Market Volatility and Asymmetric Pass-through of Monetary Policy to Retail Rates in Kenya

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Abstract

This paper examines the transmission mechanism of monetary policy in two stages: the pass-through and adjustment speed of short-term interest rates to changes in the central bank rate, and the adjustment of the bank retail rates to short-term rates. In addition, the study assesses the impact of the interest rate volatility on the asymmetric adjustment process. We find evidence of asymmetric adjustment of interbank rate to the central bank; and the lending and deposit rates to the interbank rate. The lending rates are rigid downwards and deposit rates rigid upwards, pointing to existence of collusive pricing behaviour and/or high switching costs. Volatility of the interest rates affects the adjustment process of the interbank rate to the policy rate; the deposit and lending rate to the interbank rate; and the response of the deposit rate to both the 9-day Treasury bill rate and the repo rate. Overall, the results show that although monetary policy does pass-through to the retail rates, the transmission is incomplete and with lags. The magnitude of the pass-through and the lags show an improvement of the interest rate channel of monetary policy compared to estimates from earlier studies.

Key words: Interest Rate Pass-through, Asymmetric Adjustment and Market Volatility

JEL: E43 E52 D53
1.0 Introduction

Independent central banks emphasise on transparency of communication with the public in order to enhance the effectiveness of monetary policy. The signalling mechanism of monetary policy is therefore of vital importance as it conveys the central bank’s intent based on its assessment of the economy and its future outlook. Embedded in the signalling mechanism is the pass-through of the policy rate to retail rates. The speed of the pass-through and margins of the short-term interest rate to the retail interest rate is usually taken as an indication of the effectiveness of monetary policy (Becker, et al. 2012; De Bondt, 2005). This is because it is the retail rates that truly influence the market demand and supply of loans and deposits, and therefore, have the real impact on economic activity such as inflation, investment and overall output growth.

The recent global economic downturns put monetary policy in a new spotlight. Economists view monetary policy as the first line of defence against economic slowdowns, especially if quick action is needed to stabilize the economy. However, how fast economic stability is achieved depends on the pass-through to bank retail rates. While the monetary policy mechanisms in developed countries are quite robust, they tend to be weak in the case of developing economies (see Mishra et al. 2014; and Mishra and Montiel, 2013) and in highly segmented interbank markets (Duffie, et al., 2005). In Kenya, Odour, et al., (2014) show that the interbank market segmentation impedes the effectiveness of monetary policy especially during periods of liquidity volatility. At the policy makers’ level, there are concerns regarding the pass-through of the policy rate. A recent Central Bank of Kenya’s monetary policy statement notes that “…..measures taken in the previous meetings were yet to be fully transmitted to the economy” (August 5, 2015). This implies that evidence of pass-through of past changes in policy rate to lending rates is a prerequisite for further monetary policy action.

Kenya’s monetary policy framework has been evolving since the mid-1990s (see Nyamongo et al., 2015 and Adam et al., 2010 for a review). The latest effort to improve the transmission of monetary policy has been the introduction of the Kenya Bankers Reference Rate (KBRR) in July 2014. The KBRR was aimed at providing a transparent credit pricing framework and enhance transmission of monetary policy signals into changes in banks’ lending rates. Amidst the changes to the policy framework therefore, is the need to provide continuous empirical evidence on the
effects of monetary policy on the economy. Other studies in this area include (Mwega, 2014; Maturu and Ndirangu, 2014; Maturu et al., 2010; Misati, et al., 2010 and Cheng, 2006). This paper provides new evidence on monetary policy transmission in Kenya using monthly data from 2006M6 to 2015M8; that is, the period when the central bank rate (CBR) has been the main signalling instrument of monetary policy. The influence of monetary policy on conditions of the money market is through the short-term money market interest rates. These include the interbank rate, the 91-day Treasury bill rate (TB-91) and the REPO rate. This is the first stage of the interest rate pass-through. Changes in the short-term rates, in turn, affect retail bank interest rates. This study examines the magnitude and speed of the pass-through process.

