

# Fiscal policy, public debt management and government bond markets: the case for the Philippines

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## Abstract

The fiscal health of the Philippines has improved significantly over the past decade. Notwithstanding the dividends from reforms, challenges remain for the Philippines on the fiscal side. Policy coordination, primarily through the Development Budget Coordinating Committee, has helped to reduce the need for policy sterilisation. However, some concerns have been raised by the Bangko Sentral ng Pilipinas (BSP) about the reduced issuance of government securities as well as possible interest rate repression. Meanwhile, sufficient liquidity in the domestic economy has ensured that the crowding out of private offerings is not an immediate concern. Further reforms on public debt management are needed to promote efficiency, further develop the capital market and enhance overall financial stability.

Keywords: Fiscal policy, public debt management, Philippines

JEL classification: E630, H063

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## 1. Introduction

The fiscal health of the Philippines has improved significantly over the past decade. By 2005, there was widespread recognition that the fiscal position of the national government had become untenable. Subsequently, fiscal prudence was observed and new taxes were enacted. As a quick result, the fiscal position had almost returned to balance by 2007. This led to a reduction in the total outstanding government debt from a high of 74.4% of GDP in 2004 to a more manageable 52.4% of GDP by 2010. Along with improved fiscal balance numbers and relatively robust economic performance, the Philippines has earned credit rating upgrades and expects to do more in the near future. In recognition of the country's sustainable fiscal position, debt spreads have narrowed to levels better than those of higher-rated sovereign bond issuers.

Notwithstanding the dividends from reforms, challenges remain for the Philippines on the fiscal side. Weak revenue generation, enactment of revenue-eroding measures by the Philippine Congress and recent underspending have generated concerns for the fiscal authorities. While revenue shortfalls have been manageable, they may contribute to rising deficits in the future. Should the fiscal stance become unsustainable, public expenditure may again be constrained with a corresponding negative effect on economic growth.

With the improvement in the scale of government debt, the debt service burden has also become less of a fiscal drag. From 85% of total government revenue in 2004, the debt ratio fell to 57% by 2010. As a proportion of GDP, the debt service burden likewise dropped to 7.7 % in 2010 from a high of 13.6% in 2006. While the fiscal situation is currently under control, the prospect of either lost opportunities for improved economic performance or future instability requires further thought.

## 2. Potential for constraints on monetary policy from an unsustainable path for public debt

### 2.1 Measurement of the fiscal policy stance and public debt

As determined by the fiscal authorities, the fiscal policy stance is designed to deliver sound public financing including a commitment to medium-term objectives<sup>2</sup> combined with the flexibility to respond to changing economic conditions in the short term. Its measurement takes into consideration cyclical movements in the economy and contingent liabilities over the medium term. By cyclically adjusting the fiscal policy stance, important fiscal variables are scaled to GDP to provide some insight into cyclical patterns in the economy. Notwithstanding these measures, impulse responses generated from a vector error correction model (VECM)<sup>3</sup> show that public spending has been cyclical and needs to adopt a more countercyclical stance to support the economy against countercyclical spending shocks (Figure 1).

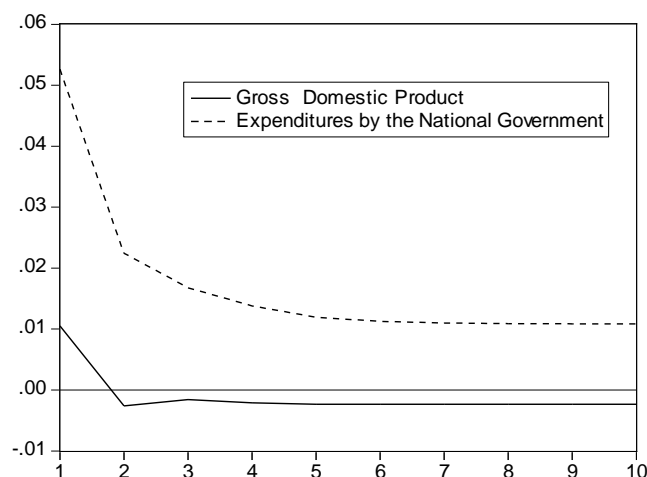
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<sup>2</sup> The medium-term goals of the fiscal programme pertain to fiscal consolidation with a view to meeting a targeted ratio of the fiscal deficit to GDP.

