

Managing Fiscal Challenges in Contemporary Papua New Guinea

Satish Chand, Junaid Sadiq Masood, and Vijaya Ramachandran

Abstract

The rising budget deficits and associated increases in public debt confronting the government of Papua New Guinea (PNG) make it difficult for the government to comply with the legislated debt ceiling of 45 percent of GDP within the foreseeable future. In these circumstances, focusing policy on containing debt to the legislated level could compromise both fiscal sustainability and developmental objectives. The damage being done by COVID-19 is severe and calls for additional flexibility. Rather than focus on the debt ceiling, we argue that the government should use public investments funded with concessional loans to raise GDP and improve developmental outcomes, thereby returning public finances to a path of fiscal sustainability. This does require containing the risks of fiscal profligacy, however.

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1. Introduction

Budget deficits and the accumulation of public debt enable governments to redistribute income over time and across generations whilst minimising the deadweight losses that arise from changes in taxation (Alesina & Tabellini, 1990). Here we consider the scope for the government of Papua New Guinea to use fiscal deficits and debt finance to redistribute, and more importantly, to increase gross domestic product (GDP) while complying with legislated commitments to debt sustainability. This paper also addresses an important issue for many emerging economies in the wake of the COVID-19 pandemic: how to reconcile the credibility of fiscal targets and debt ceilings while retaining the flexibility needed to respond to the crisis? This question of credibility versus flexibility is not a new issue in general or for PNG in particular, but it has gained pertinence with the unfolding crisis.

The Parliament of PNG has made concerted efforts to keep national debt sustainable and to safeguard against fiscal recklessness. In 2006, the Parliament enacted a *Fiscal Responsibility Act* (FRA henceforth): “to provide guiding principles for the conduct of fiscal policy” (Paragraph 1 (1a)), and “to provide a framework for fiscal management ... for transparent reporting of the national fiscal position ...” (Paragraph 1(1b)).

The subsequent amendments also included the following commitments regarding total public sector liabilities:

Government will not raise the overall level of general government debt as a share of Gross Domestic Product above 30 percent of Gross Domestic Product, apart from in the years 2013 and 2014 in which it will not exceed 35 per cent, having regard for the size of the Government’s other liabilities and the size and likelihood of contingent liabilities—(Section 2, paragraph (c), *Papua New Guinea Fiscal Responsibility (2013 Budget) (Amendment) Act 2012*).

Commitments were also made with regards to total public sector liabilities; that is that the:

Government will not raise the overall level of general government liabilities, including all debt as well as contingent and non-contingent liabilities and guarantees, above 60 per cent of Gross Domestic Product—(Section 2, Paragraph (h), *Papua New Guinea Fiscal Responsibility (2013 Budget) (Amendment) Act 2012*).

These commitments were made in the aftermath of at least three fiscal crises in the last decade of the 20th Century, with debt as a proportion of GDP having peaked at 76 percent in 2002 (Chand, 2002). Thereafter, public debt initially trended downward falling to 23 percent of GDP by 2011 but subsequently trended up, reaching 39.4 percent of GDP in 2015. These statistics, while indicative of the levels of public debt, have to be interpreted with care as the figures for public debt vary enormously between sources and definitions: the IMF¹, for example, reports ‘government gross debt’ for 2018 of 36.8 percent while the PNG Treasurer reported this to be 30.9 percent and “well within the 30 to 35 percent range prescribed by the Fiscal Responsibility Act (Amended 2017)” (Abel, 2018, p. v). The World Bank states the figure for

¹ See here: <https://www.imf.org/en/News/Articles/2018/12/03/pr18451-papua-new-guinea-imf-executive-board-concludes-2018-article-iv-consultation>.

external debt stock as a proportion of GNI as 78.4 percent (see Table 1).² And some debt such as those belonging to state owned corporations are not reflected in the budget.

While the true level of debt as a proportion of GDP is unclear, this is likely to be well above the revised legislated ceiling of 45 percent of GDP. This is partly because significant quantities of debt is held off-budget in PNG. Some estimates (IMF, 2016) put total debt including that held by SOEs (Kumul Consolidated Holdings, PNG Power etc) and outstanding liabilities, largely for superannuation (pension) payments, closer to 70 percent of GDP. While we do not have exact, up-to-date estimates, these numbers are worth mentioning when talking about debt stock in PNG.

The sustainability of public debt is likely to remain a challenge in PNG for the foreseeable future. A recent report from the Asian Development Bank outlines three areas where the debt problems for the government will need to be managed (ADB, 2020). It cites large amounts of public sector arrears in the form of unpaid bills, mainly wages, allowances, and unpaid invoices for its purchase of goods and services. It also raises concerns about state-owned enterprises debt, which ‘neither the Treasury nor any other department is actively monitoring’. And finally, it mentions contingent liabilities, which were estimated in 2019 to be K14.1 billion, 91 percent of which are guarantees extended to external creditors. The ADB says ‘in the past, the servicing of both principal and interest costs of some guaranteed loans has become a burden on the government budget.’ (ADB, 2020, p. 318). In February 2020, the International Monetary Fund approved a Staff Monitored Program (SMP) to help the government implement reforms and establish a good track record (IMF, 2020).

