Monetary Policy Discipline and Macroeconomic Performance: The Case of Indonesia

Arief Ramayandi and Aleli Rosario
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Abstract

Lax monetary policy in the United States has been pointed out as one of the responsible factors behind the recent global crisis. Similar loose monetary conditions also prevailed in many European countries before the crisis and were argued to be among the accommodating factors behind the run-up in asset prices that helped trigger the 2007 financial market turmoil. Did a similar situation also prevail in Asia? This paper provides an insight by specifically looking at developments in the conduct of monetary policy in Indonesia during the first decade of this century. It uses an estimated monetary policy rule to provide a benchmark for assessing the actual conduct of the country’s monetary policy. The analysis suggests that a loose monetary policy stance also prevailed in Indonesia in the run-up to the global financial crisis. This situation helps to explain the surge in the country’s inflation and its very high growth in financial condition from late 2007 to 2008. The paper reiterates the need for monetary policy discipline to safeguard the country’s economic stability, and provides lessons to improve its macroeconomic management.
I. Background

Lax monetary policy in developed countries prior to the global financial crisis is one of the contributing factors that created the bubble in asset prices. Authorities were criticized for keeping monetary policy too loose in the run-up to the crisis (see for example, Taylor 2007, 2008, and 2009; Ahrend et al. 2008), and for having a too narrow approach in setting their policy (Cecchetti et al. 2000, White 2006); that is, by focusing mostly on consumer price index (CPI) inflation and, to some extent, the output gap to guide their policy rate. This loose stance was considered to be justified given the relatively low and stable inflation environment at that time, leaving behind any pressure to tighten the monetary policy position. The low interest rates and a stable economic condition created a comfortable environment for people to systematically underestimate risks and put a low risk premium on the financial market.

Is a simple traditional monetary policy reaction function, like the Taylor rule, really silent about the developing bubble that was left unchecked in the assets market? Taylor (2007 and 2008) suggested otherwise. Interest rates in the United States (US) after the dotcom bubble in 2001 has been kept lower than suggested by the Taylor rule; a rule that does not explicitly take into account asset prices. The fact that the suggested interest rate based on the simple Taylor rule is higher than what was prescribed actually suggests that the sign of bubble build-up in the assets market was already somewhat captured in the arguments driving the rate resulting from the Taylor rule. Arguably, an increase in the actual rate may not have been able to fully contain the growing bubble in asset prices. However, the lower actual policy rate certainly provided a better environment for the bubble to flourish. A higher policy rate would have definitely lessened supportive conditions for the asset prices to have blown unchecked.

Ahrend et al. (2008) argue that the above monetary policy failures were not only unique for the case of the US, but widespread in many European countries and Canada as well. This trend for a too lax monetary policy suggests that, in the past 3 years, there has been a tendency to shift monetary policy discipline away from what the Taylor rule would have otherwise suggested. This relative lack of discipline has implications on the announcement of much lower interest rates, which in turn sends false signals to the economy by providing incentives that encourage risk-taking activities, which could potentially send an economy into trouble.
A similar story for the case of Asia is not yet seen in the literature. Instead, the region’s monetary authorities have been praised for their successes in weathering the crisis well and for their prudent policies and behavior prior to it (see, for example, Ito 2010 and ADB 2010). However, whether countries in Asia were really immune to the symptoms of lack of discipline in delivering monetary policy is still unclear. This paper intends to look at that issue by focusing on the case of Indonesia during the first decade of this century.

To do so, the paper relies on an empirically estimated monetary policy reaction function to provide the path of a counterfactual benchmark rate for assessing developments in the actual movements of the policy rate, which represents the actual monetary policy stance of the country. The benchmark rate here is derived based on an approximation of Indonesia’s past behavior of monetary policy, which need not necessarily be the optimal one.\footnote{The approximated monetary policy rule here does not necessarily guarantee a rule that is supposed to be optimum for the economy. This is different with the Taylor rule for the case of the US, which is deemed to be an optimal policy rule for the economy.} Therefore, what is assessed in this paper is not the deviation of an actual policy rate from its optimum path, but rather whether there was a change in the way monetary policy was conducted. In the event where a change is detected, one then needs to determine if the change was for the better or otherwise.

In general, the findings detected a change in the way monetary policy has been conducted prior to the period when the global economic downturn affected the country. Monetary policy in Indonesia is found to be more accommodative in the years prior to the time when the impact of the global crisis really hit the economy. This change of monetary policy discipline tends to be unproductive, with some unfavorable symptoms similar to those reported in Taylor (2008) and Ahrend et al. (2008). Although the situation did not get worse and was halted by the effect of the global crisis, there is no guarantee that keeping such lax monetary policy would be beneficial for the country’s economic stability in the future.

