An Investigation of Monetary Policy Shocks and its Impact on Thailand's Stocks and Bond Markets

(EE439 Seminar in Monetary and Financial Economics)

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May 21, 2013

Abstract

This paper estimates the impact of monetary policy actions on bong yield as well as stock returns in Thailand. Thai Baht Interest Rate fixing (THBFIX) is used to decompose changes in policy rate into anticipated and unanticipated components. Bond rates' response to anticipated changes appears to be very small and insignificant, while their response to unanticipated movements is large and highly significant, especially for short-term bills. Bond market in Thailand, however, is only behaves according to the efficient market hypothesis after controlling for the movement of bond yield in US as well as crises. Variation in SET Returns, on the other hand, appears to have no relationship with the variation in THBFIX, even after separating the unanticipated and anticipated components. Further, this paper also shows that unanticipated cuts have more impacts on the bond market than unanticipated hikes especially on the three-month and six-month bills.

1. Introduction

Economists often talk about the impact of monetary policy. Normally they focus their attentions on the impact on macroeconomic variables such as inflation, real output, and employment. Nonetheless, monetary policy actions, such as changes in the central bank discount rate, have at best an indirect effect on these variables and considerable lags are involved in the policy transmission mechanism. Financial markets such as stock market, bond market, however, are quicker to respond to new policy being implemented. As a consequence, the most direct and immediate effects of monetary policy actions are readily observed on the financial markets; whereby the policy rates affect asset prices and returns. Identifying and understanding the links between monetary policy and asset prices has long been very desirable yet elusive in the quest to understand this channel of the transmission mechanism of monetary policy. In this paper, I aim to provide empirical evidence on the relationship between monetary policy and both the responses from the equity and bond markets in Thailand. When Central bank changes target rate for its policy rate, some target changes are anticipated while the remaining may take the financial markets by surprise causing asset prices to move substantially as a result.

Equity market is among the most closely monitored asset prices in the economy and highly sensitive to economic conditions. Monetary policy affects the equity market where it in turn impacts the real economy through consumption spending (wealth effect channel) and investment spending (balance sheet channel). As Bernanke and Kuttner (2005) point out, some observers view the stock market as an independent source of macroeconomic volatility to which policymakers may wish to respond. Stock prices often exhibit pronounced volatility and boom-bust cycles leading to concerns about sustained deviations from their fundamental values that, once corrected, may have significant adverse consequences for the broader economy. For these reasons, establishing quantitatively the existence of a stock market response to monetary policy changes will not only be significant to the study of stock market determinants but will also contribute to a deeper understanding of the conduct of monetary policy and of the potential economic impact of policy actions or inactions.

In the United States where the change in interest rates often preceded the announcement from Fed, changes in policy action therefore, is often anticipated (not always accurate it has to be said). The Fed communication channel as well as the scheduled release of important economic data makes the task of incorporating data and signals from the policymakers much easier and much more transparent. Often, speeches or talks by certain policymakers will often

guide the markets along the way that the policymakers intend. Therefore, it is often the case that much of the policy changes will take place long before the actual announcement dates in the US.

The comparison with the US will be especially interesting, as Thailand doesn't have a string of closely watched economic data. Conferences or speeches are not as effective as in the US for Thai markets to update their expectations. The study of unanticipated and anticipated actions will shed new light on the effectiveness of the Thai monetary authority in signaling their policy action to the public. There has been no formal academic investigation on the impact of monetary policy on Thai stock market. This paper will also attempt to investigate this claim.

2. Literature Review and hypotheses

2.1 Literature Review

Kuttner (2000) estimated the impact of monetary policy actions on bond market by basing his methodology on Cook-Hahn Analysis, which is by regressing changes in interest rate on the two components of the target rate change (anticipated and unanticipated). Fed Fund Future rate was used to gauge policy expectations as well as distinguish target funds rate into anticipated and unanticipated components. Strong relationship between unanticipated monetary policy and bond market was found to be the case of US. In terms of stock market, Bernanke and Kuttner (2003) analyzed the impact of unanticipated monetary policy action on equity prices with the aim of estimating the size of the typical reaction. Fed fund future rates were also used to disentangle the anticipated and unanticipated components and this paper was also based on stock market in US.

In addition, Ioannidis and Kontonikas (2006) investigate the impact of monetary policy on stock returns in thirteen OECD countries over the period 1972-2002. Short-term Treasury bill was used as a proxy for the shift in monetary policy. Their finding shows that monetary policy shifts significantly affect stock returns. As Thailand is one of the developing countries, this finding provides some insight to the relationship between monetary policy and stock market in other developing countries.

This paper methodology is based on Cook-Hahn analysis as done by Kuttner. The study will be based on financial market in Thailand, including stock and bond markets. Thai Baht Interest Rate fixing will be used to distinguish anticipated and unanticipated components, instead of fed fund future rates as Thailand does not have fed fund future rates. Extension of

previous literature will be done in this paper with the further decomposition of unanticipated components into unanticipated cut and unanticipated hikes in the policy rate. In addition, as it is believed that Quantitative Easing does cause a spillover effect on Thai financial markets (Fratzscher, Lo Duca, and Straub, 2013), this paper also takes into account spillover effect that US financial market has on Thai financial markets.