Whatever the prevailing level of debt, it is likely to be pushed up in the immediate term. The fiscal injections of 2020 to mitigate the worst effects of the unfolding COVID-19 crisis will increase public outlays in a climate of falling revenues thus leading to a spike in both budget deficits and public debt, and in the process will breach the new ceiling for public debt that was lifted to 45 percent in 2019 (Sanida, 2020). While this breach of the legislated ceiling of debt may have been warranted in light of a crisis of unprecedented magnitude, and one over which the policymakers had little warning or control, the breach nonetheless raises questions regarding the credibility of a legislated debt anchor and the need for fiscal flexibility in times of need.

In this paper we argue that adhering strictly to a fiscal anchor such as a debt ceiling is impractical and possibly counter-productive to the goals of attaining fiscal sustainability, but such an anchor cannot be disposed altogether. Impractical because a shock such as that of COVID-19 will demand a response likely to breach a fiscal anchor, as explained in the next section. In developing this argument, we begin by explaining the magnitude of the fiscal challenge from COVID-19 in Section 2. Section 3 provides the possible strategies that in the short-term will lead to a spike in public debt but could put public finances on a long-run path to fiscal sustainability as stipulated in the FRA, Section 4 addresses the challenge of ensuring that parliaments continue to acknowledge the principles of fiscal responsibility. Conclusions follow.

² In this analysis, we are using IMF figures for these calculations as they are methodologically comparable with other countries. The choice of data does not affect our recommendations.

2. A New Challenge: COVID-19

Papua New Guinea at the time of writing in early May 2020 had eight confirmed cases of COVID-19 after one patient had recovered, but no recorded deaths from the pandemic. This favorable record is likely to improve as patients recover while the international border remains closed. The low rates of infection may be attributed to the quick action by the government in shutting its borders, putting in place measures for social distancing, and testing those with symptoms. This may have paid early dividends in preventing the spread of the pandemic, saving lives in the process but the economic costs in lost international trade are beginning to be assessed (Nao, 2020).

As the world scrambles to deal with the COVID-19 epidemic, there is an especially high risk for Papua New Guinea. The lack of adequate health facilities and infrastructure means it already struggles to provide basic medical services to its 8.6 million citizens (Wade, 2018). Diseases like HIV/AIDS, tuberculosis, and malaria are everyday burdens and demand a large share of limited resources available for health. The island nation sees more than 100 cases of TB a day (Sherrif, 2019), whereas another report indicates the number of cases of malaria have increased nine-fold between 2014 and 2017 (Hetzl et. al, 2017) while vaccine-derived polio has made an outbreak in PNG (Chandler, 2018).

PNG's larger hospitals have only a small number of intensive care beds—Port Moresby's main public hospital has fewer than ten, and only some of those beds have ventilators for patients with respiratory issues (Mcleod, 2020). And for the majority of the people who reside in rural districts, hospital is not effectively an option as access to basic healthcare is poor. For many people, this crisis will pass without them even visiting a health clinic, let alone knowing if they have or had COVID-19. Stopping the virus from reaching the people is the only option for many.

To cope with the economic contraction due to the pandemic, Pacific islanders will likely rely on support networks such as family and church-based organizations. People are used to catastrophes, from cyclones to tsunamis and tend to rely on informal networks rather than the state ((Nanau, 2011). Traditional networks are usually important in insuring against crises, but in this case could carry risks if infections are carried back to the villages from urban centers.

The coronavirus pandemic has the potential to cause significant economic losses. Given the PNG economy's dependence on commodity prices, the decline in oil prices will likely lead to a significant jump in budget and BoP deficits, and put further pressure on the exchange rate. It may also most defer the planned expansion of PNG's LNG industry, and in the process reduce FDI into the natural resources sector. The country's most prominent producer, Oil Search, has seen its share price fall by around 70 percent since February (Mcleod, 2020), while a dispute on the extension of a mining lease has suspended operations at a large gold mine.

A State of Emergency (SOE) was declared by PM Marape on 22nd March 2020 that was to be effective for two weeks, but this has since been extended to 5th June. The SOE has suspended all flights—both international and domestic, and all public transportation of people other than police and military personnel. Transportation of goods and medical supplies are allowed. PNG had placed a ban on its own citizens from returning home from abroad during the SOE—the constitutionality of which could be challenged in court. The suspension of international flights will reduce the risks of the coronavirus reaching PNG shores, but it will also cut access to medical personnel and supplies from abroad to assist with a potential surge in demand for healthcare. The suspension of all domestic flights will cut out isolated pockets of the country from contact with the capitals—possibly effective in reducing contagion of the coronavirus, but along with that, access to most emergency supplies. Air Niugini, the National

Carrier that has connected many far-flung communities, may require support from the national budget to remain afloat during the SOE (McLeod, 2020).

The Treasurer, Hon Ian Ling-Stuckey, announced a K5.6 billion (approx. US\$1.6b) stimulus package on 2nd April 2020 in response to the COVID-19 crisis (Ling-Stuckey, 2020). The size of the stimulus, equaling some 8 percent of GDP, is unprecedented and it could be ratcheted up further should the crisis deepen. The initial focus is on boosting health and security, with K70 million earmarked for acquisition of critical medical supplies, and direct financial aid to households and small and medium enterprises. PNG was quick to close its borders, following the detection of the first case of COVID-19 in the country, but the Treasurer warned of the risk given the porous border including that with Indonesia and Australia. While pre-emptive action may have saved PNG from more cases of COVID-19, the fiscal impacts are both immediate and large. The fall in commodity prices is estimated to lead to a fall in the value of exports by K5 billion (US\$1.45b and equal to 13 percent of total exports) and a loss of revenues from this source alone to the national budget of K2 billion (US\$0.58b). Total budget deficit for 2020 is projected at K6.6 billion (equal to 9 percent of GDP), the funding for which will see debt levels spike, both in value and more so as a percentage of GDP given that the economy is expected to contract in 2020.

