

Monetary and Exchange Rate Policies in Indonesia: Challenges and a Post-Crisis Framework ¹

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1. Introduction

A crisis always brings new lessons. Similar to previous crises, the global financial and economic crisis in 2007/2008 provided a number of salient lessons. For monetary authorities, the most valuable lesson was that maintaining price stability alone is insufficient to maintain macroeconomic stability. During the recent global turmoil, the crisis that originated in the financial sector occurred during a time when the global economy managed to achieve its best performance in maintaining price stability and economic growth: an episode known as the era of Great Moderation. Price stability is necessary but insufficient for macroeconomic stability. During the global crisis, it is clear that price stability may have encouraged the accumulation of risk in the financial sector, such as excessive credit growth and asset price bubbles -- a "paradox of credibility" (Blinder, 2010). Stable macroeconomic conditions reflected by a long period of low interest rates created moral hazard among market participants against macroeconomic risks. Investors felt that the macroeconomic risk was already guaranteed by the credible central bank; therefore they tended to seek higher yields in higher risk assets.

In the aftermath of the crisis, an uneven global economic recovery has created massive capital flows, which have posed a number of arduous challenges for emerging countries. A

¹ Prepared as a book chapter (ISEAS, 2011).

deluge of capital flows, driven by the two-speed recovery of the global economy and abundant global excess liquidity, has flowed into emerging countries with more favourable economic prospects and lower risks, including Indonesia. While recipient countries benefited from the inflows through financial deepening and wider sources of financing, capital flows have also elicited various challenges in the affected economies. Capital flows have exacerbated pressures on domestic currency appreciation, accelerated economic overheating, triggered asset price bubbles and intensified the risk of financial system instability. Speculative capital inflows could create economic vulnerabilities to changes in investor sentiment, primarily through changes in asset prices, the exchange rate and maturity mismatches.

The procyclical nature of capital flows has created complexity in monetary and exchange rate policies in Indonesia. The capital flow cycle is naturally tied to the business cycle. Accordingly, capital tends to flow during an expansionary period; therefore, the subsequent liquidity created further accelerates the economy and on many occasions leads to asset bubbles. In contrast, portfolio capital typically flows out when the economic outlook deteriorates, which undermines the domestic economy. Consequently, the highly procyclical nature of capital flows can be problematic. Monetary policy to address inflationary pressures through higher interest rates could further attract capital inflows. The torrent of capital inflows amidst inflationary pressures in 2010 and 2011 clearly illustrates this dilemma. Conversely, policies to overcome economic weaknesses are often constrained by exchange rate depreciation pressure as displayed in the second half of 2005 during the currency crisis after the oil price shocks.

Post-crisis challenges have revealed some valuable lessons for monetary policy and exchange rates. First, in a small open economy, like Indonesia, the multiple challenges facing monetary policy as a result of capital inflows imply that the monetary authorities should employ multiple instruments. This instrument mix allows Bank Indonesia to address multiple dilemmas. In the face of capital flows, while the exchange rate should remain flexible, it should be maintained in such a way that the exchange rate is not misaligned from its fundamentals. Concomitantly, measures are required to accumulate foreign exchange reserves as self-insurance given that short-term capital flows are particularly vulnerable to a sudden stop. In terms of capital flow management, a variety of policy options are available to deal with the excessive procyclicality of capital flows, especially short-term and volatile capital. On monetary management, the dilemma facing monetary authorities have been partially resolved by applying quantitative-based monetary policy to support the standard interest rate policy instrument. In addition, macroprudential policies aimed at maintaining financial system stability should also be adopted to mitigate the risk of asset bubbles in the economy.

Second, while price stability should remain the primary goal of central banks, the global crisis demonstrated that maintaining low inflation alone, without preserving financial stability, is insufficient to achieve macroeconomic stability. A number of crises that have occurred in recent decades show that macroeconomic instability is primarily rooted in financial crises. Financial markets are inherently imperfect and potentially create excessive macroeconomic fluctuations if not well regulated. Therefore, the key to managing macroeconomic stability is not only managing the imbalance of goods (inflation) and externalities (balance of payments), but also an imbalance in the financial sector, such as excessive credit growth, asset price bubbles and the cycle of risk-taking behaviour in the financial

sector. In this regard, Bank Indonesia will be effective in maintaining macroeconomic stability if the central bank has a mandate to promote financial system stability. Hence, the monetary policy framework of the inflation targeting framework (ITF) needs to be enriched by including the substantial role of financial sector.

Third, exchange rate policy should play an important role in the ITF of a small open economy. According to standard ITF, central banks should be not attempt to manage the exchange rate. This benign view argues that the exchange rate system should be allowed to float freely, thus acting as a shock absorber for the economy. However, in a small open economy with open capital movement, exchange rate dynamics are largely influenced by investor risk perception, which trigger capital movements. In this environment there is a case for managing the exchange rate in order to avoid excess volatility that could push the exchange rate beyond its inflation target band.

This paper aims to discuss the challenges faced by the Indonesian economy following the global crisis and their implications for strengthening the monetary and exchange rate policy framework going ahead. This paper argues that there is a paradigm shifting in designing the monetary and exchange rate policy framework after the global crisis. The following section presents the challenges facing monetary policy and exchange rates in the post-crisis period. The third section elaborates upon the future perspective of monetary policy, especially related to increasing the role of financial system stability and exchange rates. The final section provides concluding remarks.

2. Post-Crisis Monetary and Exchange Rate Policy Challenges

Over the past decade monetary policy in Indonesia has confronted several fundamental challenges that have affected the efficacy of policy implementation. These challenges, among others, include structural rigidity on the supply side, the developments of global commodities that intensified inflationary pressures, the phenomenon of capital inflows that affected the exchange rate, and changes in financial sector behaviour that impacted upon the monetary policy transmission mechanism.

2.1. Structural Issues of Inflation

Inflation in Indonesia is persistent and fluctuative, which is linked to factors of structural rigidity and the increasing role of global commodity prices in the structure of inflation in Indonesia. A number of research papers have confirmed these findings.² The relative persistence of inflation in Indonesia is associated with several structural issues, particularly on the supply side (Bank Indonesia, 2010). Domestically, problems that principally stem from micro-structural constraints, such as inefficiency, infrastructure limitations, and low labor skill, have reduced supply-side responsiveness to demand-side performance and policy stimuli. Other domestic factors that contribute to the problem of inflation are inefficiency of market structure and distribution channel. Externally, however, changes in global commodity prices have the potential to intensify domestic inflationary pressures.

