The Reaction of Stock Prices to Monetary Policy Shocks in Malaysia: A Structural Vector Autoregressive Model

Roohollah Zare, M. Azali and M. S. Habibullah

Abstract

This study examines the response of stock prices to monetary policy shocks using the structural vector autoregressive (SVAR) model with short-run restrictions appropriate for Malaysia. The empirical results for the period 1990:1-2011:12, show that the response of stock prices to positive changes in short-term interest rate (money supply) is negative (positive) and statistically significant only in the short-run consistent with the prediction of asset pricing theories. The response of stock prices to shocks from other variables considered in the model indicate that the largest response is to the unexpected increase in the exchange rate which is negative and statistically significant during the entire forecast horizon followed by the response to oil price shocks (supply shocks) which is negative and statistically significant up until the seventh month after the shock.

Keywords: Monetary policy; stock prices; structural vector autoregressive

1. Introduction

Investigating the response of stock prices to monetary policy shocks has been of great importance for monetary policymakers to implement effective policy decisions and for financial markets participants to formulate successful investment and risk management decisions. This investigation is also important for understanding the monetary policy transmission mechanism. Monetary policy shocks are passed through the real economy with considerable delay but stock prices are much more reactive to monetary policy shocks in that asset prices are forward looking and tend to quickly respond to new information. Moreover, monetary policy actions affect its ultimate objectives indirectly through stock market via the wealth effect on consumption, Tobin’s Q effect and the financial accelerator effect on investment.

Mishkin (2007) broadly describe two channels through which monetary policy affects the stock prices: the asset pricing channel and the financial leverage channel. In the former, the price of equity at any point in time is equal to the discounted present value of expected future cash flows (including capital gains and dividends) to shareholders:

\[
Q_t = E_t \{ \sum_{k=1}^{\infty} \frac{C_{t+k}}{(1+r+t+k)^R} \}
\]

Where \(Q_t\) is the current price of stock, \(C\) denotes the cash flows associated with it, \(r\) is the interest rate to discount the future and \(E_t\) is the expectations operator based on the information set available at time \(t\). From this simple
model, monetary policy decisions (change in policy rate or money supply) can affect stock prices directly through the discount rate \((1 + r_{t+k})^k\), and indirectly by influencing expectations of future cash flows. A rise in the interest rate implies a higher cost of investment, which in turn decreases expected future cash flow, leading to lower stock prices. From the latter channel, monetary policy can influence the cost of firm’s financial activities through issuing debt. Mishkin (1996) also elaborated two views through which monetary policy can influence stock prices: the monetarist view and the Keynesian view. From the monetarist view, expansionary monetary policies increase the optimum money balances and hence enhance the demand for equities and raising their prices. Keynesian argues that the fall in interest rates stemming from expansionary monetary policies making bonds less attractive than equities causing the price of equities to rise.

The purpose of this study is to examine the response of stock prices to domestic monetary policy shocks in Malaysia. To this end, the structural vector autoregressive model (SVAR) by means of short-run restrictions is employed following Li et al. (2010), Raghavan et al. (2012) and Pirovano (2012) and the impulse-response functions and forecast error variance decompositions are examined. The empirical results for the period 1990:1-2011:12, indicate that the response of stock prices to positive changes in short-term interest rate (money supply) is negative (positive) and statistically significant only in the short run consistent with the prediction of asset pricing theories. The rest of the paper is structured as follows. In the next section the related literature is reviewed. Section 3 describes the baseline SVAR mode, identifying restrictions and data description and sources. Empirical results are presented in section 4. The robustness check of our empirical results to alternative identification schemes are presented in Section 5 and section 6 concludes.

2. Literature Review

The relationship between monetary policy and stock prices is widely investigated in the literature, relying on different econometric approaches. Thorbecke (1997), Patelis (1997) and Park and Ratti (2000) by estimating VAR models found that a restrictive monetary policy leads to a fall in stock prices. The same conclusion is reached by Rapach (2001) who identified the shocks using VAR model with long-run restrictions. These results are confirmed by Neri (2004), Li et al. (2010) and Pirovano (2012) relying on the methodology of structural VAR by adopting an identification scheme based on short-run restrictions.