The burden imposed by the COVID-19 pandemic suggests that the flexible arrangements for debt ceiling proposed in this paper may be even more relevant. But first we assess the magnitude of the fiscal challenge.

3. The Magnitude of the Fiscal Challenge

One of the major challenges in PNG is the lack of reliable data, particularly with regard to GDP and other economic indicators. The informal sector makes up more than 80 percent of GDP. This makes it extremely challenging to capture the full picture of the economy. Data limitations are further exacerbated by the spatially fragmented nature of the country—most areas outside of the provincial capitals are inaccessible, and often not connected by roads thus estimating the value of production and levels of access to basic services difficult. The statistical agency is also constrained by a lack of technical expertise. The World Bank recently rated PNG's statistical capacity as one of the lowest in the region.

PNG is ranked as the 10th most resource-dependent economy in the world. Following a regime change in May 2019, parliament passed a supplementary budget in October 2019 which represented Prime Minister James Marape's first tangible policy stance. Compared to the previous forecast, major changes could be seen everywhere—in expenditure, debt, and revenue. The government declined a request to extend the lease of a large gold mine that has been in operation since 2006 that expired in April 2020. The multinational mining company has alleged the actions of the government as amounting to “nationalisation without due process and in violation of the government's legal obligations” (*Post Courier*, 29 May 2020; page 3) and is challenging this decision in the courts. Meanwhile, landowners are also pursuing court action demanding compensation for environmental damages from the mine.³ These court proceedings will likely take time to resolve: meanwhile, the suspension of operations will halt production, raise tensions in the affected (rural) communities, and increase the risk premia attached to foreign investments, and particularly in the resource sector, in PNG. Alarming, this dispute has arisen at a time when the budget is in desperate need of revenues, and the nation of foreign investments and jobs. A new government may see the opportunity to increase receipts from natural resources by transitioning the operations of the mine to a new (foreign) owner, but a prolonged dispute over the mine will raise

³ See the media statement by PM Marape of 24th April 2020, and reports in the *Post Courier* of 29th April 2020; pages 2–5.

transactions costs and undermine the credibility of any commitment made by an incumbent administration to an investor (see North, 1993).

The treasurer, Ian Ling-Stuckey, told parliament the country's finances had a deficit over \$1 billion, as he announced \$400 million worth of cuts. Government revenues for 2019 were down by 7 percent, as reported in the supplementary budget. They fell to K13.022 billion, down almost K1 billion from the previous projections, reflecting a decrease in tax revenue. The fiscal deficit rose to K3.5 billion which is equal to 4.1 percent of the country's GDP (Laveil, 2019), and likely to rise further in 2020.

The economic prognosis for 2020 are less favourable compared to those for 2019 when economic growth is estimated at 5.6 percent, underpinned by a strong recovery in mining, oil and gas sector production (World Bank 2019). Government revenue for 2020 was projected to be PGK14,095.4 million, principally funded from tax revenues and based on an improved economic outlook, especially in the non-mining sector. The tax revenues were forecast to grow in line with GDP (Deloitte, 2019). Parliament also voted to increase the country's legal debt-to-GDP cap from 35 percent to 45 percent.

The economy was already weakening in the lead up to the COVID-19 lockdowns. Non-resource GDP, the best measure for economic activity in which most Papua New Guineans are involved, was slowing down. This slowdown was due to sluggish domestic demand as confirmed by a shortfall in non-resource tax revenue and lower inflation, while formal employment improved during the first nine months of 2019. The growth outlook was then positive, but projected GDP growth rates were being revised downwards from the previous forecasts, mainly due to delays in finalizing agreements and commencement of large new resource projects (World Bank, 2019). A growing oversupply in the global liquefied natural gas was putting downward pressure on the prices for LNG and revenues from the extractive sector, with negative flow-on effects on the non-resource economy. Total formal employment has been falling since 2013, with the nation experiencing jobless economic growth in the lead up to the lockdowns.

Papua New Guinea was facing persistent shortages of foreign exchange in the pre-COVID-19 period. Since 2014, the Bank of PNG instituted a trading band indexed to the US dollar, with nominal exchange rate for the Kina set at US\$0.29 throughout 2020 (Laveil, 2019). The primary reason for anchoring the exchange rate to the USD was to reduce imported inflation, although a study by the Australian National University found the Kina to be overvalued (Sum & Bao, 2019) Although inflation (presently at 4.3 percent) has been falling since 2016, it is still higher than neighbouring Pacific nations (Sum & Bao, 2019). While an overvalued Kina may have dampened inflation, it could also be responsible for the deterioration of PNG's trade balance and the prevailing foreign exchange rate shortages.

The International Monetary Fund, observing that the legislated ceilings on public debt had been breached in 2014, had "strongly encouraged the authorities to adopt more ambitious package of fiscal measures" (IMF, 2015; page 6). The measures recommended included reducing deficits relative to the baseline by 1 percent of GDP in 2016, and further reductions of 2 percent of GDP from 2017 to 2019 with the "bulk of the fiscal adjustment to come from reductions and reprioritisation of expenditure" (ibid; page 7). In the same breath, however, the IMF warns that "[c]are should be taken to ensure that consolidation does not affect high priority social spending, including health, education, law and justice, and agriculture" (ibid; page 8).