The rest of the paper is organized as follows. Section II provides a brief description of the development of monetary policy in Indonesia. Section III discusses the methodology used to derive the benchmark rate. Section IV compares the benchmark with the actual policy rate and presents some stylized facts about the macroeconomic condition in Indonesia during the period where the comparison is being assessed. Section V discusses the effect of an exogenous increase in the administered fuel prices on aggregate inflation, and corrects the measure of the benchmark rate. Section VI provides the assessment for Indonesia’s monetary policy stance in the last few years. Section VII concludes.
II. Monetary Policy and Its Development in Indonesia

The primary goal of Indonesia’s central bank, Bank Indonesia (BI), has always been to achieve and maintain stability in the value of its currency (rupiah). In pursuit of this goal, BI adopted a crawling peg exchange rate regime during the pre-Asian crisis period. BI was forced to abandon this regime due to severe pressures on the rupiah to significantly depreciate during the 1997/1998 Asian crisis. To arrest soaring inflation and restore confidence in its currency, BI adopted a more flexible regime within a tighter base money targeting framework. To reach the base money target, BI relies on open market operations through the sale of BI certificates (SBI).

Upon emerging from the Asian crisis, a major change in the conduct of monetary policy in Indonesia was institutionalized. A new central banking law, enacted in 1999, established the independence of BI, directed it to set an inflation target every year, and directed monetary policy to be geared toward the achievement of the inflation target (Bank Indonesia 2000). Following the implementation of the act, the operating target in conducting monetary policy likewise shifted from base money targeting to interest rate targeting. The BI rate is used as the policy instrument to direct monetary policy. Initially, the reference rate was the rate for SBI (30 days), which was then changed into the overnight cash rate on July 2005.

The following figure displays developments in some key monetary indicators for Indonesia during the different phases of the monetary policy regime. During the pre-Asian crisis period, the exchange rate was very stable but depreciated sharply during the crisis. Thereafter, the exchange rate fluctuated with the adoption of a freer regime. However, movements in foreign reserves held by BI suggest that some degree of intervention was done to smooth exchange rate fluctuations. Figure 1 also shows two noticeable jumps in CPI inflation at the later period that were attributable to changes in domestic administered fuel prices in 2005 and 2008. This will be discussed further in Section V.

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2 The International Monetary Fund classified Indonesia as adopting a managed floating exchange rate regime prior to 1997. In practice, however, the rupiah exchange rate was practically pegged to the US dollar with a nearly fixed depreciation rate, which is normally announced once a year.
III. Methodology

The rule guiding monetary policy in Indonesia is approximated by an interest rate rule that governs the path of the country’s policy rate. The monetary policy stance is decided based on developments of a given set of critical information. Specifically, the relevant short-term interest rate is used as a proxy for the operating target to trace the historical conduct of monetary policy. This type of policy rule typically assumes that policy makers respond to deviations of inflation from its target level and the output gap. This paper considers a forward-looking assumption in approximating the policy rule, given the practice of policy makers to base their policy decisions on expectations of future values of those information variables.

To this extent, Clarida et al. (1998) proposed an estimable methodology to deal with such forward-looking policy reaction function and demonstrated that their methodology works well in evaluating the monetary policy behavior in G7 countries. Batini and Haldane (1999a and 1999b) and de Brouwer and Gilbert (2005) find that this forward-looking specification performs better in evaluating monetary policy behavior relative to the backward-looking one. For those reasons, the policy reaction functions in this study are estimated based on forward-looking assumptions, and the methodology adopted closely follows that proposed by Clarida et al. (1998 and 2000).
The baseline specification for the policy rule takes a simple form. Within each of its operating periods, the monetary authority is assumed to set the nominal interest target rate $\tilde{i}$ based on developments in the expected inflation around its target and the output gap.

$$\tilde{i}_t = \tilde{T} + \kappa_1 \left[ E_t (\pi_{t+n}|\Omega_t) - \pi^* \right] + \kappa_2 E_t \left( x_{t,rq}|\Omega_t \right)$$  \hspace{1cm} (1)$$

where $\tilde{T}$ can be interpreted as the long-run equilibrium level of the nominal rate; $\pi^*$ is the long-run inflation target; $x$ is the output gap that serves as a measure of cyclical variable; and $\Omega_t$ is the set of information available to the monetary authority at the time they set the target policy rate. Clarida et al. (1998) also entertain an extension to the baseline model by allowing for a possibility for other variables (such as exchange rate, money growth, international interest rate, etc.) to affect the target rate explicitly. That is:

$$\tilde{i}_t = \tilde{T} + \kappa_1 \left[ E_t (\pi_{t+n}|\Omega_t) - \pi^* \right] + \kappa_2 E_t \left( x_{t,rq}|\Omega_t \right) + \kappa_3 E_t \left( z_{t,k}|\Omega_t \right)$$  \hspace{1cm} (2)$$

where $z$ denotes other variable(s) affecting the target policy rate.