Neri (2004) found that a restrictive monetary policy shock negatively affect stock prices in the G7 countries and Spain. Since the sensitivity of stock prices to monetary policy shocks may vary across different economies, Li et al. (2010) investigated this sensitivity in a small open economy (Canada) and a large and relatively closed economy (the United States) and that whether trade openness and financial market openness matter for the response of stock prices to monetary policy shocks. The empirical results of this study indicate that while in the United States the response of stock prices to monetary policy shocks is large and relatively prolonged, in the Canada the response is smaller and less persistent. Moreover, unexpected changes in the U.S. Federal Funds rate significantly affect Canadian stock prices. Pirovano (2012) focused on the four new Euro Area (EU) member states of Central Europe, the Czech Republic, Hungary, Poland and Slovenia, and found that in these countries stock prices are more sensitive to changes in the EU interest rate than to the domestic one which is explained by the high degree of openness to international financial markets and a large share of capital inflows to GDP in these economies.

Two main contributions in the response of stock prices to monetary policy shocks have been made in the literature. The first one addresses the problems of endogeneity and omitted variables bias by employing very high frequency dataset including daily and intraday data. This approach focuses on periods immediately surrounding changes in the monetary policy instrument and often referred to as the event study approach in the literature (see for instance Rigobon and Sack 2003; Bernanke and kuttner 2005; Farka 2009; Chulia et al. 2010 among others). However, as argued by Tsai (2011) a very high frequency event study methodology can only estimate the immediate impact of monetary policy on stock returns and is not able to estimate the dynamic response of stock returns to monetary policy shocks. This limitation and the unavailability of high frequency dataset in Malaysia motivate us to employ a
lower frequency dataset (monthly data) for investigating the dynamic impact of monetary policy on stock returns in Malaysia.

The second focuses on the unanticipated component of monetary policy shocks. Bernanke and Kuttner (2005) argued that stock market is unlikely to respond to anticipated monetary policy shocks. They adopted the methodology proposed by Kuttner (2001) to isolate the surprise monetary policy shocks from Federal funds future data. After controlling this issue the important finding is that stock prices only respond to the surprise component of monetary policy shocks (Bernanke & Kuttner, 2005; Chulia et al., 2010; Ehrmann & Fratzscher, 2004; Guo, 2004; Rigobon & Sack, 2004). This research do not follow this methodology for identification of the surprise component of monetary policy since unlike the developed economies, short term interest rate future contacts are not available in Malaysia.

The studies reviewed so far, examine the impact of monetary policy on stock returns in developed economies especially in the case of US. In the context of developed and small open economies such as Malaysia that is considered in this research, the empirical evidences are limited. See for instance Vithessonthi and Techarongrojwong (2012) who studied the response of stock returns to monetary policy in Thailand. Since the nature of financial markets and economic frameworks in developing countries differs from that of developed countries, the above findings may not be exactly relevant for small and developing economies.

3. Methodology

In this study the response of stock prices to monetary policy shocks in Malaysia is examined based on the identification and estimation of a structural vector autoregressive (SVAR) model with short-run restrictions.

3.1. The structural vector autoregressive (SVAR) model

The starting point of the analysis is a VAR model with the following structural form:

\[ B_{x_t} = \Gamma_0 + \Gamma_1 x_{t-1} + \Gamma_2 x_{t-2} + \cdots + \Gamma_p x_{t-p} + \epsilon_t \]

where \( x_t \) is a vector of endogenous variables, \( \Gamma_i \) is a matrix of parameters for \( i = 0,1, \ldots, p \). \( B \) is the matrix of contemporaneous coefficients. \( \epsilon_t \) is a vector of structural innovations with properties: \( E(\epsilon_t) = 0 \) and variance-covariance matrix \( E(\epsilon_t \epsilon_t') = \Sigma \). Pre-multiplication by \( B^{-1} \) allows us to obtain the VAR model in reduced form.

\[ x_t = A_0 + A_1 x_{t-1} + A_2 x_{t-2} + \cdots + A_p x_{t-p} + \nu_t \]

where \( A_i = B^{-1} \Gamma_i \), \( \nu_t = B^{-1} \epsilon_t \) and \( E(\nu_t \nu_t') = \Omega \). Thus, \( \Omega = B^{-1} \Sigma (B^{-1})' \). \( \Omega \) contains \( (n^2 + n)/2 \) distinct elements. \( B \) contains \( n^2 - n \) unknown values. In addition, there are \( n \) unknown values in \( \Sigma \). Therefore, in order to identify the \( n^2 \) unknowns from the known \( (n^2 + n)/2 \) distinct elements of \( \Omega \), it is necessary to impose suitable and economically meaningful \( (n^2 - n)/2 \) restrictions on the \( B \) matrix of contemporaneous coefficients.