In response to the advice from the IMF, the PNG-Government reaffirmed its commitment to maintaining government debt to sustainable levels with the Treasury announcing that:

[t]he Government continues to be cognisant of its requirement to meet debt to GDP targets as stipulated in the Fiscal Responsibility Act (FRA). The ratio is projected to remain around 35 per cent in the next three years and is expected to fall in 2019 and 2020.—(2016 *Annual Domestic Debt Issuance Plan*, PNG Department of Treasury of 26th February 2016).

In hindsight, the advice of the IMF was ignored and so was the commitment made by the Treasury.

Post-COVID-19, the PNG Government is even more unlikely to follow through with the commitments made to restrain increases in the levels of public debt. The debt ceilings were raised in 2019 and may well require further increases in 2020 and beyond. The economy is likely to contract in 2020, the balance of payments likely to worsen, and unemployment likely to rise. The pandemic has exposed many of the frailties of the economy, including weak health delivery and an ineffectual debt ceiling. Furthermore, a hard debt ceiling, which was first put in place to contain fiscal decadence, is impractical.

The developmental challenge in PNG however is far greater than the existing fiscal challenge, and this may have been exacerbated by the COVID-19 crisis. PNG was already short of the Lower middle-income countries (LMICs as defined by the World Bank) as a group and nations in neighbouring Asia on nearly every measure of socio-economic development. Table 1 provides summary statistics on several socio-economic variables of which we pick just three. Life expectancy in PNG is 4 years short of the LMC average, and 11 from the average for the nations of East Asia and the Pacific (EAP); some 63 percent of the children complete lower secondary school in PNG compared to 73 percent and 95 percent in LMCs and EAP, respectively; and, child-mortality at 57 for every 1,000 live births in PNG is comparable to the average for the LMCs but considerably higher than the 18 for EAP. PNG however spends 6.9 percent of GNI on education and another 4.3 percent on health compared to 3 percent and 2.8 percent, respectively, by the LMCs, and 2.1 percent and 2.4 percent, respectively, by those in EAP. But delivering basic services in PNG is both difficult and expensive given the highly dispersed population, the rough terrain, and extremely high linguistic and cultural fragmentation (see Fearon, 2003 on the last of the above). Over 80 percent of PNG's population lives in rural areas.

Cutting public sector outlays to reduce budget deficits by 1 percent of GDP in 2016 and a further 2 percent of GDP each year from 2017 to 2019 as was originally advised by the IMF could have, in a climate of stagnant income growth, thrown PNG's fiscal position (including debt as a proportion of GDP) into a spiral with catastrophic consequences for development as elaborated upon in the next section. If the government continues to follow advice to retain spending levels on priority sectors such as those on health, education, law and justice, and agriculture then it would need to make drastic cuts to infrastructure investments, many of whom are estimated to have return on investment exceeding 20 percent.⁴ The World Bank for example notes that investment into electricity, telecommunications, and transportation infrastructure is critical to growth of income ([World Bank, 2016](#)). COVID-19 makes these investments all the more urgent, and this could require large upfront outlays possibly funded with debt meaning that the debt ceiling would be further compromised. There is a path out of this conundrum as explained next.

⁴ See ADB(2011) "[Sector assessment \(summary\): Road Transport Subsector.](#)" Asian Development Bank, Manila on returns to investment in 'missing-link' roads and Psacharopoulos (1985) on returns to education.

Table 1. Summary statistics; Papua New Guinea (PNG), lower-middle-income countries (LMCs), and East Asia Pacific (EAP)

	PNG	LMICs	EAP
Fiscal Indicators			
Debt service (PPG and IMF only, % of exports of goods, serv. & prim. inc., 2017)	1.7	4.4	1.3
External debt stocks (% of GNI, 2018)	78.4	25.6	17.6
Expenditure on education (% of GNI, 2017)	6.9	3	2.0
Health expenditure (% of GDP, 2016)	2.0	5.4	4.8
Development Indicators			
GNI per capita (US\$, 2017)	2,570		7,600
Life expectancy (2017)	64	67	75
Poverty headcount ratio (National Poverty Line, 2009)	39.9	..	39.9
Popln, 65 yrs + (% of total, 2018)	3.4	7.5	9.5
Fertility rate (births per women, 2017)	3.6	2.5	1.9
Lower secondary completion rate, both sexes (% , 2016)	62.5	74	87
Adult literacy rate (% of 15+ population, 2013)	63	73	95
Infant mortality (per 1,000 live births, 2018)	38	31	13
Child mortality—under 5 years per 1,000 live births, 2017	47.8	41.2	15.7
Maternal mortality ratio (modelled estimate per 100,000 live births, 2017)	230	145	73
Births attended by skilled staff (% of total, 2014)	..	78	95
Access to basic sanitation (% of total popln, 2017)	47.8	52	75
Access to improved water source (% of population, 2017)	41	90	94
Access to electricity (% of total popln, 2017)	54.4	86.8	97.6
Rural population (% of total, 2018)	87	49	44
Employment in agriculture (% of total employment, 2019)	67.5	33.3	28.8

Notes: LMICs denotes Lower-Middle-Income Countries as classified by the World Bank are those with a per capita GNI in 2014 of between US\$1,045 and \$4,125. The data reported is that for the most recently available. Debt service is the sum of principle repayments and interest actually paid in currency, goods, or services. External debt stock for PNG is sourced from Table 1 in IMF (2015). Data sourced from World Development Indicators (online) database except when stated otherwise.