² A body of research conducted by Bank Indonesia found a high degree of core inflation persistence. Alamsyah (2008) further verified these findings of high inflation persistence. The degree of persistence of headline inflation, disaggregated based on groups of goods and services, was found in the range of 0.8–0.9. However, the general trend indicated a decline between the periods before and after the crisis.

Supply-side rigidity to changes on the demand side has been corroborated by empirical findings concerning changes in the supply curve, which is less elastic as a result of structural changes in the economy (Bank Indonesia, 2010).³ *First*, during the crisis period the slope of the supply curve tended to be steeper, which implied that inflation was more sensitive to output. This denotes that with a similar change in demand, the corresponding change in price would tend to be larger. *Second*, the relatively steeper supply curve for 1998 – 2009 compared to 1998 – 2008 is evidence that the global financial crisis in 2008 increased the potential for problems on the supply side. *Third*, structural problems that prompted a convex Phillips Curve indicated capacity constraints in the economy of Indonesia, primarily occurring during a period of economic crisis. This remains the principal factor behind difficulties (rigid) in reducing inflation.

An imperfect market structure for a number of specific commodities as well as an inefficient distribution channel have the potential to trigger price rigidity (Bank Indonesia, 2010). Observations by Bank Indonesia indicate that the market structure of several commodities is imperfect. As a result of such a market structure, business players have the opportunity to directly pass on higher production costs to consumers but also maintain prices when the cost of raw materials declines. Consequently, downward price rigidity is the outcome if such conditions endure. Meanwhile, an extended distribution channel not only drives up the prices paid by consumers, it also amplifies risk in the distribution channel. An assessment of the distribution channel revealed that agricultural produce (rice and cayenne peppers) have a longer distribution chain due to the involvement of brokers/middlemen with the largest margins. Furthermore, other

³ Constitutes a revisit to studies concerning the Phillips Curve in Indonesia (Solikin, 2004). Substantively, the conclusions drawn are the same, namely that structural changes attributable to the financial crisis of 1997/1998 have created a less elastic and non-linear Phillips Curve in Indonesia.

strategic produce is constrained by the prevailing auction system. In this case, distributors and wholesalers dominate the bidding at auctions.

In addition to the problems already mentioned, **externally**, the soaring oil price, be it due to strong demand, limited production or speculation, heightens inflationary pressures. Spiralling oil prices, accompanied by rising global commodity prices, has the potential to push inflation beyond the corresponding target corridor set. On the other hand, there remains uncertainty surrounding the crisis recovery in developed countries, among others due to increasingly limited scope for fiscal stimuli and relatively weak purchasing power, which is feared could affect demand for export commodities from Indonesia. Additionally, soaring global commodity prices, particularly the price of oil, could provoke policy changes regarding government subsidies. This has the potential to further inflame inflationary pressures due to the rising prices of strategic goods and services like the basic electricity tariff, liquefied petroleum gas, fuel subsidies and transportation costs. The direct and indirect effects of such a policy would not only drive up inflation but also retard economic growth looking ahead.

2.2. The Dynamic Challenges of Foreign Capital Flows and the Exchange Rate

As a small open economy, Indonesia faces a number of fundamental challenges in its implementation of monetary policy relating to the recent and persistent inundation of foreign capital flows. Firstly, the deluge of foreign capital inflows has encouraged rupiah appreciation, which could potentially undermine purchasing power and the current account. An open capital account, coupled with an influx of capital flows, ensures that capital flows, rather than the current account, tend to dominate shifts in the exchange rate. Accordingly,

capital inflows drove nominal rupiah appreciation up by 15.9% in 2009 and 4.5% in 2010. Risk of the exchange rate overshooting has been mitigated by Bank Indonesia through foreign exchange market intervention. In real terms, the value of the rupiah appreciated by 17.8% in 2009 and 11.4% in 2010, despite remaining relatively competitive compared to a number of other countries in Asia.

Secondly, capital flow volatility creates financial system vulnerability. Capital flows that fluctuate widely compared to the capital account, amid ubiquitous herding behaviour, encourage excess flows that can reverse suddenly in the event of a change in market sentiment. Moreover, an increase in capital flows, especially short term, can amplify financial market volatility and, in turn, act as a shock amplifier. These consequences could be further exaggerated by weak infrastructure and a lack of financial market depth, as is often found in developing countries like Indonesia. Amid limited financial market depth and long-term investment opportunities, the majority of capital flows towards short-term financial instruments like SBI and SUN, which are particularly vulnerable to a reversal.

Thirdly, a surge in foreign capital inflows compounds the complexity of challenges faced in terms of domestic monetary management. Persistent foreign capital inflows can undermine the efficacy of monetary management considering that measures to manage liquidity in the economy by Bank Indonesia are ultimately offset by the sheer magnitude of the capital inflows. This reduces the degree of monetary policy independence to external forces (Juhro, 2010) and is reflected by the orientation of monetary policy, which not only strives to control inflation but also (eventually) mitigates rupiah appreciation through intensive intervention. In

other words, interest rate dynamics are not fully influenced by market forces, domestic monetary policy is the primary determinant.

The challenges outlined represent a trilemma continuously faced by all open countries like Indonesia. Essentially, countries with open economies are constantly faced with a trilemma between free capital flows, exchange rate stability and independent monetary policy in the interest of the domestic economy. This trilemma triggers additional complications to the implementation of ITF-based monetary policy in the context of an open economy because on one hand the role of the exchange rate as a shock absorber is not fulfilled and, on the other hand, there is a tendency to steer monetary policy, directly or indirectly, towards managing the exchange rate. Amid a deluge of foreign capital inflows, policy orientation towards managing external balances can become counterproductive to the management of internal balances.

