Australian National University

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ANU College of Asia & the Pacific

2017 PNG economic survey

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Abstract

This *2017 PNG Economic Survey* is written at the start of Prime Minister O'Neill's second full term, following the June/July 2017 national elections. How can the new government respond both to the current economic difficulties and to longer-term growth and revenue challenges? This Survey examines PNG's recent growth performance and fiscal and macroeconomic settings. It argues that economic policy in recent years has been broadly pro-cyclical. A high level of government borrowing during the boom years has made it more difficult to borrow when it is needed: now, after the boom. A flexible exchange regime during the boom led to appreciation of the Kina, but now a fixed exchange rate is preventing the economy from adjusting, and deepening the down-swing. Economic and fiscal recovery will require different policy settings. The new "100 Day Plan" has some important fiscal reform commitments, but no reform program will be successful without re-introducing flexibility into PNG's exchange rate regime.

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2017 PNG economic survey

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2017 PNG economic survey

1. Introduction

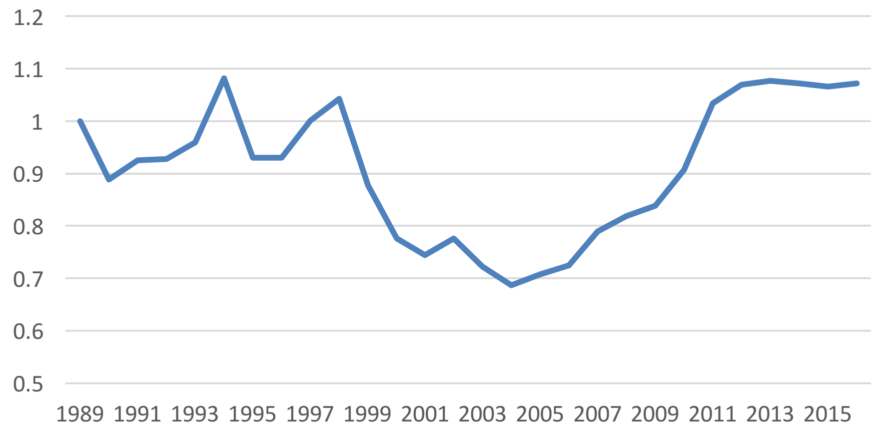
This *2017 PNG Economic Survey* is written at the start of Prime Minister O'Neill's second full term, following the June/July 2017 national elections. It covers events up to June 2017, but includes reference to the new government's "100 day plan" released in August 2017 and its September 2017 Supplementary Budget. It is written at a time of economic crisis, with falling government revenue, large expenditure cuts to basic services, evidence of negative economic growth, and a fixed, overvalued exchange rate, supported by foreign exchange rationing. In fact, the PNG economy presents a number of puzzles to the economic analyst. Why is revenue falling if growth is positive and commodity prices are now fairly stable? And why is inflation still high when the exchange rate is now fixed and the economy sluggish?

There is an immediate crisis to respond to. We present evidence that economic growth at least in the non-resource sector was negative in 2015 and 2016. This, rather than reduced compliance, explains the ongoing decline in revenue from economy-wide taxes. Government revenue after inflation has fallen 24% from its 2014 peak and is nearly back at the level it was 11 years ago, in 2006. Taking out salaries and interest, both of which have increased rapidly in recent years, expenditure after inflation has fallen by 36% from its 2014 peak and is also back at about 2006 levels. Core services have been squeezed out by the fall in revenue, the increase in salaries and interest, and the great boost to sub-national spending (particularly funds under the discretion of Members of Parliament). Borrowing is at record high levels, and the debt/revenue ratio is almost as high as it was before the boom.

The economy has been suffering in part because of an overvalued exchange rate and foreign exchange rationing. Despite a fixed exchange rate, inflation remains high, potentially in part because of the adverse effects of exchange rate rationing. Businesses list foreign exchange shortages as their main concern. Imports have collapsed to the level of a decade earlier.

While these are the short-term challenges that await the new government, there is also an opportunity to put PNG on a sustained growth path. The main benefit of the largely-foreign-owned, capital-intensive resource projects for PNG is the revenue they generate for government. In the absence of data on Gross National Income, we use non-resource GDP (or non-mining GDP as it is called in PNG) as our main measure of economic activity and welfare. This is the part of GDP that provides economic benefits to the majority of Papua New Guineans. Figure 1 adjusts for inflation (CPI as reported by BPNG/NSO) and population and sets non-resource GDP per capita in 1980 to 1. It shows that non-resource GDP per capita declined to around 2005, then recovered lost ground (during the commodity boom) but has now stopped growing at all. There is a risk that PNG has entered into another period of non-resource stagnation.

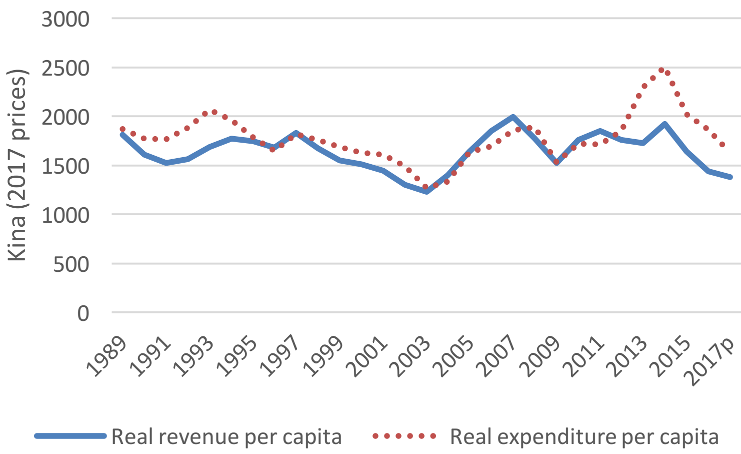
Figure 1: Non-resource GDP per capita (adjusted for inflation; 1989=1)



Source: PNG Budget Database. Retrieved from https://devpolicy.crawford.anu.edu.au/png-project/png-budget-database.
Note: Non-resource GDP calculated by removing mining and oil/gas GDP. Population in the Budget Database is taken from the World Development Indicators, which conservatively assumes growth of 2.1%.

Successfully meeting the challenges of development requires a government with increasing command of resources that it is able to invest into development. A government needs revenue growth to exceed population growth so that it can, over time, provide better quality and more accessible services to its citizens. However, as Figure 2 shows, both government expenditure and revenue per person in PNG are below the levels of 1990 – almost thirty years ago.

Figure 2: Revenue and expenditure per person (adjusted for inflation)



Source: PNG Budget Database.
Note: 2017 fiscal figures in this graph and throughout the paper from 2017 MYEFO (revenue) and Supplementary Budget (expenditure); 2016 figures from 2016 FBO.

How can PNG respond both to its current economic difficulties and to its longer-term growth and revenue challenges? What can it do to prevent a decade of serious economic decline as was experienced in the 1990s?

Economic policy in recent years has been broadly pro-cyclical. A high level of government borrowing during the boom years has made it more difficult to borrow when it is needed: now, after the boom. A floating exchange rate during the boom led to appreciation of the Kina, and now, rather than allowing the exchange rate to depreciate after the boom, the floating exchange rate regime has been replaced by a fixed one, which is preventing the economy from being able to adjust, and deepening the down-swing. Economic and fiscal recovery will require different policy settings to meet the two challenges of stimulating growth and ensuring fiscal sustainability while protecting critical government expenditures.

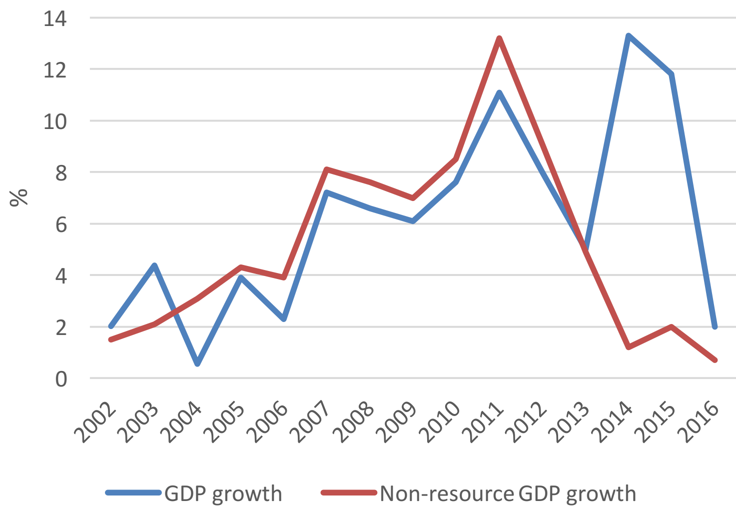
This survey contains three main sections. Section 2 looks at economic growth trends and outlook, Section 3 at fiscal trends, and Section 4 at the macro position, in particular the exchange rate and inflation. On the basis of our analysis we outline our recommendations in the conclusion.