Several studies believe that the reason why the pass-through process may be incomplete is because the retail interest rate adjustment process is asymmetric (e.g. see (Hannan and Berger, 1991; and Neumark and Sharpe, 1992). Another factor that may impact on the effectiveness of monetary policy is volatility of the market interest rates (e.g. see Mojan, 2000 and Ehrmann et al., 2003). Collusion or contest among commercial banks results in constantly changing financial market information which can lead to interest rates fluctuations. All these contribute to the non-linear adjustment process and hence the asymmetric long-run equilibrium. Nevertheless, the response of banks’ rates to changes in the policy rate need not be instantaneous or symmetric to ensure an unimpaired transmission mechanism, as long as the lag structure and asymmetry pattern is known to policy makers. This study provides recent evidence on policy rate pass-through to short-term rates and retail rates taking into account these sources of rigidities.

Specifically, the study:

(i) Examines the extent and speed of the pass-through of the policy rate to short-term rates; and from the short-term rates to the retail bank rates;

(ii) Assesses the symmetry of the pass through, i.e. whether episodes of monetary tightening and loosening have different effects on bank interest rates?

(iii) Evaluates the impact of interest rate volatility on the adjustment process and hence the effectiveness of monetary policy.
2.0 Methodology

The long-term relationship between the short-term rates (retail interest rates) and the policy rate (short-term rates) is expressed as:

\[ MR_t = \alpha_0 + \alpha_1 PR_t + e_t \]  

(1)

where \( MR_t \) is the money market or the short-term rates (interbank, TB-91 or the REPO rates) at time \( t \), and \( PR \) is the policy rate (CBR). In the second stage of the interest rate pass-through, we replace money market rates with the retail interest rate (lending or the deposit rate) and CBR with MR. \( \alpha_0 \) denotes the fixed markup/markdown on the money market rate (retail interest rate); parameter \( \alpha_1 \) measures the degree of policy rate (or corresponding money market rate) pass through; with \( \alpha_1 < 0 \) indicating incomplete pass-through, \( \alpha_1 = 0 \) complete pass-through and \( \alpha_1 > 0 \) an over-pass-through. For integrated interest rates, the error term, \( e_t \), is expected to be stationary.

In order to examine the short-run and the long-run dynamics between the policy rate (short-term rates) and the short-term rates (retail rates), we transform equations 1 into an autoregressive distributed lag (ARDL) specification with the corresponding error correction model (ECM) form given in equation 2 below. The ARDL cointegration approach has an advantage over the traditional cointegration method in that it can be used with a mixture of data series that are integrated of different order; for example, I(0) and I(1) series (Pesaran and Shin, 1999; and Pesaran et al., 2001). The second advantage is that the ARDL test is relatively more efficient in the case of small and finite sample sizes.

\[ \Delta MR_t = \beta_0 \Delta PR_t + \sum_{i=1}^{q} \beta_i \Delta PR_{t-i} + \sum_{i=1}^{\lambda} \lambda_i \Delta MR_{t-i} + \rho (MR_{t-1} - \alpha_0 - \alpha_1 PR_{t-1}) + v_t \]  

(2)

The expression \( (MR_{t-1} - \alpha_0 - \alpha_1 PR_{t-1}) = \tilde{e}_{t-1} \) represents the extent of the disequilibrium at time \((t-1)\) and is the residual \( \tilde{e}_t \) of the long-run relation in equation (1) but with the coefficient estimates obtained from the ARDL estimator. \( v_t \) is the error term. \( \beta_0 \) measures the immediate or short-term impact and \( \alpha_1 \) captures the degree of the long-run pass-through. \( \beta_i \) and \( \lambda_i \) are dynamic adjustment coefficients. \( \rho \) represents the error correction adjustment speed when the
rates are away from the equilibrium level. For instance, the greater the demand elasticity for bank loans and deposits, the higher the cost of keeping the retail bank rates out of equilibrium, and the faster the adjustment of retail rates to changes in money market rates. According to Hendry (1995), the speed with which the retail bank rates (market rates) respond to the market rates (policy rate) can be measured by the weighted average of all lags or the mean adjustment lag (MAL) computed as†:

\[ \text{MAL} = (\beta_0 - \alpha_1)/\alpha_1 \rho \]  

(3)

