Dynamics of monetary policy and fiscal policy during the pandemic: the Philippine experience[1]

Francisco G Dakila, Jr[2]

Abstract

The severity of the Covid-19 pandemic's impact on the Philippine economy has led the Bangko Sentral ng Pilipinas (BSP) and Philippine fiscal authorities to implement extraordinary monetary and fiscal policy responses. This paper discusses the dynamics of implementing these measures, which require close coordination between the central bank and fiscal authorities.

Institutions for coordination and laws that ensure balance in cooperation have facilitated the smooth collaboration between monetary and fiscal authorities. While the BSP resorted to massive unconventional monetary policy, it was able to maintain ample monetary policy space by subjecting the measures it undertook to the limits stipulated in the BSP charter. This has provided fiscal authorities with the necessary resources to finance its pandemic-response measures. Eventually, however, the government's increasing deficits and ballooning debt could impact the BSP's room for monetary policy manoeuvres. As the Philippine economy gradually recovers, continued coordination between monetary policy and fiscal policy will require monitoring the channels through which fiscal policy affects monetary policy, including the status of the government's fiscal and debt sustainability.

When economic conditions become more favourable and economic recovery has accelerated enough to warrant a scale-down of policy support, monetary-fiscal policy coordination will become even more crucial as the objectives of the BSP and fiscal authorities start to diverge. Continued coordination with fiscal authorities and clear public communication of carefully crafted exit strategies are essential in order to minimise potential policy inconsistencies, thereby ensuring a rapid, immediate economic recovery.

JEL classification: E52, E61, E62, E63, H62, H63.

Keywords: monetary policy, fiscal policy, policy coordination, Philippines.

[1] Article prepared for the BIS Emerging Markets Deputy Governors Meeting, 24–25 February 2021. The usual institutional disclaimer applies.

[2] Deputy Governor, Monetary and Economics Sector, Bangko Sentral ng Pilipinas.

1. Introduction

Along with the rest of the world, the Philippines has been severely affected by the Covid-19 crisis. The unprecedented economic disruptions caused by the pandemic required extraordinary monetary and fiscal policy responses. The Bangko Sentral ng Pilipinas (BSP) implemented conventional and unconventional monetary policy measures[3] while Philippine fiscal authorities provided fiscal stimulus and income support.

Together, the BSP and fiscal authorities acted quickly to mitigate the economic repercussions of the crisis. The BSP has been complementing the National Government's (NG) efforts by ensuring adequate liquidity and continued functioning of the financial market, as well as providing financial resources for fiscal and health programs, without compromising its mandates to safeguard price and financial stability. To do this, the BSP monitors the economic impacts of the monetary-fiscal policy interaction, including the sustainability of the NG's fiscal and debt positions.

As the country advances along the path to recovery, continued monetary-fiscal policy coordination is essential. However, the BSP recognises that this coordination may present some challenges when political biases emerge and the tendency to overburden monetary policy grows. The BSP makes use of existing government coordination institutions and structures to properly communicate its focus and commitment to its mandates.

This paper discusses the experience of the Philippines with the dynamics of monetary policy and fiscal policy during the pandemic. It starts with a discussion of existing institutions and structures for coordinating monetary and fiscal policies (Section 2), followed by the dynamics of monetary and fiscal policies during the pandemic (Section 3) and their impacts (Section 4). Section 5 explains the unwinding of measures, followed by the conclusion (Section 6).

2. Institutions and structures for coordinating monetary policy and fiscal policy in the Philippines

Coordination of monetary policy and fiscal policy is carried out through existing institutions and structures that allow information sharing and cooperation. With an understanding of the importance of policy coordination, these institutions and structures have been developed and improved through the years, reinforced by the lessons learned from past crises.

Institutional systems for policy coordination. Monetary-fiscal policy coordination is carried out mainly through the Development Budget Coordination Committee (DBCC). The DBCC is an inter-agency body that discusses, reviews and

[3] The BSP also implemented regulatory relief and supervisory measures, but these are not covered in this paper.

approves macroeconomic assumptions along with the fiscal and financing programs used to prepare the annual National Government budget.[4]

According to the invitation issued by the DBCC under DBCC Resolution no 98-1 dated 22 June 1998, the BSP participates in DBCC meetings only as a resource institution and thus has no voting powers during deliberations. As a resource institution of the DBCC, the BSP provides technical input on the performance and prospects of macroeconomic indicators[5] that serve as inputs for estimating the NG's growth projection and fiscal program. The BSP also informs the DBCC of the Monetary Board's (MB) recent monetary policy decisions and explains the economic and monetary reasoning behind these policy decisions. The BSP also provides its opinion on the NG's financing program, which is regularly prepared by the Bureau of the Treasury (BTr). The BSP also lends its expertise on matters falling under its purview during congressional deliberations on the national budget. Meanwhile, the BSP uses the information from the DBCC, particularly on economic growth projections and the NG's borrowing and spending program, including taxation plans, as crucial inputs for its inflation, growth and liquidity forecasts. These, in turn, guide the BSP's monetary policy decisions and operations as well as its liquidity management strategies.[6]

The DBCC ensures that the country's fiscal stance is consistent with the latest economic growth targets and macroeconomic assumptions. It is also responsible for setting and periodically reviewing the NG's medium-term inflation target in consultation with the BSP, but responsibility for steering inflation towards the inflation target range rests primarily with the BSP. The DBCC thus serves as an important venue for the exchange of information between monetary and fiscal authorities, thereby ensuring consistency in assumptions, forecasts and targets in the fiscal, real, monetary and external sectors of the economy.[7]

For coordination between the government's economic, financial and fiscal policies and the BSP's monetary, credit and exchange policies to be effective, the BSP Deputy Governor serves as an *ex officio* member of the National Economic and Development Authority (NEDA) Board.[8] The NEDA Board ensures that government policies, including the country's development plans and programs, are aligned with the policies set by the President.[9] The DBCC is one of the Cabinet-level inter-agency committees of the NEDA Board.

[4] The DBCC is composed of the heads of the four member agencies, which include the Department of Budget and Management (DBM) as Chair, the Department of Finance (DOF), the National Economic and Development Authority (NEDA) and the Office of the President. It was originally created in the 1970s but its current composition was based on Executive Order No. 292, signed on 25 July 1987 (Department of Budget and Management (2020)).

[5] BSP macroeconomic assumptions include projections of the inflation rate, Dubai crude oil prices, the peso-dollar exchange rate, interest rates, and trade in goods and services, among others. These serve as inputs in the growth projection (NEDA) and fiscal program (DOF and DBM) of other DBCC members.

[6] See Bangko Sentral ng Pilipinas (2021a).

[7] Ibid.

[8] Based on Section 124 of Republic Act No. 7653, or The New Central Bank Act.

[9] See National Economic and Development Authority (2021).

The current representative of the NG at the BSP Monetary Board is the Secretary of the Department of Finance.[10] The MB discusses the NG's fiscal performance and its implications for fiscal and monetary policy coordination, as necessary.

Structures that ensure balanced monetary-fiscal policy coordination. Lessons learned from past crises have led to amendments to the BSP Charter in order to avoid repeating past mistakes and to minimise any unintended negative consequences of policy coordination. In particular, Republic Act No. 7653, or The New Central Bank Act of 1993, created a "truly independent" central bank to insulate the central bank from fiscal authorities' demands for budget deficit financing.[11] Should the MB deem it important for the BSP to provide financing assistance to the government, the New Central Bank Act includes provisions that specifically indicate the amount limit and the duration of the provisional advances that the BSP may provide to the NG, as safeguards. Additionally, to ensure that government borrowing does not adversely affect monetary operations, fiscal authorities need to get an opinion from the MB on their financing program for both domestic and external sources.[12] RA 7653 also made the BSP unamenable to any proposals for engagement in quasi-fiscal activities, even in response to a crisis. It was the previous Central Bank's (the predecessor to the BSP) assumption of the foreign exchange liabilities of government-owned and controlled corporations and private sector companies as well as development banking and financing that saddled the old Central Bank with substantial deficits that eventually led to its restructuring.[13]

3. Dynamics of monetary policy and fiscal policy during the pandemic

A. Institutional coordination

Collaboration during the pandemic. Throughout the Covid-19 crisis, the institutional framework for monetary and fiscal policy coordination in the country has remained almost the same. The DBCC has also served as one of the venues for discussing policies and measures to mitigate the pandemic's economic impact, and it has been holding more frequent meetings between monetary and fiscal authorities.[14] This demonstrates the importance of coherent policymaking by the country's economic managers, consistent with the whole-of-government approach for dealing

[10] The President usually appoints the Secretary of Finance as the government representative at the Monetary Board to ensure monetary-fiscal coordination (Sicat (2012)).

