of monetary policy statements and inter-meeting statements released by central banks in emerging market countries. Second, this paper provides evidence on the effectiveness of monetary policy statements and inter-meeting statements in moving short-term interest rates in emerging market countries. Instead of testing only the presence of a surprise as a result of monetary policy communication, this paper assesses whether or not interest rates move in the same direction as the direction of the stated policy inclination.

3. Monetary Policy Decision Making at the BI and the BOT

Following the Asian crisis in the late 1990s, the BI and the BOT have become more independent and moved towards the implementation of inflation targeting. The BOT started to implement inflation targeting in May 2000, while the BI started in about five years later. Under the inflation targeting, the BI and the BOT have the authority to set the direction of monetary policy in which the overriding target is price stability.

In line with the implementation of inflation targeting, a significant change in the operational target used by the BI and the BOT also took place. Starting in July 2005, the operational target used by the BI changed from base money to an interest rate, the 1-month Bank Indonesia certificate (SBI) rate—this operational target is also called *BI Rate.*[8] At the BOT the use of interest rate as an operational target started in May 2000. Until mid January 2007 the BOT used the 14-day repo rate, and then changed to the 1-day repo rate.

If we look at the money markets in Indonesia and Thailand, they are still relatively underdeveloped, in which the proportion of money market instruments in the assets of banking sectors is still very small relative to the proportion of money market instruments in the banking sectors in industrialized countries. Nevertheless, over the past ten years Indonesia and Thailand have experienced a significant improvement in the depth and breadth of their money markets, and the role of money markets in their monetary policy operations has increased rapidly.[9]

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[8] Starting in July 9th, 2008, Bank Indonesia began using an overnight rate.

[9] A review of recent development in money markets in Asia is provided by Loretan and Wooldridge (2008).

Monetary policy decisions at the BI are made by a board of governors comprising the governor, the senior deputy governor, and all other deputy governors. At the BOT, monetary policy decisions are made by a monetary policy committee (MPC) comprising the top management of the BOT—the governor, the deputy governor for monetary stability, and the deputy governor for financial institutions stability— and distinguished experts from outside the BOT.

The BI holds monetary policy meetings every month, while the BOT holds the meeting every six weeks. The policy meeting evaluates state of the economy, and sets the direction of monetary policy. The schedule for policy meetings at the BI is either on first Tuesday or first Thursday of every month. If for some reason policy meeting cannot be held either on Tuesday or Thursday, the policy meeting is held on a different day. At the BOT, policy meetings are mostly held on Wednesday. All policy meeting days at the BI and the BOT are pre-announced publicly. At the BOT the schedule of all eight policy meetings throughout the year is announced publicly at the beginning of each year.

Both the BI and the BOT announce monetary policy decisions immediately after the meeting is concluded. At the BI monetary policy statements are released by Office of the Governor while at the BOT they are released by the Communication and Relation Office. The press releases on the policy rate are published by the BI and the BOT in their respective national languages as well as in English. Thus, domestic and foreign investors are expected to receive the same messages conveyed in the press releases.

In addition to the press release on the monetary policy decision, the BI and the BOT also publish a monetary policy report every quarter. The information and analysis in the monetary policy reports contain much more detail than what is provided in the press releases. Moreover, the BI and the BOT also provide a wide range of economic and financial data and information. All press releases, monetary policy reports, and various data and information are available in the BI's and the BOT's websites.

Other than press releases, reports, and publications, the BI's and the BOT's governors and deputy governors also occasionally make statements regarding the monetary policy. The statements may come out in speeches at various events such as conferences and workshops, interviews, or testimonies before parliament.

4. Structure and Content of the BI's and the BOT's Monetary Policy Communication

In this section we discuss the structure and content of the BI's and the BOT's monetary policy communication, and the way we measure such communication. As we have mentioned at the outset, in this paper we focus on analyzing two channels of central bank communication, namely monetary policy statements released immediately after each policy meeting, and inter-meeting statements by members of the board of governors (BI) or monetary policy committee (Bank of Thailand).

4.1 Monetary Policy Statements

To identify the structure and content of the monetary policy statements, we look at each of the English version of the BI's and the BOT's press releases on monetary policy decisions from January 2004 to December 2007. Although the BI had not implemented the inflation targeting before July 2005, the BI had undertaken regularly monetary policy meetings to decide the monetary policy stance.

To look at the structure of monetary policy statements, we count the total number of words in the statements, number of paragraphs, average number of words per paragraph, number of

words in the decision paragraph, and average sentence length in the decision paragraph. Information on the structure of the monetary policy statements is expected to give some idea on the conciseness and the consistency of monetary policy statements over time. The analysis of monetary policy statements based on the word count is relatively new. Recently, for example, Fernandez (2007) tries to look at the relation between the word count of the monetary policy statements with their information content in Asia and the Pacific plus the US, and he find that such a relation is relatively weak. Based on Fernandez's data, Garcia-Herrero and Remolona (2008) analyze the word count of monetary policy statements across central banks in Asia and the Pacific. They show that the length of the statements varies across countries, and while some central banks tend to maintain the structure of their statements, others tend to make the statements shorter.

Summary statistics of the structure of monetary policy statements show that the BOT has much shorter and more concise monetary policy statements compared with those of the BI (Table 1). The average number of words in the BI's monetary policy statements is 769, while the average number of words in the BOT's monetary policy statements is only 256. The BI covers policies not only on monetary policy stance, but also often on other issues such as issues in banking sector. On the other hand, the content of the BOT's monetary policy statements is very much closely related to monetary policy stance. This factor seems to be part of the reasons why the BI's monetary policy statements are in general longer than those of the BOT.

If we look at the changes in the structure of the monetary policy statements over time, the BOT's monetary policy statements tend to change less. As shown in Figure 1, number of words, number of paragraphs, number of words per paragraph and average length of sentences in the BI's monetary policy statements fluctuate substantially. On the other hand, number of words, number of paragraphs, and number of words per paragraph in the BOT's monetary policy statements do not change much. Moreover, the number of words in the BOT's monetary policy statements tends to decrease over time.

Of course, a shorter statement is not necessarily clearer than a longer statement. However, it has been widely known that normal human being have maximum capacity to process information. A study by Cowan (2001), for example, argues that the capacity of working memory of normal adult human is about four chunks—defined as a collection of concepts that have strong association to one another but much weaker association to other chunks concurrently used. Although the exact amount of information people can process can be debated,[10] given that people have limited capacity or working memory, a shorter statement might well provide a clearer signal of the main message the statement intends to convey. Thus differences in statement structure may account for some of the empirical results obtained below. Evidence on the importance of clarity and readability of monetary policy statements or reports for reducing uncertainty in the interest rate movements can be found, for example, in Fracasso, Genberg, and Wyploz (2003).