3.2. Data description and sources

This study utilizes the monthly data of Malaysian economy spanning from 1990:1 to 2011:12. The dataset is retrieved from DataStream. The variables considered in the SVAR model are in order: oil price index (oil), the US Federal funds rate (ffr), domestic output (y) proxied by industrial production index, consumer price index (p), money aggregate (m) including money and quasi-money, the short-term interest rate (r) as the suitable monetary policy indicator in Malaysia measured by the 3-month Treasury bill rate due to the availability of data in the sample period, the nominal exchange rate (e) expressed as the domestic currency price of one unit US dollar and the Kuala
Lumpur Composite Index (sp) to measure the stock prices as the variable of interest. In our empirical analysis, all the variables are expressed in natural logarithms, except the interest rates (ffr and r).

### 3.3. Identification

In order to identify the structural shocks, this study imposes short-run restrictions on the $B$ matrix following Li et al. (2010), Pirovano (2012) and Raghvan et al. (2011). The identification restrictions are summarized in Equation (4):

$$
\begin{bmatrix}
\varepsilon_{oil} \\
\varepsilon_{ffr} \\
\varepsilon_y \\
\varepsilon_p \\
\varepsilon_m \\
\varepsilon_r \\
\varepsilon_e \\
\varepsilon_{sp}
\end{bmatrix} =
\begin{bmatrix}
1 & 0 & 0 & 0 & 0 & 0 & 0 \\
b_{21} & 1 & 0 & 0 & 0 & 0 & 0 \\
b_{31} & 0 & 1 & 0 & 0 & 0 & 0 \\
b_{41} & 0 & 1 & 0 & 0 & 0 & 0 \\
0 & 0 & b_{53} & b_{54} & 1 & b_{56} & 0 \\
0 & 0 & 0 & 0 & b_{65} & 1 & b_{67} \\
b_{71} & b_{72} & b_{73} & b_{74} & b_{75} & b_{76} & 1 \\
b_{81} & b_{82} & b_{83} & b_{84} & b_{85} & b_{86} & b_{87} & 1
\end{bmatrix}
\begin{bmatrix}
\nu_{oil} \\
\nu_{ffr} \\
\nu_y \\
\nu_p \\
\nu_m \\
\nu_r \\
\nu_e \\
\nu_{sp}
\end{bmatrix}
$$

(4)

According to Equation (4) $oil$ is considered contemporaneously exogenous to all other variables in the model, while the $ffr$ is assumed to be contemporaneously affected by $oil$ due to instantaneous response of the Federal Reserve to oil price-related inflationary shocks. As argued by Raghvan et al. (2011) firms do not change their outputs and prices within a month in response to unexpected changes in financial signals or monetary policies. However, firms are expected to respond immediately to oil price shocks as oil is a crucial raw material for most economic sectors in Malaysia. Hence, $y$ is assumed to be contemporaneously affected only by $oil$ while, $p$ is contemporaneously influenced by $y$ and $oil$.

The Central Bank’s policy instruments, $m$ and $r$, are assumed to be the feedback rule of Bank Negara Malaysia (BNM) to the state of the economy and to foreign factors. $m$ assumed to be contemporaneously dependent on $y$, $p$ and $r$ representing equilibrium on the money market. For the $r$ equation, the contemporaneous identification includes $m$ and $e$. Domestic output and prices are not included in the $r$ equation since it is assumed that the BNM does not observe the current values of real output and the price level at the time of policy implementation, which are observable only after a lag. This assumption is reasonable in light of the monthly frequency of our dataset. The inclusion of the $e$ in the $r$ equation is motivated by the choice of exchange rate regime in Malaysia. As argued by Pirovano (2012) an increase in the exchange rate (depreciation of domestic currency) increases import prices. The Central Bank is then supposed to react to the inflationary pressures by tightening monetary policy.

The variable $e$ is defined as in Li et al. (2010) to be conditional on the contemporaneous values of all the variables in the system, except the stock prices. In fact, it is assumed that the exchange rate market is strongly efficient and incorporating all publicly and privately available information in the market. The variable of interest, stock price index, is left completely unrestricted. The rationale for this assumption is that stock prices are forward-looking and at a given time quickly respond to new information available in the market.