2. Growth

2.1 Economic growth trends

Non-resource GDP accelerated until 2011, but fell thereafter. According to the latest data, non-resource GDP growth was only 0.7% in 2016 (Figure 3). After the boost to production provided by new PNG Liquefied Natural Gas (LNG) exports, GDP growth has slowed as well.

Figure 3: GDP and non-resource GDP growth, 2002-2016, adjusted for inflation



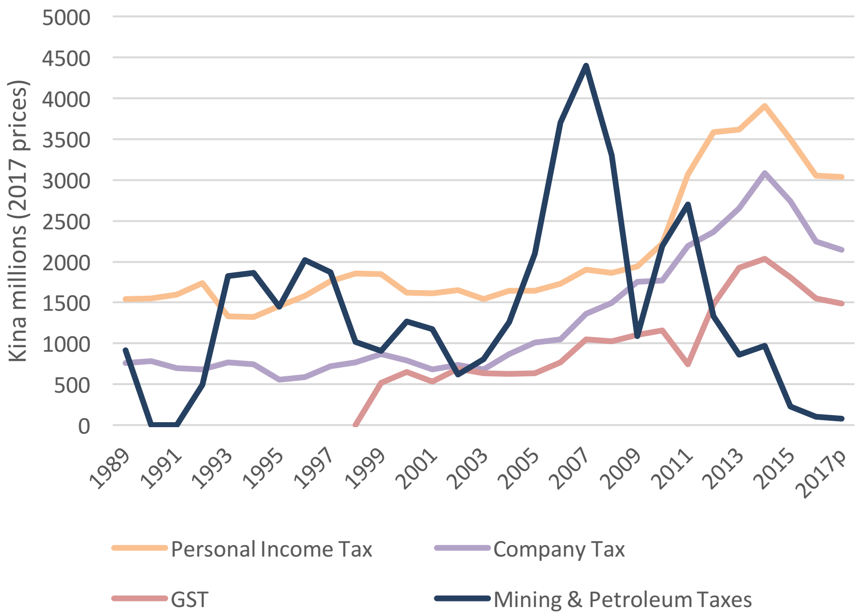
Source: PNG Budget Database.

Figure 1 shows that non-resource GDP growth has been low, lower than the rate of population growth for the past three years, meaning a decline in non-resource GDP per person. As argued by Nema and Howes (2016), other data actually suggest negative growth in non-resource GDP rather than just low growth, meaning that the decline in non-resource GDP per capita is larger. The evidence for this is discussed below.

First, interviews with a wide range of businesses indicate a drop in output and sales of 20-35% from around 2014, the year in which the PNG LNG construction finished. The survey team conducted a number of interviews with businesses in Moresby and Lae, and there was unanimous agreement that there had been a severe downturn in the economy. In an interview with *Business Advantage PNG* in October 2016, Bismark Maritime CEO Jamie Sharp stated that "Between this year and last year there has been about a 25% drop in freight" (Business Advantage 2016). Sharp indicated that a lot of his customers said that they were "experiencing that kind of drop in sales" (ibid.).

Second, the large fall in revenue from economy-wide taxes, even before inflation, relative to 2014 (shown in Figure 4) is very hard to explain without reference to a fall in output. Between 2014 and 2017, the combined take from income tax, corporate tax (from outside the resources sector) and GST fell by 25% after inflation. Some of this is explicable in terms of the LNG project being an exemplary tax payer, and that project's tax contribution being reduced once construction was complete. But that would only at most explain (only some of) the drop between 2014 and 2015, not between 2015 and 2016. The only way to explain this without reference to a recession is to argue that compliance with tax rules has fallen over time. However, as argued in Section 3.1, there is no reason to believe this to be the case, and in fact there is some evidence to the contrary.

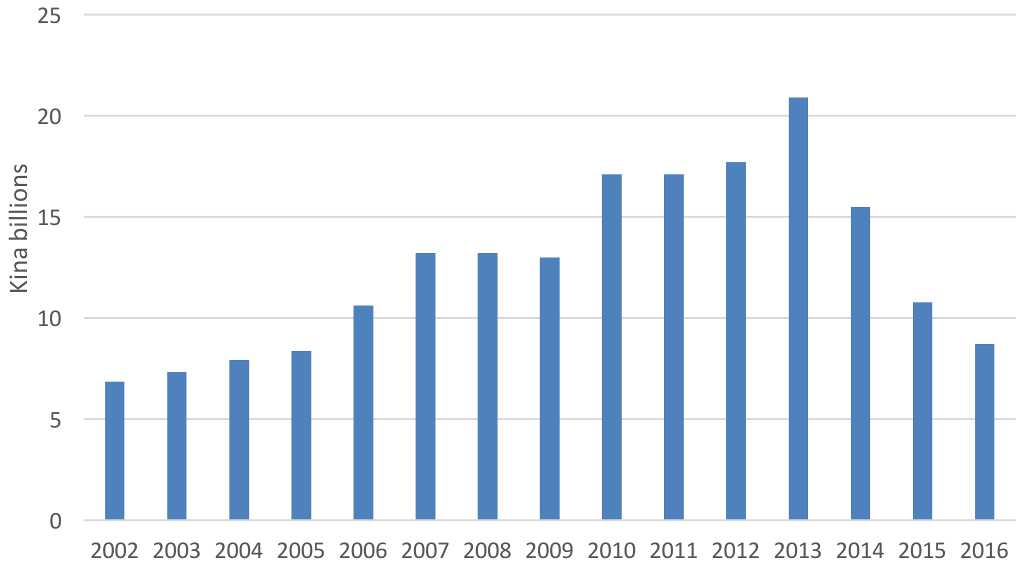
Figure 4: Tax revenue by source, adjusted for inflation



Source: PNG Budget Database.

Third, imports show a very sharp contraction, with three consecutive years of decline: 2014, 2015 and 2016. According to official figures, imports (of goods and services) are now back to levels of 2005 (Figure 5) – even with no adjustment for inflation. This demonstrates the import compression effects of exchange rate rationing (discussed in Section 4), but can also be explained by a shrinking economy.

Figure 5: Imports of goods and services

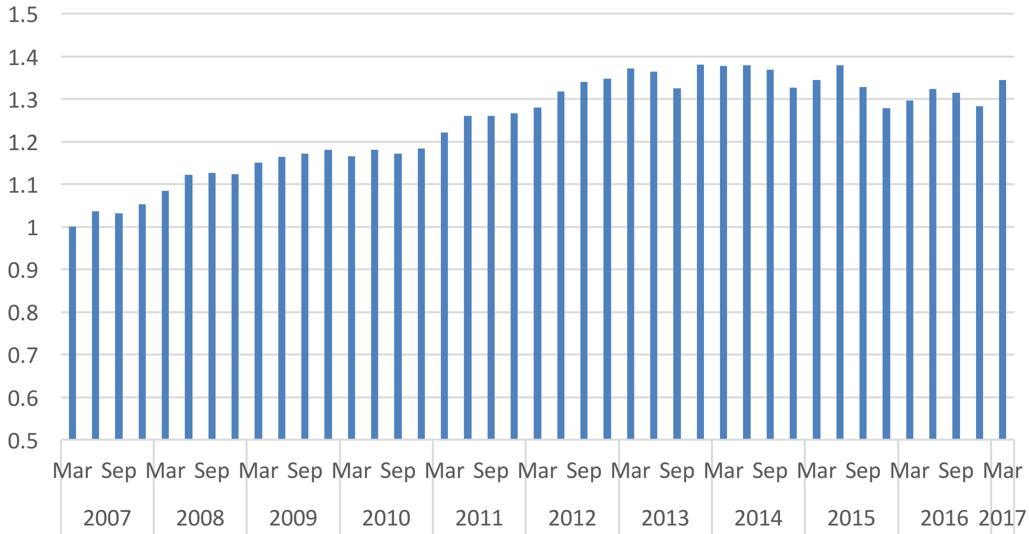


Source: BPNG.