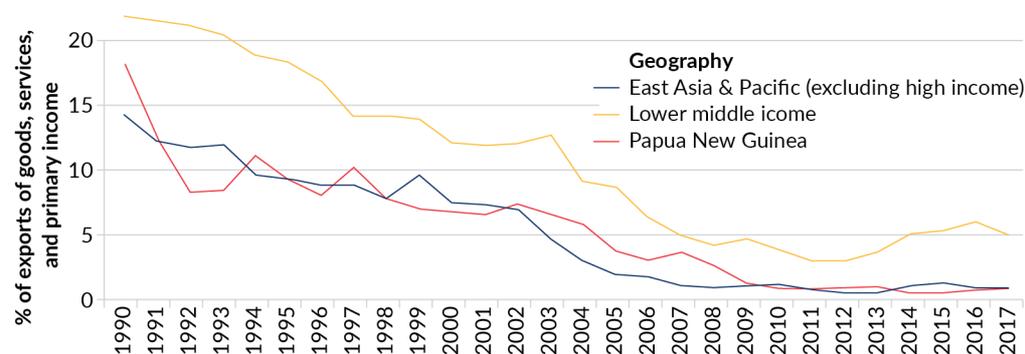
4. The Developmental Challenge and Path to Sustainable Public Debt

PNG is a young nation with the population growing at an annual average rate of 2 percent (data for 2018 from the World Bank). PNG'S fertility rate is 3.66 and just 4 percent of its population is above 65 years of age. Hence the momentum for population growth will remain for the foreseeable future (see data in Table 1). Per capita GDP at US\$2,556 is one of the lowest within the Asia-Pacific region, and particularly low given the rich endowments of minerals, marine resources, and manpower. Some 40 percent of the population are estimated to be in poverty (HIES 2009–10 data from Gibson, 2012). Access to basic services is poor, thus there is considerable room for investments into physical and social infrastructure that could boost GDP. More than 30 percent of children within the age of 7 years to 13 years fail to complete primary schooling, only 40 percent of the population have access to 'improved water source' meaning to reticulated supply or a protected spring/well, and just 18 percent of the population have access to electricity. Health outcome are just as poor: 48 of every 1,000 infants born alive die before their 5th birthday while 145 of every 100,000 births results in the death of the mother. Law and order has been a perennial problem.

There is considerable dormant demand for public service including better access to transportation infrastructure, electricity, basic education, and primary healthcare. A young developing nation such as PNG has the headroom to move in terms of income, poverty reduction, and access to basic services. While economists continue to debate why some nations are rich while others poor, there is consensus within the literature that it is easier for lagging nations to catch-up then for those at the frontier to push ahead (Hall & Jones, 1999; Neumayer, 2003; Olson, 1996).

The IMF has encouraged the authorities to implement structural reforms to strengthen Papua New Guinea's non-resource sectors. They noted that key elements of the development strategy needed to include measures to ensure that Papua New Guinea benefits more substantially from its natural wealth. There may be room for PNG to access debt for investments in public infrastructure with a view to lifting social and economic indicators for development. PNG is far from being a highly indebted country—national debt, as reflected in official statistics, in PNG is lower than that for Lower Middle Income Countries and comparable to those for the EAP (see Figure 1).

Figure 1. Public and publicly guaranteed debt service, 1990 to 2017



Notes: Debt service is the sum of principle repayments and interest paid in currency, goods, or services. Data sourced from World Development Indicators.

Source: World Bank data.

Prioritisation of investments into public infrastructure would be central to helping the citizens of PNG catch up with their cousins across the Torres Strait. And the opportunity for doing so may be now given the low commodity prices, the global glut in savings, and the under-utilised skills and capital in Asia (and China particularly) that lend the opportunity to invest in the construction of the long-needed public infrastructure in PNG. We are also warning against cutting public outlays that could prove detrimental to growth of GDP. The following simple math brings the key arguments to the fore.

The level of public debt is expressed as a ratio; that is,

$$DR = \frac{Debt \$}{GDP \$} \quad (1),$$

Where \$ denotes US dollars in constant prices. Thus, the growth in debt as a percent of GDP is given by the difference in the rate of growth of debt and GDP; that is,

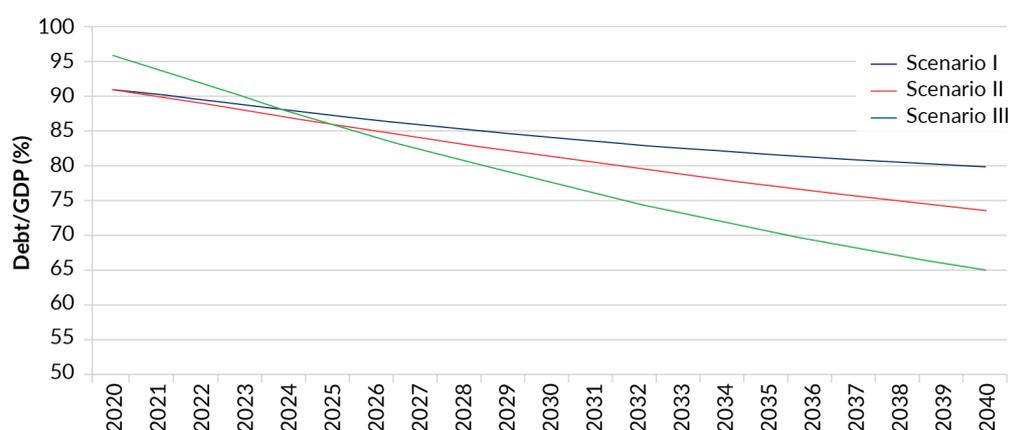
$$\widehat{DR} = \widehat{Debt\$} - \widehat{GDP\$} \quad (2),$$