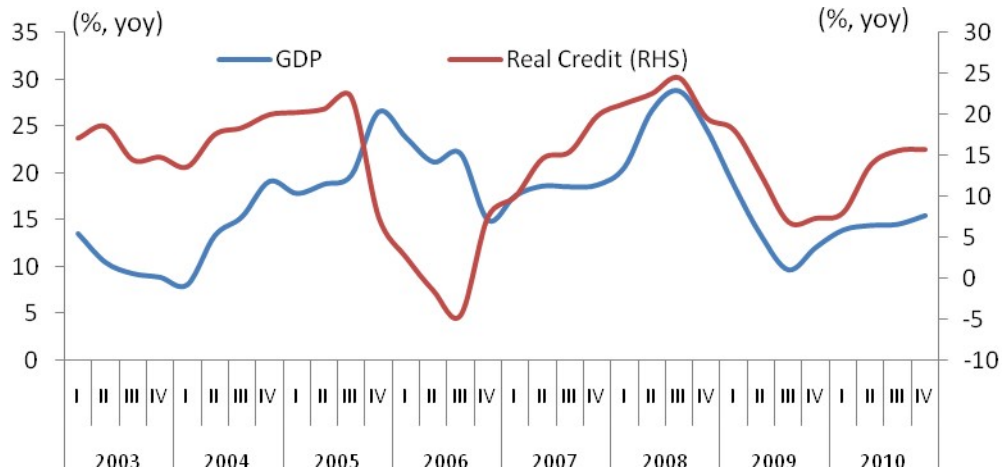
2.3. Dynamic Challenges of the Financial Sector and Monetary Policy Transmission

The procyclical behaviour of the financial sector as well as the surge in capital flows has magnified complications to monetary policy management. The financial sector basically behaves procyclically in synergy with the business cycle. Rising asset prices, market player optimism and stronger demand for credit during an expansionary phase, and vice versa, explain why the financial sector always behaves procyclically (Agung, 2010). As a result of such characteristics, when the economy experiences a contraction and the value of collateral declines, even reputable companies with sound projects have difficulty acquiring credit. Conversely, when the economy improves and the value of collateral increases, such firms regain access to banks and this catalyses the economy. Financial sector procyclicality becomes more prevalent when

driven by foreign capital inflows. Capital will flow into an economy when the outlook is favourable and flow out of an economy during a contractionary phase (Ocampo, 2008). Consequently, the financial sector tends to exacerbate economic fluctuations.

In Indonesia, procyclicality is reflected by the performance of bank credit during expansionary and contractionary phases. Observing credit growth, interest rate spread and capital during periods of expansion and contraction reveals the magnitude of procyclicality in the banking system of Indonesia. Figure 1, which presents GDP and credit growth over time, demonstrates the close correlation between real GDP growth and real credit growth. Real credit moves procyclically and outpaces GDP growth during expansionary periods but the opposite is true during a contractionary phase. As an example, after the crisis in 1997/1998, the ongoing credit crunch, namely risk aversion by banks in terms of extending credit, undermined the already sluggish economic recovery process in Indonesia. Subsequently, from the beginning of 2002 credit expanded gradually before ultimately contracting sharply in line with the economic slowdown after fuel price hikes in 2005. After plummeting to its nadir in 2006, credit steadily rebounded and peaked in 2008 at 38% in Quarter III-2008. This period illustrates perfectly a cyclical upswing driven on the back of rising international commodity prices and confidence from economic players in the banking sector and real sector. During this period of optimism banks tended to underestimate risk as reflected by the narrow interest rate spread.

Figure 1. Procyclicality of Bank Loans



Source: Bank Indonesia

Risk behaviour also contributes to procyclicality in the financial sector. Similar to the findings proposed by Borio et al (2001), an unproportional response by market players in terms of risk evaluation will heighten procyclicality. Market players and banks in general tend to be overoptimistic during a propitious economic cycle and overly pessimistic during an unfavourable cycle. In the case of Indonesia, a study conducted by Satria and Juhro (2011) found that the risk perception of market participants and the level of risk in the banking sector played a significant role in monetary policy transmission.

3. Towards a New Monetary Policy Framework

With reference to monetary policy, the key question is how the monetary policy and exchange rate framework can overcome the issues outlined in the previous section. Fundamentally, the overarching goal of monetary policy continues to focus on achieving price stability or low inflation. The problem is, however, that when confronted by the challenges summarised in the previous section the standard inflation targeting monetary policy framework cannot be applied effectively. As an example, under the standard ITF, the interest rate is used as the sole monetary policy instrument, which subsequently affects aggregate demand and the output gap, with inflation expectations guided towards the inflation target band set. However, in an open economic system raising the interest rate is oftentimes ineffective because of the subsequent surge in capital inflows that add liquidity into the economy. Without sterilisation the additional liquidity will drive up inflation and trigger an asset bubble, which affects financial system stability. Therefore, new instruments are required to cope with the dilemma faced by central banks. The following subsection discusses the design of a contemporary ITF to overcome the most salient challenges in the implementation of monetary policy in Indonesia.

3.1. Inflation Targeting Framework (ITF): Is it still relevant?

The crisis taught us that monetary policy must remain focused on price stability as the primary goal. Advanced countries central bank failures to avoid the global crisis were often addressed in the failure of monetary policy, which was narrowly focused on price stability. It cannot be denied that in the era known as great moderation the global economy could maintain low inflation with sustained economic growth in a quite long period. However, nascent

consensus seems to indicate that achieving price stability is insufficient to guarantee macroeconomic stability as a whole because macroeconomic instability frequently stems from instability in the financial sector, even when inflation is maintained at a low level (Bean, et al, 2010). The next question is whether an inflation targeting monetary policy framework that aims to achieve price stability is still relevant. The answer is a resounding yes.

ITF remains a reliable monetary policy strategy in Indonesia. Theoretically, an ITF policy framework oriented towards achieving low inflation and implemented with greater transparency is surely still relevant when the objective of monetary policy is to achieve price stability. Mishkin (2011), who holistically evaluated nine principles of monetary policy, including ITF, which had become a kind of consensus prior to the crisis, concluded “none of the lessons from the financial crisis in any way undermines the nine basic principles of science of monetary policy”.

Empirically, evaluations of ITF application in Indonesia over the past five years have yielded a number of noteworthy outcomes, namely (i) institutional strengthening of the monetary policy decision-making process; (ii) clear monetary policy signals that affect inflation expectations; and (iii) increased policy credibility.

Referring to the **institutional strengthening of monetary policy**, the implementation of ITF has institutionally improved Bank Indonesia in its systematic application of monetary policy, in a structured manner and based on principles of good governance when formulating public policy. This is evidenced by the policy-making process and procedures that are more transparent and utilise independent decision-making as well as being accountable to the public. Bank Indonesia has changed from a previously internally oriented organisation to a more outward-

oriented organisation that conducts intensive communication with the general public concerning its monetary policymaking.