Testing for Asymmetric Adjustment

The traditional linear cointegration and error correction model (ECM) commonly used to assess the interest rate pass through may yield biased results because it relies on symmetric cointegration tests of Engel and Granger (1987). These methods only capture the linear long-run relationship between variables, but ignore the nonlinear relationship between the retail rates and policy rate or money market rate (Enders & Siklos, 2001; Payne & Waters, 2008). Enders and Siklos (2001) provided an alternative test which incorporates asymmetric adjustment process in the short-run. These include methods such as the threshold auto-regressive (TAR) and momentum threshold auto-regressive (MTAR) and have been extensively used by influential studies (e.g. Becker et al., 2012; Wang & Lee, 2009). The methods have the potential to capture endogenous and exogenous threshold values. The TAR model captures the deviation from the equilibrium in level while M-TAR captures accumulation of change in the deviation. The MTAR adjustment can be especially useful when policy makers are viewed as attempting to smooth out any large charges in a series (Enders & Siklos, 2001) and when the adjustment is believed to exhibit more momentum in one direction than the other (Payne & Waters, 2008). We adopt the MTAR approach in this paper to compute the thresholds. The main strength of the threshold techniques is that, it allows bank’s lending and deposit rates to respond differently to positive and negative disequilibrium changes in the policy rate or the money market rates.

To test for existence of asymmetric adjustment, equation (2) is modified to capture positive and negative deviations from equilibrium. The respective coefficients for \( \hat{e}_{t-1} \) are \( \rho_1 \) and \( \rho_2 \). If for instance, the lending rate is above the threshold value, the adjustment margin will be \( \rho_1 \hat{e}_{t-1} \) in

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† This is for an ARDL(1,1) model but can be generalised to higher order ARDL (p,q) models.
response to a reduction in the market rate. Conversely, if the bank lending rate is below the threshold value, the lending rate will adjust by $\rho_2$ after an increase in the market rate the adjustment margin will be $\rho_2 \hat{e}_{t-1}$. The same argument holds with respect to the response of the market rate to the CBR.

To account for the volatility of the interest rates in the short-run dynamics, we follow Wang and Lee (2009). The authors extend the work of Lee (1994) to analyse the impact of market rate volatility on the retail interest pass-through mechanism for the USA and 9 Asian countries using a non-linear estimation approach. They added an error correction term, $\hat{e}_{t-1}$, into the conditional mean equation to set up an EGARCH in mean (EC-EGARCH-M) model. Lee (1994) estimates an EC-GARCH model. The EGARCH model accounts for the fact that different market information has a different effect on the conditional variance and can thus help explain asymmetric adjustment margins (Nelson, 1991). In essence, assessment of volatility involves answering the question of how interest rates volatility affects the adjustment process of retail interest rates, and whether negative shocks of interest rate adjustment are greater than positive shocks (i.e. the leverage effect). The estimated equation are as follows:

$$\Delta MR_t = \beta_0 \Delta PR_t + \sum_{i=1}^{g} \beta_i \Delta PR_{t-i} + \sum_{i=1}^{q} \lambda_i \Delta MR_{t-i} + S \sqrt{\sigma_t^2} + \rho_1 I_t \hat{e}_{t-1} + \rho_2 (1-I_t) \hat{e}_{t-1} + \nu_t \epsilon_t \Omega_{t-1} \sim N(0, \sigma_t^2) \tag{4}$$

$$\log(\sigma_t^2) = \omega_0 + \omega_1 \left| \frac{v_{t-1}^2}{\sigma_{t-1}} \right| + \gamma \frac{v_{t-1}^2}{\sigma_{t-1}} + \omega_2 \log(\sigma_{t-1}^2) \tag{5}$$

$$I_t = \begin{cases} 1 & \text{if } e_{t-1} \geq \tau \\ 0 & \text{if } e_{t-1} < \tau \end{cases} \tag{6}$$