Fourth, formal sector employment (Figure 6) and foreign employment (Figure 7) have both fallen, the former moderately, the latter sharply. Local sentiment is that the proportion of the foreign workers in the formal sector has, if anything, grown, so this probably does not reflect a process of substitution of nationals for foreigners. Visas granted for foreign employment has fallen every year from 2013, and are now back at 2011 levels.[2]

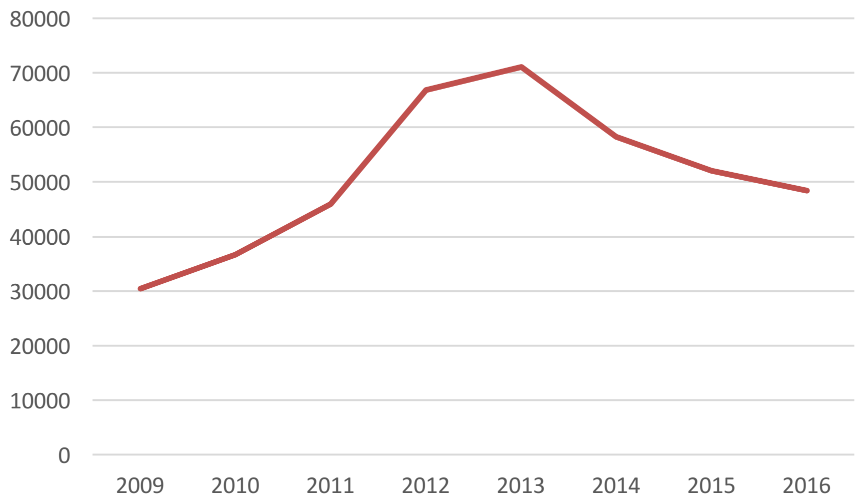
[2] These numbers can't be directly compared to employment numbers because the same employee may enter the country more than once.

Figure 6: Formal sector employment (March 2007=1)



Source: BPNG.

Figure 7: Foreign workers arriving in PNG.



Source: http://www.tpa.papuanewguinea.travel/annual-visitor-arrivals-statistics
Note: The same worker may arrive more than once in a year.

If there has been a recession — that is, negative growth in non-resource GDP, but possibly also in 2016 negative growth in GDP — there would seem to be four reasons for it.

First, the end of the stimulus caused by the PNG LNG construction boom has had a negative impact on GDP. This was a massive project completed in 2014 and valued at some $19 billion, almost equivalent to annual GDP. Though a large proportion of this was imported capital goods, there were also large demands from the project on the labour, transportation, retail and construction sectors. Just as the PNG LNG construction gave the economy a boost while underway, so its completion led to an economic decline.

Second, around 2014 the resource boom came to an end. The sharp and sustained fall in commodity prices reduced both export earnings and government revenue. Revenues from the resources sector are now virtually zero (Section 3, Figure 10). This has had economy-wide impacts: it has led to a sharp fiscal contraction, as well as reduced private sector activity. However, only a minority of the fall in total revenue came from resource taxes, the majority of the fall has been in non-resource taxes.

Third, foreign exchange rationing and an over-valued exchange rate (Section 4) have discouraged economic activity. Since the government was not prepared to allow the exchange rate to depreciate, and since the high demand (in excess of supply) for foreign exchange persisted at the prevailing rate, demand had to be reduced by restricting foreign exchange. This has reduced investment and perhaps consumption as well. The measures necessary to enforce foreign exchange restrictions like banning trade finance and putting a hold on new foreign exchange accounts required for emerging exporters (see Section 4.1) would also have had a negative effect on GDP growth.

Fourth, poor microeconomic policies may have discouraged investment (Section 2.2).

The official forecast for 2017 is for non-resources growth of 2.3%, higher than the 2016 estimate of 0.7%, on the back of higher agricultural growth, the 2017 elections, and APEC preparation. Whether or not growth is now in positive territory, there is some evidence that the economy has at least bottomed out.

Most businesses interviewed reported to us that their own sales were no longer contracting. Official employment figures seem to have stabilised, after falling from 2013 (Figure 6). There is a lack of recent data but one relevant source is on passenger and freight movement between Australian airports and Port Moresby. While these data are obviously limited, they are available with limited delay. The latest data available at the time of writing is June 2017 (Figure 8). This source shows a very sharp fall in freight volumes since 2013, right back to 2009 levels. It also shows a smaller fall in passengers, with growth from 2009 to 2013, stagnation from 2013 to 2015, and a decline in numbers since, back to about 2010 levels. Both variables do suggest a pick up, or at least an end to negative growth, since late 2016, suggesting that the recession may indeed have come to an end.

Figure 8: Air freight and passengers out of Australia to PNG, Jan. 2009 to June 2017

Source: https://bitre.gov.au/publications/ongoing/international_airline_activity-time_series.aspx ("City pairs data - passengers, freight and mail – 2009 to current")
Note: Four-month moving average used.

While these are positive signs, the 2017 Mid-Year Fiscal and Economic Outlook (MYEFO) data for 2017 show that the decline in economy-wide taxes has slowed but not halted, with GST and corporate taxes both now expected to decline slightly in 2017 after adjusting for inflation, and the personal income tax only expected to keep up with inflation (Figure 9 in Section 3.1). In summary, there is some evidence that the recession may have ended, but it is too early to give a definitive answer.

2.2 Growth outlook

In agriculture, palm oil is growing, but other commodities show little evidence of growth. Coffee production surged in 2016 after the drought, though this was more to do with good conditions, as opposed to an expansion in the number of plants. There are reports that many coffee plantations are getting old and are not well-tended, and issues with road infrastructure, law and order and education could lead to a decline in national production over the next few years (Tlozek, 2016). Cocoa production levels have not fully recovered since the discovery of the cocoa pod borer beetle, though there are some new plantations in Morobe. Rubber and tea have been on a downward trend in production since at least 2013 (BPNG, 2017). However, there are reports of expansion in some agricultural sectors, like fresh vegetables. The large project financed by the Asian Development Bank (ADB) and other donors to fix the Highlands Highway will boost the country's long-term growth potential. There are also a number of future resource projects in prospect.

That said, absent policy reform, the short- to medium-term outlook is bleak. Business confidence is down as a result not only of foreign exchange shortages, but also various threats to limit foreign trade (e.g. ban rice and vegetable imports), and to force foreign owners of small and medium enterprises (SMEs) to sell under the country's SME policy (Nicholas 2016). Corruption is perceived to be a growing problem. The New Zealand company Hawkins, which built PNG's first flyover, has pulled out of the country on the grounds that it is too difficult to win government contracts given the level of corruption.

The resource projects in the pipeline are also some years off, and may well be further delayed for a number of reasons. First, given the complete lack of resource revenue (Figure 4), the government is expected to negotiate for better tax terms. This is already an issue for the PNG LNG expansion project which Exxon Mobil expected to be able to initiate without any change in the tax terms.

Second, landowner and environmental issues may lead to delay. Remarkably, and against the law, most PNG LNG royalties to landowners have not yet been paid (Koim and Howes, 2016). This is expected to lead to increased suspicion among landowners, and to make official lenders less likely to lend. Resource projects are increasingly likely to be caught in landowner litigation. In the case of the PNG LNG project, the litigation followed project approval, but we are now seeing litigation before project approval. For example, there has already been a stay put on the development forum (a requirement for project approval) for the PNG LNG expansion project (Koim and Howes, 2016).

Third, there is a strong push in PNG to shift the ownership of sub-soil assets from the state to landowners. In practice, landowners already have to provide consent for resource projects to proceed, but changing ownership arrangements would be a major reform, the debate around which, let alone the enactment, could lead to significant project delay.

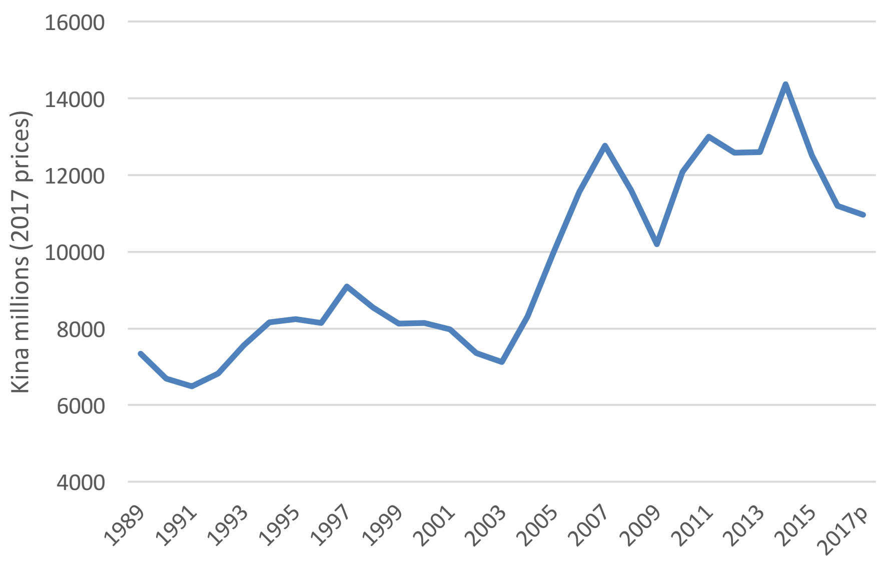
Fourth, the government will be keen to exercise its equity option which entitles it by law to pay for up to 30% of the equity of mineral projects and 22% for petroleum projects,[3] but will struggle to find the funds. Moody's recently downgraded PNG's credit rating from B1 to B2, making new private borrowing potentially costlier for PNG.