2.2 Hypotheses

According to efficient market hypotheses, only unanticipated changes can have effect on the financial market in order for the market to be efficient. This paper therefore, aims to explore whether financial market in Thailand is efficient or not. In addition, according to monetary policy theory, unanticipated monetary policy is thought to be able to create more impact on the economy relative to anticipated monetary policy. This paper investigates whether this is the case for Thailand.

3. Data

This paper uses event-study approach employed by Cook-Hahn and the time frame of data is from January 2001, which is after the adoption of inflation targeting regime, to December 2013. Proxy used to gauge expectations of changes in policy rate in this paper is 1M Thai Baht Interest Rate Fixing (THBFIX), as opposed to fed fund future rates. However, there are also limitations to the use of THBFIX as it is not as accurate in measure expectation of future changes in policy rate as fed fund futures that is specifically designed to capture expectations of changes in fed fund rate. Alternative instruments including short-term bill rates and THBFIX future has been considered, however, data was not sufficient enough to cover the entire period of study. Nonetheless, THBFIX is widely used by the market in measuring expectation of future changes in policy rate.

Other data used includes changes in policy rate from the day prior to MPC meeting to the day of MPC announcement, one day changes in bond yields with 3M, 6M, 1Yr, 2Yr, 5Yr, and 10Yr maturity from the day prior to MPC and after MPC announcement, and one day return of SET index from one day before MPC meeting to after MPC announcement as well. In addition, one day return of S&P500 and changes of bond yield in US were also used as control variables in robustness test. Finally, total number of observation is 108 with 43 observations of policy rate changes. In terms of sources of data, data such as Bond yield and SET index were obtained from Bloomberg Terminal while THBFIX was obtained from BOT website. DXY

and bond yield in US were obtained from "Federal Reserve Economic Data (FRED)" and Federal Reserve websites, respectively.

4. Baseline Event Study

This section explores the one day response of bond yields as well as SET returns to changes in THBFIX. Sample includes 43 observations with changes in policy rate, with the first on January 1 2001, and the last on November 11 2013. Model for regression used in this section is based on the Cook-Hahn (1989) analysis, in which he examined the one-day response of bond rates to changes in the target Fed funds rate from 1974 through 1979. With this model, changes in bond yield and SET returns is regressed with changes in THBFIX as shown in the equation below;

$$\Delta R_t^i = \alpha^i + \beta^i \Delta \tilde{r}_t + \varepsilon_t^i \qquad (1)$$

ΔR_t^i Denotes changes in bond yield or SET return and $\Delta \tilde{r}_t$ denotes changes in THBFIX.

According to table 4.1 in the appendix, coefficients of the changes in THBFIX or beta appears to be positive and significant for bonds with all maturities, except 2 year and 5 year bonds. This implies that changes in THBFIX causes bond yields to move in the same direction. Furthermore, the coefficients of short term bond yield, 3M and 6M for instance, appears to be larger than the long-term bond yield, which can be interpreted that short term bond yield tend to be more responsive to the changes in THBFIX compared to the changes of bond yield with longer maturity. In this case, an increase in 100 basis points or 1 percent of THBFIX will cause yield of 3M bills to increase by 34.38 basis points while the yield of 10Yr bond will only increase by 20.07 basis points. Possible explanation for this case my be due to the nature of the policy rate, which is a short-term rate (1 day repurchase rate)

Last row of table 4.1 shows the result from regressing SET return with changes in THBFIX. Coefficient of THBFIX is small, negative, and insignificant. This implies that variation in SET return cannot be explained by the changes in THBFIX. Therefore, there seems to be no relationship between changes in policy rate and SET return.

5. Decomposition of policy actions

The previous section investigates the response of bond yields and SET return to raw changes in THBFIX. This section describes how Thai Baht Interest Rate Fixing (THBFIX) can

be used to distinguish between anticipated and unanticipated changes in the policy rate. The decomposed components will then be used in the later part of the paper to find the impact of unanticipated and anticipated changes in the policy rate. Equation used to derive the unanticipated changes in policy rate is as follow;

$$\Delta\tilde{r}_t^u = \tilde{r}_t - \tilde{r}_{t-1} \qquad (2)$$

$\Delta\tilde{r}_t^u$ Denotes unanticipated changes in policy rate on day t. $\tilde{r}_t$ and $\tilde{r}_{t-1}$ denotes 1M Thai Baht interest rate fixing (THBFIX) on day t, which in this case is the day with Monetary Policy Committee (MPC) meeting, and the THBFIX on day t-1, which is the rate on the day prior to the MPC meeting. The difference between THBFIX on the day with MPC meeting and the day prior to the MPC meeting will then give us unanticipated component of the future changes in policy rate. Next step is to extract the anticipated component, which can be done by using the following equation;

$$\Delta\tilde{r}_t^e = \Delta i_t - \Delta\tilde{r}_t^u \qquad (3)$$

$\Delta\tilde{r}_t^e$ Denotes the anticipated or expected component of the changes in policy rate while Δi_t denotes the actual changes in policy rate. Anticipated changes in policy rate can be derived by subtracting actual changes in policy rate with unanticipated portion of changes in policy rate, which is obtained from equation (2). To illustrate, if on the day that the Bank of Thailand (BOT) decided to cut policy rate by 25 bps, THBFIX fell by 13 bps, from 2.98% to 2.85% from the day before. In this case, unanticipated change in policy rate is -13 bps, which is the one-day change in THBFIX. Anticipated change in policy rate is then equal to -12 bps, extracted from subtracting 25bps with 13bps.