Equation 4 is the conditional mean equation and equation (5) the conditional variance equation. Equation (6) says that when $\hat{e}_{t-1}$ is greater than or equal to the threshold value $\tau$, the adjustment coefficient is $\rho_1$ and the adjustment margin equals $\rho_1 \hat{e}_{t-1}$. When $\hat{e}_{t-1}$ is less than $\tau$, the adjustment coefficient is $\rho_2$ and the adjustment margin equals $\rho_2 e_{t-1}$. So, if the lending rate is above the threshold value, the lending rate will adjust by $\rho_1$ and the adjustment margin will be $\rho_1 \hat{e}_{t-1}$ in response to a reduction in the policy rate. Conversely, if the bank lending rate is below the threshold value, the lending rate will adjust by $\rho_2$ after an increase in the policy rate. The test results can tell us whether the adjustment rigidity of the interest rates follows the collusive pricing hypothesis or the adverse customer reaction hypothesis.
\( \beta_0 \) measures the immediate of short-term impact of changes in the market rate of the policy rate, while \( \alpha_i \) captures the degree of the long-run pass-through. \( \beta_i \) and \( \lambda_i \) are dynamic adjustment coefficients. The effect of the interest rate volatility (or risk) on the interest rate is added to the mean equation and specified as the time varying standard deviation \( \sqrt{\sigma^2_t} \), where \( \sigma^2_t \) is the conditional variance of \( \nu_t \). When parameter \( s \) is positive and significant, then volatility of the interest rates would enhance the fluctuation margins of the interest rates and \textit{vice versa}. Parameter \( \gamma \) in equation (5) is a test for asymmetries in volatility. If significant, then there exists the asymmetric effect in the conditional variance. If \( \gamma \) is negative, then a decrease of the interest rate adjustment margins would lead to a larger interest rate fluctuation.

We estimate an symmetric model if \( \rho_1 = \rho_2 \), and the traditional error correction model if the residuals are white noise. If no cointegration relation exists, but the variance of the residual from equation (1) vary with time, we estimate a conditional variance model and examine whether the volatility of the interest rates affects the adjustment process.

3.0 \hspace{1em} \textbf{Empirical results}

3.1. \textit{Unit root tests}

The results of the unit root tests are presented in Tables A1 in the appendix. The results of the Augmented Dickey-Fuller (ADF) test and the Phillips-Perron (PP) unit root tests are not consistent for CBR, TB-91 and the deposit rates. While we can reject the null hypothesis of a unit root in the ADF test, we fail to reject it with regard to the PP criteria. We cannot also reject the null hypothesis for the interbank rate at 5% level of significance based on the ADF, but not the PP. The lending rates are integrated of order one, I(1). The differing orders of integration for the variables justifies the use of the ARDL specification.

3.2. \textit{Short-run and long-run pass-through effects}

Table 1 shows the estimated short and long-run impacts of the policy rate on the short-term rates; that is, the interbank, TB-91 and the REPO rate. The interbank rate is the least sensitive to the policy rate in the short-run with the impact estimated at 0.21 for a 1 percent increase in the CBR. The immediate impact on TB-91 rate is twice as much as that of the interbank rate, at about 0.46.
The REPO rate is the most sensitive in the short-run to changes in the policy rate with an estimated over-pass-through of about 1.39. This impact is, however, moderated in the long-run to 0.75. A unity test for this long-run coefficient for the REPO is rejected. The interbank follows with regard to the long-run impact at 0.67 percent for a 1 percent increase in the CBR. This impact is also incomplete, as well as that of the TB-91 rate at 0.59 percent.

The interbank rate has an asymmetric response, with a decrease in the policy rate leading to a faster adjustment than an increase. The speed with which the interbank rate responds to the CBR measured by the MAL is estimated to at slightly less than 1.3 months after a decrease in policy, and almost 2 years following an increase. Upward rigidity of interbank rate following an increase in the policy rate may be the case if adverse selection problem exist within the interbank market. Banks would then avoid increasing the interbank rate and ration credit to riskier banks to circumvent default. Customer reaction hypothesis would also support lending rates being rigid upwards if banks fear negative reactions from each other.

**Table 1: Pass-through of CBR to Short-term rates**

<table>
<thead>
<tr>
<th></th>
<th>Short-run impact</th>
<th>Long-run impact</th>
<th>Adjustment coefficient</th>
<th>Speed of response (MAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta_0$</td>
<td>$\alpha_1$</td>
<td>$\rho_1$</td>
<td>$\rho_2$</td>
</tr>
<tr>
<td>Interbank</td>
<td>0.21</td>
<td>0.67</td>
<td>-0.54</td>
<td>-0.03</td>
</tr>
<tr>
<td>91 day T-bill</td>
<td>0.46</td>
<td>0.59</td>
<td>-0.19</td>
<td></td>
</tr>
<tr>
<td>REPO</td>
<td>1.39</td>
<td>0.75</td>
<td>-0.58</td>
<td></td>
</tr>
</tbody>
</table>
Table 2: Pass-through of Short-term Rates to Lending and Deposit rates