Regarding **policy signal clarity**, through a gradual and ongoing learning process, buttressed by intensive communication with the public, the inflation targeting framework has successfully bolstered monetary policy transmission through expectations. The general public increasingly understands the background behind monetary policymaking and more readily captures monetary policy signals, thereby strengthening and expediting monetary policy transmission. Such circumstances differ greatly from conditions prior to the application of inflation targeting, when policy signals relied upon base money, which were not easily picked up by the market and, thus, under certain conditions tended not to alter expectations or, even worse, undermine expectations.

In harmony with the two successes detailed above, improved monetary policy credibility could slowly but surely be strived for. Several indicators support this conclusion. *First*, observations through surveys and empirical testing demonstrate that there is or has been a behavioural shift in the formation of public inflation expectations, which previously tended to be backward looking but are now more forward looking; and this has had a positive effect on reducing the degree of inflation persistence. *Second*, in line with nurturing sought-after credibility, Bank Indonesia regularly announces policy stance by employing its policy rate (BI Rate) as a key economic indicator that is referred to by players on the money market and the business community as a whole. In addition, irrespective of the differing perceptions held by Bank Indonesia and the Government in terms of forecasting inflation and other macro indicators, the public generally seems to comprehend why this difference occurs.

Nevertheless, achievement of the inflation target, which is the overriding objective of a central bank, is not as straightforward as it seems. A number of structural shocks on the supply side over the past six years have pushed inflation beyond the target corridor set, more specifically in 2005, 2008 and 2010. In the years of 2005 and 2008 inflation jumped to double digits as a result of government policy to raise fuel prices.⁴ Meanwhile, in 2010 inflation slightly exceeded its target as an impact of soaring commodity prices traded internationally and weather anomalies that disrupted agricultural production. Looking ahead at potential inflationary pressures, it seems unlikely that inflation will hit its long-term target of 3-4% in the near term, similar to conditions in advanced countries and neighbouring ASEAN countries.

Table 1. Inflation Target and Actual

Year	Inflation Target	Actual Inflation	Core Inflation	SBI rate	Underlying Factors
2005	6 ± 1	17.1	9.7	9.17	Global shocks, fuel price increases pada in Marh and October
2006	8 ± 1	6.6	6.03	11.83	
2007	6 ± 1	6.6	6.29	8.56	Fuel price increase (Mei)
2008	5 ± 1	11.06	8.29	8.67	
2009	4.5 ± 1	2.72	4.09	6.5	Global commodity price increase, weather anomaly
2010	4.5 ± 1	6.39	4.29	6.5	

Source: Bank Indonesia

Difficulty in achieving the inflation target, in addition to structural constraints on the supply side, is also linked to the complexities faced by Bank Indonesia in the monetary sector. As experienced over the past three years, in order to overcome the inundation of capital flows, so that excessive appreciation pressures are not levied upon the rupiah exchange rate,

⁴ Fuel price hikes occurred twice in 2005, once in March by an average of 30% and then in October by an average of 96%. Furthermore, fuel prices were also raised in May 2008 by around 33%.

Bank Indonesia has intervened to purchase foreign exchange, thereby increasing liquidity on the domestic money market. This contributed to excess liquidity, which subsequently had to be reabsorbed by Bank Indonesia in order to avoid inflationary pressures in the future. Of course, these efforts undertaken by Bank Indonesia to maintain macroeconomic stability were not without their own consequences considering the magnitude of monetary operational costs expended, which will ultimately affect the financial performance of Bank Indonesia looking ahead.

On the other hand, sources of macroeconomic instability are increasingly emanating from the financial system. A financial system characterised by procyclical behaviour recurrently magnifies macroeconomic fluctuations. According to Nijathaworn (2009), procyclicality is not merely the result of interaction between the business cycle and financial cycle; however, it is also affected by the risk-taking cycle, namely behaviour signified by excessive optimism during an expansionary phase and overt pessimism during a contractionary phase. Efforts to maintain macroeconomic stability are inseparable from endeavours to reduce immoderate procyclicality. To this end, synergy should be sought between monetary policy and macroprudential policy.

The monetary policy framework needs to be strengthened by refining the future ITF implementation strategy. Accordingly, evaluations of ITF implementation in Indonesia over the past five years have also evidenced the requirement for a number of adjustments and refinements to the inflation targeting framework, which have been undertaken (Juhro et al., 2009). In this case, the role of macroprudential policy and exchange rate policy need to be integrated into operational monetary policy.

3.2. Monetary and Macroprudential Policy Integration

The global financial crisis reinforced the paradigm that macroeconomic stability is not merely achieved through monetary stability but also determined by financial stability. Empirical facts indicate that the era of great moderation over the past decade optimistically isolated the global economy from exposure to crises triggered by financial sector vulnerabilities.⁵ This implies that efforts to achieve macroeconomic stability must be supported by financial system stability as a whole - “there is no macrostability without financial stability”.

To this end, it is essential that future policy formulation at Bank Indonesia takes into consideration the strategic role played by monetary policy and the financial system together (Goeltom, 2009, Juhro et al., 2009; Agung, 2010). The dynamics that occurred during the financial crisis demonstrated that it is increasingly necessary to steer monetary policy towards anticipating the risk of macroeconomic instability stemming from the financial system. This implies that sound macroeconomic management must also take into account financial system stability. Adhering to this policy perspective, in order to strengthen monetary and financial system stability, Bank Indonesia must utilise instruments that can maintain financial system stability as a whole, e.g. macroprudential instruments, as part of its policy instruments.

According to such thinking, appropriate monetary and macroprudential policy integration or synergy is required in order to buttress monetary and financial system stability. The commonly accepted overriding objective of monetary policy is to maintain price