The policy reaction function outlined in equations (1) or (2) is often considered to be too restrictive for describing the actual movement in the policy rate (Clarida et al. 2000). It is restrictive in the sense that: (i) the functional form in both equations assumes that the target rate will adjust immediately to developments of the variables that affect it (regardless of the magnitude); (ii) they represent the systematic response of the monetary authority to developments in the economy without acknowledging a possibility of randomness in the policy action; and (iii) they assume that the monetary authority has perfect control over the interest rate.

Abrupt and frequent changes in the policy rate could disrupt the capital market and erode the credibility of a monetary authority. Since credibility is very important for a monetary authority, it typically prefers to smooth the movements in interest rate. To avoid loss of credibility from impulsive and large changes in the policy instrument, it is further assumed that a monetary authority smoothes the interest rate by adjusting it partially to the target:

$$i_t = (1 - \rho_i) \tilde{i} + \rho_i i_{t-1} + v_t$$  \hspace{1cm} (3)$$

where $i_t$ is the actual interest rate at time $t$; $\rho_i$ is the partial adjustment coefficient that captures the degree of interest rate smoothing; and $v_t$ is the error term introduced to capture randomness in policy action, and the fact that a monetary authority does not have perfect control over interest rate. The intuition behind such an adjustment scheme is that the authority does not adjust the interest rate fully to its desired current target level, but takes some linear combination between its desired target level and the past value of the interest rate to smoothen its movement.
Substituting equation (1) into equation (3) to obtain an estimable equation for the policy reaction function gives us the following:

\[ i_t = (1 - \rho_i)\alpha_i + (1 - \rho_i) \kappa_2 \pi_{t+n} + (1 - \rho_i) \kappa_2 x_{t+q} + \rho_i i_{t-1} + \xi_t \]  

(4)

where

\[ \alpha_i = T - \kappa_i \pi^* \]

and

\[ \xi_t = -(1 - \rho_i) \left[ \kappa_2 \pi_{t+n} - E_t(\pi_{t+n} | \Omega_t) \right] + \kappa_2 \left[ x_{t+q} - E_t(x_{t+q} | \Omega_t) \right] + \nu_t \]

with \( E_t(\xi_t) = 0 \). The later term \( \xi_t \) is a linear combination of the forecast errors of inflation, the output gap, and the exogenous disturbance \( \nu_t \).

Once the estimable functional form is established, the next step would be to determine a vector of instrumental variables \( \{u_t; u_t \in \Omega_t \} \) that includes the monetary authority’s information set at the time they choose the interest rate. That is, the elements of \( u_t \) need also be uncorrelated with \( \nu_t \), hence \( E_t(\xi_t | u_t) = 0 \). The last condition provides a basis for estimating the vector of unknown parameters \( [\kappa_1 \kappa_2 \alpha_i \rho_i] \) using the generalized method of moments (GMM) with an optimal weighting matrix that accounts for possible serial correlation in \( \xi_t \).

Ramayandi (2007) estimated the monetary policy reaction for Indonesia using quarterly data from the first quarter (1Q) of 1989 to the last quarter of 2004. He uses the 30 days SBI rate to proxy for the policy target rate; annualized changes in the log of the headline CPI for the measure of inflation; H-P (Hodrick-Prescott) filtered seasonally adjusted real GDP for the measure of output gap; and annualized changes in log of the nominal rupiah exchange rate to the US dollar as other potential variable that affects the target policy rate.

The results suggest that monetary policy in Indonesia has gone through a regime change after the Asian financial crisis of 1997–1998. Prior to the crisis, monetary policy was driven primarily by movements in the exchange rate, and not by changes in the inflation or the output gap. This observation is in line with the crawling peg exchange rate regime adopted by BI in the precrisis period.
In the post-Asian crisis sample, however, movements in the policy rate were no longer driven by movements in the exchange rate. Instead, the policy rate was driven by movements in both inflation expectation and the output gap. This signifies the shift in monetary policy from a crawling peg exchange rate regime (prior to the 1997/1998 crisis) to a Taylor type rule-based policy regime after the financial crisis.