<sup>3</sup> The VEC model examines the impact of policy measures adopted during the global financial crisis. Monetary policy was proxied by M3 in real terms while fiscal policy was represented by government consumption. The VEC model is taken from Redoblado (2011). Please see Annex A for details.

Figure 1

**Response of national government expenditure to a GDP shock**



Public debt measures used in formulating the fiscal stance cover the Local Government Units (LGU), the 14 monitored Government Owned and/or Controlled Corporations (GOCCs), two Government Financial Institutions (GFIs), and three Social Security Institutions. Through the government’s fiscal risk management programme, contingent liabilities relating to pensions and health care spending are included in the medium-term fiscal programme. These items are periodically monitored but do not form part of the fiscal budget until assumed by the government. The government’s gross debt is measured by netting out deposits placed with the central bank. However, in the presentation of the consolidated public sector debt, the intra-sector debt holdings are netted out. With respect to the measurement of public sector assets when formulating the fiscal stance, these assets (eg central bank assets, state pension funds) are not seen as an offset to gross debt. Otherwise, the ratio of debt to assets would effectively be lower. The fiscal authorities, through the Development Budget Coordinating Committee (DBCC), set fiscal targets such as the key tax and spending priorities while avoiding an unsustainable rise in the burden of public debt.

**2.2 Interaction between monetary and fiscal policy**

Results from the same model suggest that the BSP and the national government have coordinated their policy actions so that policy sterilisation has been avoided. Both impulse response analysis and variance decomposition show that shocks to domestic liquidity allow for higher spending by fiscal authorities. The reverse is also true as higher government spending increases liquidity in the financial system. Consequently, policy measures undertaken by monetary and fiscal authorities do not offset each other.<sup>4</sup>

Moreover, it was observed that GDP reacts more to monetary policy than fiscal policy. It also seems that policy moves by monetary authorities take effect faster than fiscal policy action.<sup>5</sup> Also, while GDP is more responsive to innovations in monetary policy than to fiscal policy shocks, monetary policy tends to become countercyclical after roughly five quarters. This may be construed as heading off the inflationary effects of output growth as the slack in the economy is taken up by more economic activity.

<sup>4</sup> This may of course be subject to some threshold which could be the basis for future research.

<sup>5</sup> Variance decompositions indicate that monetary policy shocks account for the bulk of the response of GDP.

While benign interaction between monetary and fiscal policy has been observed during the global financial crisis and its aftermath, some concerns have been raised by the BSP on the national government's reduced issuance of government securities, as well as on the topic of possible interest rate repression.

The recent underspending in 2011 has left the national government with sufficient funds for its operations. Despite efforts to ramp up spending in the latter part of the year, the fiscal deficit incurred by the national government has only amounted to 65.9% of the programmed amount for the fiscal year (Table 1).

Table 1  
**National government fiscal performance**  
In billions of pesos

	December			January–December				
	2010	2011	Growth (%)	2010	2011	Growth (%)	Q1–Q4 2011 Program	% to Q1–Q4 2011 Program
Surplus/(Deficit)	–44.6	–101.5	127.4	–314.5	–197.8	–37.1	–300.0	65.9
Revenues	103.2	110.2	6.8	1,207.9	1,359.9	12.6	1,411.3	96.4
Expenditures	147.8	211.7	43.2	1,522.4	1,557.7	2.3	1,711.3	91.0

Source: Bureau of the Treasury.

Combined with the high level of liquidity in the financial system, this has led to a pattern of rejected bids in regular auctions of Treasury bills and Treasury bonds during the year. As a result, the amount awarded has, at times, been less than the offer size. In the primary auctions for Treasury bills, awards were below programmed offers on 13 out of 24 auction dates.<sup>6</sup> The Bureau of the Treasury (BTr) has cited the government's comfortable cash position and that the bids were deemed high as the reason for the rejections.