Table 5.1 in the appendix lists the 43 days which the Bank of Thailand changes policy rate and broken the actual policy rate changes down into unanticipated and anticipated components.

5.1 Measuring the impact of anticipated and unanticipated changes in policy rate

After changes in THBFIX are broken down into anticipated and unanticipated changes in policy rate, this section will now test whether anticipation or unanticipated changes in policy rate cause bond yields and SET return to move in a different magnitude. Also, whether at all, anticipated changes in policy rate can cause movement in bond yield and SET return. This can be done within the cook and Hahn-style analysis by regressing the change in the interest rate on the two components of the THBFIX, anticipated and unanticipated.

$$\Delta R_t^i = \alpha^i + \beta_1^i \Delta \tilde{r}_t^e + \beta_2^i \Delta \tilde{r}_t^u + \varepsilon_t^i \quad (4)$$

As mentioned earlier, $\Delta \tilde{r}_t^e$ represents the anticipated component of changes in policy rate while $\Delta \tilde{r}_t^u$ represents unanticipated component of changes in policy rate. DR_t^i Represents the yields on 3M, 6M, and 12M bills, 2Yr, 5Yr, and 10Yr bonds as well as return on SET. Table 5.1 shows the result from the regression from equation (4)

From table 5.1.1 in the appendix, result shows that the coefficients of unanticipated portion of changes in policy rate or b_1 appears to be positive and significant for bond with all maturities, except for 5Yr bond. Response of short-term bills still appears to be more responsive relative to long-term bond. In this case, an unanticipated in 100 basis points of policy rate will lead to an increase in 3M bond yield by 35.61 basis points, while anticipated increase will only lead to an increase of 3M bond yield by 9.62 basis points.

However, one of the most important thing to notice here is that the coefficient of unanticipated component appears to be larger and more significant than coefficients of anticipated component or b_2 for bonds with all maturity, but 5Yr. Nevertheless, not all of coefficients of anticipated component are significant. Only the coefficients of 3M, 12M, 2Yr, and 1Yr bond are significant. Another crucial thing to notice here is that with coefficient of anticipated component for 3M, 12M, and 2yr bonds being significant, anticipated changes in policy rate appears to have impacts on the yields of 3M, 12M, and 2Yr, which violated the hypotheses of efficient market. According to efficient market hypotheses, only unanticipated changes in policy rate will have effects on financial markets. Hence, our evidence based on model (4) does not lend support to the efficient market hypotheses.

For the SET return, coefficients for both anticipated and unanticipated changes in policy rate are negative and insignificant. This confirms the result of stock return obtained in section 4 that variation in SET return cannot be explained by variation in THBFIX. Therefore, one should not expect the Bank of Thailand to change policy rate to control or influence SET return. Possible explanation for this case may be due to the fact that stock market tends to reflect future expectation of the market. Therefore, stock index has already incorporated future expectation, causing most changes in SET return to be anticipated.

Column five (Surprise-Expected=0) test whether the impact of changes in bond yield from unanticipated and anticipated are statistically significant. For bonds, the difference appears to be significant at 90% confidence level (P-value < 0.1) for bonds with all maturities except 5Yr. This indicates that unanticipated changes policy rate causes bond yield to move in

a larger magnitude relative to anticipated changes in policy rate. On the contrary, difference of the impact between anticipated and unanticipated changes in monetary policy on SET return appears to be insignificant (P-value >0.1). This can be expected, as variation in SET cannot be explained by changes in THBFIX.

5.2 Decomposing Unanticipated changes in the policy rate

Having used THBFIX to distinguish between anticipated and unanticipated changes in policy rate, next question here is whether response of unanticipated hike and cut in policy rate differs. As the variation in SET return cannot be explained by the variation in THBFIX, an investigation in the differential impacts between unanticipated hike and unanticipated cut will be conducted for bond market only. Equation used in this step is as below;

$$\Delta R_t^i = \alpha + \beta_1 \Delta \tilde{r}_t^u + \beta_2 D_{Negative}^u + \beta_3 D_{Negative}^u \Delta \tilde{r}_t^u + \beta_4 \Delta \tilde{r}_t^e + \varepsilon_t^i \qquad (5)$$

As previously stated, $\Delta \tilde{r}_t^u$ and Δr_t^e represents unanticipated and anticipated changes in policy rate. $D_{Negative}^u$ is a dummy variable that takes the value of 1 when there is an unanticipated cut in policy rate. $D_{Negative}^u \Delta \tilde{r}_t^u$ is an interaction term, derived from multiplying dummy variable that represent unanticipated cut in policy rate with over all unanticipated changes in policy rate. This interaction term is created to capture the extra effect from unanticipated cut in policy rate relative to unanticipated hike. Result of the regression of unanticipated changes, dummy variable of unanticipated cut, interaction term of unanticipated cut and overall unanticipated changes, and anticipated changes are shown in table 5.2.1 in the appendix.