Regarding the content of the monetary policy statements, for each monetary policy statement we look at three types of information—i.e. assessment of the economic condition, direction of the future policy, and possible risk to the outlook. Examples of the statements are provided in Appendix 1. While all the BI's and the BOT's monetary policy statements contain an assessment of the economic condition, they do not always contain policy direction and possible risks to the outlook. Seven out of the 48 BI's monetary policy statements do not contain a statement on possible risks to the outlook, and five out of the 32 BOT's monetary policy statements do not contain a direction of future policy.

[10] A classical Miller's (1956) rule says that the working memory of normal people is about seven, and this rule has been often used as a reference for communication.

Based on the keywords presented in Table 2, we classify monetary policy statements according to whether they contain a tight policy inclination, neutral policy inclination or loose policy inclination. Using such a classification, we find that over the period from January 2004 to December 2007, policy inclination in the BI's monetary policy statements consists of 58 percent tight, 18 percent neutral and 23 percent loose (Table 3). Over the same period, policy inclination in the BOT's monetary policy statements consists of 53 percent tight, 31 percent neutral and 16 percent loose.

4.2 Inter-meeting Statements

Information on the inter-meeting statements by members of the BI's and the BOT's board of governors is searched by using *Google News*. The keywords used in the searching are names of the governors and deputy governors. Instead of searching all members of the board of governors, we only limit our search for the ones who are most likely providing statements related to monetary policy. For the BI we include the statements by the governor, the senior deputy governor, the deputy governor for monetary sector and the deputy governor for financial market sector. Meanwhile, for the BOT we include the statements by the governor, the deputy governor for monetary stability, and the deputy governor for financial institutions stability. In some cases, due to a replacement over the period studied, a position for a governor or a deputy governor can be held by two different persons. If this is the case then we include the statements of those two persons during their tenure.

After we pull out all the news related to the members of the board of governors, we examine the content of each of the news and identify whether or not the news contains statements on monetary policy inclination.[11] When we can access the article fully from its source then we examine the quoted statements. But when we cannot access the article fully, we only use the headline of the news. Based on the keywords presented in Table 4, all of the news containing monetary policy inclination is classified into tight, neutral or loose monetary policy inclination. The examples of the inter-meeting statements with policy inclination are presented in Appendix 2.

Summary statistics of the policy inclination in the inter-meeting statements are presented in Table 5. Over the period studied, the number of inter-meeting statements with monetary policy inclination conveyed by the BI's and the BOT's governors are quite similar. The BI governor had 19 statements while the BOT governor had 21 statements. In the case of the BI, other than the governor, the senior deputy governor also often conveys inter-meeting statements that contain policy inclination. Other than the senior deputy governor, deputy governors at the BI and the BOT convey only a few inter-meeting statements. Nevertheless, if we compare the numbers of inter-meeting statements by deputy governors at the BI and the BOT, the BI deputy governors convey inter-meeting statements more often.

The inter-meeting statements conveyed by different members of the BI's board of governors as well as by different members of the BOT's MPC are quite consistent. As shown in Figure 2, over the period studied there are only three cases at the BI, and none at the BOT in which the statements conveyed by different members of board of governors or MPC contain different policy inclination during the same inter-meeting period.

[11] In fact, members of the board of governors may give statements on a wide range of issues that are not necessarily directly related to monetary policy.

5. Empirical Analysis

While in the previous section we discuss the structure and content of the monetary policy communication, in this section, using econometric techniques we assess the effectiveness of the monetary policy communication in moving short-term interest rates.

5.1 Econometric Model

The model we use in examining the effects of communication on interest rates is *Exponential Generalized Autoregressive Conditional Heteroskedasticity* (EGARCH), a model proposed by Nelson (1991) and has been widely used in analyzing the effects of announcements on financial markets.[12] This model provides estimates of the effects of communication not just in level but also in volatility. Moreover, this model also has the advantage of correcting for kurtosis, skewness, and time-varying volatility of asset prices, as well as avoiding the non-negativity constraints on the conditional second moment.

As the dependent variables in the models, we use daily changes in interbank interest rates and daily changes of implied forward interest rates.[13] To check for the robustness of the results, we estimate the models for different maturities of interest rates and implied forward rates. Interest rate maturities range from 1 month to 1 year, while the maturities of forward rate are 3 month and 6 month. The implied forward rate is calculated as follows. Let r_{it} and r_{jt} be interbank interest rates with i- and j- month maturities, respectively. Then, interbank forward rate (i- j) is defined as:

$$F_{(i-j)} = \left[\frac{1+\frac{i}{12}\times\frac{r_{it}}{100}}{1+\frac{j}{12}\times\frac{r_{jt}}{100}} - 1 \right] \times \frac{12}{j} x100 \qquad (1)$$

where $i > j$.

To capture the effects of policy inclination contained in the statements, instead of using a single cardinal variable, we use different dummy variables for different directions of policy inclination. The advantage of this approach is that it does not require cardinality restrictions, and allows us to capture the presence of asymmetry in the effects of communication under different directions of policy inclination. Thus, dummy variables for monetary policy statements are defined as:

$M_t^+ = 1$ if the statement contains tight policy inclination; 0 otherwise

$M_t^0 = 1$ if the statement contains neutral policy inclination; 0 otherwise

$M_t^- = 1$ if the statement contains loose policy inclination; 0 otherwise

And dummy variables for inter-meeting statements are defined as:

$I_t^+ = 1$ if the inter-meeting statement contains tight policy inclination; 0 otherwise

[12] See for example, Ehrmann and Fratzscher (2007), and Connolly and Kohler (2007).

[13] In a number of studies, interest rate expectation is measured by the interest rates implied by futures. In this paper due to the lack of future rate data, we use implied forward rate. Indeed, as pointed out by Brooke and Cooper (2000) forward rate is also commonly used as a measure for interest rate expectation.

$I_t^0 = 1$ if the inter-meeting statement contains neutral policy inclination; 0 otherwise

$I_t^- = 1$ if the inter-meeting statement contains loose policy inclination; 0 otherwise

Other than dummy variables for communication, we also take into account autoregressive behaviour of the dependent variables, the effects of changes in the policy rate, and the effects of changes in interest rates in international financial markets. As the policy rate for Indonesia we use 1-month SBI rate, and as the policy rate for Thailand we use 1-day repo rate. As a proxy for interest rates in international financial markets we use Fed Fund rate. Besides communication variables and interest rates, we also include control variables consisting of macroeconomic announcements and days of the week. We capture macroeconomic announcements by using a dummy variable for GDP announcements and a dummy variable for inflation announcements.