[11] See Sicat (2012).

[12] Section 43 of Republic Act 11211, or an Act Amending the New Central Bank Act, indicates that whenever the Philippine government considers borrowing, be it domestically or abroad, it shall request a written opinion on the monetary implications from the Monetary Board. For external borrowing, the MB's opinion shall be based on the nation's gold and foreign exchange resources and obligations and on the effects of the proposed operation on the balance of payments and monetary aggregates. For domestic borrowing, the MB's opinion shall be based on the probable effects on monetary aggregates, price level, and the balance of payments.

[13] See Tetangco (2003) and Glindro and Oliva (forthcoming).

[14] See BSP (2021a).

with the crisis.[15] Communication and submission of technical reports within the committee have been accomplished mainly through digital channels (eg Zoom, Google Meet and email) to comply with physical distancing protocols.

Ensuring transparency and accountability. The DBCC has also remained committed to its practice of transparency and accountability to the public during the crisis through the publication of reports, prompt release of the latest macroeconomic assumptions and fiscal program, and more frequent press statements. As a resource institution, the BSP participates in online DBCC press briefings and in budget deliberations in Congress in order to respond to queries about macroeconomic outlook and policies.[16] Together with other economic managers of the NG, the BSP has also been active in congressional hearings to discuss legislative measures aimed at mitigating the financial consequences of the pandemic and helping the economy recover.

Strong coordination to prevent policy tension. The BSP's open and skilful interaction with fiscal authorities, developed through years of regular coordination, has been particularly useful in facilitating the process of addressing the ill effects of the pandemic.

Policy coordination through the DBCC and the BSP's active participation in legislative hearings ensure that policies and laws in response to the pandemic support the independence of the BSP and its commitment to price and financial stability. Through policy discussions, the BSP can draw boundaries regarding its responsibilities and explain the limitations of its policy and tools while ensuring that it firmly supports the government's efforts in dealing with the crisis.

B. Policy coordination

Early recognition of the need for greater policy coordination. At the outset of the pandemic, the government imposed strict mobility restrictions to slow the spread of the virus. Unsurprisingly, such restrictions curb economic activities, subsequently reducing the government's revenue streams. As a source of alternate financing, the domestic debt market[17] was experiencing extreme volatility due to concerns over the pandemic. Immediately recognising the National Government's financing constraints, the MB provided it with emergency financing. In order to maintain the independence and credibility of its monetary policy, the BSP carefully crafted time-bound, market-oriented (eg through a secondary market) bridge financing measures that with legal and binding limits.

The BSP's response measures and bridge financing for the NG. Due to the unprecedented economic and financial impacts of the Covid-19 crisis, the BSP took prompt, decisive measures to ensure adequate domestic market liquidity, calm the

15 See Batac et al (2020).

16 Ibid.

17 Based on the Balance Sheet Approach data, prior to the pandemic, the general government's total liabilities were mostly debt securities (84.1 per cent), half of which were held by the domestic banking system and financial corporations (50.6 per cent).

market and boost confidence, and sustain flows and access to credit in order to support economic recovery.[18]

The shift to an accommodative monetary policy stance started with the reduction in the policy interest rate, which the BSP implemented as early as 6 February 2020. By the end of the year, the cumulative reduction in the policy rate was 200 bp. The BSP also cut reserve requirement ratios (RRR) by 200 bp for universal/commercial banks and 100 bp for savings banks and rural commercial banks, in conjunction with other intervention measures to ease liquidity conditions.[19]

To provide bridge financing to the NG, the BSP resorted to large-scale unconventional measures consistent with the provisions of its Charter. Funding assistance consisted of short-term relief measures primarily intended to give the NG additional fiscal flexibility. These are expected to enable the government to quickly meet the expenditure requirements of social amelioration and recovery efforts. The extraordinary liquidity measures taken by the BSP include:

1. **Purchase of government securities (GS) in the secondary market**. On 24 March 2020, the BSP opened a daily one-hour window for buying peso-denominated GS. Availability of secondary market liquidity assures market participants that there will be demand should they decide to liquidate their GS holdings. This encourages market participation in primary GS auctions and has enabled the GS market to continue functioning properly, especially during the peak of the pandemic. The one-hour window will remain open until market conditions return to normal.

   The purchase of GS in the secondary market is one of the BSP's open market operation (OMO) tools, which may be used to implement monetary policy when warranted. The BSP has not made use of this instrument before due to the financial system's surplus liquidity position with respect to the BSP prior to the pandemic.

2. **Remittance of dividends.** The BSP also remitted PHP 20 billion in advance dividends to the NG on 26 March 2020. While the BSP is no longer required to remit its dividends to the government,[20] it decided to defer the use of its dividends to increase its capital in order to immediately provide resources to the government.

3. **Provisional advances to the NG.** On 27 March 2020, the BSP entered into a reverse repurchase (repo) agreement with the Bureau of the Treasury (BTr) when it bought GS amounting to PHP 300 billion with a term of three months. This was extended for another three months, with the NG buying back the GS on 29 September 2020. In October 2020, the BSP provided direct provisional advances worth PHP 540 billion, and these were settled by the NG on 18 December 2020.

[18] See Dakila (2020).

[19] The BSP also eased monetary policy settings through the following measures: temporary suspension of term deposit facility (TDF) auctions and zero offering for certain tenors, temporary reduction in the daily offer volume in the RRP facility and temporary reduction of the term spread on peso rediscounting loans relative to the overnight lending rate to zero, among others.

[20] Amendments to the BSP Charter via RA 11211 stipulate that any and all dividends declared by the BSP in favour of the NG shall be released and disbursed for the payment of Bangko Sentral's increase in capitalization.

In January 2021, the BSP granted new loan advances totalling PHP 540 billion, which are scheduled to be settled on 12 July 2021.

This is the first time since the creation of the BSP in 1993 that a provisional advance has been requested by the NG and granted by the BSP. The provisions of the loan were based on Section 89 of the BSP Charter, which states that the BSP is allowed to provide direct provisional advances to the NG in order to finance expenditures authorised in its annual appropriation. However, these direct provisional advances should not exceed 20 per cent of the NG's average annual income for the last three (3) fiscal years. Moreover, these advances shall be repaid, with or without interest, within three (3) months. The maturity may be extended by another three (3) months, as allowed by the MB.

Due to the severity of the crisis, Congress authorised the BSP to provide additional provisional advances to the NG through Section 4(bbb) of RA No. 11494, or the Bayanihan to Recover as One Act. The law authorises the BSP to issue additional provisional advances to the NG, for an amount no greater than 10 per cent of the NG's average income for fiscal years 2017 through 2019. With or without interest, these funds are explicitly earmarked for the government's Covid-19 response programs. The additional provisional advance can be availed of until 2022 and must be repaid within one year. This can also be extended for another year as allowed by the MB. To date, the NG has not taken advantage of this resource.

As of 3 June 2021, the total amount of liquidity injected by the BSP into the financial system through the implementation of monetary instruments and extraordinary measures amounted to PHP 2.2 trillion, or 12.1 per cent of the country's GDP.

The main consideration behind the responses. The key considerations of the measures undertaken by the BSP were price and financial stability objectives. The benign inflation environment[21] in 2020 and inflation forecasts set firmly within the inflation target range of 2–4 per cent from 2020 to 2022 had provided the BSP with ample monetary policy space to deploy policy measures with the government's fiscal stimulus and social programs.

The BSP uses monetary policy to support fiscal stimulus in crisis periods by maintaining an accommodative stance, provided it does not pose risks to the Bank's price and financial stability objectives. In assessing its monetary policy stance, the BSP also considers the possible implications of the government's revenue, spending and borrowing programs on the outlook for inflation and growth, as well as on domestic liquidity conditions. In the current pandemic, the BSP ensures that it maintains ample monetary policy space by subjecting its measures to the limits stipulated in the BSP charter.

The repo agreement is not a quantitative easing (QE) measure. The BSP emphasises that the temporary and time-bound repo agreement with the BTr is not a QE measure. In taking this unconventional measure, the BSP has no intention of bringing down market interest rates over the medium term in order to keep all interest rates low and stimulate the economy. Moreover, it does not constitute a

21 The inflation rate in 2020 averaged 2.6 per cent, below the government's target for the year of 3.0 per cent ± 1 percentage point. Inflation expectations were also well-anchored.

large-scale asset purchase since the NG had to buy back the GS within a specified maximum period of six months.[22]

The provisional cash advances to the NG also have their limits in terms of amount and duration in order to ensure that they do not lead to a permanent expansion of the monetary base or the BSP's balance sheet.[23] Requiring the NG to pay out the debt within a specific and short period of time helps avoid the risk of inflation and the build-up of inflation expectations. The BSP recognises that while government debt financing by the central bank can serve as a crisis management tool, it cannot be used as a permanent solution, for this would increase the risk profile of the central bank's balance sheet.[24] A decline in the financial soundness and financial independence of the country's monetary authority would not be sustainable for the economy.