where a \wedge (hat) over a variable denotes its growth rate. Equation (2) shows that the debt-ratio falls when the rate of growth of GDP exceeds that for debt. In the case of debt used to finance public infrastructure, debt as a ratio of GDP falls when the return on investment is greater than the interest cost of the debt. We next use a numerical example to illustrate the fact that the level of debt can be put on a sustainable path through judicious use of loans to finance public investments. It demonstrates the fact that taking on more debt and investing this in projects with high returns whilst rolling debt repayments over annually can help put public finances on a path to fiscal sustainability.

Consider the following initial conditions: aggregate GNI in 2018 of US\$20.8 billion;⁵ and the stock of public debt at \$17.9 billion (i.e. 78 percent of GDP). All valuations are done in US dollars at 2018 prices so as to avoid the volatilities of the Kina and domestic prices. Let GNI for 2020 be the same as that for 2018 meaning that the gains of 2019 are lost in 2020 from the COVID-19 crisis. Assume that a loan of US\$1 billion is acquired in 2019 at an annual interest rate of 5 percent to fund public outlays that have a return of 20 percent; this being the sole contribution to GDP that we model henceforth. Assume further that all interest payments are rolled forward on an annual basis. Thus, debt jumps by 5 percentage points to 91 percent in 2020 but from 2021 onwards the investment returns \$200 million to GNI that is compounded each year while the interest bill adds \$50 million that is also compounded from then onwards. The impact of this investment on debt as a ratio of GDP is shown as Scenario 1 in Figure 2. Note that the debt ratio falls from 2021 onwards since the contribution to GNI of this investment is larger than the interest bill (as shown in Equation 2). On the initial conditions and the parameters assumed, debt as a proportion of GDP falls to 80 percent by 2040: this is still well above the 45 percent set in the amended-FRA but recall that it started well above the ceiling to begin with.

⁵ The data used here are from the World Development Indicators (online) database that was updated on 18th March 2020. The figures for GNI instead of GDP are used due to data availability and they are comparable since the ratio of GNI to GDP for 2018 is 0.97.

Figure 2. Debt-GDP simulations under three alternative scenarios, 2020 to 2040



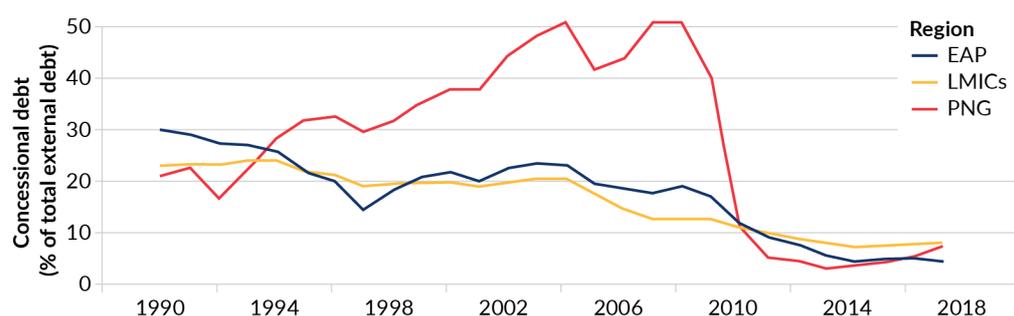
Notes: Initial conditions—debt stock as of 2020 of US\$18.9 billion (equal to 91 percent of GNI), and 2020 GNI of \$20.8 billion. Scenario I—interest rate on debt of 5 percent, loan in 2020 of US\$1 billion; Scenario II—interest rate on debt of 0 percent, loan in 2020 of US\$1 billion; and, Scenario III—interest rate on debt of 0 percent, loan in 2020 of US\$2 billion.

Let us now consider two alternative scenarios with a view to accelerating the rate of fall of debt. In the second scenario, we reduce the interest rate on debt from 5 to 0 percent as an extreme case while leaving the rest of the assumptions unchanged. The debt to GDP ratio, as implied by equation (2), falls faster than in the first scenario: the simulations shows that it falls from the peak of 91 percent in 2020 to 73 percent of GNI by 2040—still well above the FRA target. The final scenario assumes an initial debt of \$2 billion with an interest rate of 0 percent: the simulations show that the level of debt jumps to 96 percent of GDP in 2020 but then falls to 65 percent by 2040. These effects are from the one large public investment project, with the assumption that this is the only source of growth of GNP.