### 4. Empirical results

#### 4.1. Preliminary analysis

Before proceeding to the SVAR model, it is necessary to perform a priori analysis of the variables temporal properties. Given that the validity of VAR in level requires co-integration among the variables, the SVAR specification is preceded by standard unit root and co-integration tests. The results of the augmented Dickey-Fuller
Title of the study

and Phillips-Perron test indicate that all the variables are integrated of order one. The Johansen co-integration test shows that these variables are co-integrated. Therefore, the SVAR approach provides consistent estimates of the parameters.

The SVAR model is estimated with six lags. The lag length is chosen based on the requirement that the error terms need to be serially uncorrelated. Exact identification of this eight-variable SVAR model requires imposing \( (8^2 - 8)/2 = 28 \) restrictions on contemporaneous matrix while, in Equation (4) 33 restrictions are imposed, leading to over-identification conditions. The results of the LR test reported in Table 1 confirm the validity of the over-identifying restrictions. To account for the 1997-98 Asian financial crisis and 2007 global financial crisis two dummy variables are included in the model which take the value of one during the crises and zero otherwise.

| Table 1. LR test for over-identifying restrictions |
|---------------------------------|------------------|------------------|
| Baseline model | Alternative 1 model | Alternative 2 model |
| Chi-square(5) | 4.48 | 1.21 | 12.72 |
| P-value | 0.48 | 0.75 | 0.12 |

Note: the null hypothesis is that the over-identified restrictions are valid.

4.2. Impulse responses

The response of stock price index to a one standard deviation shock to domestic monetary policy measured by short-term interest rate and money supply (M2) is displayed in Figure 1. The estimated responses for a forecast horizon of 36 months show that an unexpected increase in the short-term interest rate (a contractionary monetary policy) leads to a negative and statistically significant drop in the stock price index until the fourth month after the shock and reaches a peak at the third month after the shock (-0.023). The estimated response remains negative (albeit it is not statistically significant) up until the eighth month after the shock. The estimated response is positive but statistically insignificant for the rest of the 36 month forecast horizon. The negative response of stock prices to short-term interest rate is consistent with the findings of Rigobon and Sack (2003), Bernanke and Kuttner (2005), Farka (2009), Chulia et al. (2010), Neri (2004), Li et al. (2010) and Pirovano (2012) among others. The response of the stock price index to a one standard deviation shock to money supply is positive during the entire forecast horizon but becomes statistically significant only from the third month up until the ninth month after the shock and reaches a peak at the seventh month after the shock (0.023). The positive association between the money supply and stock prices is consistent with the findings of Chen (2007) and Ibrahim and Yusoff (2001) among others. The positive (negative) response of stock prices to money supply (short-term interest rate) shocks is in accord with the prediction of asset pricing theories.

† The results of unit root and co-integration tests are not reported here to conserve space but are available upon request.
Figure 1: Responses of the stock price index (sp) to a one standard deviation innovation to other variables considered in the model. 
Note: intervals between the dashed lines correspond to two standard errors.
The dynamic responses of the stock price index to shocks from other variables considered in the model are also reported in Figure 1. As depicted in the Figure the largest and statistically significant response of stock price index is to the unexpected increase in the exchange rate. The estimated response is negative and statistically significant during the entire forecast horizon considered in the study and reaches a peak at the tenth month after the shock (-0.03). The negative response of Malaysian stock price index to the unexpected increase in the exchange rate is also reported by Ibrahim and Yusoff (2001). This negative response can be explained by the choice of the managed float exchange rate regime in Malaysia. As argued by Pirovano (2012) an increase in the exchange rate raise import prices. The Central Bank is then supposed to react to the inflationary pressures by tightening monetary policy, which in turn decreases stock prices according to the stock valuation model.

The response of stock price index to oil price shocks (supply shocks) is negative and statistically significant up until the seventh month after the shock and reaches a peak at the third month after the shock (-0.022). The negative impact of oil price shocks on stock prices can be explained by the fact that oil price shocks induce stock prices to decline by creating uncertainty in the financial markets. This negative impact is also justified due to the lower production and higher inflation caused by higher oil prices (Filis, 2010). Jones and Kaul (1996) argued that according to the stock valuation model, oil prices cause stock prices to change by affecting future cash flows of firms. The negative relationship between oil price shocks and stock prices is also documented by Ciner (2001) and Nandha and Faff (2008).