Coefficients of unanticipated cut, which is derived by the sum of b_1 and b_3, appears to be larger and significant than coefficients of unanticipated hike for bonds with all maturities, except 5Yr. Note that all of the coefficients representing unanticipated hike b_1, are insignificant for bonds with all maturity after the decomposition of unanticipated components. b_3, which is the coefficient of the interaction term and represents the extra effect that unanticipated cut has, relative to unanticipated hike, appears to be significant for bills with 3M and 6M maturity only. Therefore, when compared in a standardized way, unanticipated cut causes bond yield to move in a larger magnitude relative to unanticipated hike for bonds or bills with 3M and 6M maturity only.

Possible explanation for the insignificant effect of unanticipated hike can be rooted from the fact that when there is inflationary pressure on the economy, BOT usually says in the

MPC report that there is high inflationary pressure and it will be closely monitored. If the inflationary pressure persists for a period of time, BOT then usually hike the rates to counter inflation. As a result, market participants tend to be able to predict the increase in policy rate when there is inflationary pressure. Thus, when BOT actually increase the rate, it was mostly anticipated. Example MPC statements are shown in figure 1 and 2 in the appendix.

On the other hand, when the inflation rate is relatively stable, it is harder for market participants to predict whether BOT will cut policy rate to stimulate growth or not. Even when there is any event that negatively affects the economy, it is still harder to predict whether BOT will cut the rate or not. BOT may not cut the rate to prevent the market from expecting BOT to cut rate every time something happens or it may foresee future events that may negatively affect the economy and want to wait to cut the rate when that happens instead. In conclusion, it may be harder for the market to predict whether BOT will cut the policy rate or not, causing the cut in policy rate to be more unanticipated.

6. BOT Policy Inaction

After examining the responses of Bond yield and SET return to changes in policy rate, both anticipated and unanticipated, this section examines responses of both bond yield and SET return on days when there is no policy action from BOT. The purpose of this section is to see whether there is a case in Thailand where market participants expect BOT to change policy rate, but BOT response by not changing.

From appendix, Table 6.1 compares the responses of bond yields and SET returns on days with policy action and days with policy inaction. Coefficients of response of both bond yields and SET returns, b appears to be insignificant. This implies that financial market movements on those days appear to have no relationship with the policy inaction.

Possible explanation for the case may be due to the fact that BOT often employs wait-and see strategy. Market participants tend to be able to anticipate monetary policy inaction from BOT with lots of accuracy. When the economy is normal where both economic growth and inflation rate is at the appropriate level. BOT often communicate through its MPC report that there will be no adjustment of policy rate. Even when the economic situation or inflation rate in Thailand is not favorable, BOT tend to states in the MPC report that it will closely monitor the development of the economy as well as inflationary pressure and therefore, the current policy rate will be maintained. This kind of policy stance from BOT may be attributable to the inflation-targeting regime, where transparency and effective communication of monetary

policy are crucial to the effectiveness of the monetary policy. This explains how BOT try to communicate its stance through MPC report to try to align the expectation of the market with BOT target. In addition, responses of both bond yields and SET return when there is no policy action from BOT also appears to be robust after controlled for variables such as DXY, changes in US bond yield, and crises. Thus, confirming the result above.

7. Robustness Test

This section will try to control for variables that might influence or bias the results. First of all, expectation of future changes in bond yield and SET return may not only come from the expectation of future changes in policy rate. Therefore, dollar index (DXY) is used to capture the global sentiment that may causes the bond yield and well as SET return to move.

Bond Market

Table 7.1 from appendix shows the result of the response of bond yield after controlling with DXY. Coefficients representing DXY appears to be insignificant for bonds with all maturity, which implies that global sentiment is not statistically significant to the changes in bond yield in Thailand.

After controlling for global sentiment, other factors such as changes of bond yield in US and crises, may also contribute to the changes of bond yield in Thailand. Thus, controlled for changes of bond yield in US and crises were conducted. When control for crises, dummy variable was used to control and will take the value of 1 when there is domestic or international crises. In terms of crises, this includes financial crises, policital crises as well as natural disaster. Examples are global financial crisis in 2009, flooding in 2011, and military coup in 2007.

Table 7.2 shows the result after controlling for changes of bond yield in US and crises. Responses of unanticipated changes in policy rate appears to be robust as unanticipated changes in bond yield still causes bond yield to move in a larger magnitude, compared to anticipated changes (except for 5Yr bond). However, notice that coefficeints of anticipated changes in policy rate now become insignificant for bond with all maturity, except 10Yr. This implies that, after controlling for changes of bond yield in US and crises, bond market in Thailand become efficient. Anticipated changes in policy rate now become statistically insignificant to the changes in bond yield (except 10Yr bond), which is consistent with the market efficient hypothese that only unanticipated changes can has impact on financial market.

In addition, the fact that bond market in Thailand become efficient after controlling for both changes of bond yield in US and crises implies that bond yield in Thailand does move with with bond yield in US and that crises does influence the changes of bond yield in Thailand. Note that controlled for changes of bond yield in US and crises were also conducted separately and results appear to confirms the findings.

Stock Market

Controlled for global sentiment, crises, and stock return in US were conducted. As before, DXY and dummy variable for crises are used to control for global sentiment and crises. For stock market, however, Stock return in US are represented by S&P 500 return.