The importance of careful communication. The BSP carefully and clearly communicates to the market, media, politicians and the general public that the measures undertaken are and will remain in line with the BSP's primary mandate, which is to maintain price stability conducive to sustainable economic growth and employment. These actions are not intended to provide a long-term source of financing for government expenditures. These are extraordinary measures required only by extraordinary conditions caused by the pandemic. Medical and fiscal policy interventions should remain at the forefront of the government's efforts because the current crisis is a combination of health and economic shocks. Considering the limits of BSP interventions, particularly in terms of monetary policy and its instruments, BSP actions should serve only as a complement to the NG's more comprehensive fiscal and health responses.[25]

4. Impacts of policy coordination

The impact of the BSP's response measures. The implementation of extraordinary measures, together with other monetary policy responses, helped calm the market, easing domestic liquidity conditions and restoring financial market functioning. Aside from shoring up available funds, policy coordination between the government and the BSP also provided pricing support for domestic issues, quickly restored auction demand and trading appetite for GS, and improved yields secured at auction.[26]

Based on an analysis of variance (ANOVA) previously conducted on key financial market variables between the pre-asset purchase period (13–23 March) and the post-asset purchase period (24 March–8 April),[27] the BSP's asset purchases appear to have calmed market jitters and improved domestic liquidity. This was observed in terms of lower loan rates between banks, the recovery of the PSE index, a decrease in the credit default swap (CDS) and the appreciation of the Philippine peso.

[22] See Robleza et al (2020).

[23] Ibid.

[24] See Glindro, Oliva and Elloso (2020).

[25] See Batac et al (2020).

[26] Development Budget Coordination Committee (2020).

[27] A test of equality of means of selected financial market variables (Dakila (2020)).

Estimates by Robleza et al (2020) indicate that the full economic impact of BSP measures will be felt in 2021. They explain that reductions in the RRP rate and RRRs are seen to contribute to lower market interest rates, faster domestic liquidity growth, and depreciation of the exchange rate, after long and variable lags. These could lead to slightly higher inflation and improved growth prospects over the policy horizon, although inflation is likely to remain firmly anchored within the government's target range.

Channels of fiscal policy impact on monetary policy. The BSP considers the main channels through which the state of public finances affects room for monetary policy manoeuvres to be inflation, inflation expectations, output and the domestic yield curve. Since a number of theories indicate that there is a growing relationship between the government's fiscal position and these variables in general, the BSP takes into account the NG's actual and planned borrowing and spending when formulating its strategies for implementing monetary policy. Below are some explanations for the relationship between fiscal position and these channels based on the literature:

1. **Fiscal position and inflation.** Bordo and Levy (2020)[28] list some theories that explain the link between fiscal deficits and inflation. From simple Keynesian and quantity theory of money approaches to modern approaches that incorporate expectations and forward-looking behaviour, they explain that fiscal deficits are, in general, inflationary.

   The simple Keynesian model posits that fiscal expansion could increase inflation since it increases aggregate demand. Early monetarists using the quantity theory of money argued that fiscal policy would influence price movements only if financed through monetisation.

   In terms of modern approaches, Sargent and Wallace (1981) posit that, when there is fiscal dominance[29] of monetary policy, persistent deficits and ballooning government debt could force the central bank to tolerate additional inflation. In an extension of the quantity theory tradition, Bordo and Levy (2020) explain that this theory implies that even if fiscal deficits are bond-financed, central banks would eventually follow an accommodative monetary policy in order to reduce the real value of debt and satisfy the government's long-run consolidated balance sheet. Meanwhile, the fiscal theory of the price level, which is built on the Keynesian approach, states that fiscal policy leads to a rise in prices caused by increased consumption due to the wealth effect. The perceived increase in real wealth is the result of an increase in nominal government debt.

   The historical survey conducted by Bordo and Levy (2020) showed that expansionary fiscal policy led mostly to high inflation, except during the Global Financial Crisis (GFC). Despite soaring fiscal deficits and debt, accompanied by unconventional quantitative easing, advanced economies did not experience a rise in inflation during and after the GFC. The authors explained that this was attributed in part to weak aggregate demand due to risk aversion. Meanwhile, using the average fiscal deficit and average inflation of selected emerging market economies (EMEs), Montoro, Takáts and Yetman (2012) show that less accommodative fiscal policies are weakly associated with lower inflation.

[28] See Bordo and Levy (2020).

[29] Fiscal dominance is the risk that the current fiscal situation could put pressure on the central bank to deviate from its primary objective (Salmeron and García Arenas (2021)).

2. **Fiscal position and inflation expectations.** Inflation expectations are likely to increase when the market perceives the government's fiscal position as no longer sustainable.[30] Moreover, models of fiscal dominance imply that higher debt, when changes in primary surpluses are not offset, could lead to higher inflation expectations.[31]

   The significant role that fiscal condition plays in driving inflation expectations was demonstrated by Mello and Ponce (2020), as they found robust evidence of a positive correlation between the fiscal deficit-to-GDP ratio and inflation expectations for Uruguay. More recently, the findings of Coibion, Gorodnichenko and Weber (2021) using US household survey data indicate that a persistently worsening fiscal outlook, with rising debt levels into the future, has a more powerful effect on inflation expectations due to anticipation of future debt monetisation.

3. **Fiscal position and output.** Fiscal policy can affect current and long-term output growth through its contribution to saving and investment and its effects on resource allocation efficiency.[32] The IMF (1995) explains that, since high deficit is a form of dissaving in the economy, it could lead to lower economic growth if government spending is not related to investment in human capital or the development of infrastructure. The makeup of government spending and how it is financed (a type of tax or deficit financing) could also affect the allocation of economic resources. If it causes distortion, this could curb economic growth. During a recession, fiscal expansion could increase output in the short run, but this could be limited by capacity constraints, low responsiveness of domestic supply and the country's inability to sustain a lower balance of payments position. However, an accommodative fiscal stance could also curb economic growth in the short run if the financial market reacts adversely to high fiscal deficit by raising interest rates in anticipation of high inflation and financial instability.

   Adam and Bevan (2005) examined this relation empirically, using a panel of low- and middle-income countries. They found that the relationship between output growth and deficit is non-linear and depends on the financing mix and the outstanding debt stock. Their analysis suggests a statistically significant non-linearity in the budget deficit's impact on growth at around 1.5 per cent of GDP. For fiscal deficits less than or equal to this ratio, they observed a positive impact on economic growth, but as the deficit increases beyond that, the impact on growth becomes negative. The magnitude of the estimated impact varies depending on how the deficit is financed and the level of debt stock. A high debt level worsens the adverse effects that high deficits have on output growth.

4. **Fiscal position and yield curve.** High fiscal deficit could raise interest rates as the government increases demand for funds. In addition to cyclical conditions and monetary policy position, the short end of the yield curve is also influenced by the government's borrowing behaviour.

[30] See Montoro, Takáts and Yetman (2012).

[31] See Coibion, Gorodnichenko and Weber (2021).

[32] See International Monetary Fund (1995).

The yield curve slopes upward if large fiscal deficits are expected to continue and there is an excess supply of government debt.[33] When creditors start to worry about debt sustainability, they expect higher interest payments over time to compensate for increased perceived risk. Moreover, higher inflation expectations due to anticipation of debt monetisation could increase the nominal long-term interest rate.

However, the effect of large fiscal deficits on long-term interest rates depends on the overall impact on national savings.[34] A decrease in national savings due to higher fiscal deficits can be mitigated by an increase in private savings due to expected future tax increases (ie Ricardian equivalence). Moreover, the effects of fiscal deficit on the real long-term rate can be reduced, to a certain extent, if the fiscal deficit is financed by foreign savings.

As with other channels, the effects of fiscal deficit and public debt on yield curve are less clear-cut empirically. Baldacci and Kumar (2010) observed a nonlinear impact, the magnitude of which depends on initial fiscal, institutional and structural conditions. They found that the effect of fiscal deterioration on long-term interest rates is greater in countries that enter a crisis with weak fundamentals.

Monitoring the impact of fiscal policy on monetary policy. Correlation and visual analyses of Philippine data show that the relationships between fiscal position and the four channels appear to be ambiguous. Considering the simplicity of these approaches, insights from these discussions should be considered with caution and could be considered useful topics for future research.