3. Fiscal trends

3.1 Revenue

According to the July 2017 PNG Treasury Mid-Year Economic and Fiscal Outlook (MYEFO), nominal revenue (including grants) will be 5% above its 2016 level in 2017, meaning that once inflation is taken in to account, revenue will decline for the third year in a row. Though the decline in 2017 is anticipated to be slight, the cumulative decline since 2014 is large. After inflation, total revenue will be about 25% below its 2014 peak, and will be back at about 2006 levels (Figure 9).

Figure 9: Government revenue, adjusted for inflation



Source: PNG Budget Database.

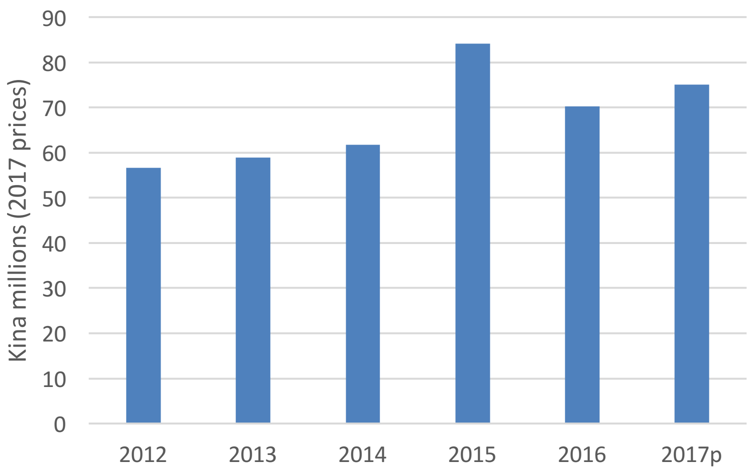
The economic downturn was initially a result of declining commodity prices and the end of the construction phase of the LNG project. Now however, as argued in the previous

[3] http://www.ausimm.com.au/publications/epublication.aspx?ID=8460.

section, it reflects a much more general downturn in economic activity, which can be seen in the declines in economy-wide taxes as well as resource taxes (Figure 4).

An alternative explanation for tax decline (other than falling output) is falling tax compliance. However, allocations to the Internal Revenue Commission (IRC) have been increasing since 2012, even after inflation (Figure 10). Discussions with IRC management and advisers suggested that compliance levels have, if anything, been increasing due to increased funds and capacity. We were told that IRC staff had increased from 324 in 2013 to 660 currently. IRC is also now a statutory authority with much more flexibility in wages and recruitment and new computer systems, including links to business registries. Many of these compliance reforms have been underway for years and should be having a positive effect on efficiency and effectiveness.

Figure 10: Internal Revenue Commission funding, adjusted for inflation

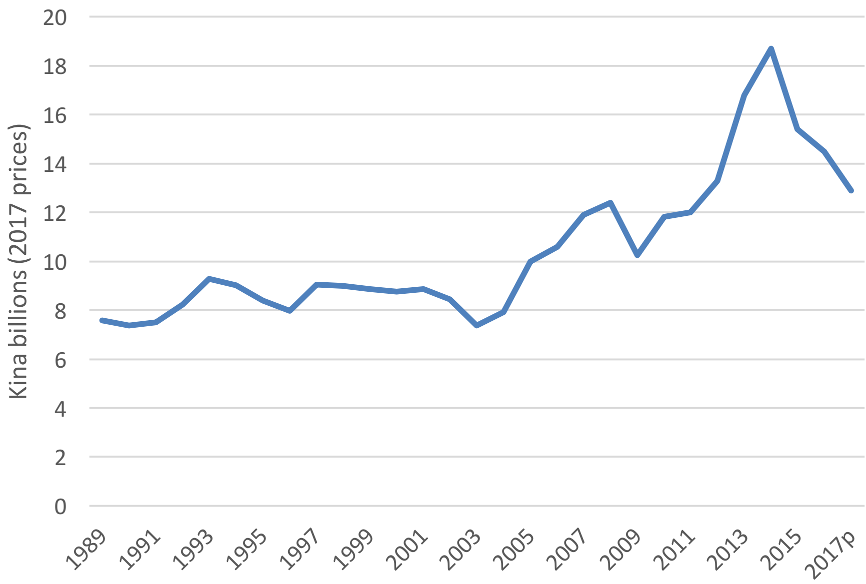


Source: PNG Treasury budget documents.

3.2 Expenditure

Aggregate expenditure has dropped substantially since 2014 and is now back at 2011-2012 levels after inflation (Figure 11). It has not fallen as much as revenue (back to about 2006 levels) due to increased borrowing, as discussed in the next sub-section. With revenue projections for 2017 downgraded by about 5%, along with limited borrowing opportunities, actual 2017 expenditure is likely to be even lower.

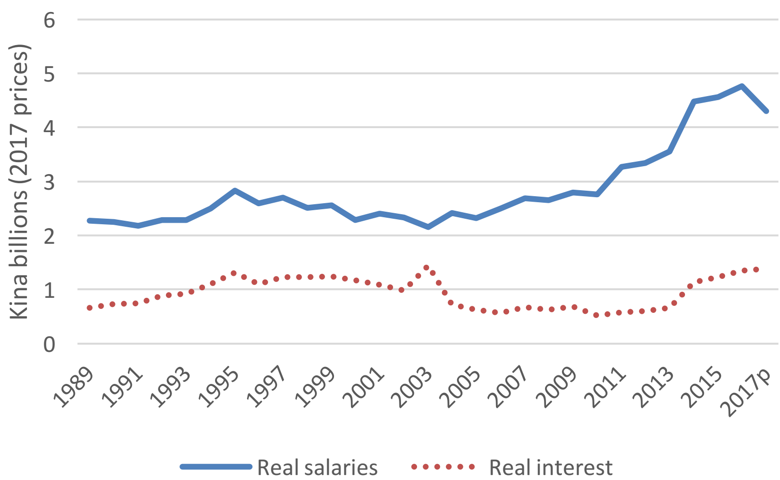
Figure 11. Government expenditure, adjusted for inflation



Source: PNG Budget Database.

The drop in aggregate expenditure back to 2011-2012 levels underestimates the expenditure pressures within the system. Aggregate salaries have almost doubled (after inflation) since the start of the commodity boom (around 2003) and now exceed K4 billion (Figure 12). In one year (2014), the salary bill increased in real terms by K800 million. The interest bill is also back at pre-boom levels, close to K1.5 billion, having been brought down to only K500 million just after the start of the boom.

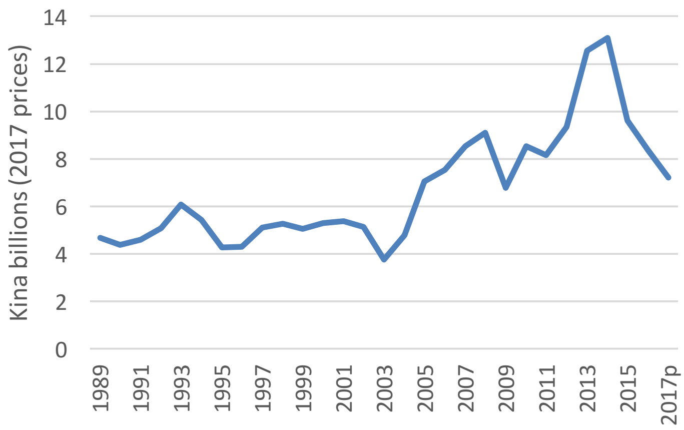
Figure 12: Salaries and interest bill, adjusted for inflation.



Source: PNG Budget Database.