The BSP has expressed its concerns regarding the pattern of bid rejections. For one, the cash management concerns of the national government have to be weighed against its market-making role in the government securities market. Also, a steady and predictable supply of government securities in primary markets is critical for the proper functioning of credit markets. More importantly, the pattern of bid rejections leads to a higher differential between the benchmark Treasury bill rates and the policy interest rates. It should be noted that Treasury bill rates are used for pricing loans. Possible interest rate repression serves to confuse signals on the price of funding for borrowers. Consequently, an impediment to the efficient transmission of monetary policy has been artificially created.

<sup>6</sup> In 2010, full awards were not made in 10 of 24 auction dates for Treasury bills.

### **3. Domestic currency public debt issues in local markets**

#### **3.1 Shift from international to domestic financial markets for public debt**

Currently, there is sufficient liquidity in the domestic economy to obviate any concerns about the crowding out of private offerings. The BSP has encouraged the national government to access domestic financial markets and take advantage of this liquidity. It has even encouraged the national government to access its foreign exchange needs through domestic borrowing. This can be done in two ways. First, the national government can issue foreign currency-denominated debt to residents because foreign exchange liquidity in the Philippine financial system is also high. A second option is to issue domestic currency debt and then exchange the proceeds with the BSP to meet the government's foreign currency needs.

#### **3.2 Implications for capital market development**

Greater domestic borrowing would also promote the domestic capital markets. More domestic issuance would create incentives for the development of market infrastructure. It would also encourage more private firms to issue debt securities in domestic financial markets. Furthermore, as the government is often one of the few safe issuers of long-term debt, it would provide benchmarks that could then pave the way for private issuance of longer-maturity debt securities. This could be a boon for financing long-gestation (eg infrastructure) projects and could encourage greater private participation in infrastructure development.

From the point of view of a central bank, additional resident-sourced sovereign debt would also reduce the incentive of the government to inflate away its debt. With respect to external debt management, domestic issuance would also reduce the currency risks faced by the national government. Also, greater domestic issuance (especially in the domestic currency) would also reduce financial stability concerns.

#### **3.3 Lengthening maturity of domestic government bonds**

Higher liquidity in domestic markets also provides the opportunity for stretching the maturity of sovereign debt. The lengthening maturity of public debt would also reduce default risks for borrowers since there would be less exposure to rollover risks or to liquidity risk. As a market signal, issuance of debt with a longer maturity would signal relatively greater fiscal credibility as demand for such debt paper would not be viable without fiscal credibility. Similarly, it would also signal monetary credibility on the part of the central bank. However, the national government should also ensure that its cash flows will meet future liabilities and it must avoid bunching up on maturities. A bunching up on maturities poses risks for rolling over the debt and may even lead to greater volatility in market interest rates.

#### **3.4 Financial stability concerns**

##### **(a) *Capital inflows and potential for faster transmission of external shocks***

As most public debt is held by residents, the country's susceptibility to the effects of a sudden stop is reduced. Also, flows to domestic financial markets have been subdued compared with those into other regional financial markets. Several factors such as the relatively smaller size of domestic markets as compared to regional peers, limited offerings, political uncertainty and risk aversion may explain this effect. As domestic financial markets deepen, exposure to exogenous shocks may increase. However, since the distribution of asset holdings in domestic financial markets has heavily favoured residents, the risk profile is different than if the bulk were held by non-residents, who are more exposed to external shocks.

**(b) Reduced issuances as NG fiscal condition improved**

Significantly, the dearth of liquidity in short-term Treasury bills has negative implications for capital market development and long-term financial and macroeconomic stability. As the supply of benchmark Treasury bills in primary markets dries up, interest rates fail to reflect actual credit market conditions. Consequently, Treasury bills lose their usefulness as the benchmark for market interest rates and as the basis for loan pricing. Furthermore, the bid rejections and less-than-programmed award size make for higher volumes in succeeding auctions, thereby feeding higher interest rate volatility. Lastly, as the Treasury bill rates are repressed, investors seek higher returns in property and equities markets. These may feed into asset bubbles as the lower rates contribute to mispricing.