Correlation analysis of the relationship between fiscal deficit-to-GDP ratio and inflation indicates a statistically significant negative correlation, while that between the NG debt-to-GDP ratio and inflation shows a statistically significant positive correlation (Table 1). These results are also shown in the scatter plots of these variables (Figure 1). This seems to indicate that, in the Philippines, higher inflation is associated more with higher debt than with higher fiscal deficit.

33 See Baldacci and Kumar (2010).

34 Ibid.

Correlation analysis of the relationships between fiscal debt-to-GDP and NG debt-to-GDP ratios and inflation, inflation expectations, real GDP growth and long-term interest rate

Table 1

	Inflation rate	Inflation expectations	Real GDP growth	Ten-year government bond yield
Fiscal deficit-to-GDP ratio	–0.3*** (1993–2019)	–0.1 (2013–2019)	–0.1 (1993–2019)	0.2 (2011–2019)
	–2.9	–0.3	–1.1	1.0
NG debt-to-GDP ratio	0.3*** (1993–2019)	0.1 (2013–2019)	–0.3*** (1993–2019)	–0.1 (2011–2019)
	3.3	0.3	–2.7	–0.6

The figure below the correlation coefficient is the t-statistic.

*** Statistically significant at the one-per cent level.

Inflation expectation data are based on the Business Expectations Survey's next-quarter expectations.

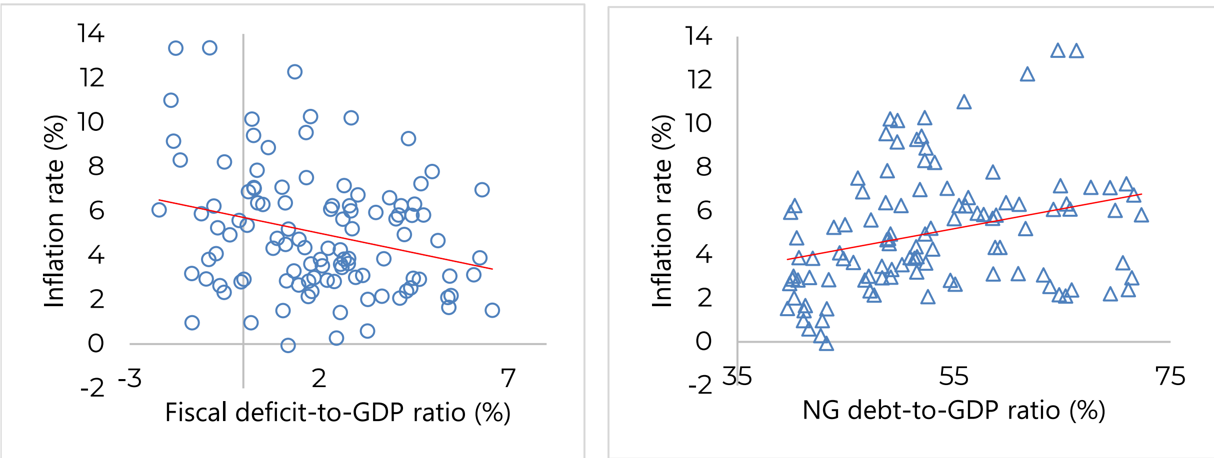
Differences in periods of analysis are due to differences in data availability. The Covid-19 crisis period was not included to avoid distortions.

Sources: Bangko Sentral ng Pilipinas; Bureau of the Treasury; Philippine Statistics Authority; Bloomberg.

Scatter plots of the relationships between fiscal deficit-to-GDP ratio and inflation and NG debt-to-GDP ratio and inflation (in per cent)

1993–2019

Figure 1

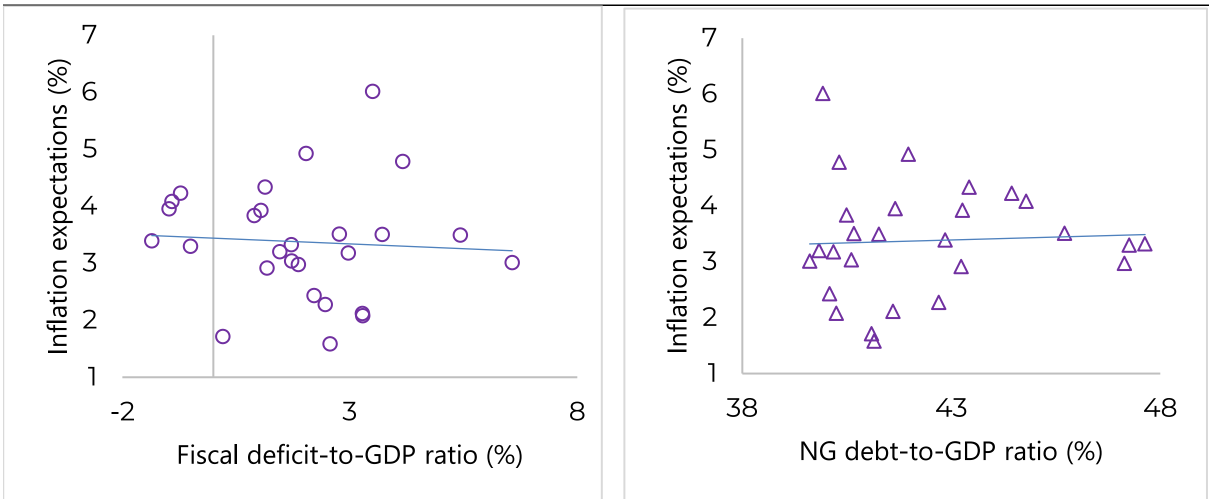


Sources: Bureau of the Treasury; Philippine Statistics Authority.

With regard to the correlation between fiscal position and inflation expectations, the resulting coefficient signs are consistent with that of inflation, but not statistically significant. The scatter plots also appear to reflect these respective signs (Figure 2). Españo and Santillan (2018), however, showed that a 1-percentage point increase in fiscal surplus-to-GDP ratio could reduce expected inflation by 0.02 percentage points. This implies that prudent management of fiscal resources could help anchor inflation expectations in the country.

Scatter plots of the relationships between fiscal deficit-to-GDP ratio and inflation expectations and NG debt-to-GDP ratio and inflation expectations (in per cent)

2013–2019 Figure 2



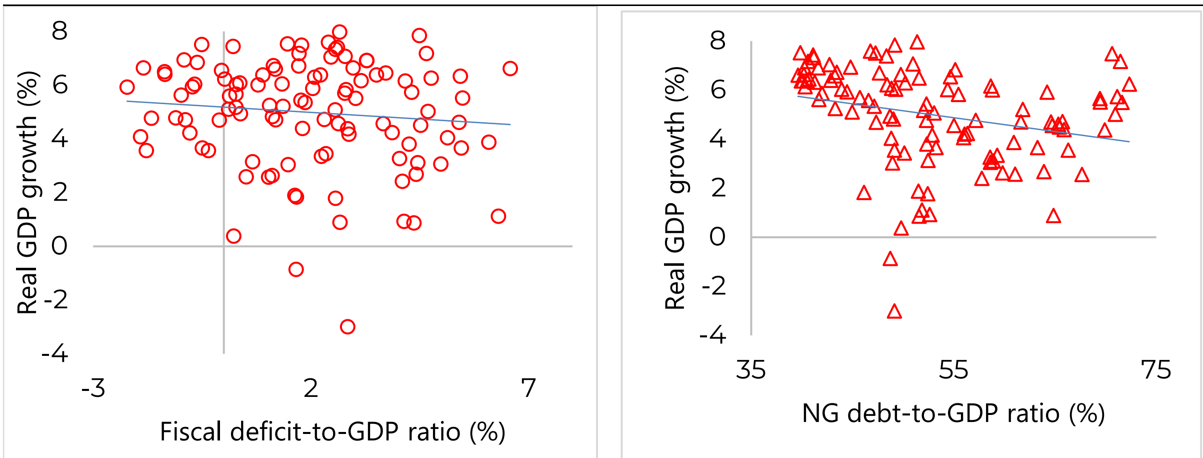
"Inflation expectations" refers to the inflation projection in the Business Expectations Survey.

Sources: Bureau of the Treasury; Philippine Statistics Authority.

In the relationship between fiscal position and economic growth, the resulting coefficients are negative but only statistically significant for the NG debt-to-GDP ratio. This is also reflected in the scatter plots of these variables (Figure 3). Akram (2015) showed that, in the Philippines, economic growth has a negative and significant relationship with public external debt but a positive relationship with public domestic debt.