According to table 7.3, coefficients of DXY appears to be significant for most of the cases, which implies that global sentiment does influence SET returns. However, coefficients of S&P500 return as well as dummy controlling for crises appears to be insignificant for every cases. This leads to the conclusion that SET returns are effected by global sentiment, but not the crises and stock return in US. It is crucial to note that it does not mean that stock market in Thailand does not generally move with the stock return in US as the result acquired were based only on those days with MPC meeting and the days prior to the MPC meeting.

Last of all, Row 1.1 reports the result from regression of the SET return on raw change in the THBFIX, with control for global sentiment (from equation (6)). H_t in this case denotes stock return.

$$H_t = a + b\Delta r_t + DXY_t + e_t^i \qquad (6)$$

Row 1.2 shows the response when THBFIX is broken down into anticipated and unanticipated components (equation (7))

$$H_t = \alpha + \beta_1^i \Delta\tilde{r}_t^e + \beta_2^i \Delta\tilde{r}_t^u + DXY_t + \varepsilon_t^i \qquad (7)$$

Responses to raw changes of THBFIX as well as b_1 and b_2 are insignificant for all the cases, which confirms the robustness of the result obtained earlier that SET return cannot be explained by the variation in THBFIX.

8. Conclusion

The aim of this paper has been to explore the effect of changes in policy rate from BOT on a spectrum of market interest rates, using Thai Baht Interest Rate Fixing to distinguish anticipated from unanticipated changes. Main findings of the paper are that changes in

THBFIX causes bond yield to move in the same direction, with larger magnitude for short-term bonds. This result appears to be similar to the case of US where coefficients of response of bond yield to changes in Fed Fund Future rate are positive and significant for all maturities, but small at the long end of the yield curve.

Moreover, effects from unanticipated changes of policy rate on bond yield are more pronounced than anticipated changes for Thailand, which is consistent with the findings in US. In addition, unanticipated cut in policy rate leads to larger magnitude of movement in bond yield relative to unanticipated hike for bonds with 3M and 6M maturity. In terms of efficiency, both bond market in Thailand and US appears to be efficient, however, bond market in Thailand is efficient only after controlled for crises as well as changes of bond yield in US. Furthermore, when BOT does not change policy rate, responses of bond yield in Thailand appears to be statistically insignificant, indicating that bond yields movements on those days appear to have no relationship with the policy inaction.

Last of all, variation of SET return or stock market in Thailand cannot be explained by the variation in THBFIX regardless of policy action and this is consistent with the finding in US. Nevertheless, unanticipated changes in Fed Fund Futures causes stock return in US to move in the opposite direction while both unanticipated and anticipated changes of policy rate in Thailand can still not explain the variation in SET.

References

Kuttner, K. N., (2001). "Monetary policy Surprises and Interest Rates: Evidence from the Fed Funds Futures Market," Journal of Monetary Economics, 47(3), 523-44.

Bernanke, B. S., Kuttner, K. N. (2005). "What explains the stock market's reaction to the Federal Reserve policy?" Journal of Finance, 60, 1221-57.

Aziza, F. O.F. (2010). "The Effects of Monetary Policy on Stock Market Performance: A Cross-Country Analysis."

Fratzscher, M., Duca, M. L., Straub, Roland. (2013). "Working Paper Series on the International Spillovers of US Quantitative Easing." Working Paper Series No.1557/June 2013.

Ioannidis, C., Kontonikas, A. (2006). "Monetary Policy and the Stock Market: Some International Evidence."

Thorton, D. L. (2011). "The Identification of the Response of Interest Rates to Monetary Policy Actions Using Market-Based Measures of Monetary Policy Shocks," Federal Reserve Bank of St. Louis.

Rigobon, R., and B.P. Sack. (2004) "The Impact of Monetary Policy on Asset Prices," Journal of Monetary Economics, 51, 1553-75

Rigobon, R., Sack, B. (2003). "Measuring the Reaction of Monetary Policy to the Stock Market". *Quarterly Journal of Economics,* 118, 639-70.

Bjornland, H. C and Lietemo, K. (2009). "Identifying the Interdependence between US MonetaryPpolicy and the Stock Market." Journal of Monetary Economics, 56, 275-282.

Cassola, N., and Morana, C. (2004). "Monetary Policy and the Stock Market in the Euro Area." Journal of Policy Modelling, 26, 387-399.

Sellin, P. P. (2001). "Monetary Policy and the Stock Market: Theory and Empirical Evidence". Journal of Economic Surveys, 15(4), 491-541.

Meulendyke, A. (1998). "U.S. Monetary Policy and Financial Markets." New York: Federal Reserve Bank of New York.

Cook, T., and Hahn, T. (1989). "The Effect of Changes in the Federal Funds Rate Target on Market Interest Rates in the 1970s." Journal of Monetary Economics, 24. 331-351.

Bohl, M. T., Siklos, P. L., Sonderman, D. (2007). "Shocking Markets: European Stock Markets and the ECB's Monetary Policy Surprises." Wilfrid Laurier University Waterloo and Viessmann European Research Centre, Canada.

Flemming, M. , Remolana, E. (1999). "The Term Structure of Announcement Effects." Staff Report 76. Federal Reserve Bank of New York.