Specifically, the model is formulated as follows. Let r_t be the changes in interest rates, then the mean equation of the EGARCH model is given by:

$$r_t = \alpha_0 + \sum_{i=1}^{4} \alpha_i r_{t-i} + \sum_{0}^{4} \beta_i p_{it} + \sum_{i=1}^{5} \gamma_i ff_{t-i} + \mu_1 M_t^+ + \mu_2 M_t^0 + \mu_3 M_t^- + \theta_1 I_t^+ + \theta_2 I_t^0 + \theta_3 I_t^- + \zeta X_t + \varepsilon_t \quad (2)$$

where p_t is the change in policy rate, ff_t is the change in Fed Fund rate, and X_t is a vector of control variables. In this model, it is assumed that $\varepsilon_t = \sqrt{\sigma_t^2}.v_t$ where v_t is independently identical distributed random variable with zero mean and unit variance.

The effect of communication on the volatility of the dependent variables is captured through the variance equation:

$$\log(\sigma_t^2) = \varpi + \zeta \log(\sigma_{t-1}^2) + \varphi \left| \frac{\varepsilon_{t-1}}{\sigma_{t-1}} \right| + \vartheta \frac{\varepsilon_{t-1}}{\sigma_{t-1}} + \tau_1 M_t + \tau_2 I_t + \delta X_t \quad (3)$$

In the variance equation, instead of taking into account direction of the policy inclination, we only include dummy variables that capture the presence of the statements, that is:

$M_t = 1$ if there is a monetary policy statement; 0 otherwise

$I_t = 1$ if there is an inter-meeting statement; 0 otherwise

The hypothesis for the mean equation is that if communication is effective then it moves interest rate in the intended direction. Thus, we expect that a statement contains tight policy inclination leads to higher market interest rates, a statement contains neutral policy inclination leads to unchanged market interest rates, and a statement contains loose policy inclination leads to lower market interest rates. The hypothesis for the variance equation is less straight forward. Some studies argue that if communication provides new information for the markets then the presence of communication is expected to result in higher volatility of interest rates.[14] However, higher volatility can also be interpreted as an indication of higher uncertainty and thereby less effective communication, given that the goal of communication is to reduce uncertainty in the markets. Here, instead of testing a hypothesis on the direction

[14] This idea is followed, for example, by Kohn and Sacks (2004), and Connolly and Kohler (2004).

of the effect of communication on the volatility, we assess the extent to which the volatility reacts to the communication.

5.2 Estimation Results

Using the model specified in equations (2) and (3) we estimate mean equations and variance equations for the effects of the BI's and the BOT's monetary policy communication. The results for the mean equations are presented in Table 6, and the results for volatility equations are presented in Table 7.

Monetary Policy Statements

The estimation results for the BI's monetary policy statements show that the statements containing loose monetary policy inclination significantly lower interest rate changes. However, the results also show that the statements with neutral monetary policy inclination lower interest rate changes. The results are quite robust across different maturities of interest rates, in which the magnitudes of the coefficient range from 0.03 to 0.06 for loose policy inclination, and 0.04 to 0.09 for neutral policy inclination.

The policy inclination in the BOT's monetary policy statements in general moves interest rates in the intended direction. While loose policy inclination in general significantly lowers interest rate changes, neutral policy statements do not significantly affect interest rates, as expected. On the other hand, tight monetary policy inclination tends to have mixed effects. In terms of the magnitudes, when the effects are significant, the effects of loose policy inclination in Thailand are generally larger than the magnitudes in Indonesia. The effects of the BOT's loose policy inclination on 1-month and 3-month interbank interest rates in Thailand are even more than 10 basis points, while the effects of the BI's loose policy inclination for the same maturity of interest rates are less than 5 basis points. If we compare these results with the evidence from three major central banks—the Federal Reserve, the Bank of England, and the ECB—found by Ehrmann and Fratzscher (2007), when they are significant, the effects of the BI's and the BOT's communication tend to be much larger. Ehrmann and Fratzscher (2007) find that the effects of policy inclination for those three major central banks range from 1.5 to 2.5 basis points.

Looking at the influence of the BI's monetary policy statements on the volatility of interest rates in Indonesia, the results show that in most cases monetary policy statements do not significantly affect volatility of interest rates. On the other hand, except for the volatility of interest rates with 1-month maturity, the BOT's monetary policy statements significantly increase volatility of interbank interest rates in Thailand, and the magnitudes of the coefficients are consistently larger than one.

Inter-Meeting Statements

Similar to the effects of loose policy inclination in the BI's monetary policy statements, loose policy inclination in the BI's inter-meeting statements also significantly lower interest rates, in which their magnitudes range from 0.028 to 0.042. The main difference with the effects of monetary policy statements is that a neutral policy inclination in the inter-meeting statements does not significantly affect interest rates.

The effects of the BOT's inter-meeting statements in some cases are in line with the direction of the policy inclination. A tight policy inclination in the inter-meeting statements significantly leads to higher 1-month interest rates, 3-month forward rates and 6-month forward rates. On the other hand, a loose policy inclination in the inter-meeting statements significantly leads to lower 1-month interest rates and 3-month forward rates. However, a neutral policy inclination also significantly leads to lower 1-month and 12-month interest rates.

In terms of the magnitudes, the results show that for Indonesia's case there is no systematic difference between the effects of inter-meeting statements and the effects of monetary policy statements. On the other hand, in Thailand the effects of inter-meeting statements tend to be smaller than the effects of monetary policy statements. If we interpret that the difference in the magnitudes indicates the difference in the importance of different channels of communication for interbank interest rates, then in Thailand monetary policy statements seem to be more important relative to inter-meeting statements.

Regarding the effects of inter-meeting statements on the volatility of interest rates, in most cases the inter-meeting statements do not significantly affect volatility of interest rates in Indonesia and Thailand. Given that the policy inclination in the inter-meeting statements moves interest rates significantly, the insignificant effect of the inter-meeting statements on the volatility cannot be interpreted as an indication of lack of new information in the inter-meeting statements. Instead, such insignificance seems to be more reasonable interpreted as an indication of the lack of interest rate uncertainty due to the inter-meeting statements.