<table>
<thead>
<tr>
<th></th>
<th>Short-run impact</th>
<th>Long-run impact</th>
<th>Adjustment coefficient</th>
<th>Speed of response (MAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta_0$</td>
<td>$\alpha_1$</td>
<td>$\rho_1$</td>
<td>$\rho_2$</td>
</tr>
<tr>
<td></td>
<td>Decrease</td>
<td>Increase</td>
<td>Months</td>
<td></td>
</tr>
<tr>
<td><strong>Lending rate</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interbank ARDL(1,2)</td>
<td>0.08</td>
<td>0.67</td>
<td>-0.08</td>
<td>-0.14</td>
</tr>
<tr>
<td>91 day T-bill ARDL(1,0)</td>
<td>0.07</td>
<td>0.74</td>
<td>-0.12</td>
<td></td>
</tr>
<tr>
<td>REPO ARDL(1,3)</td>
<td>0.17</td>
<td>0.79</td>
<td>-0.09</td>
<td></td>
</tr>
<tr>
<td><strong>Deposit rate</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interbank ARDL(2,1)</td>
<td>0.01</td>
<td>0.44</td>
<td>-0.14</td>
<td>-0.04</td>
</tr>
<tr>
<td>91 day T-bill ARDL(3,0)</td>
<td>0.03</td>
<td>0.65</td>
<td>-0.09</td>
<td></td>
</tr>
<tr>
<td>REPO ARDL(2,1)</td>
<td>0.05</td>
<td>0.62</td>
<td>-0.15</td>
<td></td>
</tr>
</tbody>
</table>

Table 2 presents the results of the second stage of the policy rate pass-through. Starting with the lending rate, the estimated short-run impacts are very similar for the interbank (0.08) and the TB-91 rate (0.07). The result for the TB-91 rate is very similar to that obtained by Misati, *et al* (2010); but is an improvement with regard to the interbank and the REPO rates. This earlier study estimated a short-term elasticity of about 0.03 and -0.08 for the interbank and REPO respectively using data from 1993M07 to 2010M09. In both cases, a change in the REPO rate has the largest impact in both the short- and the long-run.

The estimated long-run impacts are also quite high compared to the earlier studies. The responses are quite similar, at 0.67, 0.74 and 0.79 for the interbank, TB-91 and REPO rates respectively. Given a symmetric adjustment coefficient of -0.12 and -0.09 for the TB-91 and the REPO rates respectively, the estimated speed with which lending rates respond to movements in the TB-91 and REPO rate is 7.6 months and 9.12 respectively. Lending rates adjust asymmetrically to changes in the interbank rate and exhibit downward rigidities. The estimated adjustment coefficient for an increase in the interbank rate is -0.14 compared to –0.08 for a decrease. The corresponding MAL are 6.3 and 11.6 months respectively, which is much shorter than that estimated in earlier studies of about 18 to 24 months. This may point to an...
improvement in interest rate channel of monetary policy, although differences can also arise due to the adopted methods since this study accounts for asymmetric adjustment and impact of market volatility.

A higher reaction of lending rates to an increase in market rates is consistent with the literature where the asymmetric adjustment of the interest rate is caused by collusive pricing arrangement and high search and switching cost associated with alternative sources of finance. Das (2015) finds similar results for India; and Wang and Lee (2009) for Hong Kong, Philippines and Taiwan. Moreover, the estimated fixed mark-up, $\alpha_0$, is positive (0.11) and significant. This may be the case when banks are not able to pass-through all the costs to the borrower. The bank mark-up the lending rate with a fixed proportion to cover the cost or possible losses associated with default as interest rates rise.

The results of the deposit rate are given in the lower panel. The short-run impacts for the three rates are 0.01, 0.03 and 0.05 percent for the interbank, TB-91 and the REPO rates respectively. The magnitudes of long-run impacts are also similar for the TB-91 and the REPO rates at about 0.65 and 0.62. That of the interbank is much higher at about 0.44. Just like the lending rate, the adjustment process is asymmetrical with regard to the interbank rate. The adjustment process is rigid upwards as the estimated coefficient for an increase in the interbank (-0.04) is less than that of a decrease (-0.14) and is significant at only 10 percent level. This finding is consistent with collusive behaviour hypothesis similar to the lending rate.