## **4. BSP and public debt management**

### **4.1 BSP's issuance of its own securities**

Under its charter, the BSP is not permitted to issue its own debt securities.<sup>7</sup> Coordination with the Department of Finance (DoF) on issuances of debt securities for the BSP has been considered. However, concerns about such an arrangement have arisen from the implications for the central bank's independence, coordination difficulties and the potential impact on the government's credit ratings.

The national government's issuance of debt securities on the BSP's behalf may undermine the central bank's independence. It should be noted that the government takes on a debt management perspective when it issues debt securities. The differing incentives arising from the separate objectives of fiscal and monetary policy could pose conflicts of interest for the Bureau of the Treasury, part of the Department of Finance, as the expected issuer. Consequently, coordination may be difficult even if detailed agreements are made between the monetary and fiscal authorities. Furthermore, as the national government operates in a more politicised environment, the BSP could be forced to defend its operational decisions to political forums. Such politicisation of the monetary policy implementation process represents an unnecessary distraction in the conduct of monetary policy and imposes transaction costs on the regular policy-setting process.

As capital inflows surge, the need for greater siphoning may ensue. This may require the national government to increase its stock of debt by more than its programmed size. Consequently, its willingness to continue issuing debt securities for the BSP may be diminished. Should it continue to do so, the increase in its debt stock as well as the corresponding negative effects on its debt ratios could trigger concerns on its credit ratings.

Based on the foregoing, it is deemed a better option for the BSP to pursue a proposed amendment to its charter that would again authorise it to issue its own debt securities.<sup>8</sup> If granted, it would expand the scope of open market operations and enable better inflation management especially in times of excess liquidity.

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<sup>7</sup> Section 92 (Issue and Negotiation of Bangko Sentral Obligations) of Republic Act no 7653 states that "issuance of certificates of indebtedness shall be made only in cases of extraordinary movements in price levels".

<sup>8</sup> The Charter of the old Central Bank of the Philippines (Republic Act no 265) granted it the authority to issue its own debt securities.

## 4.2 BSP's role in government debt management

Under Philippine law,<sup>9</sup> all government borrowing, whether peso- or foreign currency-denominated, require the approval of the Monetary Board. BSP staff examine the effects of these borrowings on monetary aggregates, foreign exchange reserves, the balance of payments and the sustainability of external debt.<sup>10</sup> The implications of these borrowings for monetary policy are also considered.

On a more direct basis, BSP representatives occupy two of the five seats in the auction committee of the Bureau of the Treasury. Their participation in the Auction Committee affords the BSP an inside view of primary markets for government securities and a unique vantage point from which to monitor credit market trends and lending.

Beyond the opportunities afforded by its participation in the Auction Committee and by its role in the approval of government borrowing, the BSP has not engaged in quasi-fiscal operations and unconventional monetary policies as practised by a number of central banks in advanced economies. Consequently, its balance sheet has not been exposed to shocks arising from such practices.

However, the management of surges in capital flows has had a significant effect on its balance sheet. As it accumulates foreign exchange reserves to manage the impact of capital inflows on domestic liquidity and inflation as well as on the exchange rate, the BSP is exposed to foreign exchange risk. Valuation losses from peso appreciation in the face of strong FX inflows have negative implications for the BSP's balance sheet and particularly for its capitalisation.

## 4.3 Governance arrangements for the coordination of monetary policy and public debt management

Within the BSP, the national government is able to coordinate monetary policy and public debt management through a seat on the Monetary Board. The government representative on the Monetary Board is currently the Secretary of the Department of Finance (DoF). In instances that the DoF Secretary is unable to attend, the usual substitute has been the Treasurer of the Philippines (ie the head of the agency that issues sovereign debt).

### **NEDA Board and related inter-agency committees<sup>11</sup>**

Beyond the confines of the BSP, its participation in macroeconomic coordination is through the Board of the National Economic and Development Authority (NEDA Board).<sup>12</sup> (Annex A lists the composition of the NEDA Board.) To assist the NEDA Board in the performance of its functions and duties, seven inter-agency cabinet level committees were formed. The BSP is also involved in two of these seven committees. These are the Development Budget Coordinating Committee (DBCC); and the Investment Coordination Committee (ICC).