Demiralp, S., Jorda, O. (1999). "The Transmission of Monetary Policy via Announcement Effects." UC Davis Working Paper No.99-06.

Edelberg, W., Marshall, D. (1996). "Monetary Policy Shocks and Long-Term Interest Rates." Federal Reserve Bank of Chicago Economic Perspectives, 20(2), 2-17.

Jensen, G. R., Mercer, J. M. (1998). "Monetary Policy and the Cross-Section of Expected Stock Returns." *Journal of Financial Research*, 45 (2002), 125-139.

Becher, D.A., Jensen, G.R., Mercer, J.M. (2008). "Monetary Policy Indicators as Predictors of Stock Returns." *Journal of Financial Research*, 357-379.

Thorbecke, W. (1997). "On Stock Market Returns and Monetary Policy". *Journal of Finance,* 52(June), 635-54.

Craine, R., Martin, V. (2003). "Monetary Policy Shocks and Security Market Responses." *University of California, Berkeley Economic Working Paper.*

Ehrmann, M., Fratzscher, M. (2003). "Taking Stock: Monetary policy transmission and equity markets." Working Paper Series No.354/May 2004.

Bernanke, B., Gertler, M. (1999). "Monetary Policy and Asset Price Volatility." *Federal Reserve Bank of Kansas City Economic Review,* 17-51.

Durham, J. B. (2001). "The Effect of Monetary Policy and Monthly and Quarterly Stock Market Returns: Cross-Country Evidence and Sensitivity Analyses." Washington, D.C. : Divisions of Research & Statistics and Monetary Affairs, Federal Reserve Board.

Crowder, W. J. (2004). " The Interaction of Monetary Policy and Stock Returns." *Journal of Financial Research*, 29 (2006), 523-535

Chami, R., Cosimano, T. F., Fullenkamp, C. (1999). " The Stock Market Channel of Monetary Policy." IMF Working Paper No.99/22.

Bernanke, B. S. (2003). "Monetary Policy and the Stock Market: Some Empirical Results." *Remarks at the London School of Economics Pulic Lecture, England, London.*

Haldane, A. G., Read, V. (2000). " Monetary Policy Surprises and the Yield Curve." *Working Papers,* Bank of England.

Craine, R., Martin, V. L. (2007). "International Monetary Policy Surprise Spillovers." *Journal of International Economics*, 180-196

Poole, W., Rasche, R. H., Thornton, D. L. (2002). "Market Anticipations of Monetary Policy Actions." *Federal Reserve Bank of St. Louis Review,* 84, 65-93.

Appendix

Table 4.1

Maturity	**Intercept**	b	R^2	**SE**
3 month	-0.0013	**0.3438**	0.3515	0.0883
	(-0.11)	(3.90)		
6 month	-0.0095	**0.3330**	0.4227	0.0782
	(-0.99)	(4.26)		
12 month	0.0012	**0.1499**	0.0520	0.0754
	(0.07)	(2.00)		
2 year	-0.0039	0.1063	0.0755	0.0888
	(-0.43)	(1.20)		
5 year	0.0018	0.1037	0.0268	0.0808
	(0.10)	(1.28)		
10 year	-0.0109	0.2007	0.2288	0.0643
	(-1.13)	(3.12)		
SET	-0.2158	**-0.7771**	0.0118	1.1092
	(-1.11)	(-0.71)		

Notes: Parentheses contain t-statistics.

Table 5.1

Year	Date	Actual changes in policy rate	Unanticipated	Anticipated
2001	8/6/01	1	-0.57	1.57
	25/12/01	0.25	0.09	-0.34
2002	21/01/02	-0.25	0.00	-0.25
	19/11/02	-0.25	-0.03	-0.22
2003	27/06/03	-0.5	-0.31	-0.19
2004	25/08/04	0.25	0.07	0.18
	20/10/04	0.25	0.02	0.23
	15/12/04	0.25	0.04	0.21
2005	2/3/05	0.25	0.00	0.25
	9/6/05	0.25	0.01	0.24
	20/07/05	0.25	-0.01	0.26
	7/9/05	0.5	-0.04	0.54
	19/10/05	0.5	-0.03	0.53
	14/12/05	0.25	-0.04	0.29
2006	18/01/06	0.25	0.01	0.24
	8/3/06	0.25	0.02	0.23
	10/4/06	0.25	-0.05	0.30
	7/6/06	0.25	-0.01	0.26
2007	17/01/07	-0.25	-0.12	-0.13
	28/02/07	-0.25	-0.02	-0.23
	11/4/07	-0.5	0.08	-0.58
	23/05/07	-0.5	0.06	-0.56
	18/07/07	-0.25	-0.14	-0.11
2008	16/07/08	0.25	-0.01	0.26
	27/08/08	0.25	0.02	0.23
	3/12/08	-1	-0.62	-0.38
2009	14/01/09	-0.75	0.34	-1.09
	25/02/09	-0.5	0.05	-0.55
	8/4/09	-0.25	-0.04	-0.21
2010	14/07/10	0.25	0.04	0.21
	25/08/10	0.25	0.17	0.08
	1/12/10	0.25	0.18	0.07
2011	12/1/11	0.25	0.02	0.23
	9/3/11	0.25	0.10	0.15
	20/04/11	0.25	0.04	0.21
	1/6/11	0.25	0.11	0.14
	13/07/11	0.25	0.15	0.10
	24/08/11	0.25	0.13	0.12
	30/11/11	-0.25	0.03	-0.28
2012	25/01/12	-0.25	-0.13	-0.12
	17/10/12	-0.25	-0.23	-0.02
2013	29/05/13	-0.25	-0.04	-0.21
	27/11/13	-0.25	-0.28	0.03