Scatter plots of the relationships between fiscal deficit-to-GDP ratio and real GDP growth and NG debt-to-GDP ratio and real GDP growth (in per cent)

1993–2019 Figure 3

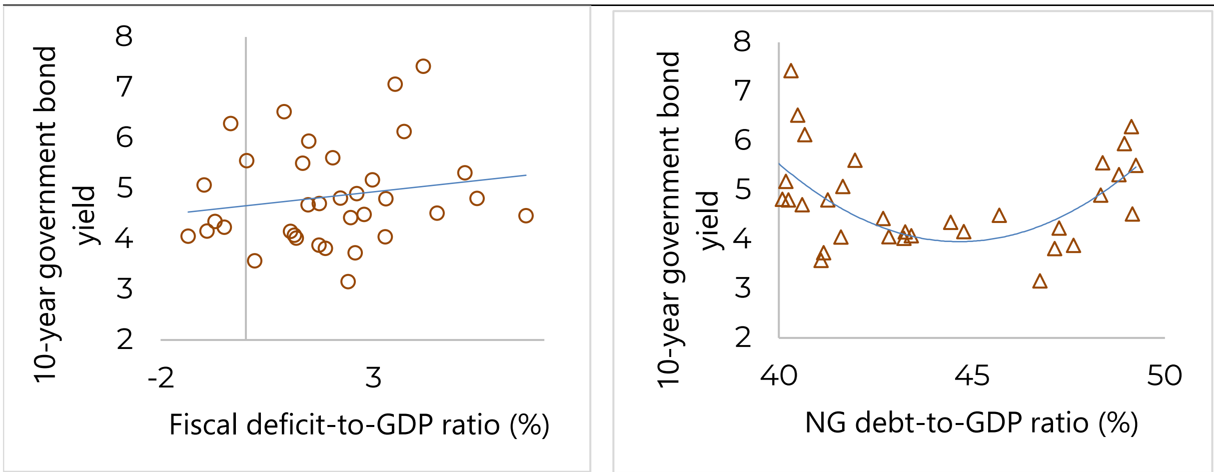


Sources: Bureau of the Treasury; Philippine Statistics Authority.

Lastly, while a positive correlation was observed between NG fiscal deficit-to-GDP ratio and ten-year government bond yield, an unexpected negative correlation was observed between NG debt-to-GDP ratio and the long-term interest rate, though neither is statistically significant. A scatter plot of the relationship between NG debt-to-GDP ratio and long-term interest rate, however, seems to indicate a non-linear relationship (Figure 4). There appears to be a negative relationship when the ratio is lower than 45 per cent and a positive relationship when the ratio is higher. This appears to be consistent with the findings of Baldacci and Kumar (2010).

Scatter plots of the relationships between fiscal deficit-to-GDP ratio and 10-year government bond yield and NG debt-to-GDP ratio and 10-year government bond yield (in per cent)

2011–2019 Figure 4



Sources: Bureau of the Treasury; Philippine Statistics Authority.

Channels of impact on monetary policy during the crisis. The channels connecting fiscal policy to monetary policy remain crucial; the pandemic did not materially affect their importance. In 2020, real GDP declined by 9.6 per cent due to the adverse effects that quarantine measures had on economic activities. However, the inflation rate was within target at 2.6 per cent, inflation expectations remained manageable and well within the government's target range of 2–4 per cent, and ten-year government bond yield was low, at 3.0 per cent.

In the first quarter of 2021, while the economy still contracted by 4.2 per cent, the inflation rate began to rise, averaging at 4.4 per cent in the first five months of the year. This is mainly due to inflationary pressures on the supply side, particularly from meat and transport prices.[35] Nevertheless, the BSP's latest inflation forecasts show that the inflation rate will average within the target range from 2021 to 2023 on the back of the government's ongoing implementation of direct, non-monetary measures.[36] In addition, inflation expectations remain firmly anchored to the target range for the same period. The ten-year Treasury bond rate increased to 4.4 per cent in the first quarter of 2021, but this is still below the pre-pandemic rate.

[35] The elevated price of meat was attributed to tighter supply caused by the outbreak of African swine fever. Higher transport prices were the result of rising international crude oil prices and high inflation for transport services.

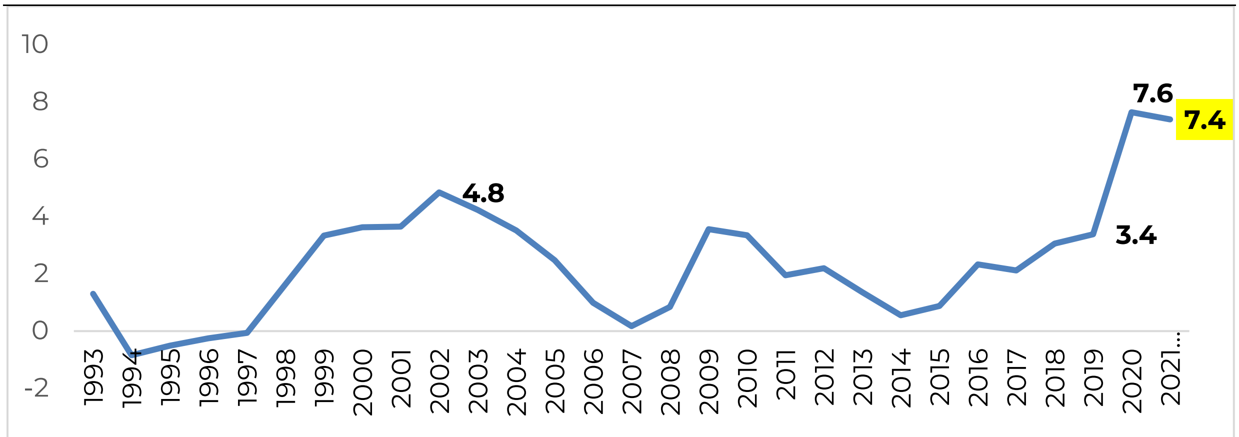
[36] See Bangko Sentral ng Pilipinas (2021b): "Monetary Board maintains policy settings," 24 June.

Given these manageable levels, the BSP has sustained its monetary policy support for domestic demand in order to help economic recovery gain more traction. The latest MB decision also took into account continued risk aversion, which is curbing credit activity despite ample liquidity in the financial system.[37]

Monitoring fiscal and debt sustainability. A lacklustre recovery in domestic demand and a potentially lengthy adjustment process would make it necessary to deploy fiscal support over a prolonged period of time. This would mean a higher deficit and accumulation of debt by the government in order to steer the Philippine economy back to its pre-pandemic growth track. Since these could have impacts on inflation, inflation expectations and output, which are important considerations in monetary policy formulation, the BSP constantly monitors the sustainability of the government's fiscal position. The indicators that the BSP typically uses to assess fiscal sustainability include the deficit-to-GDP ratio, the share of the national government's debt out of total GDP, and projections for real interest rates and growth rates.

1. **The National Government remained fiscally prudent.** The NG is committed to practising fiscal prudence while pursuing an expansionary fiscal stance to speed up domestic economic recovery from the pandemic. The national government deficit-to-GDP ratio more than doubled, from 3.4 per cent in 2019 to 7.6 per cent in 2020, settling at 7.4 per cent in the first quarter of 2021 (Figure 5). The primary deficit likewise increased to 5.5 per cent in 2020 and 4.5 per cent in the first quarter of 2021, up from 1.5 per cent in 2019. This increase in deficits was mainly due to lower tax revenues amid higher spending in 2020. While tax collection improved in the first quarter of 2021, this was offset by a significant decline in the BTr's income as government expenditures continued to increase.

Government fiscal deficit-to-GDP ratio (in per cent) Figure 5



Sources: Bureau of the Treasury; Philippine Statistics Authority.