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<sup>9</sup> Section 123 (Financial Advice on Official Credit Operations) of Republic Act no 7653

<sup>10</sup> A ceiling on foreign currency-denominated debt is imposed to ensure sustainability of the external debt.

<sup>11</sup> For further details, please see the website of the National Economic and Development Authority ([www.neda.gov.ph](http://www.neda.gov.ph)).

<sup>12</sup> Macroeconomic planning and policy coordination is reposed in the National Economic and Development Authority (NEDA). Its mandate is to formulate development plans and ensure their implementation in the course of policymaking and policy coordination with other government agencies.

## **The Development Budget Coordinating Committee (DBCC)**

The DBCC is composed of the Secretary, Department of Budget and Management as chairperson; the Secretary, Department of Finance as co-chairperson; with the Executive Secretary of the Cabinet and the Director General of NEDA as members. The DBCC is a policymaking body which approves the macroeconomic assumptions and economic policy directions for the preparation of the annual national government budget and for the requirements of the government's medium-term development plan. Specifically, the functions of the DBCC are the following:

1. Recommend for presidential approval the level of the annual government expenditure programme and the ceiling on government spending for social and economic development, national defence, general government and debt service;
2. Recommend to the president the proper allocation of expenditures for development activity between current operating expenditures and capital outlay; and
3. Recommend to the president the allocation for capital outlay under each development activity for the various capital or infrastructure projects.

The BSP participates in the DBCC as a resource institution<sup>13</sup> providing background information on monetary and financial policy as well as perspectives on economic developments.

The DBCC is the government body through which inflation targets are proposed by the BSP and approved by the economic managers who comprise the Committee. In essence, while the BSP enjoys operational and instrument independence, it is not fully independent in that its inflation targets must be agreed by the DBCC. The central bank participates in the DBCC both at the technical staff level and at the level of senior officials. At the technical staff level, BSP staff provide input on the formulation of macroeconomic assumptions relating to inflation rates, exchange rates, interest rates, oil prices and banking trends. Subject to these constraints, the fiscal budget is computed. The output from the technical level is then forwarded to senior officials who define policy priorities, finalise assumptions and make recommendations to the President. Once finalised, the draft budget is presented to Congress for enactment into the annual General Appropriations Act. The BSP attends budget deliberations in Congress to brief the legislators on economic and financial developments as well as explain the macroeconomic assumptions in its sphere of influence (eg interest rate assumptions).

Under the DBCC is the Executive Technical Board (DBCC-ETB) which is responsible for implementing the policy directions firmed up at the cabinet level. The DBCC-ETB is the screening and review body for policies, measures and targets that are recommended to the DBCC. It consists of undersecretaries and directors of the DBCC member agencies, which include: the Department of Budget and Management (DBM), the Department of Finance (DOF), the National Economic and Development Authority (NEDA) and the Office of the President (OP). The DBCC-ETB is chaired by the DBM Undersecretary and receives technical support from DBM that serves as the ETB Secretariat. The DBCC and the DBCC-ETB work through the DBCC Secretariat, which is chaired by the Director of the Fiscal Planning Bureau of the Department of Budget and Management. Similar to the DBCC, the BSP participates as a resource agency providing input to its processes. During an October 2008 meeting of the ETB, the ETB Chairperson clarified the following rights and obligations of the BSP as a resource institution in the DBCC and in its committees:

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<sup>13</sup> Per Executive Order no 232 dated 14 May 1970, the central bank was an original member of the Presidential Development Budget Committee (PDBC) which was renamed DBCC in 1972. The Administrative Code of 1987 ordered the replacement of the central bank by the Executive Secretary in the DBCC membership.