The response of stock price index to other variables is not statistically significant in the sample period except for the case of domestic prices which has a positive and significant impact on stock prices only at the second month after the shock. The positive response of Malaysian stock price index to domestic prices is also documented by Ibrahim and Yusoff (2001), but the response is significant up until the sixth month after the shock. The positive association between stock prices and domestic prices can be described by the generalized Fisher hypothesis. Accordingly, stocks may serve as a good hedge against inflation.

4.3. Variance decompositions

Table 2 reports the contribution of the variables considered in the model to the fluctuations of stock price index in terms of forecast error variance decomposition. As expected, the largest fraction of fluctuations of stock price index is contributed to the shocks to stock price index itself. As depicted in the Table 1 the contribution of the shocks to the stock price index to its variations is about 76% in the first month after the shock, but declines monotonically to about 27% in the 36th month after the shock. The second most important shock in explaining the fluctuations in stock price index is shock to the nominal exchange rate which contributes to about 13%, 16% and 19% of variations in stock price index in the first, third and sixth month after the shock respectively. However, its contribution increases to about 34% in the 36th month after the shock.

The contribution of domestic monetary policy shocks (short-term interest rate) to the variance of stock prices is about 6% for the first month and increases to about 7% in the 6th month. It declines to about 5% after one year, but then again increases to about 10% after three years. The contribution of money supply (M2) shocks to the fluctuations of stock price index is small in the first month after the shock (about 0.50%) but increases to about 7% and 9% in the third and sixth month and remains around 9% in the long-run. The contribution of oil price index to the variance of stock prices is about 1% for the first month and increases monotonically to about 11% after one years and then again decreases to about 8% in the long-run. Other variables considered in the model are not too important in explaining the variation of stock prices. However the contribution of these variables to the variance of stock prices is greater in the long-run than in the short-run.
Table 2. The forecast error variance decomposition of stock price index

<table>
<thead>
<tr>
<th>Months ahead</th>
<th>Standard error</th>
<th>oil</th>
<th>ffr</th>
<th>y</th>
<th>p</th>
<th>m</th>
<th>r</th>
<th>e</th>
<th>sp</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.083</td>
<td>0.729</td>
<td>0.062</td>
<td>2.382</td>
<td>0.392</td>
<td>0.504</td>
<td>6.373</td>
<td>13.169</td>
<td>76.387</td>
</tr>
<tr>
<td>3</td>
<td>0.150</td>
<td>6.154</td>
<td>0.425</td>
<td>4.437</td>
<td>2.133</td>
<td>1.985</td>
<td>7.781</td>
<td>16.485</td>
<td>60.697</td>
</tr>
<tr>
<td>6</td>
<td>0.189</td>
<td>9.309</td>
<td>0.342</td>
<td>6.046</td>
<td>2.775</td>
<td>6.630</td>
<td>7.486</td>
<td>19.547</td>
<td>47.864</td>
</tr>
</tbody>
</table>

5. Robustness check

We check the robustness of our empirical results to two alternative restrictions on the $B$ matrix of contemporaneous coefficients labeled as alternative 1 and 2. In the first alternative, the assumption that the BNM does not observe the current values of real output and domestic prices is relaxed and the reaction function of the BNM is augmented by including the current values of real output and domestic prices. In the second alternative, the hypothesis that the exchange rate market is strongly efficient is relaxed and exchange rate is defined to be contemporaneously influenced only by the foreign interest rate. This specification is motivated because a contemporaneous shift in the foreign interest rate and hence a change in the interest rate differential produces capital flows that put pressures on the value of the currency (Pirovano, 2012). The alternative identifying restrictions are summarized as follows:

\[
\begin{bmatrix}
\varepsilon_{oil} \\
\varepsilon_{ffr} \\
\varepsilon_{y} \\
\varepsilon_{p} \\
\varepsilon_{m} \\
\varepsilon_{r} \\
\varepsilon_{e} \\
\varepsilon_{sp}
\end{bmatrix}
= 
\begin{bmatrix}
1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & b_{21} & 1 & 0 & 0 & 0 & 0 & 0 \\
0 & b_{31} & 0 & 1 & 0 & 0 & 0 & 0 \\
0 & 0 & b_{41} & 0 & b_{43} & 1 & 0 & 0 \\
0 & 0 & b_{41} & 0 & b_{43} & 1 & 0 & 0 \\
0 & 0 & 0 & b_{71} & b_{72} & b_{73} & b_{74} & b_{75} & b_{76} & 1 & 0 \\
0 & 0 & 0 & b_{81} & b_{82} & b_{83} & b_{84} & b_{85} & b_{86} & b_{87} & 1
\end{bmatrix}
\begin{bmatrix}
\nu_{oil} \\
\nu_{ffr} \\
\nu_{y} \\
\nu_{p} \\
\nu_{m} \\
\nu_{r} \\
\nu_{e} \\
\nu_{sp}
\end{bmatrix}
\]