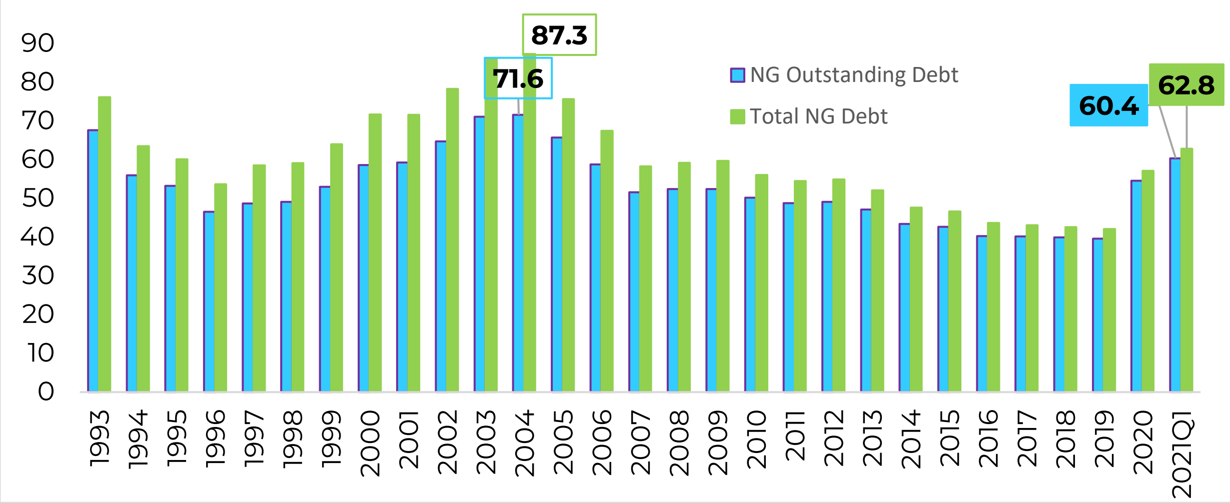
Notwithstanding the sizeable financing requirements of responding to the crisis, the government's debt profile remains manageable. Total NG debt-to-GDP[38] ratio increased to 62.8 per cent as of end-March 2021, up from 42.1 per cent in 2019 and 57.2 per cent in 2020. This is still tolerable compared to the 87.3 per cent that was recorded when the country experienced a fiscal crisis in 2004

[37] Ibid.

[38] Includes both outstanding debt and contingent liabilities.

(Figure 6). Not counting contingent liabilities, the ratio of outstanding NG debt to GDP was 60.4 per cent as of end-March 2021, up from 39.6 per cent in 2019 and 54.6 per cent in 2020 (Figure 6).

Total National Government debt and outstanding debt (as a percentage of GDP) Figure 6

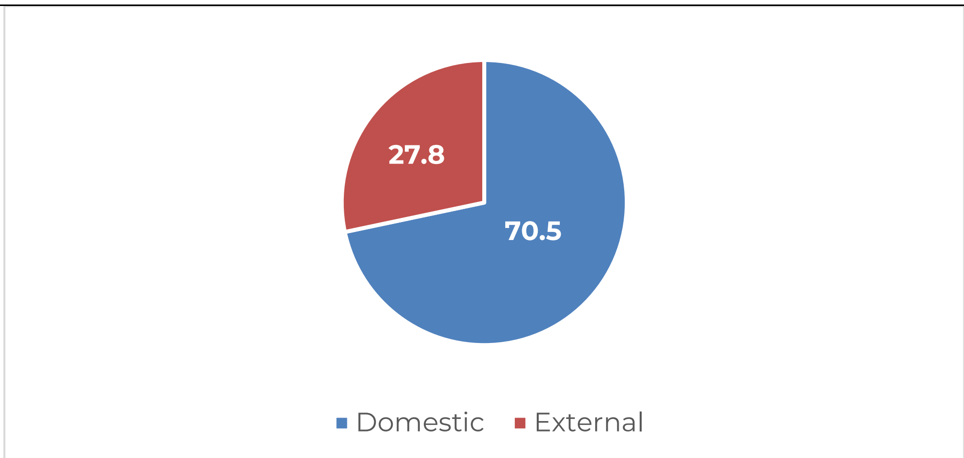


Total National Government debt = NG outstanding debt plus contingent liabilities.

Source: Bureau of the Treasury; Philippine Statistics Authority.

The government taps both domestic and international debt markets in order to cover the shortfall in revenue collections and meet expenditure requirements.[39] The majority of the NG's total debt is sourced domestically, with a 70.5 per cent share as of end-April 2021 (Figure 7). This includes the PHP 540 billion in provisional advances that the government took from the BSP in January 2021.

Sources of total National Government debt (per cent share) Figure 7



Includes contingent liabilities.

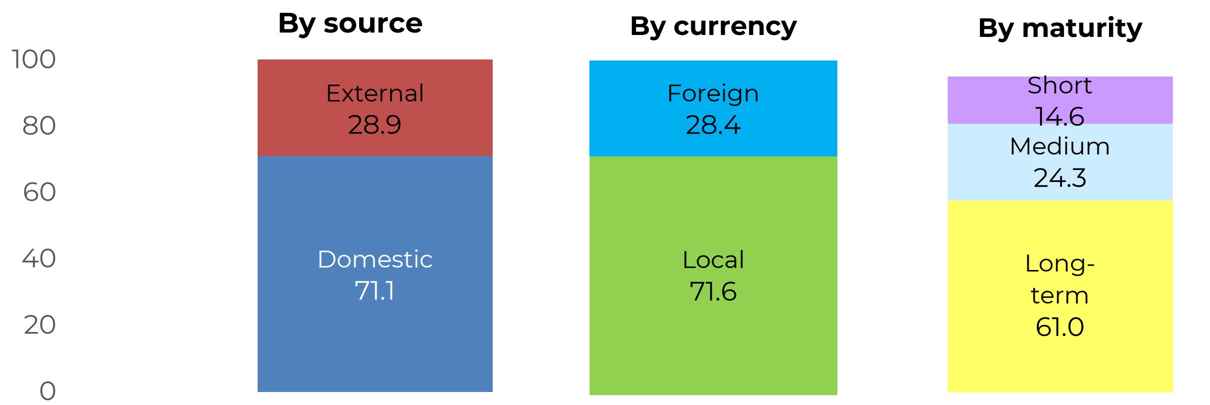
Source: Bureau of the Treasury.

[39] DBCC (2020).

Exluding contingent liabilities, outstanding NG debt was mainly sourced domestically (71.1 per cent) as of end-April 2021 and is dominated by local currency (71.6-per cent share) with medium- (24.3 per cent) to long-term (61.0 per cent) maturity (Figure 8). In 2020, the average maturity of outstanding NG debt was 7.6 years, down from 8.6 years in 2019.

Composition of National Government outstanding debt as of end-April 2021(per cent share)

Figure 8



Source: Bureau of the Treasury.

The NG's total outstanding external debt as of end-April 2021 has no short-term maturities, only medium- (5.6 per cent) and long-term (94.4 per cent) maturity profiles. More than half (56.6 per cent) was obtained from commercial sources, while the rest (43.4 per cent) were concessional loans from multilateral and bilateral lenders. The share of the NG's total external debt denominated in US dollars[40] is quite significant, at 72.0 per cent, but this share only accounts for around 20 per cent of total outstanding NG debt. This indicates that the NG's debt position is less vulnerable to external shocks and foreign exchange risks.

Despite the increase in NG debt amid the pandemic, borrowing costs remained low as the country still maintained a strong credit rating, along with continued fiscal and monetary policy coordination.[41] Amid the Covid-19 crisis, NG interest payments constitute 2.9 per cent of GDP in the first quarter of 2021. This is higher than the 2.1 per cent in 2020 and 1.9 per cent in 2019, but much lower than 5.1 per cent of GDP in 2005, when the country was undergoing a fiscal crisis.

Four credit rating agencies[42] affirmed a stable outlook, reflecting continued trust and confidence in the country's economic fundamentals. These assessments were made between June 2020 and May 2021, attesting to the country's strong external position and healthy financial sector. The S&P believes that the

[40] The next major currency composition is Japanese yen, with a 13.9-per cent share, followed by the Euro, with 10.1 per cent. The Philippine peso accounts for 2.7 per cent.

[41] See DBCC (2021).

[42] Standard & Poor's Global affirmed a BBB+ rating with stable outlook on 27 May 2021, Rating and Investment Information, Inc. affirmed a BBB+ rating with stable outlook on 23 April 2021, Moody's affirmed Baa2 with stable outlook on 16 July 2020, and Japan Credit Rating Agency, Ltd upgraded the Philippines' rating to A- with stable outlook on 11 June 2020.

Philippine government's fiscal performance will strengthen once the Covid-19 pandemic is contained. This S&P projection considers the country's track record of sustainable public finances, which actually helped the government gain fiscal space that ended up being useful in responding to the pandemic.[43] However, worth noting is the more recent adjustment in the outlook of the country's credit rating by Fitch Ratings, down from BBB stable to BBB negative. According to Fitch, this was due to downside risks to the country's medium-term growth prospects and possible challenges associated with unwinding the extraordinary policy response to the health crisis and restoring sound public finances as the pandemic subsides.[44]

Meanwhile, with local government units and social security institutions included in the analysis, the general government debt-to-GDP ratio only increased to 47.9 per cent in 2020, up from 34.1 per cent in 2019. As of end-June 2020, this is mostly made up of domestic debt, with a 64.5-per cent share. The average residual maturity remains at a very comfortable level, at around 7.5 years as of end-November 2020, within the 7- to 10-year target. This is due to the NG's ability and tendency to borrow for medium and long tenors, which could help reduce sovereign exposure to liquidity risk. Meanwhile, the shares of variable rate debt and debt held by foreign residents are 9 per cent and 63 per cent, respectively, as of end-November 2020. In 2019, general government debt denominated in foreign currency reached USD 29.4 billion (at a rate of PHP 50.8/USD).