We can now summarise the key findings from this section. First, increased outlays on public investments with high returns can put public finances on a path to fiscal sustainability. Conversely and probably more subtle is the fact that the same mechanism works in reverse meaning that slashing public investment projects with high returns can undermine fiscal sustainability. Second, picking projects that have a return greater than the interest cost of debt reduces the level of debt as a fraction of GNI (shown in Equation 2). This stresses the importance of picking projects with the highest returns and debt with the lowest cost. Interest rate of 5 percent was selected as this is possibly the most competitive rates available from the private sector while the zero rates are possibly the most concessional of such rates available from multilateral development banks.⁶ Figure 3 shows the level of concessional finance in PNG. Furthermore, the limited absorptive capacity of the economy implies that a project of \$2 billion in any one year may be the upper limit to such investments. Third, the simulations suggest that attaining the 45 percent revised target of debt as a proportion of GDP as legislated in the FRA is unlikely to be achieved for the foreseeable future except for the case of major windfall gains to GDP. Finally, the government’s response to the unfolding COVID-19 crisis will put additional pressure on the budget as growth forecasts get revised downwards, and health expenditures spike. In such a climate, any waste of public funds will only exacerbate fiscal pressures, and it is this issue that we turn to next.

⁶ Note that PNG is a ‘blend country’ meaning that the nation can get finance from the International Development Association (IDA) as well as from the Asian Development Fund (ADF). The zero-interest rate is an extreme assumption as neither of the above sources of concessional finance provides interest-free loans for an indefinite period.

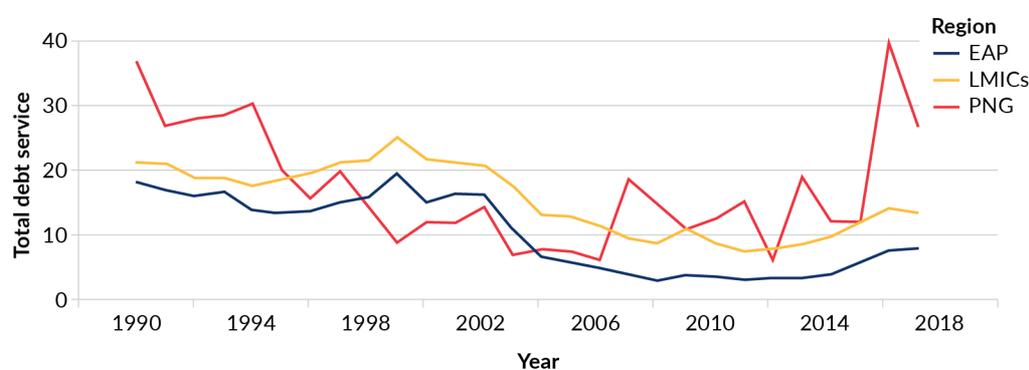
Figure 3. Concessional debt (as percentage of total debt)



5. Insuring Against Fiscal Irresponsibility

While the budget deficit for 2020 is likely to spike as will the level of public debt, what guarantees is there that any debt taken by the government will not be wasted? This question highlights the premise underpinning the FRA: governments’ fiscal irresponsibility can and should be curbed by legislation. But debt ceilings such as those contained in the FRA which require frequent revisions simply because—for whatever reason—they cannot be attained destroy the credibility of the legislation and that of policymaking in general. Figure 4 shows the recent spike in debt service. The COVID-19 crisis, for example, provides the rationale for breach of the mandated 45 percent of GDP debt ceiling.

Figure 4. Total debt service in PNG



Note: Total debt service is measured as % of exports of goods, services, and primary income.

Source: World Bank Statistics.

The question that needs to be addressed is how to make credible commitments (on debt ceilings and other policy anchors) whilst allowing for flexibility during periods of need such as that of a natural disaster. Commitment to an anchor while maintaining flexibility for times in need is a challenge that is not unique to PNG. While we do not answer this question in detail, we do have some preliminary thoughts confined to the use of debt finance for public investments in contemporary PNG which are sketched out next.

Using debt finance for public investments so as to attain fiscal sustainability over the long term requires three ingredients: (i) projects with high rates of return; (ii) finance at the lowest possible cost; and, (iii) quality deliverables. We consider each of these ingredients in what follows. On the first, the National Department of Planning and Monitoring has been compiling lists of public investment projects, estimating the rate of return on each (GoPNG, 2010). Thus, selecting public investments with the requisite rates of return as argued in Section 3 should be fairly easy. On the second, obtaining finance from the private sector for public investment projects could be problematic but accessing concessional finance, particularly when PNG is eligible for this from the World Bank and the ADB, is possible and preferable. The engagement of the European Investment Bank in PNG, the establishment of the Australian Infrastructure Investment Facility with authorized capital of A\$5 billion, and the creation of Asian Infrastructure Investment Bank (AIIB) with authorized capital of US\$100 billion for lending to build rural infrastructure could be an attractive sources of cheap loans.⁷ These loans are preferable to those from the private sector because the interest costs will be low and because concessional financing comes with the financier monitoring the delivery of outputs.

On the third in terms of quality deliverables, it is more than likely that the private sector will be involved in the projects. Large construction projects will require international expertise and at least some of the building materials (i.e. steel, concrete, etc.) that will be sourced from abroad. Technical expertise from the multilateral developing banks (MDBs) could be used to monitor and evaluate the deliverables. The financing for a public investment project could be acquired on a competitive basis from one of the three MDBs, the expertise from the other two could then be used to audit the quality and timeliness of the deliverables, while the actual construction could be outsourced to the private sector. The ADB for example prides itself as the bank that 'pours concrete' while the World Bank claims expertise in delivering social outcomes. Because each MDB has a brand name to protect, all are likely to deliver on their commitments.