Table 5.1.1

Maturity	Intercept	Response to target change:		Surprise-Expected=0	R^2	SE (surprise)
		Unanticipated	Anticipated	Prob>F		
3 month	-0.0041	**0.3561**	**0.0962**	0015	0.4853	0.0696
	(-0.41)	**(5.12)**	**(2.73)**			
6 month	-0.0111	**0.3402**	0.0567	0.0007	0.4822	0.0712
	(-1.24)	**(4.77)**	(1.99)			
12 month	-0.0002	**0.1960**	**0.0618**	0.0128	0.0951	0.0596
	(-0.01)	**(3.29)**	**(2.11)**			
2 year	-0.0057	**0.1638**	**0.0769**	0.0966	0.2679	0.0470
	(-0.67)	**(3.48)**	**(3.37)**			
5 year	0.0007	0.1399	0.0484	0.2910	0.0552	0.1076
	(0.04)	(1.30)	(1.49)			
10 year	-0.0121	**0.2372**	**0.0489**	0.0001	0.2950	0.0548
	(-1.29)	**(4.33)**	**(2.13)**			
SET	-0.2039	-1.1650	-0.5193	0.5660	0.0376	1.1699
	(-1.08)	(-1.13)	(-1.01)			

Notes: Parentheses contain t-statistics.

Table 5.2.1

Maturity	Responses				R^2
	Unanticipated	Dummy for unanticipated cut	Interaction term for unanticipated cut	Anticipated	
3 month	**0.1158**	0.0368	**0.4584**	0.0532	0.5791
	(0.96)	(1.40)	**(2.26)**	(1.35)	
6 month	**0.0441**	0.0209	**0.4914**	0.0122	0.5825
	(0.42)	(0.98)	**(2.57)**	(0.38)	
12 month	**0.3274**	0.0811	0.0266	0.0642	0.1743
	(1.98)	(1.57)	(0.14)	(2.02)	
2 year	**0.0959**	-0.0198	0.0396	0.0747	0.2803
	(0.74)	(-0.82)	(0.26)	(3.07)	
5 year	**0.6717**	0.0294	-0.6135	0.0705	0.1353
	(1.46)	(0.76)	(-1.34)	(1.50)	
10 year	**-0.0009**	0.0099	0.3303	0.0381	0.3608
	(-0.01)	(0.37)	(1.94)	(1.58)	

Notes: Parentheses contain t-statistics.

Unanticipated hike	Unanticipated cut
0.1158	**0.5742**
(0.96)	**(3.70)**
0.0441	**0.5355**
(0.42)	**(3.62)**
0.3274	**0.3539**
(1.98)	**(2.70)**
0.0959	**0.1355**
(0.74)	**(2.00)**
0.6717	**0.0583**
(1.46)	**(0.56)**
-0.0009	**0.3294**
(-0.01)	**(4.95)**

Figure 1

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No. 27 /2008

Monetary Policy Committee's Decision on 16 July 2008

Ms. Duangmanee Vongpradhip, Assistant Governor of the Monetary Policy Group, Bank of Thailand, announces that the Monetary Policy Committee (MPC) met today to assess the latest economic developments and trends in order to determine the appropriate monetary policy stance. The main issues discussed were as follows.

During the first two months of 2008 Q2, the Thai economy continued to expand from both domestic spending and exports, resulting in high capacity utilization and a low unemployment rate. However, there were indications that the rise in the cost of production and the acceleration in inflation have begun to affect business confidence, private consumption and investment spending, as well as price competitiveness of the export sector. Meanwhile, increasing uncertainty in global economic conditions would require close monitoring by the MPC.

Risks to inflation increased markedly in the previous quarter as a result of the continued rise in oil and raw food prices, as well as the rapid acceleration in pass-through from producer prices to the prices of other goods, which was facilitated by continued economic expansion. In addition, indicators of inflation expectations have risen, making it likely that inflation would remain elevated for a while.

The MPC deemed that the risks to inflation have risen markedly, which would affect private sector confidence, make it increasingly difficult to ensure economic stability going forward, and impact potential growth as well as the competitiveness of the Thai economy in the long run. The MPC therefore decided to raise the policy interest rate by 0.25 per cent, from 3.25 per cent to 3.50 per cent per annum, effective immediately.

The MPC would closely monitor the outlook for inflation and economic growth going forward and stands ready to adjust the monetary policy stance should inflationary risks continue to remain elevated.

Bank of Thailand
16 July 2008

Figure 2.

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No. 18 /2008

Monetary Policy Committee's Decision on 21 May 2008

Ms. Duangmanee Vongpradhip, Assistant Governor of the Monetary Policy Group, Bank of Thailand, announces that the Monetary Policy Committee (MPC) met today to assess the latest economic developments and trends in order to determine the appropriate monetary policy stance. The main issues discussed were as follows.