Comparisons of the Results

The estimation results above show that to some extent monetary policy statements and inter-meeting statements have been effective in moving domestic interbank interest rates in Indonesia and Thailand. If we look at the effects of the statements under different directions of policy inclination, the results show that there is asymmetry in the effectiveness of the statements, in which the statements with loose policy inclination tend to be more effective relative to the statements with tight policy inclination. Moreover, the results also show that while the BOT's monetary policy statements with neutral policy inclination is also quite effective, the BI's monetary policy statements with neutral policy inclination tend to bring lower interest rates.

While the difference in the structure of monetary policy statements may account for the differences between the results for Indonesia and Thailand, it does not explain why there is asymmetry in the effectiveness of the statements under different directions of policy inclination. To explain such asymmetry we examine the association between policy inclination in the statements and the changes in policy rate following the statements. As shown in Figure 3 and Figure 4, it is quite obvious that the BI's and the BOT's statements with loose policy inclination are mostly followed by lower policy rates. On the other hand, when the statements contain tight or neutral policy inclinations, the BI and the BOT show different patterns. In many cases the BI's statements with tight policy inclination are followed by unchanged policy rates, and the BI's statements with neutral policy inclination are often followed by lower policy rates. On the other hand, the BOT's statements with tight policy inclination are mostly followed by unchanged policy rate and the BOT's statements with neutral policy inclination are mostly followed by unchanged policy rate.

The association between the policy inclination and the change in the following policy rate is summarized in Table 8. As we can see for Indonesia's case, only 36 percent of the BI's monetary policy statements with tight policy inclination is followed by a higher policy rate, while 91 percent of the statements with loose policy inclination are followed by a lower policy rate. Moreover, we can also see that 44 percent of the BI's monetary policy statements with neutral policy inclination are followed by a lower policy rate. When we look at Thailand's case, the BOT's monetary policy statements with neutral policy inclination and loose policy inclination are quite consistent with the changes in the policy rate. Ninety percent of the BOT's monetary policy statements with neutral policy inclination are followed by an unchanged policy rate, and 80 percent of the BOT's monetary policy statements with loose policy inclination are followed by a lower policy rate.

If we look at the association between policy inclination in the inter-meeting statements and changes in the policy rate, we can also see that the policy inclination in the BOT's inter-meeting statements is much more in line with the changes in its policy rates. While only

around 60 percent of the policy inclination in the BI's inter-meeting statements that are in line with the direction of the change in the BI's policy rate, more than 75 percent of the policy inclination in the BOT's inter-meeting statements is in line with the direction of the change in the BOT's policy rate.

One possible reason why policy inclination in the BI's statements are not necessarily followed by corresponding changes in the policy rate could be because the BI just started to use interest rates as the operating target in July 2005. As shown in Figure 3, before July 2005 for about a year the SBI rate—as a proxy for the BI's policy rate before July 2005—hardly changed although monetary policy statements contain tight policy inclination. After July 2005 we find that while all monetary policy statements with loose policy inclination are still followed by lower policy rates, most of the monetary policy statements with tight policy inclination are not followed by higher policy rate (Table 9). The main difference is observed in the association between policy inclination in the inter-meeting statements and the changes in policy rate, in which the statements with tight policy inclination are mostly followed by higher policy rate.

The question is whether the change in the BI's monetary policy framework since July 2005 has improved the effectiveness of its monetary policy communication. To address that question we estimate the empirical model using a sample of data covering the period from July 2005, and the estimation results are presented in Table 10 and Table 11. The results for the mean equation using data since July 2005 do not show a significant difference from the results for the mean equation using the full sample. Using data from July 2005, the estimation results show that monetary policy statements with loose or neutral policy inclination still lead to a lower interest rate change, while monetary policy statements with tight inclination still do not significantly lead to a higher interest rate change. However, the effects of the monetary policy statements on the volatility of interest rates using data since July 2005 is significant in almost all cases, in which monetary policy statements result in higher interest rate volatility. This result is different from the estimation result using data from January 2004, in which only the volatility of 6-month interest rate that is significantly affected by monetary policy statements.

The effects of the BI's inter-meeting statements since July 2005 also tend to be negative when policy inclination is loose, although in most cases the effects are insignificant. The inter-meeting statements since July 2005 only significantly move 1-month interbank interest rate, in which loose policy inclination leads to a lower interest rate changes while neutral policy inclination leads to a higher interest rate changes. If we look at the variance equation, the effects of inter-meeting statement on the interest rate volatility do not change substantially in which in most cases the inter-meeting statements do not significantly affect the volatility of interest rates.

6. Conclusions

In this paper we investigate the effectiveness of monetary policy communication in Indonesia and Thailand. We focus on two channels of monetary policy communication, namely statements on monetary policy decisions, and inter-meeting statements by members of the board of governors. We first analyse the BI's and the BOT's monetary policy statements and inter-meeting statements over the period from January 2004 to December 2007. Looking closely at the structure and content of the monetary policy statements, we find the following patterns. In terms of number of words and number of paragraphs, the BI's monetary policy statements in general are much longer and show more fluctuation compared with the BOT's monetary policy statements. The BOT's monetary policy statements are relatively short and the number of words in the statements tends to decrease over time. If we look at the content

of the BI's and the BOT's monetary policy statements, almost all statements cover the state of the economy, direction of the future policy and possible risks to the outlook.

Beside communication through monetary policy statements on meeting days, we also find that during inter-meeting periods members of the board of governors often convey statements that contain monetary policy inclination. Such statements are conveyed in various occasions, including conferences, interviews, or testimonies before the parliament. Not surprisingly, the governors—and the senior deputy governor in the case of the BI—are the ones who deliver statements most often relative to other members of the board of governors. If different members of the board of governors happen to deliver statements during the same inter-meeting periods, the policy inclination conveyed by different person are quite consistent.

After analyzing the structure and content of the monetary policy statements and inter-meeting statements, we examine empirically how the statements affect financial markets, and the findings are as follows. First, the BI's monetary policy statements that contain loose policy inclination tend to lower interbank interest rates. However, while the BI's statements with tight policy inclination do not move interest rates, the statements with neutral policy inclination also tend to lower the interest rates. Similar to the effects of the BI's monetary policy statements with loose policy inclination, the BOT's statements with loose policy inclination also significantly lower interest rates. On the other hand, while the statements with tight policy inclination give mixed results, the BOT's statements with neutral policy inclination does not move interest rates. Regarding the effects of monetary policy statements on the volatility of interest rates, the effects in Indonesia and Thailand are quite different. In Indonesia, in most cases monetary policy statements do not significantly affect interest rate volatility, while in Thailand such statements have significant effects and the magnitudes of the effects are larger than one.