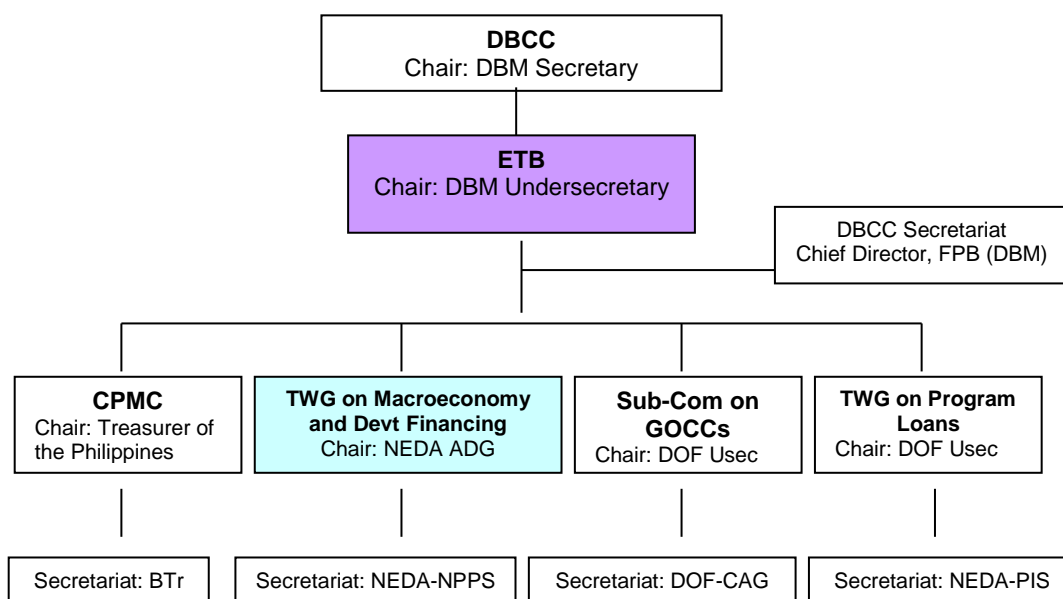


- The BSP's presence in the meetings is counted to establish a quorum;
- The BSP is not a voting member (ie "it does not sign resolutions").

Furthermore, core functions are delegated to Technical Working Groups (TWGs) or Sub-committees. The first of these is the Cash Programming and Monitoring Committee (CPMC). This is tasked with closely monitoring the fiscal performance of the national government and formulating fiscal policies for recommendation to the DBCC. It is chaired by the Treasurer of the Philippines with the Bureau of the Treasury (BTr) as its secretariat. Then, there is the Technical Working Group on Macroeconomy and Development Financing. Its job is to develop macroeconomic models and other statistical tools for planning, forecasting and policy analysis as well as to monitor macroeconomic performance and make economic reports. It is run by an Assistant Director General from NEDA, and NEDA's National Policy and Planning Staff (NPPS) serves as its secretariat. There is also the Sub-committee on Government-Owned and Controlled Corporations (GOCCs). Its task is to monitor the cash flow of the government corporate sector and formulate policies affecting government-owned and controlled corporations for recommendation to the DBCC. It is headed by an undersecretary of the Department of Finance and has the DoF's Corporate Affairs Group as its secretariat. Lastly, the Technical Working Group on Program Loans participates in policy formulation regarding external resource mobilisation. It is headed by an undersecretary from the Department of Finance and has NEDA's Public Investment Staff as its secretariat. The organisational chart of the DBCC is given below (Figure 2).

Figure 2

### Development Budget Coordination Committee Organisation



### The Investment Coordination Committee (ICC)

The ICC is composed of the Secretary, Department of Finance as chairperson with the Director General of NEDA as co-chairperson. Its members include the Executive Secretary of the Cabinet, the Secretary, Department of Agriculture, the Secretary, Department of Trade

and Industry, the Secretary, Department of Budget and Management and the Governor of the BSP.<sup>14</sup> Its functions under Philippine law are:

1. Evaluate the fiscal, monetary and balance of payments implications of major national projects and recommend to the president the timetable of implementation of these projects on a regular basis; and
2. Recommend to the president a domestic and foreign borrowing programme updated each year, and subsequently, submit to the president a status of the fiscal, monetary and balance of payments implications of major national projects

Aside from formal arrangements for policy coordination, the BSP Governor and the Secretary, Department of Finance along with key officials from their respective agencies hold informal meetings every month. These are usually scheduled every last Friday or Tuesday of a given month. The meetings provide an additional venue for discussing fiscal performance and its implications for fiscal and monetary policy coordination.