Table 1: Characterization of Monetary Policy Reaction Function in Indonesia

<table>
<thead>
<tr>
<th>Parameter</th>
<th>$i_t$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\alpha_i$</td>
<td>-2.73</td>
</tr>
<tr>
<td>(1.55)</td>
<td></td>
</tr>
<tr>
<td>$\kappa_1$</td>
<td>1.78</td>
</tr>
<tr>
<td>(0.11)</td>
<td></td>
</tr>
<tr>
<td>$\kappa_2$</td>
<td>1.04</td>
</tr>
<tr>
<td>(0.48)</td>
<td></td>
</tr>
<tr>
<td>$\rho_i$</td>
<td>0.52</td>
</tr>
<tr>
<td>(0.03)</td>
<td></td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.85</td>
</tr>
<tr>
<td>Prob. value for J-stat</td>
<td>0.70</td>
</tr>
</tbody>
</table>

Note: Numbers in parentheses are the relevant standard errors.

Table 1 presents the summary of parameters that characterize only the post-Asian financial crisis monetary policy in Indonesia. The in-sample forecast for both precrisis and postcrisis episodes of monetary policy is found to be quite convincing and has the ability to closely trace the movements in the country’s policy rate (Figure 2). Particularly, the post-Asian financial crisis (2000–2004) fit of the estimated monetary policy reaction function suggests that the estimated rule captures the actual conduct of monetary policy in Indonesia very well. Therefore, the characterization of the rule can be considered as the representation of the country’s monetary policy, and qualifies to be used to derive the benchmark path for the policy.

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3 Since the pre-Asian crisis period (prior to 1997) was a crawling peg exchange rate regime, the parameters for that period are not presented here. Refer instead to Ramayandi (2007).
IV. Developments in Monetary Policy Stance and Some Stylized Facts about the Indonesian Economy

Given the ability of the estimated policy reaction function to trace the actual movements as discussed in the previous section, the policy reaction function is used to simulate the out-of-sample path for the benchmark policy rate as the basis for assessing the development of monetary policy in Indonesia. Figure 3 presents the comparison between the actual policy rate and its benchmark path derived from the estimated policy reaction function.
Figure 3: Relative Monetary Policy Stance, 2001–2009 (percent)

![Figure 3: Relative Monetary Policy Stance, 2001–2009 (percent)](image)

Source: Authors’ calculation.

There are two episodes of huge deviations observed in Figure 3. In both cases, the actual policy rate tends to be much lower than the benchmark rate. The first episode is observed between 2Q2005 to 3Q2006 (episode 1 henceforth), and the second comes in 4Q2007 to the end of 2008 (episode 2 henceforth). From 2005 onward, the path for the actual policy rate is observed to be consistent with its benchmark only in the latter half of 2006 up to the first three quarters of 2007.

Do the two episodes of deviation indicate a change in monetary policy discipline? What economic factors influenced the deviations in the policy rate? Movements in inflation and the output gap, the two variables that drive the benchmark rate, shed light on what was going on (Figure 4). Notably, inflation peaked in both episodes. Output gap, however, behaved differently in the two episodes. Within episode 1, inflation surged to about 17% while there was no significant pressure observed in the aggregate demand. In contrast, episode 2 shows that a peak in inflation was accompanied by a systematic pressure in the aggregate demand that steadily went beyond the potential level of output starting in 4Q2006.

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4 That is, the immediate period after the sample considered in Ramayandi’s (2007) estimation.
The policy reaction function discussed in the previous section suggests that the policy rate should have been increased in response to a rise in inflation expectation and/or output gap. This is exactly what was captured by the path of the benchmark rate in Figure 3 (above). In episode 1, the benchmark rate increased solely on account of the inflation trend. On the other hand, the increase in episode 2 is driven by both the rising trend of inflation and the output gap. The fact that the actual policy rate was kept low created a wedge between the series of actual policy rates and benchmark rates, which may suggest a probable shift in the discipline of monetary policy.

**Figure 4: Inflation and Output Gap (percent)**


What were the implications to the domestic financial sector? Looking beyond the two macro indicators may provide some stylized facts that provide further insights on the situation.

**A. Credit Growth and Output Gap**

Interestingly, the growth in both private credit (overall credit of the private sector) and consumption credit (credit obtained by individuals) show a similar pattern to that of inflation (Figure 5). In episode 1, the growth in private credit peaked in 3Q2005 without any systematic pressure observed in the aggregate demand. Therefore, private credit growth may be considered as healthy for the economy since it did not widen output gap. In episode 2, credit growth was not only at least 25% but it also shared a similar trend with the burgeoning output gap. At its highest (3Q2008) in episode 2, credit growth was accompanied by a peak in output gap. In Figure 3 (above), the policy rate was also

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5 Overall private credit and consumption credit are highly correlated with a correlation coefficient of 0.995.
observed to have risen by 125 basis points from the start to end of episode 2. Such increase, however, seemed to be not high enough based on the policy reaction function.