Finally, an effective evaluation and monitoring of expenditure with the requisite sanctions for any breaches by the National Department of Treasury with regards to fiscal commitments requires that both the Parliament and the people are kept informed on the use of the loans. Such transparency would accord with the basic principle of democratic governance. The arrangements would be based on the principle that, in PNG's case, institutional transparency and accountability allows PNG's citizens to presume that, firstly, the PNG state works in their collective interest and that, secondly, should some failure of government occur, then the arrangements permit the kind of public scrutiny that enables review and redress of government action in the public interest (Michael, 2006). PNG has a robust democracy and an active media, both of which have a role in ensuring that fiscal responsibility prevails even in the most difficult circumstances. Thus, it could be mandated that the reports from the MDB providing the monitoring and evaluation services be tabled in parliament biannually and also on the completion of an investment project and that these reports are made public.

Last, the FRA would have to be amended (once more) to take into consideration the suggestions made above. An option worthy of consideration is to legislate debt ceilings that are contingent on external conditions. For example, the 45 percent of GDP as a ceiling could apply as long as the revenue shocks to the budget are within 10 percent of the forward estimates. A recent IMF paper (Cevik, 2019) makes the case for a well-designed fiscal responsibility law that enshrines explicit fiscal rules designed for countercyclical policy and long-term debt sustainability. Such a rule can ensure government spending is responsibly managed by setting out precise guidelines and a transparent oversight mechanism. It will also create exceptions when PNG's terms of trade collapses, or in the event of a natural disaster such as the

⁷ PNG is as yet to join the AIIB.

current pandemic, thus alleviating the need for constant amendments to the FRA. Alternatively, debt ceilings could be entrenched in the legislation such that an amendment would require approval from a super-majority. Such change will force parliament to debate the case for change of the debt ceiling, and lend credibility to the anchor whilst preserving the flexibility during times of need.

6. Conclusion

Papua New Guinea is facing a rise in budget deficits and an increase in public debt to the extent that the legislated ceilings set out in the *Fiscal Responsibility Act* (FRA) as amended in 2019 will be breached in 2020, and for the foreseeable future thereafter. The unfolding COVID-19 pandemic that was not anticipated will exacerbate the fiscal challenge in PNG. The national parliament will probably change the ceilings and justify this on the basis of the unanticipated falls in the price of exports and the adverse effects of the pandemic. The Department of Treasury was advised by the International Monetary Fund to cut expenditures to 2019: this advice was not followed and is unlikely to be maintained for the foreseeable future, thus we envision further deterioration in the fiscal position. We have argued that any future cuts to public expenditure as advised by the IMF runs the risk of reducing access to basic services which in turn will have a detrimental impact on GDP and on the already poor social indicators of development. We have argued that judicious increases in public investments financed with concessional loans from multilateral development banks have the potential to put public finance on a path to fiscal sustainability whilst improving developmental outcomes.

Our figures for public debt indicate that the debt ceiling has been breached by a significant margin. Using debt finance for public investments so as to attain fiscal sustainability over the long term requires three necessary ingredients: (i) projects with high rates of return are selected; (ii) finance at the lowest possible cost is accessed; and, (iii) quality deliverables are produced. Data on the first exists within the National Department of Planning and Monitoring. On the second, PNG is eligible for concessional finance from multilateral development banks. And on the third, technical expertise from the non-financing MDBs could be used for monitoring and evaluation.

But what guarantee that the loans so acquired will not be wasted? The FRA was enacted and hard debt ceilings legislated therein to prevent profligacy by the government. The subtext of the IMF advice is that there is waste within the budget to the extent that basic services can be delivered whilst making significant cuts to the budget: but no such wasteful expenditures have been identified. The debt ceilings in the FRA have already been raised twice, and more will be required following COVID-19 crisis. There is little point of having an anchor such as a debt ceiling if it is shifted arbitrarily and frequently. Clearly no parliament can constrain future governments from changing the Fiscal Responsibility Act (FRA), and the debt ceilings mandated therein but mechanisms can be built within the legislation to reduce arbitrary changes. Thus, the challenge is to redesign the FRA such that it provides an anchor to debt levels whilst providing the flexibility when desperately required.

Policy credibility however demands that the limits put in place are adhered to. Difficult times demand amendments to the debt limits and doing so will be to the cost of the credibility of the FRA. This is not a new problem in economics: there is a trade-off between the competing benefits of commitment and flexibility (Dixit, 1998, p. 66). Setting hard legislated limits on public debt face the policy dilemma of having simple rules versus allowing for discretion, particularly given unforeseen eventualities. Policy credibility is acquired by making the limits difficult to change but this is done at the price of losing the flexibility to react to unforeseen shocks (Alesina & Perotti, 1994).

Can we have credible debt policy with flexibility for times of need? This is a pertinent issue given the unfolding COVID-19 pandemic, and a problem that extends beyond PNG. A compromise to the debt ceilings in the FRA would be one where debt ceilings are set subject to pre-specified contingencies. The policy challenge is one of prescribing such contingencies and the means to returning to the limits when conditions normalise. Such rules however have to be simple and conditioned on few and clear contingencies (Dixit, 1998). The institutional challenge therefore is recognising that it takes time to build the processes yielding the kind of transparency and accountability required to gain the trust of PNG's citizens. The approach argued here is akin to tying the government's hands to a debt ceiling but providing the necessary manoeuvrability under mandated transparency during turbulent times. Contemporary PNG may constitute such turbulent times. And transparent and accountable management arrangements leveraged from PNG's democratic institutions could encourage governments to manoeuvre in a fiscally responsible way.

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