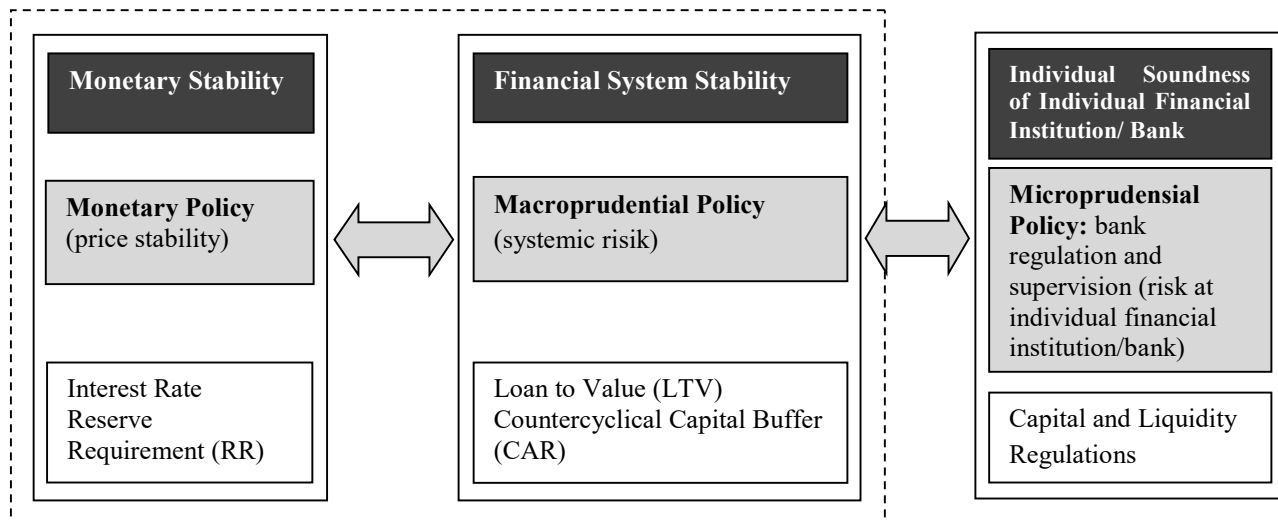
⁵ In general, economists associate a period of great moderation with a period when economic shocks (volatility) are minimal. Clarida (2010) describes the period of great moderation as a period of “predictable policy, low inflation and modest business cycles.” Source: http://en.wikipedia.org/wiki/Great_Moderation.

stability. To achieve this goal, central banks normally use the interest rate as the main policy instrument. However, preserving price stability is insufficient to guarantee macroeconomic stability because the financial system is procyclical, which leads to excessive economic fluctuations. Meanwhile, the goal of macroprudential policy is to ensure the resilience of the financial system as a whole in order to underpin financial intermediation in the economy. With its countercyclical role, macroprudential policy supports monetary policy in the pursuit of maintaining price stability and output.

The successful achievement of the goals of monetary policy and macroprudential policy is mutually reinforcing. Measures are taken to strengthen financial system resilience and bolster monetary policy, among others, by protecting the economy from sharp shocks to the financial system. Conversely, macroeconomic stability will reduce financial system vulnerabilities that are procyclical by nature. Holistically, therefore, large adjustments are perhaps not required to interest rate policy compared to when there is a lack of integration or policy coordination. Meanwhile, macroeconomic policy will affect the supply of credit and, hence, monetary policy transmission. The efficacy of policy coordination depends upon the macroeconomic environment, financial conditions, the intermediation process as well as the level of capital and assets in the banking system. Therefore, it is unrealistic to expect a combination of monetary and macroprudential policy to eliminate the economic cycle in its entirety. The overarching goal of policy integration is to manage the cycle and augment financial system resilience on a macro scale.

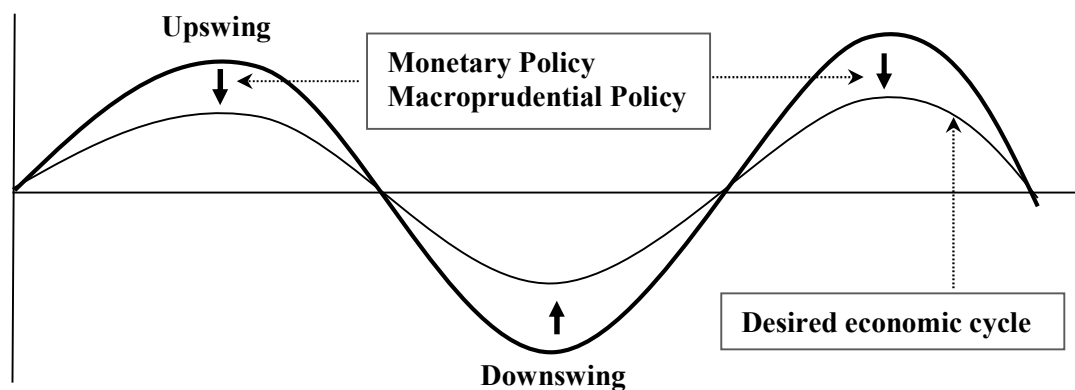
A framework to reinforce monetary stability and financial system stability through monetary and macroprudential policy integration is illustrated in the chart below.

Chart 1. The Framework of Monetary – Macroprudential Policy Integration



Monetary and macroprudential policy integration can also be explained as follows. For instance, macroprudential policy aims to tighten capital and liquidity requirements during an economic upswing, thereby encouraging banks to rein in credit growth in an attempt to maintain future bank resilience when the economy experiences a downturn. Under such conditions, efforts to preserve banking system resilience will concomitantly underpin the goal of monetary policy, which is to stabilise the supply of credit. Therefore, the objective of countercyclical macroprudential policy is in harmony with the goal of monetary policy in terms of reducing excessive economic fluctuations.

Chart 2. Monetary and Macroprudential Policy to Dampen Procyclicality



Referring to the framework presented above, **there are a number of requirements for the appropriate implementation of monetary and macroprudential policy integration.** *First*, thorough comprehension is required on the linkages between monetary policy, macroprudential policy and microprudential policy due to potential conflicts in the achievement of policy objectives. Ergo, the use of an instrument mix or new supplementary instruments is an appropriate alternative measure. *Second*, understanding is required on how the monetary and macroprudential policy transmission mechanism affects economic activity, which requires a more integrated analysis framework, particularly in terms of calculating the significant role of the financial sector. *Third*, accurate measurement of risk indicators is required in order to monitor risks in the system. In addition, such indicators will also strengthen analysis of the transmission mechanism through the risk-taking channel.

3.3. Managing the Dynamics of Capital Flows and Exchange Rates

Greater domestic economic integration with the global economy, coupled with a deluge of foreign capital flows, has increased macroeconomic management complexity, in particular monetary and exchange rate policy. Accordingly, monetary policy is recurrently faced with a trilemma, e.g. the impossible trinity, between free capital flows, exchange rate stability and independent monetary policy in the pursuit of price stability.

To confront this issue, the choice becomes how to transform the impossible trinity into a possible trinity. The concept of the possible trinity can be expressed as an intermediate solution that avoids volatile swings in the exchange rate, controls excessive short-term capital inflows and reinforces independent monetary policy (Palley, 2009). Therefore, a policy mix is required in order to strike an optimal balance between these three goals.