The lower policy rate episodes are associated with faster growth in domestic private credit but with different implications on aggregate demand. High credit growth in episode 1 seems to be healthy for supporting the pace of economic growth in the economy. High credit growth in episode 2, on the other hand, does not seem to be as healthy as it widened the output gap, which in turn indicates growing demand pressures in the economy, which should have implied an increase in inflation expectation and the possible formation of a bubble within the economy.

Figure 5: Credit Growth and Output Gap (percent)

![Credit Growth and Output Gap (percent)](image)


B. Stock Index and Output Gap

Figure 6 shows that while the stock market had grown at an average of 40% from 2003 to 2006, actual output on the average merely approximated potential output. In the period consistent with episode 1, it can be seen that when changes in the stock index peaked on 2Q2005, aggregate demand was below potential. A similar but more obvious situation is observed for 1Q2004. However, a sharp contrast to that pattern is observable in episode 2, where excess demand was coupled with a declining trend in the stock index. From the patterns for credit growth and inflation, it would have been right to expect the
stock index to continue rising. The aberration in this case could be attributed to the first-round effects of the global crisis that overall eroded confidence in the financial markets, resulting in the withdrawal of investments from stock markets.

Figure 6: Stock Index Change and Output Gap (percent)

For each of the information variables considered above, what accounts for the differing patterns against output gap in the two episodes? Episode 1 straddles 2 years when the Indonesian economy grew at a relatively stable rate (5.7% in 2005 and 5.5% in 2006; see Figure 7). The growth in 2005 was remarkable considering that the economy had to contend with, among others, the aftermath of the earthquake and tsunami of December 2004, and a drastic increase in the prices of domestic fuel as subsidies were removed. Although private credit grew by more than 31% in 3Q2005, private spending was stifled by the ensuing soaring inflation in the next quarter. The following year, 2006, was a year of moderation as everything that surged or slumped in the previous year gradually eased back to their usual levels (ADB 2006 and 2007).

In contrast to the challenges that episode 1 faced, episode 2 was coming from a relative domestic boom situation. GDP grew at 6.3% in 2007, the highest since the Asian financial crisis a decade earlier. Private consumption and investment lifted the economy, aided by low interest rates. Private credit rose continuously at a fast pace (ADB 2008). However, pressure to the economy came from the global financial crisis through exports and the financial markets. The first wave of impact was felt in the stock market as the index dived by more than 50% at the end of 2008. The second wave of impact was reflected when output went down about 1 percentage point from the average growth in posted in
2004–2008. Curiously, it seems that in this case, the financial crisis aborted what could have been an unchecked bubble in private credit in 2007.

**Figure 7: GDP Growth (percent)**

![GDP Growth Chart]


In short, the policy rate path deviation in episode 1 occurred without any substantial pressure from the demand side. On the other hand, the deviation in episode 2 came with a strong indication of demand side pressure to the economy. Although the state of the economy immediately prior to each episode was able to account for the different patterns between output gap and each of the three information variables, it still does not explain the reason for the path deviation in policy rate.

For this, it may be worthwhile to take a closer look at inflation. From Figure 3 (above), it can be seen that inflation rose by more than 10 percentage points in 4Q2005 (within episode 1) from its 2003 level. It stayed at double-digit levels for another three quarters before it went down to around 6.7% up to the first half of 2008. Then, inflation shot up once more to 12% in the second half of the year (within episode 2) before tapering down to single-digit levels. By 1Q2010, inflation was less than 4%.

What caused the sharp increases in inflation during the two episodes? The succeeding section examines at length two exogenous shocks to inflation that were introduced by the Indonesian government when it decided to change policy insofar as fuel prices are concerned.
V. Effects of Changes in Administered Prices on Inflation and a Corrected Measure for Indonesia’s Monetary Policy Stance

A. Impact of Changes in Administered Fuel Prices on Aggregate CPI Inflation

The previous section has argued that both episodes of deviation in the policy rate may be due to the increase in the administered fuel prices brought about by the government’s decision to slash its subsidy. The increase in the administered prices could have pushed up the aggregate CPI inflation and drove the benchmark rate (Figure 2) up due to its rule-based simulation. Meanwhile, the actual policy rate may rightly have been kept lower since the central bank was not supposed to react to this administered prices-induced inflation. If that were the case, then the central bank may have been consistent with its way of managing monetary policy. Rather, the observed deviations demonstrate an empirical illusion as a consequence of mechanically applying simulation according to the prescribed rule, using only information from headline CPI inflation without considering the fact that monetary policy should not be responding to changes in the administered components of the aggregate prices.