## 5. Conclusion

The fiscal health of the Philippines has improved significantly over the past decade. Notwithstanding the dividends from reforms, challenges remain for the Philippines on the fiscal side.

Econometric results suggest that the BSP and the national government have coordinated their policy actions so that policy sterilisation has been avoided. While interaction between monetary and fiscal policy has been productive during the financial crisis and its aftermath, some concerns have been raised by the BSP on the national government's reduced issuance of government securities as well as possible interest rate repression.

With respect to the shift from international to domestic financial markets for public debt, it should be noted that there is sufficient liquidity in the domestic economy to obviate concerns about the crowding out of private offerings. The central bank is even urging the national government to source more of its financing from domestic markets.

The higher liquidity in domestic markets also provides the opportunity for lengthening the maturity of sovereign debt. However, the national government should also ensure that its cash flows will meet future liabilities as they come and it must avoid bunching up on maturities.

As this issue impinges on financial stability and especially on the attractiveness of public debt to foreign investors, it should be noted that most public debt has historically been held by residents. By the same token, the country's susceptibility to the effects of a sudden and sharp outflow of foreign currency has been limited. However, the dearth of liquidity for short-term Treasury bills has negative implications for capital market development and long-term financial and macroeconomic stability.

The BSP's role in public debt management has been to examine the effect of public debt issuance on the key macroeconomic variables under its purview. Under Philippine law, all government borrowing, whether peso- or foreign currency-denominated, requires the approval of the Monetary Board. On a more direct basis, representatives of the BSP occupy two of the five seats in the Bureau of the Treasury's auction committee.

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<sup>14</sup> The Governor is represented in the ICC by a senior member of the Monetary Board.

Ironically, the BSP is unable to directly participate in domestic capital markets, being prohibited by its charter from issuing its own debt securities. The issuance of debt securities for the BSP by means of a collaboration with the Department of Finance has been considered. However, concerns about such an arrangement have arisen from the implications for the central bank's independence, coordination difficulties and the potential effect on the government's credit ratings.

Within the BSP, the national government coordinates monetary policy and public debt management through a seat on the Monetary Board. Beyond the confines of the BSP, the government participates in macroeconomic coordination through the Board of the National Economic and Development Authority (NEDA Board).

The main body through which policy coordination has been conducted has been the Development Budget Coordinating Committee. Aside from formal arrangements for policy coordination, the BSP Governor and the Secretary for the Department of Finance, along with key officials from their respective agencies, hold informal meetings every month. The meetings provide an additional venue for discussing fiscal performance and its implications for fiscal and monetary policy coordination.

## Annex A: Policy responses to the global financial crisis: the Philippine Case

In 2010, the Southeast Asian Central Bank Training and Research Centre (SEACEN) initiated an international research project on the “Relative effectiveness of policy choices during the global financial crisis”. Individual country studies were conducted complete with econometric modelling based on a vector error correction specification.

The Philippine case<sup>15</sup> used an empirical model of the form

$$Y_t = f(MP_t, FP_t, Z_t)$$

where  $Y_t$  is a measure of economic activity and  $Z_t$  refers to other relevant variables while  $MP_t$  and  $FP_t$  correspond to monetary and fiscal policy responses, respectively. For simplicity but without loss of generality, the logarithmic form<sup>16</sup> of real GDP (LGDP) was used as  $Y_t$ ; the log of M3 or domestic liquidity (LM3) represented  $MP_t$ , the log of government purchases of goods and services (LGOVCONS) served as  $FP_t$  and an indicator of financial markets volatility,  $SQR\_RPHISIX$ <sup>17</sup> as  $Z_t$ . With the exception of  $SQR\_RPHISIX$ , all the data have been seasonally adjusted. In the error correction specification used, two dummy variables were created to represent the Asian financial crisis (AFC) and the global financial crisis (GFC).<sup>18</sup> For the AFC dummy variable, its value was equal to one from the third quarter of 1998 to the fourth quarter of 1999 and zero, otherwise. For the GFC dummy variable, its value was equal to one from the third quarter of 2007 to the third quarter of 2009 and zero, otherwise.