Second, inter-meeting statements by member of the BI's board of governors seem to be effective when the inter-meeting statements contain loose or neutral policy inclination, while the statements with tight policy inclination do not significantly move the interest rates. If we look at the effects of inter-meeting statements on the volatility of interest rates, only in a few cases the BI's inter-meeting statements significantly result in higher interest rate volatility. The effects of inter-meeting statements by members of the BOT's board of governors in some cases are in line with the direction of the policy inclination. On the other hand, in all cases the volatility of interest rates in Thailand is not significantly affected by the inter-meeting statements.

Finally, the implementation of inflation targeting in Indonesia since July 2005 has not seem to improve the effectiveness of monetary policy communication in moving interest rates. Monetary policy statements with loose or neutral policy inclination tend to lower interest rate while the statements with tight policy inclination do not have significant effects. Moreover, although the effects of inter-meeting statements with loose policy inclination remain negative, in most cases the effects are insignificant. The main difference is the effects of monetary policy statements on the volatility of interest rate, in which the effects of the statements become more pronounced.

In summary, the empirical findings in this paper show that, to some extent, the BI's and the BOT's monetary policy statements and inter-meeting statements have been effective in moving short-term interest rates. Nevertheless, there seems to be asymmetry in the effectiveness of the statements, in which the statements with loose policy inclination tend to be more effective compared to the statements with tight policy inclination. In the case of Thailand, neutral policy inclination in monetary policy statements is also quite effective in the sense that such statements do not move interest rates. The effectiveness of the communication seems to be associated with the consistency between policy inclination in the statements and the following change in policy rate. In this respect, the BOT's monetary policy statements seem to be more consistent relative to the BI's monetary policy statements.

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Table 1

Summary Statistics of the Structure of Monetary Policy Statements

	Bank Indonesia			Bank of Thailand		
	Mean	Min	Max	Mean	Min	Max
Total Number of Words	769	195	1223	256	158	430
Number of Paragraph	7	2	12	4	3	7
Number of Words in Decision Paragraph	107	49	200	81	41	135
Sentence Length of Decision Paragraph	27	15	46	25	17	41

Table 2

Keywords for Policy Inclination in the Monetary Policy Statements

Tight	Neutral	Loose
Bank Indonesia: - maintain tight bias - continue tight bias - hold steady course in its tight bias - more measured, cautious actions - consistently guide expectations - calling for vigilance - will maintain prudent monetary policy - will remain on prudent track	- to remain neutral - unchanged still provide stimulus - will be kept on track - maintain present course - will remain building stability	- guided towards cautious easing - allowed room for cautious easing - possibility to gradually lower - maybe reduced further - more aggressive reduction will be made - reinvigorate consumer& business - indicate room for further reduction
Bank of Thailand: - low level has become less necessary - would stand ready to respond - should continue at an upward trend - Should be raised again	- current rate is appropriate	- monetary policy could be eased

Table 3

Summary Statistics of Policy Inclination in the Monetary Policy Statements

Monetary Policy Statements	Tight	Neutral	Loose	Total
Bank Indonesia	28	9	11	48
	58%	19%	23%	100%
Bank of Thailand	17	10	5	32
	53%	31%	16%	100%

Table 4

Keywords for Policy Inclination in the Inter-Meeting Statements

Tight	Neutral	Loose
Bank Indonesia		
- will keep tight bias policy	- no plan to raise	- may be cut
- raising interest rate is possible	- will keep	- will cautiously cut
- will raise interest rate	- lowering BI rate is uncertain	- will ease monetary policy
- continue to increase interest rate	- will not impose tight policy	- there is a room to further cut
- may raise interest rate	- will not cut	- it is possible to lower
	- might not raise	- lower interest rate trend
		- expects the benchmark to go down
		- it makes sense to cut
Bank of Thailand		
- will add interest rate increase	- too soon to say further rise	- will remain low
- could raise key rate	- will seek to maintain balance	- will keep low
- needs to be increased keep increasing	- no need to push further	- would start to ease
	- won't be cut	- will be further cut
- would have to rise	- uncertain about decision on rate	- may cut benchmark rate
- would continue upward trend	- cut unlikely	
- the increase will help	- might not have to rise	
- wants higher rate		
- might have to go up		

Table 5

Summary Statistics of Policy Inclination in the Inter-Meeting Statements

	Bank Indonesia				Bank of Thailand			
	Tight	Neutral	Loose	Total	Tight	Neutral	Loose	Total
Governor	4	3	11	18	9	9	3	21
	22%	17%	61%	100%	43%	43%	14%	100%
Senior Deputy Governor	3	9	6	18	-	-	-	-
	17%	50%	33%	100%	-	-	-	-
Deputy Governors	1	4	6	12	4	1	1	6
	9%	36%	55%	100%	67%	17%	17%	100%
Total	8	6	23	47	13	10	4	27
	17%	34%	49%	100%	48%	37%	15%	100%

Table 6

Estimation Results: Mean Equation

	Monetary Policy Statement			Inter-Meeting Statement		
	Tight	Neutral	Loose	Tight	Neutral	Loose
Bank Indonesia:						
1-month Interbank	-0.001	-0.089***	-0.032***	-0.001	-0.025	-0.042**
	(-0.66)	(-4.79)	(-3.23)	(-0.16)	(-1.27)	(-2.27)
3-month Interbank	0.000	-0.048***	-0.049***	0.005	-0.015	-0.033**
	(0.12)	(-4.31)	(-2.79)	(1.63)	(-1.01)	(-2.38)
6-month Interbank	0.003	-0.039**	-0.047***	0.005	-0.002	-0.039**
	(0.48)	(-2.25)	(-2.61)	(0.68)	(-0.34)	(-2.07)
12-month Interbank	0.001	-0.042**	-0.059***	0.002	0.008	-0.028***
	(0.16)	(-2.48)	(-3.01)	(0.18)	(0.93)	(-2.21)
3-month Forward	0.004	-0.015	0.008	0.000	0.000	-0.031
	(0.49)	(-0.49)	(0.53)	(0.03)	(0.03)	(-1.43)
6-month Forward	-0.009	-0.024	-0.035**	0.007	0.015	0.012
	(-0.95	(-1.17)	(-2.10)	(0.28)	(1.10)	(0.45)
Bank of Thailand:						
1-month Interbank	-0.002	0.001	-0.164***	0.004***	-0.002**	-0.124***
	(-1.10)	(0.62)	(-8.91)	(3.08)	(-2.22)	(-8.41)
3-month Interbank	0.019***	-0.001	-0.131***	0.000	0.001	0.012***
	(2.94)	(-0.77)	(-8.80)	(-0.54)	(0.82)	(2.96)
6-month Interbank	0.000	-0.001	-0.040	0.000	0.002	-0.008
	(-0.01)	(-0.39)	(-0.90)	(0.64)	(1.41)	(-0.55)
12-month Interbank	-0.011***	0.001	-0.065***	0.000	-0.003**	0.004
	(-3.94)	(0.81)	(-3.34)	(0.11)	(-2.55)	(0.82)
3-month Forward	0.000	0.002	0.027	0.004**	0.000	-0.010**
	(0.03)	(1.09)	(0.80)	(1.97)	(0.23)	(2.31)
6-month Forward	0.004	0.001	-0.030	0.003**	0.000	0.005
	(0.41)	(0.18)	(-0.89)	(2.32)	(-0.06)	(0.99)