To test the above possibility, this paper identified events when changes in administered fuel prices were introduced in Indonesia. Because of the erratic changes in international oil prices and its implications to the country’s national budget, the government made several decisions to reduce and reintroduce fuel subsidies for domestic consumption. Each decision immediately changed prices for domestic fuel, hence altering CPI inflation by shifting its mean.

Sharp increases in international oil prices forced the Indonesian government to reduce its contribution to subsidized fuel prices for domestic consumption twice in 2005. The subsidy contributions were reduced on 1 March and 1 October 2005. The move in March increased average domestic fuel prices by about 29%, and the one in October jacked up the average prices by about 100%. Other moves to alter the contribution for fuel subsidy were implemented in 2008. In May 2008, the government cut the fuel subsidy further, resulting in about 30% increase in average domestic fuel prices. On 1 December 2008, however, the government reacted to the decline in international oil prices by re-increasing its fuel subsidy contribution. This move had the effect of reducing domestic fuel prices by an average of about 15%.
### Table 2: Exogenous Shocks to Inflation, 2005 and 2008 (percent)

<table>
<thead>
<tr>
<th>Date</th>
<th>Fuel Component</th>
<th>Transport Fare</th>
<th>Impact on CPI Inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Weight in 2005 CPI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Mar 05</td>
<td>1.18 0.08 1.97</td>
<td>3.53 0.46 0.09 0.20 0.04</td>
<td></td>
</tr>
<tr>
<td>1 Oct 05</td>
<td>0.00 27.27 29.99</td>
<td>19.96 11.35 1.02 -0.25 0.83</td>
<td></td>
</tr>
<tr>
<td>1 May 08</td>
<td>2.64 0.08 3.71</td>
<td>2.85 0.67 0.07 0.46 0.00</td>
<td></td>
</tr>
<tr>
<td>1 Dec 08</td>
<td>25.00 27.91 33.33</td>
<td>23.86 14.93 14.29 8.70 0.00</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Increase in price</th>
<th>Contribution to CPI inflation</th>
<th>Contribution to CPI inflation</th>
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<th>Contribution to CPI inflation</th>
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<tbody>
<tr>
<td>1 Mar 05</td>
<td>0.00 27.27 29.99</td>
<td>0.70 0.05 0.00 0.00 0.00</td>
<td>0.76 1.37</td>
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<tr>
<td>1 Oct 05</td>
<td>115.51 104.79 79.45</td>
<td>46.38 35.90 34.02 5.20 9.69</td>
<td>1.85 4.86</td>
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<tr>
<td>1 May 08</td>
<td>25.00 27.91 33.33</td>
<td>23.86 14.93 14.29 8.70 0.00</td>
<td>0.83 2.75</td>
<td></td>
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<tr>
<td>1 Dec 08</td>
<td>0.00 -12.73 -16.67</td>
<td>n.a n.a n.a n.a n.a</td>
<td>n.a n.a</td>
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</table>

CPI = consumer price index.
Source: Adapted from *Economic Report on Indonesia* (Bank Indonesia 2005, 77; and 2008, 26).
The exogenous average price changes discussed above are only the immediate (first round) impact of changes in the domestic fuel subsidy on aggregate CPI inflation. On top of these, there were also second-round impacts through immediate price increases in the transport sector. These second-round impacts, though, applied only to events when the prices of domestic fuel increased, but not the other way around due to the downward stickiness nature of prices. Table 2 summarizes the immediate impact of exogenous changes in the administered fuel prices on aggregate domestic inflation in Indonesia.

B. Correcting the Measure for Monetary Policy Stance

To better assess Indonesia’s monetary policy stance in 2005 and 2008, it is sensible to use the above information to adjust the headline CPI inflation figures to remove the irrelevant component coming from the increase in administered fuel prices. The impact on CPI inflation figures in the last column of Table 2 provides the magnitude of mean-shifter in headline inflation figures. Figure 8 shows that without the increased effect from the administered fuel prices, Indonesia’s CPI inflation in 2005–2006 and in 2008 should have been substantially lower than its reported headline. These adjusted inflation figures are what the central bank needs to use when setting up the monetary policy stance. Reacting to illusionary inflation signals brought about by increases in the administered prices, which are not in the domain of monetary policy control, would be a mistake. It would send the economy into an overly contracted monetary condition that could result in an unnecessary recession.