### 3.3. Effect of interest rate volatility on the adjustment process

The estimates of the effect of interest rate volatility are presented in Table 3 for equations where the variance of the traditional ECM varies with time and the coefficients are significant. This is measured by parameter $s$ in equation (4). This effect is positive and significant in the interbank rate response to the CBR and deposit rate response to the TB-91. This indicates that volatility of the interest rates would enhance the fluctuation margins in the adjustment process. The opposite is the case for lending rates response to the interbank rate. An increase in interest rate volatility would significantly reduce the fluctuation margins of lending rates. Moreover, the asymmetric effect of the conditional variance for lending and deposit rates adjustment to the interbank ($\gamma$) is significant and negative. It is also negative and significant for the deposit’s rates response to the
REPO rate. This means that a decrease of the interest adjustment margins would lead to a larger interest rate fluctuation. Presence of asymmetric leverage effect implies that a negative interest shock may cause volatility to rise more than a positive shock of the same magnitude for the retail rates. This enhances the rigidities in the transmission mechanism. This effect is positive in the adjustment process of the interbank rate to CBR.

Table 3: Effect of volatility on Interest rate Pass-through

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Independent Variable</th>
<th>Effect of interest rate volatility (S)</th>
<th>Asymmetry in interest rate volatility (γ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interbank</td>
<td>CBR</td>
<td>0.10</td>
<td>0.36</td>
</tr>
<tr>
<td>Lending rate</td>
<td>Interbank</td>
<td>-0.92</td>
<td>-0.26</td>
</tr>
<tr>
<td>Deposit rate</td>
<td>Interbank</td>
<td>-ve (not significant)</td>
<td>-0.41</td>
</tr>
<tr>
<td>Deposit rate</td>
<td>TB-91</td>
<td>0.33</td>
<td>-ve (not significant)</td>
</tr>
<tr>
<td>Deposit rate</td>
<td>REPO</td>
<td>-ve(not significant)</td>
<td>-.44</td>
</tr>
</tbody>
</table>

4.0 Conclusion

The paper examines the magnitude and structure of the pass-through from (i) changes in the central bank rate to short-term rates, and (ii) changes from the short-term rates to the retail bank rates. It analyses the level of asymmetric pass-through and the impact of interest rate volatility as sources of rigidities in adjustment process. The main finding as follows:

- The interbank rate adjusts asymmetrically to the CBR; and the lending and deposit rates to the interbank rate.
- An increase in interest rate volatility enhances the fluctuation margins of interbank and TB-91 rates’ response to the CBR while it would reduce that of the leading and deposit rates adjustment to the interbank rate.
- Asymmetric information might cause the asymmetric adjustment during interest pass-through process. We also find evidence of a leverage effect in the adjustment process of the lending rate and deposit rate to the interbank rate; and deposit rate adjustment to the REPO rate. This indicates that the adjustment margin of the lending rate and deposit rate is greater when faced with a negative shock than a positive one. This can discourage borrowing while keeping the bank’s margins high.
• The asymmetric adjustment of the lending rates exhibit downward rigidity to a decline in the interbank rate, while the deposit rate is rigid upwards. These findings are supportive of collusive pricing arrangement for retail rates or consumer behaviour related to high search and switching costs and level of sophistication. Moreover, a fixed mark-up is positive and significant. This would mean that if banks are not able to completely pass-through the cost to the borrower, for example, they would then mark-up the retail rate with a fixed proportion to cover the cost and possibility of loss when lending rates rise.

• The interbank rate adjustment process shows an upward rigidity after policy rate increase. This may happen if adverse selection problem exist within the interbank market. Banks would then avoid increasing the interbank rates and ration credit to riskier banks to circumvent default. Banks may also fear negative reactions from each other.

• On average, it takes about 6 to 12 months for lending rates to completely adjust to changes in the short-term rates; and 7 to 23 months for deposit rates.

• Bank retail rates seem most sensitive to the repo rate especially in the short-run. The long-run impacts are quite similar with that of the 91 day Treasury bill rate.

• The long-run impacts are incomplete for all the rates. The magnitudes for short-term rates pass-through range between 0.6 and 0.75. Those for the retail rates range from 0.44 to 0.79. These magnitudes are higher than those estimated in previous studies pointing to an improvement in the interest channel of monetary policy.
References