Salaries and interest are both very inflexible areas of expenditure. Interest is determined by the debt stock. And the real salary bill can only be reduced if staff are sacked or if salaries are increased by less than inflation – both are difficult. Figure 12 shows the continued rise of salaries and interest, even after the boom and accounting for inflation. (The salary bill is projected to fall in 2017, but in previous years, the salary bill has been revised upwards at the end of the year.) Discretionary expenditure is total expenditure minus salaries and interest. It has to bear the brunt of adjustment. As Figure 13 shows, discretionary expenditure is back at about 2006 levels (compared to 2011-2012 for total expenditure). Whereas total expenditure has fallen by 32% since 2014, adjusted for inflation, discretionary expenditure has fallen by 45%.

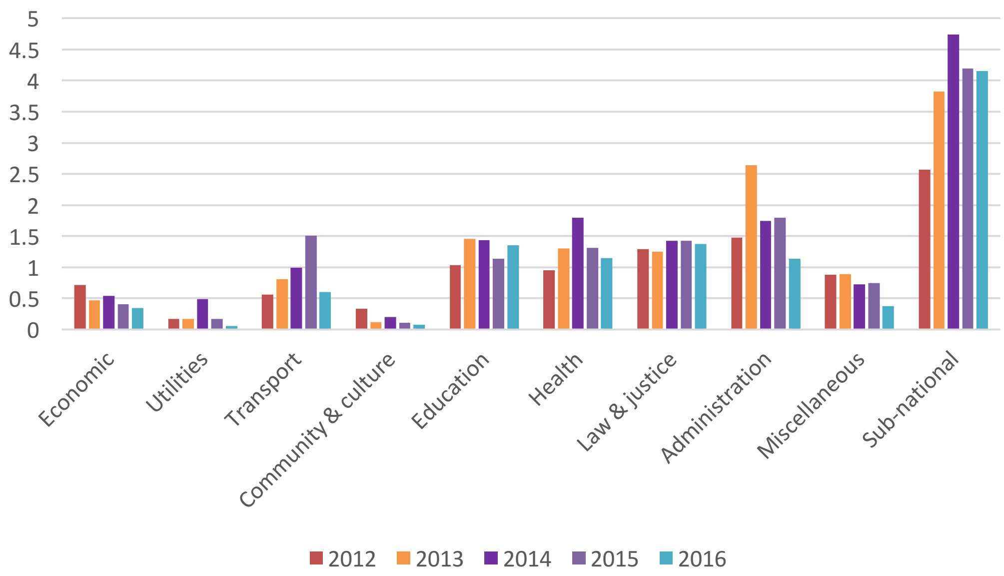
Figure 13: Discretionary expenditure (total minus salaries and interest), adjusted for inflation



Source: PNG Budget Database.

Figure 14 shows sectoral allocations from 2012 (longer time-series are difficult due to accounting changes introduced in 2012). Sub-national spending is the stand-out. It has been reduced from its peak in 2014, but is still approximately 60% larger than in 2012. The big increase has been in funds controlled by MPs, such as the District Services Improvement Programme (DSIP). There have been major cuts to other sectors (education, health, economic, transport) since 2014, and in many sectors expenditure is back at 2012 levels or below (economic, transport, education, law and justice).

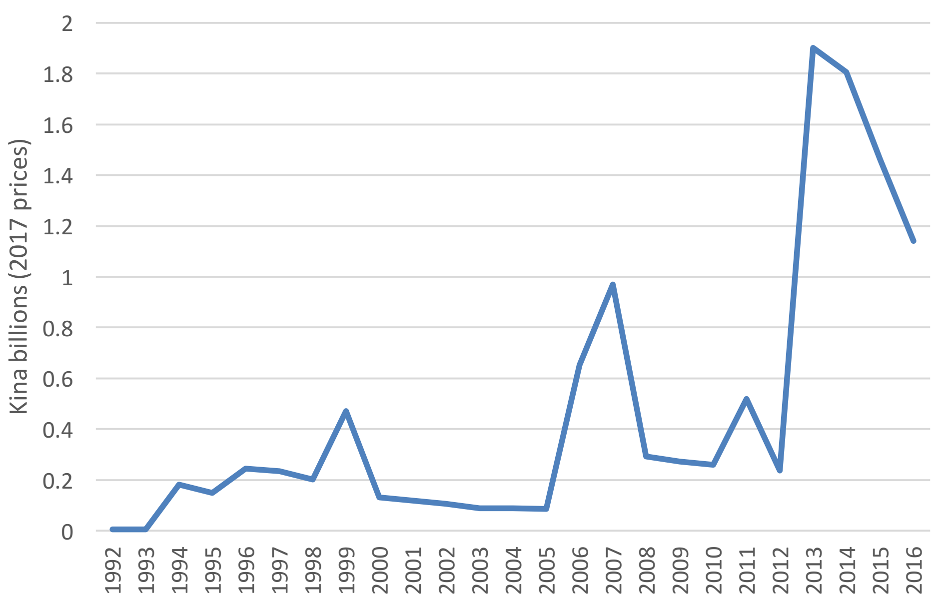
Figure 14: Budget expenditure by sector, adjusted for inflation



Source: PNG Treasury budget documents.
Note: Sub-national expenditures are referred to as provincial expenditures in the budget documents, but include spending that goes direct to the district (electorate) level.

Figure 15 shows the massive increase in DSIP and other funds under the control of MPs over a longer time period. Though funding has been reduced, the supplementary budget states that some portion of DSIP have been "deferred" to future years. Such a high level of spending is unaffordable today, and has come at significant cost to other established government services.

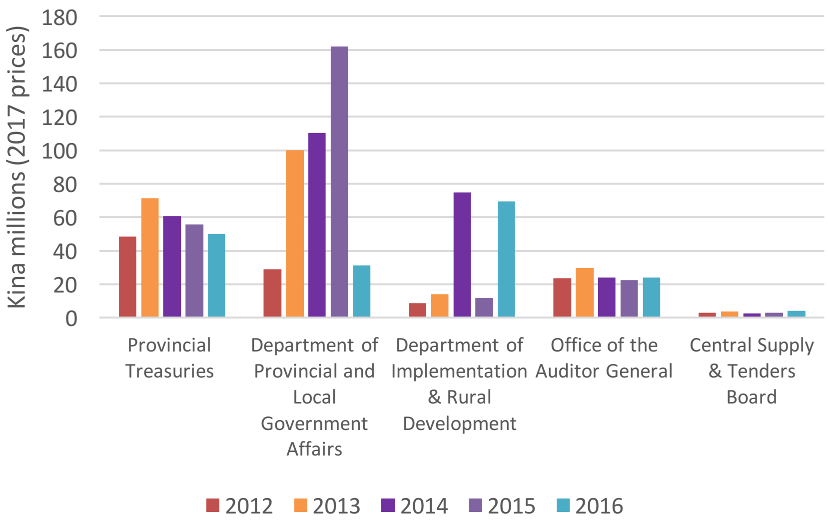
Figure 15: Funds under the control of MPs (DSIP etc), adjusted for inflation



Source: Updated using budget documents from Howes et al. (2012).

Monitoring of provincial expenditure is poor and there is little follow up on external audit recommendations (Batten 2013). While subnational funding has increased by 60% since 2012, departments that monitor and support provinces have not seen similar support (Figure 16). Funding for Provincial Treasuries, Office of the Auditor General and the Central Supply and Tenders Board have stayed relatively constant in real terms since 2012, and while funding for the Department of Provincial and Local Government Affairs, and Department of Implementation and Rural Development has seen some increases across years since 2012, it has been erratic. There has also been a steep decline in the number of MPs who have presented acquittals on DSIP and PSIP funds: 95 in 2013, 50 in 2014, 30 in 2015 and only 11 in 2016.