**Figure 8: Adjusted CPI Inflation Figures**

![Graph showing adjusted CPI inflation figures]

Source: Authors’ calculation.

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6 Each mean-shifter stays for four quarters in this case since the year-on-year inflation figure with quarterly frequency is used.
Under the assumption that the central bank was fully aware about the impact of changes in administered fuel prices on inflation, it can be expected that the bank’s actual monetary policy stance would not be fully reflective of developments in headline CPI inflation when changes in the administered prices take place. Factoring in the adjusted inflation series as relevant information for simulating the monetary policy stance should correct the simulated benchmark if the central bank did not change the way it conducted monetary policy.

**Figure 9: Corrected Relative Monetary Policy Stance, 2001–2009 (percent)**

![Graph showing corrected relative monetary policy stance](image)

Source: Authors’ calculation.

Figure 9 replots the relative monetary policy stance after adjusting the aggregate CPI inflation measure for the effect of changes in the administered prices of fuel. When the actual policy rate path is plotted against the path of the corrected benchmark rate, a different pattern from that shown in Figure 2 emerges. The deviation observed in episode 1 is no longer obvious. On the contrary, although by a slightly smaller magnitude, the deviation observed in episode 2 is still clearly observed.

Two important messages can be drawn from the above. First, the central bank’s actual monetary policy stance in episode 1 was actually consistent with the way monetary policy had been conducted in the past. The central bank seems to have done very well in factoring in the impact of the exogenous increase in domestic fuel prices on inflation and reacted in a timely fashion according to the appropriate signals of inflationary pressures that are controllable within the domain of its policy, without changing the way of managing the policy itself. Second, despite the adjustment to the aggregate inflation figure, the deviation in the actual stance with respect to its benchmark path is still obvious.
in episode 2. This suggests that the conduct of monetary policy may have been changed during the episode. The central bank no longer stuck to its past discipline of conducting monetary policy but adopted a more accommodative stance than usual.

**VI. Assessment**

Inflation targeting as a framework for conducting monetary policy in Indonesia is still relatively in its infancy. The framework was adopted based on National Act No. 23/1999 and its amendment, Act No. 3/2004, which mandated the central bank to focus more closely on maintaining rupiah stability. Inflation targeting framework was formally adopted in July 2005 to strengthen the performance of Indonesia’s monetary policy, particularly in curbing inflation without increasing output volatility.

Although the formal adoption began only in mid-2005, the move toward conducting monetary policy based on a Taylor type of monetary policy rule has been evident in the post-Asian financial crisis period (Ramayandi 2007). Prior to 2005, the path of the policy rate in Indonesia can be well presented by a Taylor type monetary policy rule characterized by parameters in Table 1. This suggests that the central bank of Indonesia adopted a certain rule to discipline the conduct of its monetary policy. The discipline, to an extent, was proven useful in helping Indonesia contain its post-Asian financial crisis inflation in terms of lowering both the level and volatility of inflation (see, for example, the discussion in ADB 2010).

Section IV provides indications that the country changed its monetary policy discipline to a more accommodative stance around 2007–2008. The lax monetary policy during this episode is indicated by the fact that the actual policy rate has been consistently lower than its benchmark path, derived through a policy reaction function that approximated past monetary policy behavior. For this reason, the deviation in the stance of the country’s monetary policy could not be interpreted in a straightforward manner as a deviation from its optimum path, but rather only indicates a change in the way monetary policy was conducted. Consequently, at this point there is no strong case for interpreting the change as an undesirable one, especially since the approximated monetary policy reaction function used to derive the benchmark path may not necessarily be the optimal policy reaction function for the country.

The optimality issue of the approximated policy reaction function used to derive the policy benchmark rate in this paper is discussed in Ramayandi (2009), whose analysis shows that the policy reaction function characterized by parameters presented in Table 1 is not necessarily the optimal policy reaction function for the case of Indonesia. He argues that the room for the country’s central bank to improve on the performance of its monetary policy is still wide open. The direction for improvement, however, points to a stricter
monetary policy discipline rather than a more accommodative one. Nevertheless, even with this consideration in mind, it is still not clear if one can jump to the conclusion that the deviation in the conduct of monetary policy in 2007–2008 was essentially a less preferable one.

To make a better assessment on the deviation from past monetary policy discipline, this paper conducted a further analysis of Indonesia’s macroeconomic condition during the episode of the deviation. Ahrend et al. (2008) argues that although the episodes of lax monetary policy (the “below Taylor” condition) are not a necessary condition for financial imbalances that potentially lead to economic troubles, the condition has generally been associated with the build-up of financial imbalances in housing and credit markets. Ahrend’s paper also shows that the “below Taylor” episodes, in most cases, are associated with very strong increases in both housing sector and private credit activities.