2. **Fiscal consolidation is an important consideration for fiscal authorities.** The NG pledges to bring down the deficit and debt levels in the medium term. In the midst of the pandemic, the NG continues to maintain a median fiscal position among similarly credit-rated peers and emerging economies with comfortable and sustainable debt and deficit level tolerance. The DBCC sets the medium-term fiscal deficit program at a level that supports economic recovery but ensures that the debt-to-GDP ratio is kept at a sustainable level. The latest fiscal program approved by the DBCC indicates that the deficit-to-GDP ratio will increase to 9.3 per cent in 2021, but will gradually decline to 5.3 per cent by 2024.[45] The same downward path has been planned for the primary deficit, which will improve from 6.7 per cent in 2021 to 2.7 per cent by 2024 (Figure 9).

   Even with higher fiscal deficit targets in the near term, the DBCC projects that NG debt will be generally manageable and fall within the internationally recognized sustainability threshold of 60–70 per cent. The debt trajectory is seen to revert to a downtrend upon the restoration of pre-pandemic growth and deficit levels. This appears to be consistent with the initial IMF projection that the country's general government debt will be temporarily higher than 60 percent but still around the median for the Asian region.

3. **The NG's debt position remains sustainable.** Calculation of the national government's simple debt sustainability condition indicates that the negative real interest rate and real growth differential ($r - g < 0$) did not hold in 2020 and the first quarter of 2021 (Figure 10). This is mainly due to negative economic

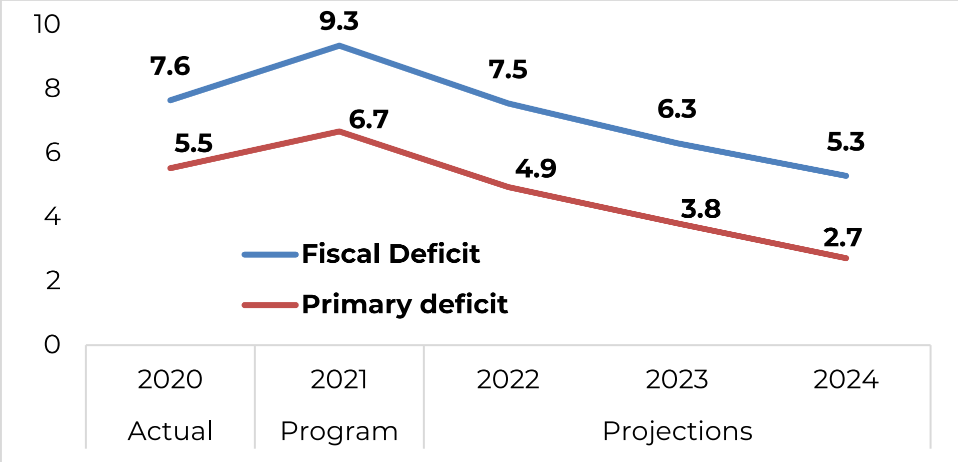
[43] See Investor Relations Office (2021a).

[44] See Investor Relations Office (2021b).

[45] As of 18 May 2021.

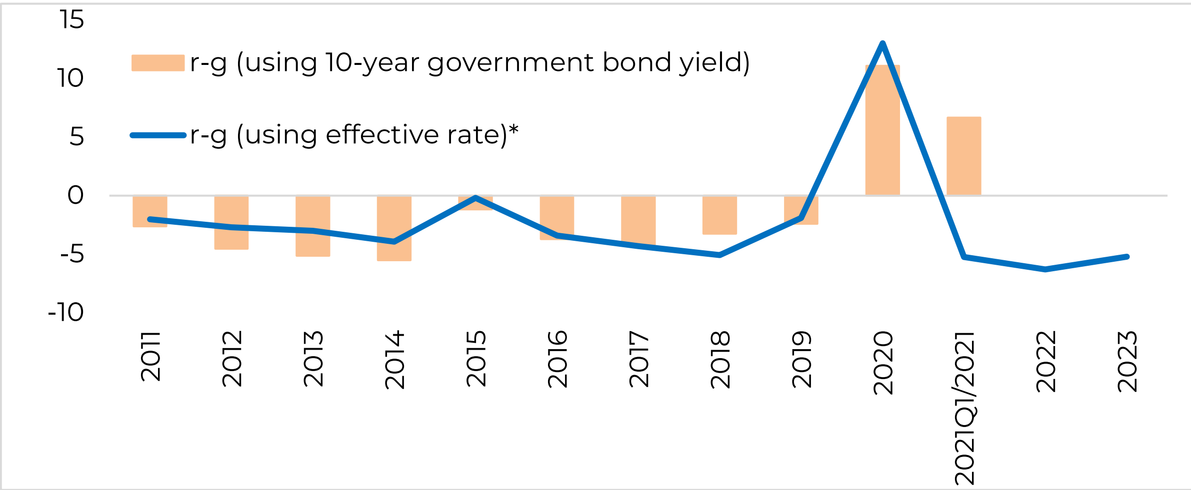
growth because the long-term interest rate remained low. Calculation of an effective rate based on interest payments and NG debt showed a similar trend until 2020.

Medium-term plan for National Government fiscal and primary balances (as a percentage of GDP) — Figure 9



Source: Development Budget Coordination Committee (as of 18 May 2021).

Difference between real interest rate and real growth rate (in percentage points) — Figure 10



*r – g (using effective rate) for 2021–2023 are full year projections based on the DBCC fiscal program as of 18 May 2021.

Sources: Bureau of the Treasury; Philippine Statistics Authority; Development Budget Coordination Committee.

For the full year of 2021, however, the country is estimated to regain the sustainable debt condition, mainly due to the expected economic recovery. The government projects that real GDP will grow by 6–7 per cent this year. With the BSP's latest projected inflation of around 4 per cent in 2021, the country only needs positive economic growth by at least 1.5 per cent in order to regain the $r - g < 0$ condition.

For 2022 to 2023, $r - g < 0$ is estimated to continue, which indicates that the NG's fiscal position could remain sustainable over the next two years.

However, this should be viewed with caution, as uncertainty brought by the pandemic remains high and there is a risk of tighter global financial conditions.

The stochastic simulation results produced by the DBCC's Debt Sustainability Analysis (DSA) model predict a moderate risk of more than 60 per cent in 2021. Long-term debt sustainability remains intact because a return to a downward debt path is highly likely if GDP growth and fiscal deficit levels regain their pre-2020 long-run averages beginning in 2023.[46]

5. Unwinding monetary policy measures

The Philippine economy is slowly recovering. Currently, the Philippine economy continues to recover at a hesitant pace as the Covid-19 threat lingers on, particularly with the emergence of new coronavirus variants. Since the end of the pandemic is still highly unpredictable, the BSP continues to affirm that it will support the economy for as long as necessary until economic recovery gets fully underway.[47]

Despite inflationary pressures in the first half of 2021, the BSP believes that there is still some room for accommodative monetary policy and liquidity easing measures due to the BSP's latest projections that inflation will still fall within the target range between 2021 and 2023, and risks to inflation outlook remain generally balanced.

The BSP is also staying vigilant in monitoring domestic and international developments in order to gauge the country's evolving needs and identify emerging risks to inflation and growth outlook. The BSP remains ready to adjust its policy settings, if warranted, to meet its price and financial stability objectives.

Winding down and policy coordination. When the macroeconomic environment becomes more favourable and economic recovery has accelerated enough to warrant a scale-down of policy support, the BSP will gradually phase down its monetary interventions. The BSP has consistently reiterated in various meetings, fora and media that unconventional actions to provide bridge financing to the NG are only short-term, temporary relief measures. These need to be unwound when conditions start to normalise in order to prevent the build-up of inflationary pressures and mispricing of risks that could generate systemic risk.

However, winding down presents some decision-making challenges. One is deciding how soon to unwind this monetary support. On one hand, an early exit means greater assurance that inflation will be curbed, but this could undermine economic recovery. On the other hand, waiting too long ensures economic expansion, but could catapult inflation and create an over-leveraged economy.[48]

Another challenge is ensuring that policy actions remain consistent with the BSP's primary mandate as coordination with fiscal authorities continues. During the transition to the new normal, fiscal policy is expected to be continually accommodative in order to ensure economic recovery. Since the BSP has been

[46] See DBCC (2021).