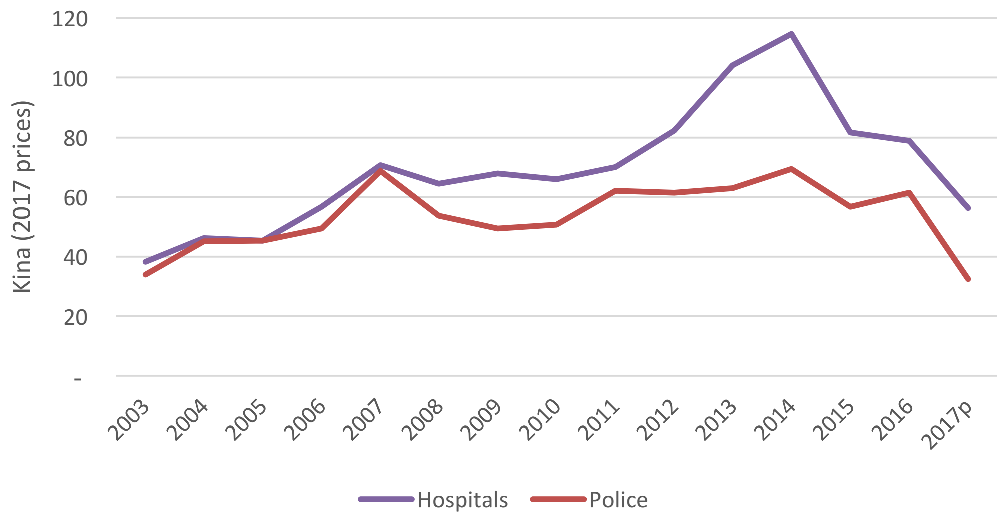
Figure 16: Expenditure allocations by monitoring/supervising department, adjusted for inflation



Source: PNG Treasury budget documents

Some essential services have been sharply cut. Taking account of inflation, spending on the police and hospitals have been cut by just under half since 2014. In per capita terms, it is as if the commodity boom hardly happened or completely bypassed these sectors: per capita spending is below 2003 levels for the police, and 2006 levels for hospitals (Figure 17).

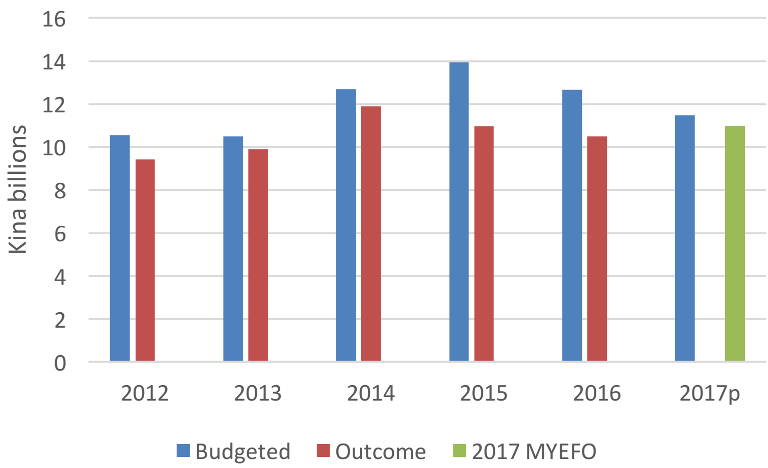
Figure 17: Per capita spending on hospitals and police, adjusted for inflation



Source: PNG Treasury budget documents. Population and inflation from PNG Budget Database.

Despite budgeted expenditure falling sharply, the government has had and still has considerable cash flow problems, as for the last few years budgeted revenue projections have been too optimistic (Figure 18) and meeting borrowing targets has proven difficult.

Figure 18: Budgeted and actual revenue in recent years



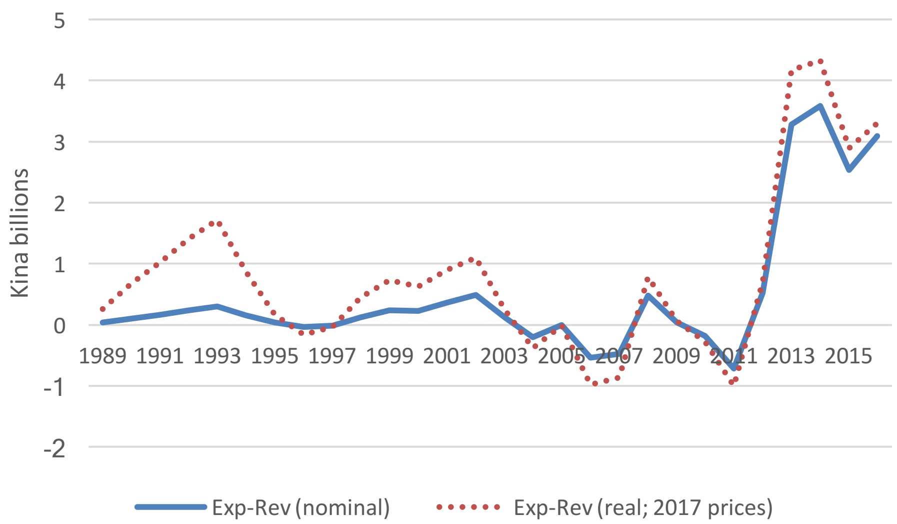
Source: PNG budget documents.

The combination of budget cuts and cash-flow problems has affected the functioning of government services. For example, there are reports that the Kundiawa hospital has scaled back operations, noting that it has not received national funds for three months (Kama, 2017). The hospital has said that it is only considering patients requiring emergency care and is restricting entry to the public. The Modilon hospital in Madang has also scaled back operations due to financial difficulty (Post Courier, 2017). Modilon and Kundiawa hospitals are both major referral hospitals. Some government departments in Moresby have also been evicted due to non-payment of rent.

3.3 Debt and deficits

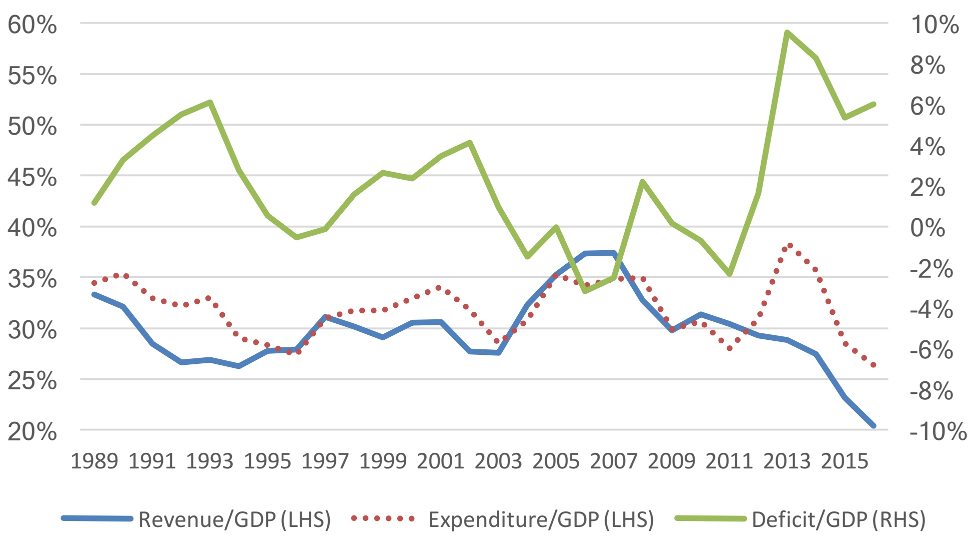
Large deficits (the gap between expenditure and revenue) starting in 2012 have forced a massive rise in borrowing (Figure 19). Figure 20 shows the deficit as a percentage of GDP (as well as expenditure and revenue).

Figure 19: Government deficits



Source: PNG Budget Database.

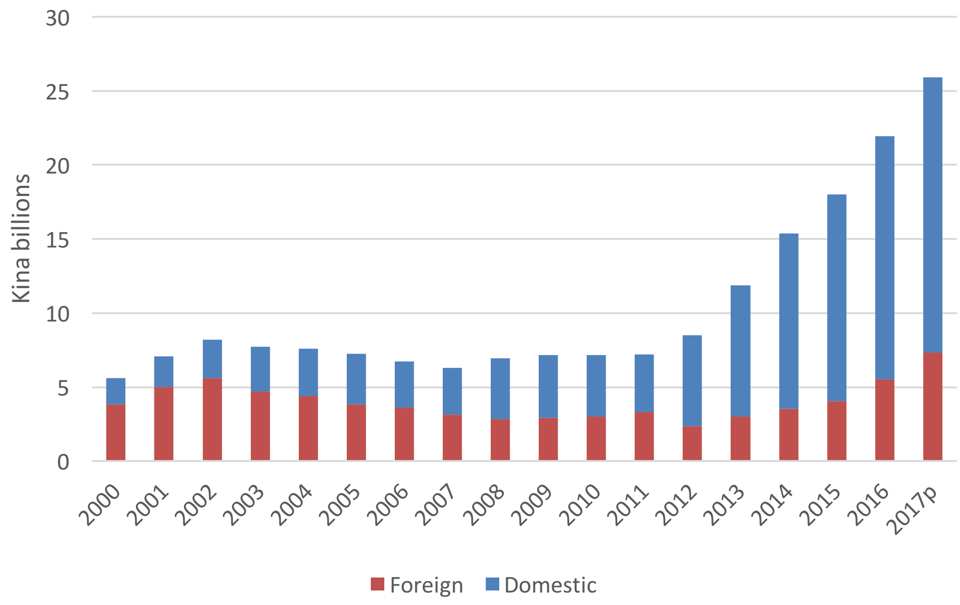
Figure 20: Deficits, expenditure and revenue as a percentage of GDP



Source: PNG Budget Database.
Note: For consistent comparison, old GDP series used.