Notes: Numbers in the brackets are standard error; ***,**,*) indicate significance at the 99%, 95%, and 90% levels. Sample for Indonesia runs from 1/1/2004 to 12/31/2007, and sample for Thailand runs from 6/8/2005 to 12/31/2007.

Table 7

Estimation Results: Variance Equation

	Bank Indonesia		Bank of Thailand	
	Monetary Policy Statement	Inter-Meeting Statement	Monetary Policy Statement	Inter-Meeting Statement
1-month Interbank	-0.081	0.694*	0.500	0.642
	(-0.24)	(1.88)	(1.28)	(1.37)
3-month Interbank	0.387	0.210	1.432***	0.074
	(1.10)	(0.48)	(5.09)	(0.17)
6-month Interbank	0.834***	0.511	2.077***	-0.200
	(2.72)	(1.00)	(4.24)	(-0.34)
12-month Interbank	0.058	-0.075	1.665***	-0.543
	(0.16)	(-0.21)	(4.01)	(-1.25)
3-month Forward	0.063	0.699	1.032***	-0.317
	(0.20)	(2.39)	(2.94)	(-0.78)
6-month Forward	-0.407	1.588***	1.065*	-0.429
	(-1.40)	(3.09)	(1.72)	(-1.22)

Notes: Numbers in the brackets are standard error; ***,**,* indicate significance at the 99%, 95%, and 90% levels. Sample for Indonesia runs from 1/1/2004 to 12/31/2007, and sample for Thailand runs from 6/8/2005 to 12/31/2007.

Table 8

Policy Inclination and Following Change in Policy Rate

(full sample)

Policy Inclination	Bank Indonesia			Bank of Thailand		
	Higher	Unchanged	Lower	Higher	Unchanged	Lower
Monetary Policy Statement:						
Tight	**35.7**	53.6	10.7	**70.6**	29.4	0.0
Neutral	0.0	**55.6**	44.4	0.0	**90.0**	10.0
Loose	0.0	9.1	**90.9**	0.0	20.0	**80.0**
Inter-Meeting Statement:						
Tight	**62.5**	25.0	12.5	**76.9**	23.1	0.0
Neutral	12.5	**62.5**	60.9	10.0	**90.0**	0.0
Loose	0.0	39.1	**60.9**	25.0	0.0	**75.0**

Table 9

The BI's Policy Inclination and Following Changes in Policy Rate

(sample since July 2005)

Policy Inclination	Higher	Unchanged	Lower
Monetary Policy Statements:			
Tight	**35.7**	42.9	21.4
Neutral	0.0	**55.6**	44.4
Loose	0.0	0.0	**100.0**

Inter-Meeting Statements:			
Tight	**80.0**	0.0	20.0
Neutral	8.3	**58.3**	55.0
Loose	0.0	45.0	**55.0**

Table 10

Estimation Results for Indonesia: Mean Equation

Using Data since July 2005

	Monetary Policy Statement			Inter-Meeting Statement		
	Tight	Neutral	Loose	Tight	Neutral	Loose
1-month Interbank	-0.003	-0.083***	-0.067***	0.076	0.027*	-0.024**
	(-0.13)	(-4.68)	(-2.59)	(0.84)	(1.73)	(-2.25)
3-month Interbank	-0.035	-0.047***	-0.096***	0.026	0.009	-0.003
	(-1.64)	(-3.44)	(-2.74)	(0.59)	(0.88)	(-0.34)
6-month Interbank	-0.014	-0.038***	-0.139***	0.197	0.002	-0.005
	(-0.66)	(-2.61)	(-4.57)	(1.40)	(0.15)	(-0.57)
12-month Interbank	-0.005	0.000	-0.074*	-0.004	0.013	-0.007
	(-0.24)	(-0.03)	(-1.91)	(-0.09)	(1.38)	(-0.61)
3-month Forward	-0.006	0.006	-0.092***	-0.025	0.010	-0.014
	(-0.28)	(0.39)	(-3.17)	(-0.57)	(0.73)	(-0.96)
6-month Forward	-0.045*	-0.005	-0.067**	-0.013	0.014	-0.013
	(-1.78)	(-0.38)	(-2.09)	(-0.70)	(1.54)	(-1.50)

Notes: Numbers in the brackets are standard error; ***,**,*) indicate significance at the 99%, 95%, and 90% levels.

Table 11

Estimation Results for Indonesia: Variance Equation

Using Data since July 2005

	Policy Announcement	Inter-Meeting Statement
1-month Interbank	0.483*	0.447
	(1.83)	(1.00)
3-month Interbank	0.951***	0.180
	(2.84)	(0.26)
6-month Interbank	1.469***	1.337***
	(5.51)	(3.39)
12-month Interbank	0.587*	0.169
	(1.68)	(0.40)
3-month Forward	0.136	0.574*
	(0.38)	(1.72)
6-month Forward	1.384***	0.200
	(4.75)	(0.59)

Notes: Numbers in the brackets are standard error;