Discussions in the previous two sections suggest that the mound in the benchmark rate in episode 1 is simply driven by the upward surge in inflation expectation due to huge increases in domestic administered fuel prices. When the price adjustments in fuel prices was factored into the policy reaction function, the inflation expectation was demonstrated to be aligned with the perception of the central bank, hence eliminating the deviation between the actual and the benchmark policy rates. Deviations in episode 2, on the other hand, were driven by both inflation expectations and a continuous build-up of positive output gap. The impact of both phenomena provided the impetus for the gap between the actual and the benchmark policy rates to persist even after adjusting the inflation figures.

In 2007, the Indonesian economy experienced one of its strongest growths in the decade. The relatively high growth, however, was still mainly reliant on the strong growth in domestic consumption (see, for example, discussion in Kong and Ramayandi 2008). Accordingly, the growth was accompanied by a build-up of positive output gap that led to increases in inflation expectations. Instead of reacting to these developments, the central bank adopted a more accommodative monetary policy stance by not appropriately raising its policy rate. As a result, the growth of private credit including the private consumption credit shot to the roof in that period.

This development is very much in contrast with the situation observed in 2005–2006. Although high growth in private credit was also observed in these years, it did not seem to have negatively affected the stability of the country’s economy at that time. Output gap was not showing any systematic deviation from zero at that time, and hence did not seem to indicate an overheating effect on the economy.

The trend in late 2007 persisted through 3Q2008, where the very high growth in private credit remained unchecked and accompanied by a continuously widening output gap (Figure 4 above). The condition was comfortably accommodated by a change in the monetary policy discipline to a more lax policy stance of the central bank at that time.
As argued in Ahrend et al. (2008), this situation suggests a potential build-up of financial imbalances in the economy. The deviation of the monetary policy stance is also in contrast with the suggested avenue to promote improvements in the monetary policy performance; that is, by pursuing a stricter rather than a more lax monetary policy stance (Ramayandi 2009). Based on these assessments, the paper concludes that the change in the way Indonesia conducted its monetary policy in 2007–2008 tends to move away from, rather than close to, its optimal one. The trend was indicating signs that the economy may have been nurturing its own homegrown bubble, which was coincidentally aborted by the impact of the global economic downturn around 4Q2008.

VII. Concluding Remarks

The analysis in this paper suggests that Indonesia is not excluded from the list of countries that have shown symptoms of lack of discipline in conducting monetary policy. The tendency started to manifest during the second half of 2007 and seems to have an unproductive impact on keeping the economy stable. Aggregate demand has continuously widened since the shift to a looser discipline in monetary policy took place, with private credit also growing unchecked at the same time. Both suggest that a potential homegrown bubble may be building up.

The above situation was reversed as the impact of the global slowdown started to weaken the economy in the late 2008. The global crisis put the seeming trend of booming demand in the financial sector in Indonesia to a halt. Prior to this, there seemed to be no significant movement from the central bank side to moderate the rising trends. Although the potential for a bubble build-up was there, it is not very clear how it would have developed if the global economic downturn had not occurred. Conducting a proper counterfactual simulation to see how the trend in 2007–2008 could have developed in Indonesia sans the world economic slump would be an interesting extension for the findings in this paper.

The motive for the central bank’s shift to relax monetary policy by adopting a more accommodative stance at that time is also unclear. Nevertheless, the tendency seemed to have been unproductive in at least two ways. First, it potentially added to the volatility in the country’s macroeconomic condition thereby increasing the riskiness of the economy. Second, the shift in monetary policy discipline can also be detrimental to the central bank’s credibility if prolonged. As credibility is a virtue that is difficult to earn, it may pose a huge cost to the central bank and needs to be seriously considered.
To avoid such things from hurting the potential growth path of the economy, bringing back more discipline in the way monetary policy is conducted is a more productive option for Indonesia. Focusing more on stabilizing the fluctuations in aggregate domestic price level and managing its expectation would be key for promoting and maintaining the credibility of the central bank. This, in turn, will improve the effectiveness of the country’s monetary policy in promoting a stable growth of the economy.

References


About the Paper
Arief Ramayandi and Aleli Rosario examine the conduct of monetary discipline in Indonesia using an estimated monetary policy rule as benchmark. Their analysis suggests that a loose monetary policy stance had prevailed in Indonesia, which helps to explain the surges in the country’s inflation and financial condition from late 2007 to 2008. They reiterate the need for monetary policy discipline to safeguard the country’s economic stability, and provide lessons to improve its macroeconomic management.

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