Alternative 1

\[
\begin{bmatrix}
\varepsilon_{oil} \\
\varepsilon_{ffr} \\
\varepsilon_{y} \\
\varepsilon_{p} \\
\varepsilon_{m} \\
\varepsilon_{r} \\
\varepsilon_{e} \\
\varepsilon_{sp}
\end{bmatrix}
= 
\begin{bmatrix}
1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & b_{21} & 1 & 0 & 0 & 0 & 0 & 0 \\
0 & b_{31} & 0 & 1 & 0 & 0 & 0 & 0 \\
0 & 0 & b_{41} & 0 & b_{43} & 1 & 0 & 0 \\
0 & 0 & b_{41} & 0 & b_{43} & 1 & 0 & 0 \\
0 & 0 & 0 & b_{71} & b_{72} & b_{73} & b_{74} & b_{75} & b_{76} & 1 & 0 \\
0 & 0 & 0 & b_{81} & b_{82} & b_{83} & b_{84} & b_{85} & b_{86} & b_{87} & 1
\end{bmatrix}
\begin{bmatrix}
\nu_{oil} \\
\nu_{ffr} \\
\nu_{y} \\
\nu_{p} \\
\nu_{m} \\
\nu_{r} \\
\nu_{e} \\
\nu_{sp}
\end{bmatrix}
\]

Alternative 2

Figure 2 reports the estimated dynamic responses of stock price index to a one standard deviation shock to the domestic short-term interest rate and money supply for the alternative models. As we can see by comparing Figures 1 and 2, the estimated responses are qualitatively and quantitatively robust throughout all specifications. In both
alternative models the estimated response of stock price index to short-term interest rate (money supply) is negative (positive) and statistically significant in the short run showing a tendency to revert to the pre-shock level in the long-run. The results of the LR test reported in Table 1 confirm the validity of the over-identifying restrictions in alternative models.

![Figure 2: Responses of the stock price index to a one standard deviation innovation to the domestic interest rate and money supply in alternative models](image)

Note: intervals between the dashed lines correspond to two standard errors. (a) and (b) correspond to alternative 1 and 2 models, respectively.

### 6. Conclusion

This paper examines the response of stock prices to monetary policy shocks in Malaysia for the period 1990:1 to 2011:12 by employing the methodology of structural VAR with short-run restrictions. The empirical results of this study indicate that the responses of the stock price index to a one standard deviation shock to the domestic short-term interest rate (a contractionary monetary policy) is negative and statistically significant up until the fourth month after the shock. The estimated response remains negative (albeit it is not statistically significant) up until the eighth month after the shock and shows a tendency to go back towards the pre-shock equilibrium in the forecast horizon of the 36 months. An unexpected increase in the money supply (M2) leads to a positive increase in the stock price index and becomes statistically significant only from the third month up until the ninth month after the shock. For the rest of the time horizon it remains positive albeit the response decreases and reaches to the pre-shock equilibrium in the forecast horizon of 36 months. The negative (positive) response of stock prices to the short-term interest rate (money supply) is consistent with the prediction of asset pricing theories.

The dynamic responses of the stock price index to shocks to other variables in the model indicate that the largest and statistically significant response of stock price index is to the unexpected increase in the exchange rate. The
estimated response is negative and statistically significant during the entire forecast horizon considered in the study which peaks at the tenth month after the shock and then subsides gradually afterward. The response of stock price index to oil price shocks (supply shocks) is negative and statistically significant up until the seventh month after the shock and reaches a peak at the third month after the shock. The response of stock price index to other variables is not statistically significant in the sample period except for the case of domestic prices which has a positive and significant impact on stock prices only at the second month after the shock. Moreover, in terms of forecast error variance decomposition, the shocks to the exchange rate is the second most important shock in explaining the fluctuations in stock prices followed by shocks to the monetary policy instruments.

References