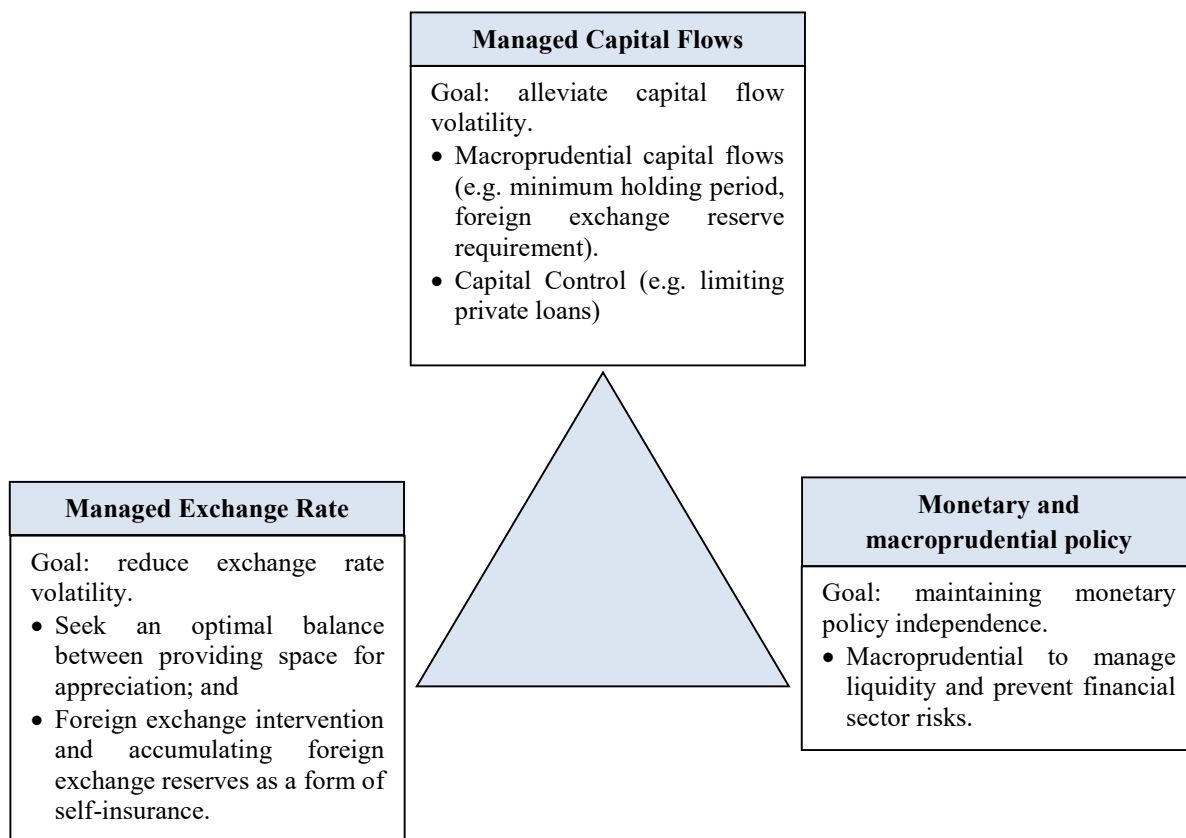
To address capital flows, in terms of the exchange rate, the rupiah should be managed to remain flexible and provide space to appreciate but also avoid being overvalued as this will endanger macroeconomic stability. Consequently, Bank Indonesia's presence is required on the foreign exchange market to ensure that the rupiah does not deviate with excessive volatility. Of course, this option is no longer available if the rupiah becomes overvalued. Simultaneously, efforts to accumulate foreign exchange reserves are vital as a form of self-insurance considering that short-term capital flows are particularly vulnerable to the risk of sudden reversal.

Regarding capital flows, by continuing to adhere to a free foreign exchange regime, macroprudential measures consist of policy options designed to reduce excessive short-term capital flows. Such measures have been introduced by Bank Indonesia through regulations that oblige investors to hold Bank Indonesia bills (SBI) for a minimum period of one month. This

policy has helped diversify foreign portfolio capital flows and extend the duration of Bank Indonesia bills.

Monetary policy complexity stemming from the interest rate can partially be resolved by quantitatively applying tighter monetary policy by raising the reserve requirement. In addition, macroprudential policy aims to avoid asset bubbles and excessive credit growth, which could trigger potential financial system instability. This type of macroprudential policy is effective if banks can intermediate the capital flows. Nevertheless, if the capital flows emanate directly from unregulated sectors, like direct loans from the private sector, measures to control capital inflows are another option, for example by limiting private loans.

Chart 3. Monetary Trilemma Management



The coordinated implementation of a policy instrument mix is ultimately part of an important strategy to employ an optimal possible trinity in the current climate blighted by widespread uncertainty. Coordination is critical, not only to address the two sources of imbalances (external and internal imbalances), but also to optimally manage the impact of monetary policy; while avoiding overkill and mutual exclusivity. To this end, policy coordination should be based upon a wider implementation framework as formulated in the crisis management protocol (CMP) scheme, which incorporates prevention, management and resolution.

In this context, **measured management of the dynamics of foreign capital flows is required**. As the first line of defence, Bank Indonesia and the Government will apply prudent and consistent macroprudential policy in order to maintain positive perceptions of the domestic economy in general. More specifically, these measures include the possibility of permitting exchange rate appreciation, the accumulation of foreign exchange reserves and other monetary and fiscal policies. In this regard, Bank Indonesia continuously assesses prudential and structural policies to manage capital inflows, for instance by applying a minimum holding period for domestic portfolio, and limits on the Net Open Position (NOP) of foreign exchange and the account balance in rupiah for foreign banks, as well as applying a foreign exchange reserve requirement as outlined in Table 2.