[47] See Bangko Sentral ng Pilipinas (2021).

[48] See Blinder et al (2013).

complementing the government's initiatives to address the effects of the pandemic, it is aware that there could be requests for continued implementation of some of its measures to support the government's efforts. These could be additional provisional loan advances, continuation of the BSP's purchases of GS in the secondary market, maintaining the low interest rate environment to make it easier for the government to finance its debt, or tolerating higher inflation to reduce the real value of NG debt.[49]

The BSP Charter and Bayanihan law are clear on the exit provisions for loan advances from the BSP to the NG. The agreed date of settlement must be enforced, as this serves as an indication of the government's ability to settle its obligations and also affects the BSP's integrity in upholding the law. However, any proposal to further expand the amount and duration of provisional advances through newer versions of the Bayanihan law requires careful assessment. It is important that the BSP stands firm against any political pressure if it deems such additional loan provisions no longer necessary, or it may compromise its commitment to achieving price and financial stability. The existence of policy coordination institutions is an advantage, as these enable the BSP to clearly and carefully communicate to fiscal authorities the reasons behind its policy position. The BSP's active participation in legislative hearings also sends lawmakers a strong signal of the BSP's commitment to protecting its independence and maintaining its credibility in pursuing its mandates.

Meanwhile, the unwinding of the daily one-hour window for the purchase of GS in the secondary market must take into account the overall liquidity condition, appetite for GS during the transition phase[50] and the stability of the financial market. Determining the exact timing of recalibration is also a challenge, as it requires coordination with fiscal authorities since the government is expected to provide continuous support to strengthen economic recovery.[51]

Such is the case for any political pressure to maintain a low interest rate environment or tolerate higher inflation, although these scenarios may be unlikely if the government's borrowing costs remain low and the NG's fiscal and debt positions continue to be sustainable.

Formulating the exit strategy. At present, the BSP is carefully formulating its exit strategies, which will serve as a guide on the transition to the new normal. To avoid serious repercussions, the timing for phasing measures out will be based on careful assessment of data, taking into consideration domestic and external developments, inflation and growth outlook, and the stability of the financial system. To ensure a smooth exit process, the BSP will continue its policy coordination with fiscal authorities to minimise possible policy inconsistencies that can send mixed messages to the market. The exit strategies will be properly and clearly communicated to the government and to the public in order to encourage whole-of-society cooperation.

49 See Salmeron and García Arenas (2021).

50 See Glindro et al (2020).

51 See Robleza et al (2020).

6. Conclusion

The devastating economic fallout from the Covid-19 crisis highlights the importance of coordinating monetary policy and fiscal policy when responding to a crisis. The Philippines benefited from the presence of existing institutions and structures that facilitate coordination and help ensure that monetary policy responses stay in line with price and financial stability.

As the country continues to recover, it is important to regularly monitor the channels through which the state of public finances affects room for monetary policy manoeuvres. Knowing the status of the government's fiscal and debt sustainability is also useful for better policy coordination.

Moving forward, when economic conditions improve, coordination between monetary and fiscal policy will become even more crucial and challenging as the objectives of the BSP and fiscal authorities start to diverge. Continued coordination with fiscal authorities and clear public communication of carefully crafted exit strategies are essential in order to minimise potential policy inconsistencies, thereby ensuring a rapid, immediate economic recovery.

References

Adam, C and D Bevan (2005): "Fiscal deficits and growth in developing countries", *Journal of Public Economics,* vol 89, April, pp 571–97.

Akram, N (2015): "Is public debt hindering economic growth of the Philippines", *International Journal of Social Economics*, vol 42, no 3, March, pp 202–21.

Baldacci, E and M Kumar (2010): "Fiscal deficits, public debt, and sovereign bond yields", *International Monetary Fund Working Paper*, WP/10/184, August.

Bangko Sentral ng Pilipinas (2021a): *2020 Annual Report: Central banking amid the pandemic for a resilient economy*.

——— (2021b): "Monetary board maintains policy settings", Media and Research Press Releases, 24 June.

Batac, C, E Robleza, J Dacio, L Ganapin and D Bautista (2020): "The role of strategic policy coordination and communication", Chapter 13 in *BSP Unbound: Central banking and the Covid-19 pandemic in the Philippines*, Bangko Sentral ng Pilipinas.

Blinder, A, T Jordan, D Kohn and F Mishkin (2013): "Exit strategy", *Geneva Reports on the World Economy*, International Center for Monetary and Banking Studies, September.

Bordo, M and M Levy (2020): "Do enlarged fiscal deficits cause inflation: The historical record", *National Bureau of Economic Research Working Paper*, no 28195, December.

Coibion, O, Y Gorodnichenko and M Weber (2021): "Fiscal policy and households' inflation expectations: Evidence from a randomized control trial", *Working Paper,* no 2021-26, Becker Friedman Institute, February.

Dakila, F (2020): "Conclusion: Central banking in the new normal", Chapter 14 in *BSP Unbound: Central banking and the Covid-19 pandemic in the Philippines*, Bangko Sentral ng Pilipinas.

Department of Budget and Management (2020): "About the DBCC", https://www.dbm.gov.ph/index.php/dbcc-matters/about-the-dbcc, 7 January.

Development Budget Coordination Committee (2020): *Fiscal Risks Statement 2021*, https://www.dbm.gov.ph/wp-content/uploads/DBCC_MATTERS/FiscalRiskStatement/Fiscal-Risks-Statement-2021-for-Circulation.pdf.

Españo, V and M C Santillan (2018): "Determinants of inflation expectations in the Philippines", *Bangko Sentral Review 2018*.

Glindro, E, M Oliva and L Elloso (2020): "Forward planning for strategic crisis response", Chapter 12 in *BSP Unbound: Central banking and the Covid-19 pandemic in the Philippines*, Bangko Sentral ng Pilipinas.

Glindro, E, H Parcon-Santos, F Cacnio, M Oliva and L Ignacio (2020): "Covid-19 exit strategies: How do we proceed?", *BSP Working Paper Series*, no 2020-01.

Glindro, E and M Oliva (forthcoming): "The BSP's journey towards a progressive monetary policy framework", *Philippine Review of Economics*.

Guinigundo, D (2012): "Fiscal policy, public debt management and government bond markets: the case for the Philippines", *BIS Papers* chapter in: Bank for International

Settlements (ed.), *Fiscal policy, public debt and monetary policy in emerging market economies*, vol 67, pp 269–83, Bank for International Settlements.

International Monetary Fund (1995): "Guidelines for fiscal adjustment", Fiscal Affairs Department, *Pamphlet Series,* no 49.

Investor Relations Office (2021a): "S&P affirms Philippines' 'BBB+' rating, 'stable' outlook – Debt watcher cites firm economic recovery prospects", IRO Press Release, 27 May.

——— (2021b): "Philippines keeps 'BBB' rating with Fitch", IRO Press Release, 12 July.

Mello, M and J Ponce (2020): "Fiscal policy and inflation expectations", Banco Central del Uruguay, *Documentos de trabajo*, no 004-2020.

Montoro, C, E Takáts and J Yetman (2012): "Is monetary policy constrained by fiscal policy?", *Bank for International Settlements Papers*, no 67.

National Economic and Development Authority (2021): "NEDA Board", 21 June.

Republic Act no 7653, *The New Central Bank Act*, 14 June 1993.

Republic Act no 11211, *An Act Amending Republic Act Number 7653, otherwise known as "The New Central Bank Act," and for Other Purposes*, 14 February 2019.

Robleza, E, C Batac, P Alhambra, J Dacio, J Ocampo, L Ganapin and D Bautista (2020): "Leveraging monetary tools to maintain macroeconomic stability", Chapter 4 in *BSP Unbound: Central banking and the Covid-19 pandemic in the Philippines*, Bangko Sentral ng Pilipinas.

Salmeron, A and J García Arenas (2021): "The shadow of fiscal dominance", *Dossier | Challenges facing central banks in the post-pandemic world*, CaixaBank Research, April.

Sargent, T and N Wallace (1981): "Some unpleasant monetarist arithmetic", Federal Reserve Bank of Minneapolis, *Quarterly Review*, Fall 1981.

Sicat, G (2012): "The peso appreciation and monetary-fiscal coordination", *University of the Philippines Discussion Paper*, no 2012-15, October.

Tetangco, A (2003): "The tax-exempt status of the central bank in the Philippines", *BIS Papers* chapter in: Bank for International Settlements (ed.), *Fiscal issues and central banking in emerging economies*, no 20, pp 208–213, Bank for International Settlements, October.