As a result of recent large deficits, nominal debt has more than tripled since 2012 (Figure 21).

Figure 21: Government debt (not adjusted for inflation)



Source: PNG Budget Database.

As Figure 21 shows, the debt make-up is substantially different from the early 2000's, when foreign debt made up most of the debt mix. However, with rapidly rising domestic debt and further domestic financing options now limited, the trend towards domestic financing has started to reverse slightly. Domestic interest rates have risen, and the Bank of PNG (BPNG) has stepped in to buy some domestic government debt, which has occurred at times when Treasury auctions have been undersubscribed.

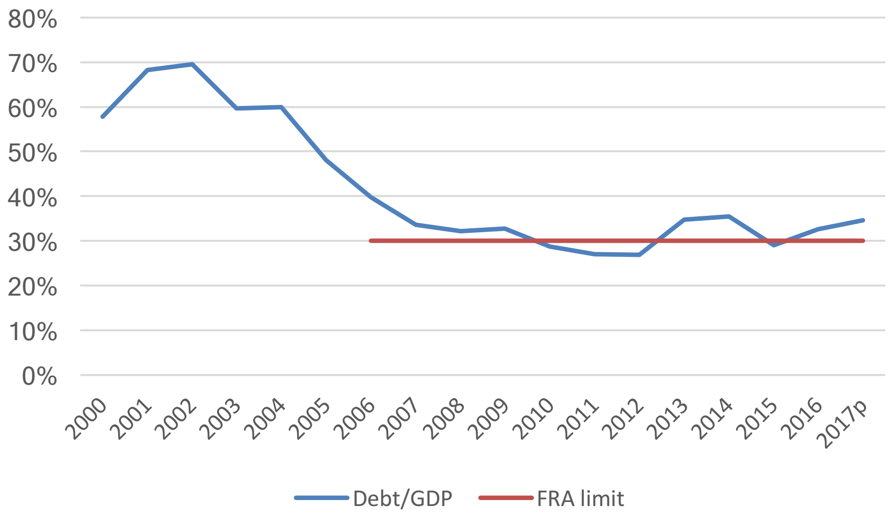
Foreign debt carries exchange rate risk. Depreciation will increase the foreign debt burden if it occurs after finance is secured, but will increase the domestic value of international financing if it occurs before finance is secured.

PNG legislation limits the debt/GDP ratio to 30%.[4] It is currently at 35% (Figure 22). While this is above the legislated limit, it is below the levels of the 1990s. However, on-budget debt underestimates the liabilities of the government. In 2016, the International

[4] At the time of the 2017 Supplementary Budget (September 2017), the Fiscal Responsibility Act debt/GDP limit was increased from 30% to 35%

Monetary Fund (IMF) estimated the overall public debt-to-GDP ratio at 56% of GDP (IMF 2016, p.9). There are outstanding superannuation payments and other public-sector liabilities which are a risk to the budget.[5] For example, in the 2017 MYEFO, the estimated government debt stock rose from the budgeted 29% of GDP to 35% of GDP in part because of "State-guaranteed loans now being serviced by the State." (PNG Treasury 2017, p.29).

Figure 22: Debt to GDP



Source: PNG Budget Database.
Note: This ratio is not calculated by the authors but taken directly from budget documents. The calculations in the budget documents use PNG's new GDP series from 2015 onwards, which is between 20-30% higher than the old GDP for these years. Other graphs use the old GDP series since this is the only one for which a consistent time series is available. Use of a consistent time series would show a sharper rise in debt/GDP in recent years. Fiscal Responsibility Act (FRA) debt limit legislated in 2006.

In any case, the revenue/GDP ratio has plummeted to about half of what it was at the height of the boom (Figure 20). Ultimately debt has to be repaid from revenue. Debt to revenue levels are currently at similar levels to that observed in 2000, that is, before the last boom (Figure 23).

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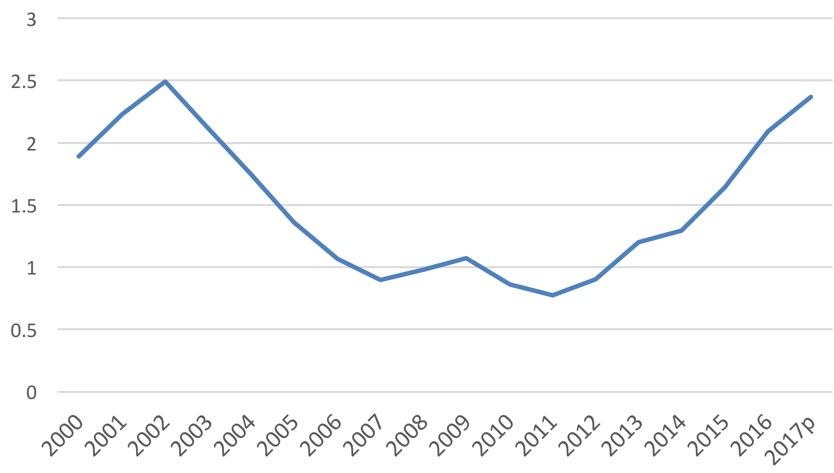
[5] There was also a large off-budget debt used to purchase Oil Search shares, but the shares were sold and the debt extinguished in September 2017.

Figure 23: Debt to revenue ratio



Source: PNG Budget Database

4. Macroeconomic indicators

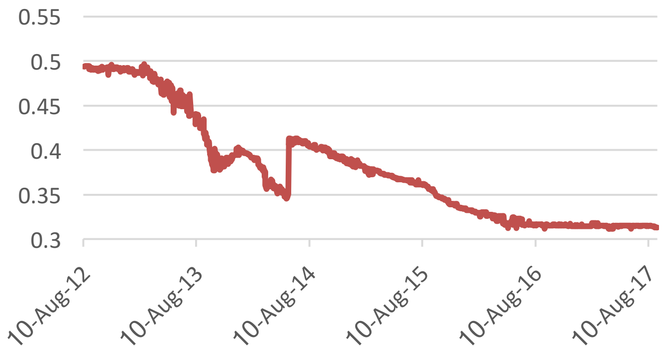
4.1 The real exchange rate

Three years after their introduction in mid-2014, foreign exchange (FX) restrictions continue to be in place. There is a ban on trade financing (BPNG 2017), on the opening of new foreign currency accounts of PNG residents (BPNG 2015), and on the remittance of dividends. There is a queue to obtain funding for imports. Data on the precise extent of excess demand for foreign currency are unavailable. Based on our business interviews, unofficial ballpark estimates of excess demand range between US$300 million to 1 billion. These estimates are virtually unchanged from about two years ago (Business Advantage PNG, 2015), which suggests that the foreign exchange situation has not further deteriorated. Foreign exchange restrictions have likely now been factored into businesses expectations and behaviour, with firms now avoiding imports where possible.

Currently there are no signs of any developments that could bring about market clearing in the FX-market. Reserve holdings have declined from US$4 billion in 2012 to US$1.7 billion in June 2017. The large current account surplus of K16.8 billion in 2016 is matched by a commensurate financial account deficit. The main reason for this is capital outflows for debt repayments associated with the LNG Project (Business Advantage PNG, 2017). A further strengthening of the current account cannot be expected at present as most commodity prices are forecast to remain stable (World Bank, 2017).

With no projected change in exchange rate fundamentals, market clearing requires a depreciation in the nominal exchange rate. BPNG now sets the USD-Kina exchange rate. Between 2015 and early 2016, the Kina lost its value vis-à-vis the US dollar at a rate of about 1% per month. However, the rate has remained fixed at approximately 0.31 US dollar per Kina since March 2016 (Figure 24). At present, there is no indication that BPNG will alter its policy stance with respect to the nominal exchange rate.

Figure 24: PGK/USD exchange rate.