Table 2. Post-global Crisis Macroprudential Policy Measures

Measure	Objectives
Minimum Holding Period on BI bills (one month in 2010 and changed to six months in 2011)	<ul style="list-style-type: none"> To put sand in the wheels of short-term and speculative capital inflows, as well as mitigate the risk of sudden reversals.
Shifting BI bills to Term Deposits as of June 2010	<ul style="list-style-type: none"> To lock up domestic liquidity to longer term and limit the supply BI bills on the market.
Reinstate limits on short-term offshore bank borrowing	<ul style="list-style-type: none"> To limit short-term and volatile capital inflows. To limit FX exposure of the banking system stemming from capital inflows.
Increase FX reserve requirements of the banks	<ul style="list-style-type: none"> To strengthen FX liquidity management, and thereby the resilience, of the banking system in confronting increasing FX exposure emanating from capital inflows. Help absorb domestic liquidity.
Increase rupiah reserve requirement from 5% to 8%, effective Nov 2010	<ul style="list-style-type: none"> To absorb domestic liquidity and enhance liquidity management by the banks without exerting negative impacts on lending that is required to stimulate growth.
Lengthen (from weekly to monthly) auctions and offer longer maturity (3, 6 and 9 months) of BI bills as of June 2010	<ul style="list-style-type: none"> To enhance the effectiveness of domestic liquidity management, including from capital inflows, by locking up to longer term and helping develop domestic financial markets.

Meanwhile, in line with such measures to manage foreign capital inflows, exchange rate management that is in harmony with fundamental conditions is conducted through symmetrical foreign exchange market intervention, which provides space for rupiah appreciation in the event of an influx of foreign capital flows. Accordingly, the amount of rupiah appreciation permitted must remain congruous with the degree of exchange rate appreciation in neighbouring countries. Therefore, in addition to helping ease inflationary pressures, exchange rate management is not expected to undermine the competitiveness of the domestic economy.

When the economy is beset by more arduous challenges consisting of a further deluge of foreign capital inflows, and amid domestic inflationary pressures, Bank Indonesia will

consider **the application of follow-up policies**, including Capital Flow Management (CFM).⁶ It should be emphasised that the sequence of policy measures to manage foreign capital inflows is critical, particularly for an economy like Indonesia that departed from open conditions in line with the application of a free foreign exchange regime at the beginning of the 1980s. In this context and with due regard to the policies practiced in several other countries, the various stages of policy commence with measures adhering to a free foreign exchange system and then subsequently become more managed.

3.4. A Modern Monetary Policy Framework: Towards a New ITF

Considering the elements presented in this paper, a post-global crisis monetary policy framework is, in general, characterised by the following:

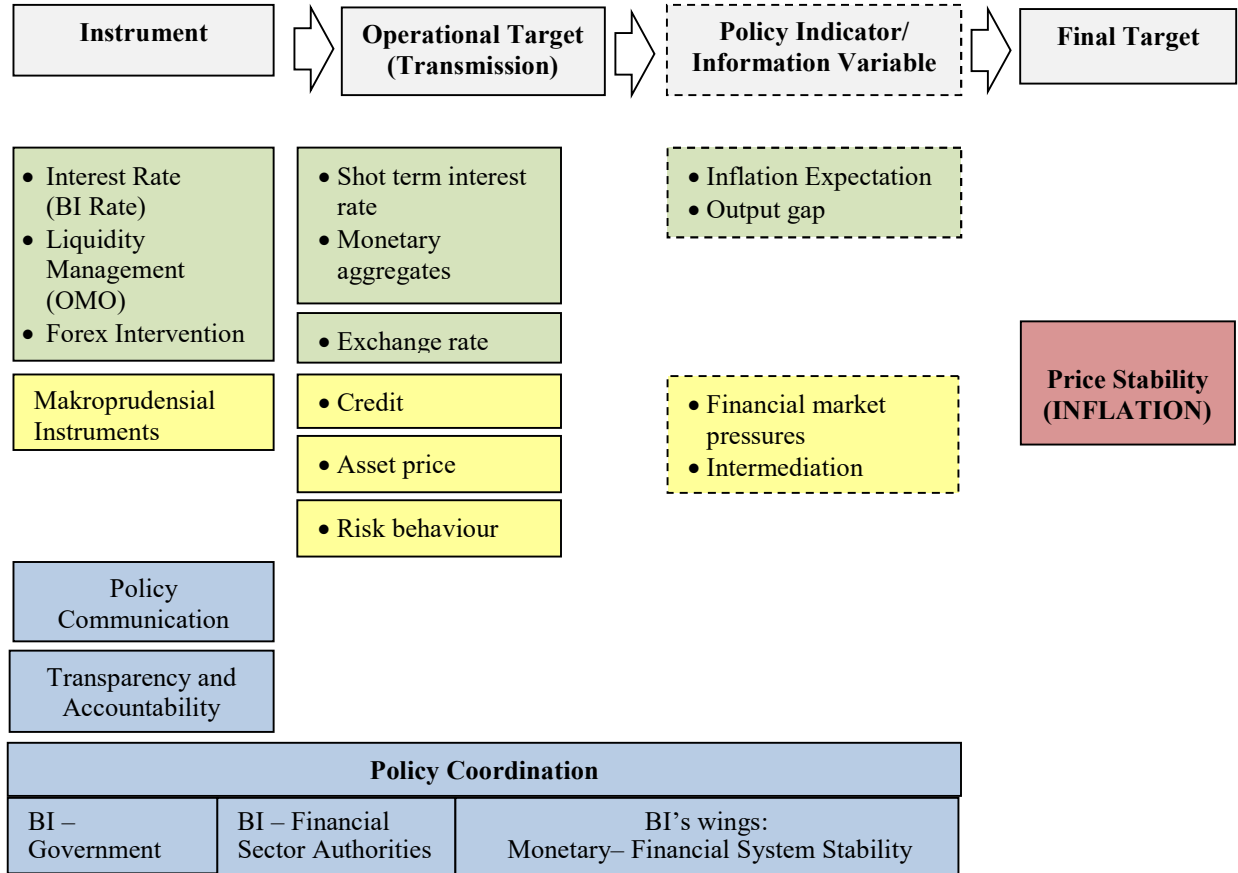
- **Flexible ITF.** The policy framework continues to adhere to an inflation target as the overriding objective of monetary policy. The main characteristics of ITF will remain, namely that the inflation target is announced publicly and that monetary policy is forward-looking, transparent and clearly accountable (Alamsyah, et al, 2001). However, ITF as implemented in a number of countries is flexible. Bank Indonesia must not only look at the inflation target merely in terms of policy formulation but also consider a number of other factors, including financial sector stability and supply factors.

⁶ According to IMF guidelines (2011), CFM is best applied when an economy meets the following three conditions: (i) The exchange rate is not undervalued multilaterally; (ii) Foreign exchange reserves are excessive and, thus, incur additional costs; (iii) The economy is overheating; the inflation outlook is rising and there is risk of a credit boom or asset price boom.