During the first quarter of this year, the Thai economy continued to expand from both private consumption and private investment, in line with the robust growth in imports of consumer and capital goods. However, exports began to show signs of moderation consistent with the slowdown in the global economy. In addition, rising costs of production and higher inflation could affect confidence and private spending going forward.

Risks to inflation increased markedly from the previous meeting. Headline inflation accelerated as a result of the significant increase in energy and raw food prices. Meanwhile, core inflation rose by more than expected, mainly as a result of higher pass-through of production costs, which could result in higher core inflation going forward.

The MPC deemed that the risks to economic growth and inflationary pressures had risen, and both would have to be monitored closely. At the moment, the MPC decided to keep the policy interest rate at 3.25 per cent per annum. However, should inflation continue to accelerate, the MPC would stand ready to adjust the monetary policy stance accordingly.

Bank of Thailand
21 May 2008

Table 6.1

Bonds(Using Baseline)				
Maturity	**Days w/ target change**		**Days w/o target change**	
	b	R^2	b	R^2
3 month	0.3438	0.3515	-0.0069	0.0024
	(3.90)		(-0.29)	
6 month	0.3330	0.4227	0.0146	0.0108
	(4.26)		(0.65)	
12 month	0.1498	0.0520	0.0614	0.0281
	(2.00)		(1.46)	
2 year	0.1063	0.0755	0.0008	0.0000
	(1.20)		(0.02)	
5 year	0.1037	0.0268	-0.0234	0.0024
	(1.28)		(-0.34)	
10 year	0.2007	0.2288	0.0503	0.0102
	(3.12)		(1.00)	
SET	-1.0736	0.0982	-6.5738	0.1893
	(-0.88)		(-1.88)	

Notes: Parentheses contain t-statistics.

Table 7.1

Maturity	**Intercept**	**Response**	**Chg_DXY**	R^2	**SE**
3 month	-0.0003	0.3461	0.0067	0.3527	0.0917
	(-0.02)	(3.77)	(0.24)		
6 month	-0.0088	0.3345	0.0045	0.4234	0.0804
	(-0.78)	(4.16)	(0.19)		
12 month	-0.0039	0.1350	-0.0421	0.0776	0.0787
	(-0.26)	(1.72)	(-0.99)		
2 year	-0.0030	0.1090	0.0077	0.0779	0.0898
	(-0.34)	(1.21)	(0.33)		
5 year	-0.0028	0.0903	-0.0380	0.0492	0.0692
	(-0.18)	(1.31)	(-0.83)		
10 year	-0.0117	0.1987	-0.0058	0.2300	0.0644
	(-1.03)	(3.09)	(-0.26)		

Notes: Parentheses contain t-statistics.

Table 7.2

Maturity	Intercept	Response: Unanticipatedd	Anticipated	D_Crisis	YldChg_ USBond	R^2	SE (surprise)
3 month	-0.0109	**0.3746**	0.1008	0.0077	-0.5816	0.4944	0.0679
	(-0.67)	(5.52)	**(1.40)**	(0.16)	(-0.63)		
6 month	0.0191	**0.2143**	-0.0295	-0.0706	1.1563	0.5352	0.0648
	(1.43)	(3.31)	**(-0.63)**	(-1.65)	(1.85)		
12 month	-0.0159	**0.2919**	0.1086	0.0338	-1.3776	0.1515	0.1061
	(-0.81)	(2.75)	**(1.71)**	(0.80)	(-0.90)		
2 year	-0.0031	**0.1546**	0.0699	-0.0072	-0.0268	0.2693	0.0404
	(-0.25)	(3.83)	**(1.88)**	(-0.26)	(-0.09)		
5 year	0.0248	0.0437	-0.0213	-0.0691	0.1396	0.0854	0.1233
	(1.12)	(0.35)	**(-0.41)**	(-1.26)	(0.64)		
10 year	-0.0209	**0.2719**	0.0749	0.0259	-0.0608	0.3049	0.0606
	(-1.38)	(4.48)	(2.04)	(0.91)	(-0.48)		

Table 7.3

	Intercept	Raw change	Responses: b_1	b_2	DXY	S&P 500	D_Crisis	R^2	SE (surprise)
1) Control for DXY									
1.1) SET	-0.3176	-1.0736			-0.8414			0.0982	1.2241
	(-1.48)	(-0.88)			(-1.69)				
1.2) SET	-0.3199		-1.7286	-0.7965	-1.0122			0.1552	1.0749
	(-1.59)		(-1.61	(-1.30)	(-2.07)				
2) Control for both DXY and Crisis									
SET	-0.6229		-0.5949	0.0350	-1.0301		0.8403	0.1912	1.3836
	(-2.23)		(-0.43)	(0.04)	(-2.20)		(1.53)		
3) Control for both DXY and Spillover									
SET	-0.2908		-1.8943	-0.8153	-1.1063	0.0984		0.1675	1.2173
	(-1.39)		(-1.56)	(-1.37)	(-1.97)	(-0.54)			
4) Control for DXY, Crisis, and Spillover									
SET	-0.6468		-0.4519	0.2025	-1.1294	0.1167	1.0671	0.2192	1.6627
	(-2.24)		(-0.27)	(0.22)	(-2.15)	(-0.66)	(1.66)		

Notes: Parentheses contain t-statistics.