***,**,* indicate significance at the 99%, 95%, and 90% levels.

Figure 1

Changes in the Structure of the Monetary Policy Statements

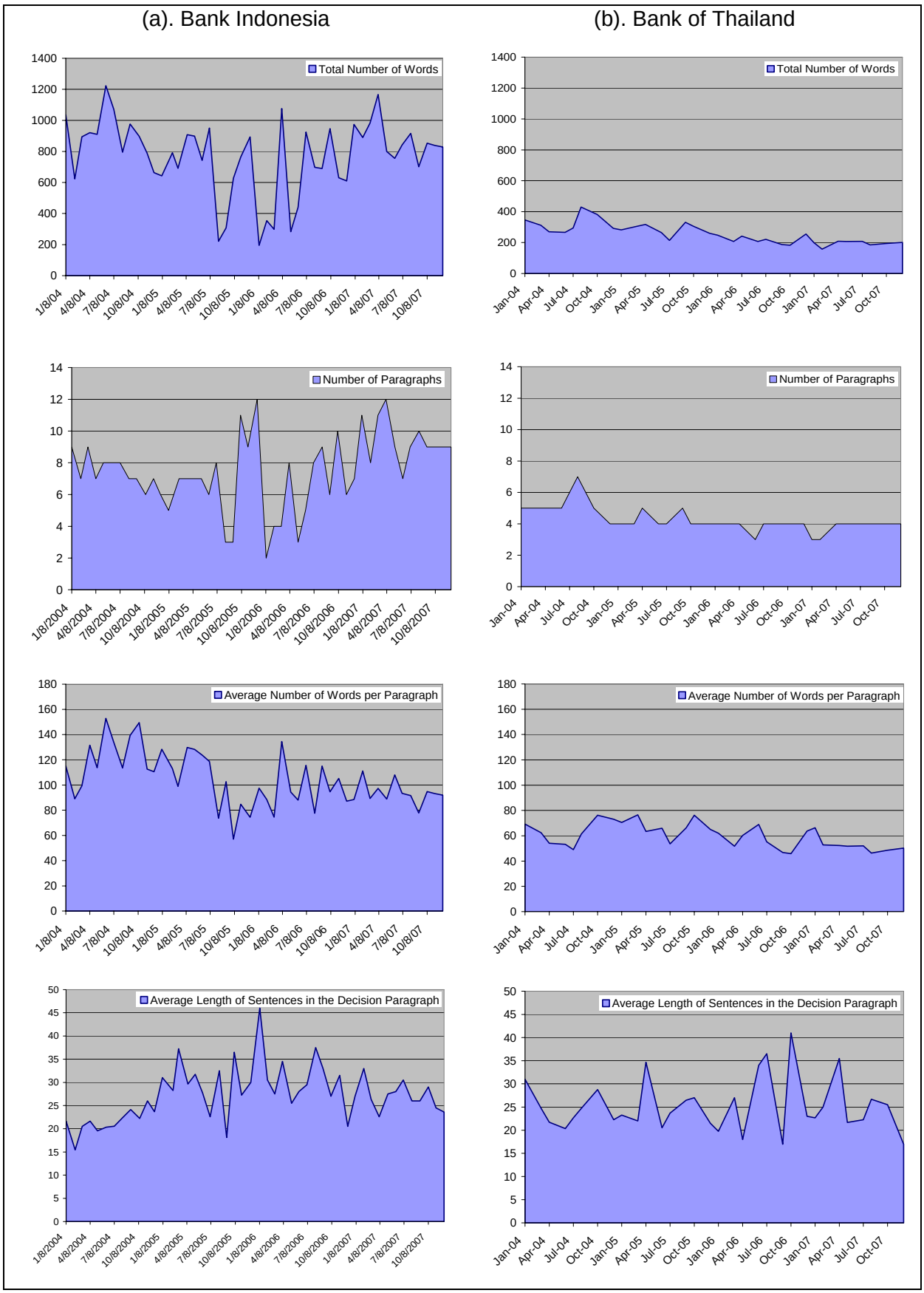


Figure 2

Policy Inclination in the Inter-Meeting Statements

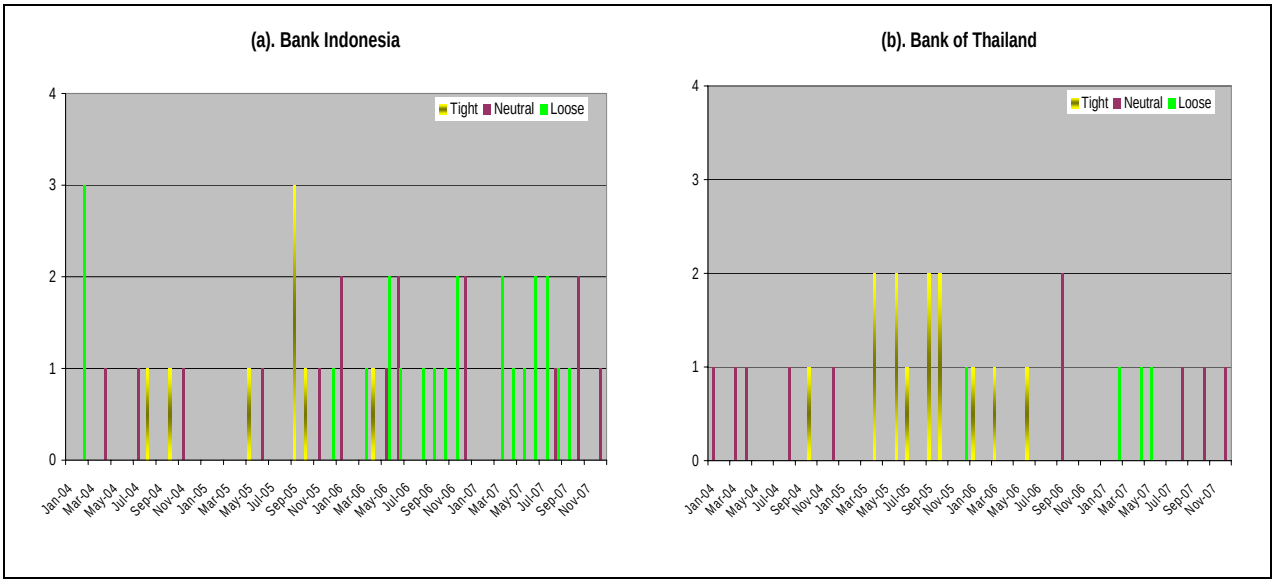


Figure 3

Policy Inclination in the Monetary Policy Statements and Policy Rate

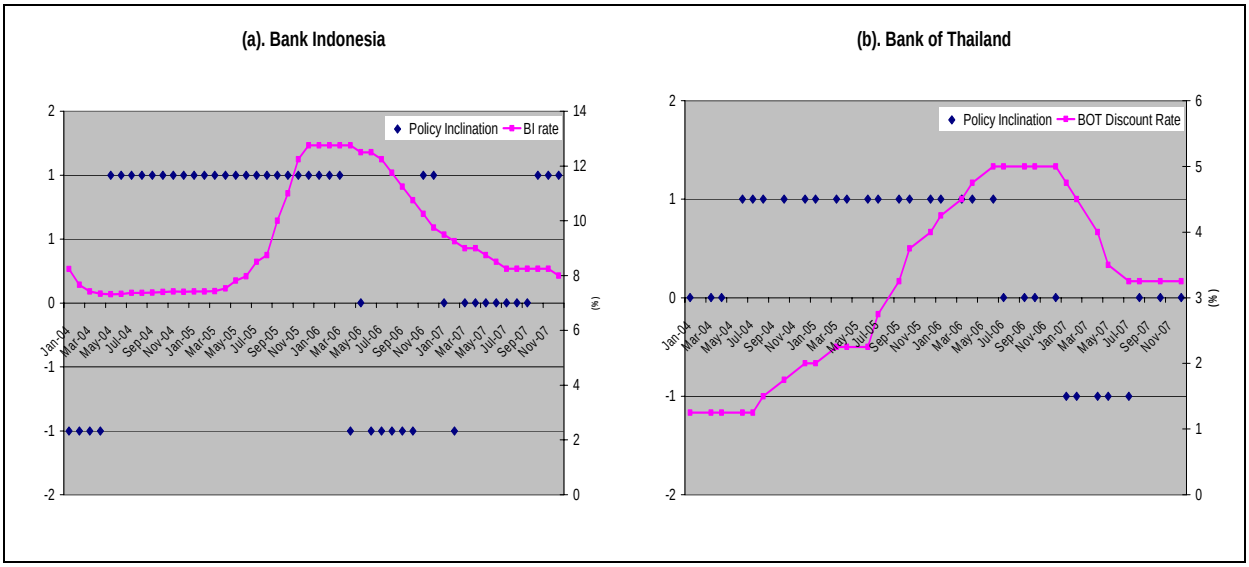
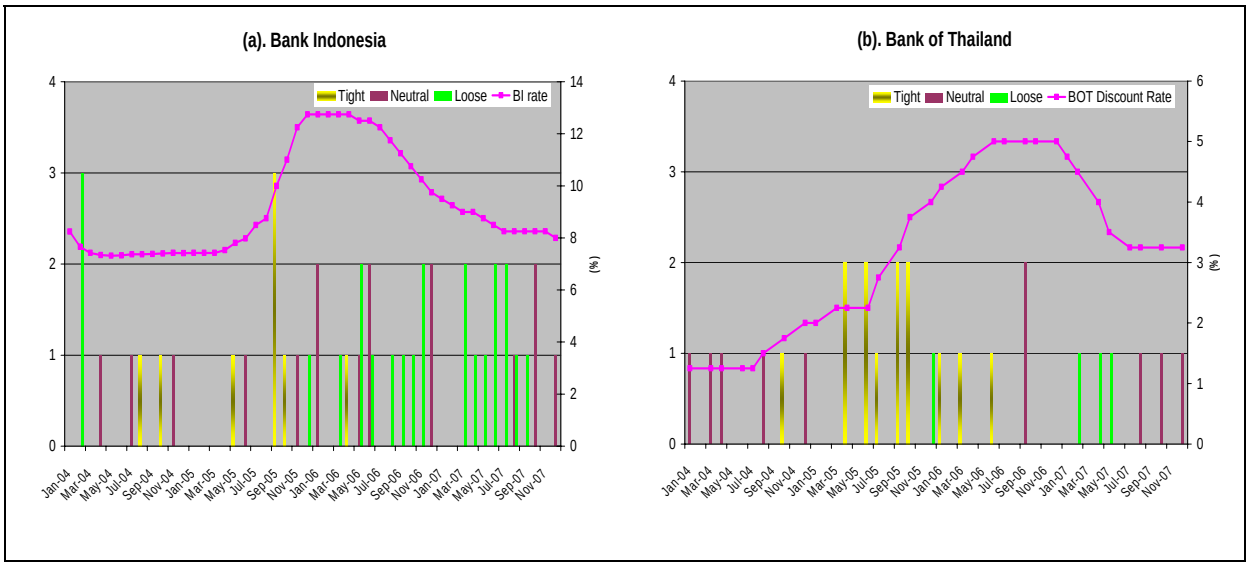


Figure 4

Policy Inclination in the Inter-Meeting Statements and Policy Rate



Appendix 1: Examples of Monetary Policy Statements and Their Codes

Bank Indonesia:

8 April 2004:

"*Present condition still allows room for cautious easing of interest rates, though at a more gradual rate of decline in keeping with medium term inflation*."

Code: $M_t^- = 1$

6 December 2006:

"*Bank Indonesia will hold a steady course in its tight bias monetary policy stance and optimize the use of the various instruments at its disposal*."

Code: $M_t^+ = 1$

7 July 2007:

"…*monetary policy pursued so far to maintain stability needs to be complemented by concrete sectoral policies to promote increased growth in the real sector*."

Code: $M_t^0 = 1$

Bank of Thailand:

25 August 2004:

"*The MPC thus deemed that the need to maintain the interest rate at the presently low level has become less necessary*."

Code: $M_t^+ = 1$

13 December 2006:

"*The MPC deemed that the current level of the policy rate is appropriate for the current economic situation*."

Code: $M_t^0 = 0$

18 July 2007:

"*Monetary policy could therefore be eased further to facilitate economic adjustment and to facilitate economic expansion without exerting pressure on inflation*."

Code: $M_t^- = 1$

Appendix 2: Examples of Inter-Meeting Statements and Their Codes

Bank Indonesia:

4 August 2004:

"*Bank Indonesia will continue tight bias policy and will negotiate with government regarding inflation target in medium and long term*."

Code: $I_t^+ = 1$

20 November 2006:

"*Bank Indonesia (BI) has signalled that it would not directly increase interest rates*"

Code: $I_t^0 = 1$

15 March 2007:

"*Bank Indonesia will ease its monetary rules including lowering the BI Rate and loosening conditions for application of credits to improve the banks` intermediary role to boost economic developement*,…"

Code: $I_t^- = 1$

Bank of Thailand:

31 March 2004:

"*Thailand's central bank sees no immediate pressure that would force current low interest rates to rise*,…"

Code: $I_t^0 = 1$

1 July 2005:

"*Interest rates need to be increased to attract funds from abroad and help plug Thailand's widening current-account deficit, ….The benchmark rate should exceed inflation,….*"

Code: $I_t^+ = 1$

2 March 2007:

"Interest rates ``can still be eased'' as inflation isn't a concern,…"

Code: $I_t^- = 1$