- **Integrated with macroprudential policy.** Under a new inflation targeting policy framework, monetary and macroprudential policy would be integrated in order to guarantee macroeconomic stability. According to this paradigm, financial factors play a crucial role in the transmission of monetary policy through the corporate balance sheet channel, bank balance sheets as well as the risk-taking behaviour of banks and firms (Juhro et al., 2009; Agung 2010). Macroprudential policy is instituted in order to overcome short-term capital flows, manage liquidity in the domestic economy and mitigate the risk of instability in the financial system.
- **The exchange rate management as a part of monetary instrument.** Differing from standard ITF where the exchange rate is exogenous, under this framework the exchange rate is managed to play a role in achieving price stability. In emerging market countries with an open capital account and a free-floating exchange rate regime, shifts in the exchange rate are oftentimes affected by exchange rate volatility, which is not necessarily related to economic fundamentals. Allowing capital flows to move in line with market mechanisms precipitates exchange rate volatility and misalignment risk, which can undermine macroeconomic stability. Consequently, the exchange rate must be managed in order to support price stability.
- **Policy coordination is an essential element.** Policy coordination, principally with the fiscal authority as well as sectorally, is crucial considering that inflation stemming from the supply side creates the majority of inflation volatility.
- **Communication strategy is an instrument.** Communication strategy is considered as one monetary policy instrument in the context of guiding future inflation expectations, shifts in the exchange rate and the role of macroprudential policy as a whole.

The new monetary policy framework is illustrated in Chart 4.

Chart 4. New Inflation Targeting Policy Framework



It worth noting that a change in the framework will have a number of significant implications on the institutional mandate of Bank Indonesia. The paradigm that monetary policy requires the support of macroprudential policy has the consequence of being unable to separate monetary policy from macroprudential policy in order to ensure effective implementation.

4. Conclusion

This paper concludes that a change to the monetary and exchange rate policy framework is required in the current post-global crisis era. In principle, the global crisis did not alter the key paradigm that the overarching goal of monetary policy remains price stability. However, a new paradigm must be considered in the design of future monetary policy framework, namely that Bank Indonesia policy must be directed towards anticipating macroeconomic instability risks that stem from the financial system. Considering that monetary instruments cannot be used to achieve an array of concomitant goals, Bank Indonesia will supplement its policy with the full panoply of instruments available, including macroprudential instruments that directly aim to ensure financial system stability. In other words, the central bank policy framework must integrate monetary and macroprudential policy.

In terms of the exchange rate, increasing integration between the Indonesian and global economies has led to the emerging influence of foreign capital flows on shifts in the exchange rate that is often discordant with economic fundamentals. Bank Indonesia is continuously plagued by a dilemma in its implementation of monetary policy due to persistent foreign capital flows. In this context, Bank Indonesia is forced to manage a trilemma in its policy mix, including the monetary, exchange rate and macroprudential policy mix in order to overcome procyclical capital flows. Bank Indonesia will be ineffective in its macroeconomic management in the event of dependence on merely one instrument.

References

- Agung, Juda (2010), “Integrating Monetary and Macroprudential Policy: Towards a new Monetary Policy Paradigm in Post-Global Crisis Indonesia”, Paper SESPIBI, Bank Indonesia.
- Alamsyah, Halim (2008), “Inflation Persistence and Monetary Policy in Indonesia”, Doctoral Dissertation, Faculty of Economics, University of Indonesia.
- Alamsyah, H., Joseph, C., Agung, J., Zulverdy, D. (2001), “Towards Implementing Inflation Targeting in Indonesia”, *Bulletin for Indonesian Economic Studies*, Australian National University.
- Bank Indonesia (2010), *Economic Report on Indonesia 2009*, Bank Indonesia.
- Bean, Charles, Matthias Paustian, Adrian Penalver and Tim Taylor (2010), “Monetary Policy after the Fall”, Federal Reserve Bank of Kansas City Annual Conference Jackson Hole, Wyoming.
- Bernanke, Ben, T. Laubach, F. Mishkin, and A. Posen (1999), *Inflation Targeting: Lessons from the International Experience*. Princeton: Princeton University Press
- Blinder, Allan S. (2010), “How Central Should the Central Bank Be?”, Princeton University CEPS Working Paper No. 198, January.
- Borio, C, C Furfine and P Lowe (2001): “Procyclicality of the financial system and financial stability: issues and policy options” in “Marrying the macro- and microprudential dimensions of financial stability”, *BIS Papers*, no 1, March, pp 1-57
- Goeltom, Miranda S. (2010), “Financial Crisis and Shifting Paradigm”, in *From Crisis to Crisis: A Central Banker’s Perspective*, forthcoming, Gramedia.

- IMF (2011), “Recent Experiences in Managing Capital Inflows—Cross-Cutting Themes and Possible Guidelines”, Document for Official Use Only.
- Juhro, Solikin M, et al (2009), “Review of the Application of ITF di Indonesia”, Directorate of Economic Research and Monetary Policy, Bank Indonesia.
- Juhro, Solikin M. (2010), “The Vicious Circle of Rising Capital Inflows and Effectiveness of Monetary Control in Indonesia”, Research Note, Directorate of Economic Research and Monetary Policy, Bank Indonesia
- Mishkin, Frederic S. (2011), “Monetary Policy Strategy”, *NBER Working Paper*, No. 16755, February.
- Nijathaworn, B (2009), “Rethinking Procyclicality: what is it now and what can be done”, Paper presented at BIS/FSI-EMEAP High Level Meeting on *Lessons Learned from the Financial Crisis – An International and Asian Perspective*, 30 November 2009, Tokyo.
- Ocampo, J.A. (2008), “Macroeconomic Vulnerability: Managing Pro-Cyclical Capital Flows”, http://www.bot.or.th/English/EconomicConditions/Semina/Documents/09_Presentation_Ocampo.pdf
- Palley, Thomas I. (2009), “Rethinking the Economics of Capital Mobility and Capital Controls”, *Brazilian Journal of political Economy*, vol. 29, n° 3 (115), pp. 15-34, July-September.
- Satria, Doni and Solikin M. Juhro (2011), “Risk Behaviour and Monetary Policy Transmission Mechanism in Indonesia”, *Bulletin of Monetary Economics and Banking*, January.
- Solikin (2004), “Structural Changes and behaviour of the Phillips Curve in Indonesia: Existence, Formation of Expectations, and Non-Linearity”, *Bulletin of Monetary Economics and Banking*, March.