The model used data from the first quarter of 1995 to the second quarter of 2010. It was recognised that, despite being a relatively robust and flexible model specification, the VECM did not differentiate completely between the pre-crisis and post-crisis periods.

The key findings from econometric estimation are as follows:

1. There appears to be a weakening of long-run economic relationships<sup>19</sup> arising from the recent global financial crisis.

Time and again, tests for co-integration were negated by findings of co-integration breakdown at the endpoints. Explicit inclusion of financial turbulence finally generated a viable co-integration framework for analysis.

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<sup>15</sup> See Redoblado (2011).

<sup>16</sup> The use of logarithmic form was necessary to account for the non-linearity arising from the crisis episodes in the sample. Also, vector autoregressive (VAR) models and vector error correction models (VECM) are linear approaches that do not necessarily mitigate non-linearities in the data.

<sup>17</sup> The indicator  $SQR\_RPHISIX$  was computed as the squared residual from an autoregressive model of the Philippine Composite stock market index,  $RPHISIX$ .  $SQR\_RPHISIX$  was included with a view to incorporating uncertainty in financial markets and providing information on general financial turbulence. Its inclusion was deemed a necessity in rendering long-run economic relationships stable.

<sup>18</sup> The dummy variables accounted for the duration of the crisis episodes. For a discussion of the methodology, see Harding and Pagan (2002).

<sup>19</sup> It was found that the link between output, fiscal and monetary policy variables had weakened since the second quarter of 2007. Varying permutations of these variables were tested. These permutations varied in terms of nominal versus real terms, seasonally adjusted versus those with seasonal data, ratios to GDP, differing indicators for monetary policy and fiscal policy. Attempts to include other variables such as remittances were also made.

2. The economy was more responsive to monetary policy action than to fiscal stimulus. Significantly, monetary policy has a stronger and quicker stimulus effect than fiscal policy. This is not surprising given that fiscal authorities have to tackle coordination and planning difficulties in crafting and implementing fiscal policies.
3. There is econometric evidence that the BSP initiates monetary stimuli insofar as it does not conflict with the price stability objective. There is some evidence to show that, while GDP is more responsive to innovations in monetary policy than to fiscal policy shocks, monetary policy becomes countercyclical after roughly five quarters. This may be interpreted as heading off the inflationary effects of output growth as the slack in the economy is reduced or even eliminated.
4. Macroeconomic coordination has supported the policy response. The impulse response analysis shows that the BSP and the national government coordinated their policy actions so that policy sterilisation did not occur.

## **Annex B: Composition of the NEDA Board**

This mandate is exercised through the NEDA Board which is composed of the following:

1. President of the Republic of the Philippines (as chairperson)
2. Secretary of Socio-economic Planning and NEDA Director General (as vice chairperson)
3. The Executive Secretary of the Cabinet
4. Secretary, Department of Finance
5. Secretary, Department of Trade and Industry
6. Secretary, Department of Agriculture
7. Secretary, Department of Environment and Natural Resources
8. Secretary, Department of Public Works and Highways
9. Secretary, Department of Budget and Management
10. Secretary, Department of Labor and Employment
11. Secretary, Department of the Interior and Local Government

Over the years, the following members of the cabinet were added:

1. Secretary, Department of Health
2. Secretary, Department of Agrarian Reform
3. Secretary, Department of Foreign Affairs
4. Secretary, Department of Science and Technology
5. Secretary, Department of Transportation and Communications
6. Secretary, Department of Energy
7. Deputy Governor, The Bangko Sentral ng Pilipinas<sup>20</sup>

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<sup>20</sup> This conforms to Section 124 (Representation on the National Economic and Development Authority) of the BSP Charter.

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