Source: OFX (2017)

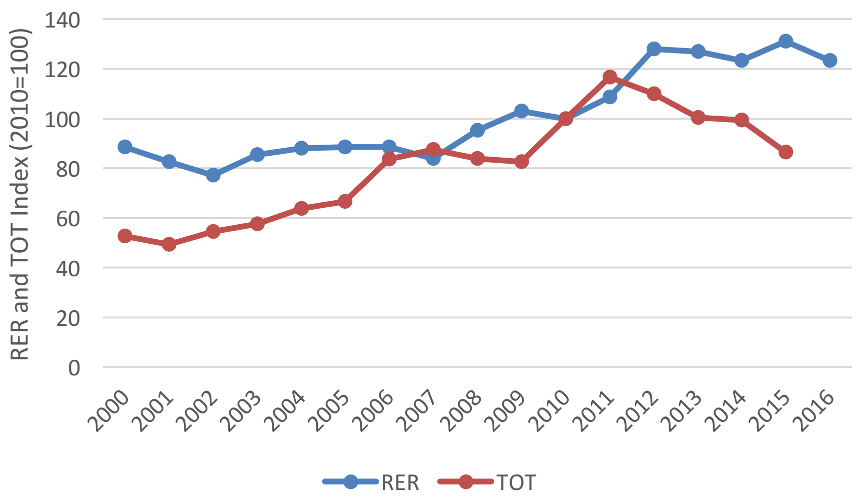
The above developments affect PNG's real exchange rate (RER), which is a key relative price for any open economy. The RER measures the domestic (Kina) price of foreign goods relative to domestic ones, and takes into account not only the market exchange rate but also the difference between domestic and international inflation rates. Note that an RER appreciation encourages consumption of imports and discourages production of import-competing local goods and production of exports.

The equilibrium value of the RER (ERER) brings about internal and external balance (Nurkse, 1945).[6] The former holds when the non-tradable goods market clears and unemployment is at its "natural rate", whereas the latter refers to a situation where the current account balance is reflected in "sustainable" capital inflows. Deviations from this equilibrium value are commonly referred to as RER misalignment or distortions (Edwards, 1989).

[6] Theory suggests that the fundamentals are the terms of trade, trade openness, productivity growth (Balassa-Samuelson effect), government consumption, and the net external position. For more details, see Fox and Schröder (2017).

The foreign exchange restrictions are a strong indication that PNG's RER is significantly overvalued. But there are also other compelling signs of real overvaluation. Since PNG is a resource-dependent country, theory suggests that there should be a strong co-movement between the Kina and commodity prices. During a commodity price boom, real incomes are increasing so the RER is expected to appreciate to restore internal balance. The converse should happen after the boom ends. The graph below (Figure 25) plots indices of PNG's trade-weighted RER together with the terms of trade (TOT), which reflects commodity prices. The RER and TOT indeed move closely together, but only during the boom up until 2012. Since the end of the boom, the two series have been diverging: the terms of trade have declined but the RER has continued to appreciate. This suggests that, all else equal, the RER has begun to deviate from its equilibrium value, i.e. is overvalued.

Figure 25: PNG's real exchange rate (RER) and terms of trade (TOT) 2000-2016.



Source: World Development Indicators.
Note: The RER is trade-weighted. An increase in RER denotes appreciation. TOT for 2016 is not available at the time of writing.

Fox and Schröder (in Press) estimate PNG's equilibrium real exchange rate (ERER) over 1980-2015 as a function of the terms of trade, trade openness, government consumption, and the net external position. Their results suggest that the RER was overvalued by 24.5% in 2015.[7] For 2016, they find that the extent of RER overvaluation declined to 17% due to

[7] For a nontechnical summary of their paper, see this http://devpolicy.org/how-much-is-pngs-Kina-overvalued-20170224/.

a real depreciation of about 8% (see Figure 25).

For 2017 we expect a modest RER appreciation in light of the now-fixed nominal exchange rate and higher inflation in PNG than in the United States. There is no expectation that the gap to the ERER will be closed this year. In fact, it may well even widen further unless there are significant movements in the ERER fundamentals or a significant change in BPNG's exchange rate policy.

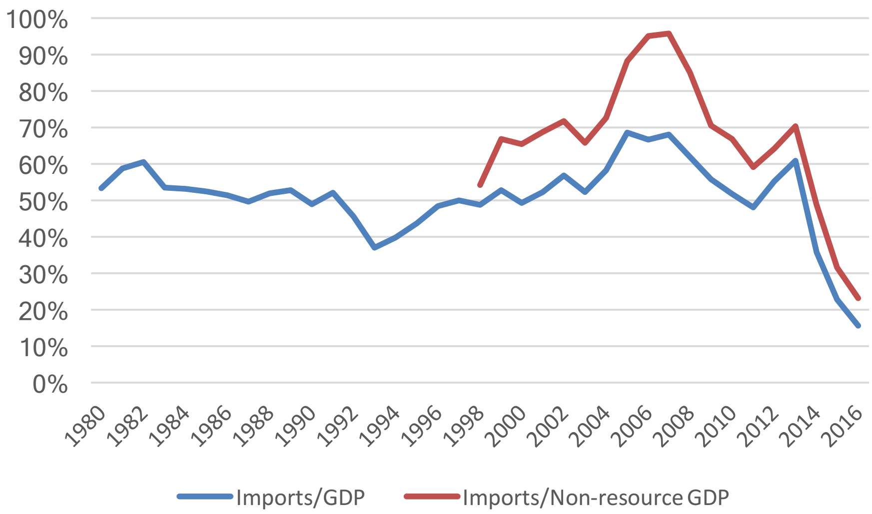
In summary, although there was some devaluation in 2014 and 2015, it has not been enough. Despite the collapse in PNG's terms of trade, the real exchange rate is as high or higher than it was during the boom.

4.2 Macro-level effects of RER overvaluation and foreign exchange restrictions

There is overwhelming empirical evidence that RER overvaluation negatively impacts on economic activity, productivity growth, and domestic investment (Edwards, 1989; Cottani et al., 1990; Ghura and Grennes, 1993; Rodrik, 2008; Fox and Schröder, 2017; Comunale, 2017). These negative effects are in part explained by the fact that PNG businesses are highly dependent on intermediate and capital goods from the rest of the world. The foreign exchange rationing thus puts severe constraints on their operations.

To grasp the severity of the situation, and the extent of import compression, consider Figure 26 below, which plots imports as a share of GDP over 1980-2016 and the import to non-resource GDP ratio during 1998-2016. The value of imports tends to hover around 50% of GDP, with upward spikes during resource booms. Over the past two years, imports have collapsed to 15% of GDP, with the start of the sharp fall coinciding with the imposition of the FX-restrictions in 2014. This decline in imports is far greater than the one experienced in 1994 when PNG underwent a currency crisis. The argument could be made that the decrease in imports could be overstated due to the LNG project, which provided a substantial boost to GDP, with no commensurate increase in the demand for imports. However, imports as a share of non-resource GDP (GDP without the mining and oil/gas sectors) have also collapsed to 23%. Even if non-resource GDP has been overstated in recent years (as argued in Section 2.1), there is no doubt that the import-GDP and import-non-resource GDP ratios have fallen sharply.

Figure 26: Imports as a percentage of GDP and non-resource GDP



Source: World Development Indicators and BPNG.

In the long run, the authorities may not be able to resist the equilibrating forces and preserve the current value of the exchange rate through foreign exchange rationing. Exporters are incentivised to divert their receipts from official channels. This can take the form of supplying export dollars to the parallel market or "parking" these funds abroad, either as a precautionary measure or in search of higher returns.[8] Eventually this mechanism will lead to BPNG running out of reserves. In PNG, this outcome might be prevented for longer than usual due to the absence of a well-developed parallel market seen in other developing countries that recently imposed foreign exchange restrictions, such as Nigeria or Egypt.[9] In any case, the ongoing damage being done to the economy, and therefore government revenue, is serious, and is enough grounds on its own for a move away from rationing.

4.3 Other effects of foreign exchange restrictions

Interviews with businesses reveal that the excess demand for foreign currency has led to a substantial delay in the processing time of FX-orders, which is now reported to be between 6 and 16 weeks. The processing duration is a function of fluctuating FX

[8] In PNG especially the parking of funds abroad might be a problem. In one of our interviews we were told that PNG lacks an effective system to monitor the repatriation of export receipts.
[9] We have come across unsubstantiated rumours that there exists a small-scale parallel market in PNG. The black-market premium on the Australian dollar is supposed to be 15%, but this is also unverified.

availability and the priority of an order, which BPNG sets at its own discretion. The general pattern is that imports of basic food (especially rice) and fuel are favoured over other consumer goods, or raw materials for construction. Dividends and repatriation are near the bottom of BPNG's priority list, and most of these orders do not get processed at all.

One consequence is that firms' invoices are now outstanding for 60-180 days, whereas the typical credit line is 14-30 days. Since PNG businesses have established good credit records in the past, overseas suppliers have by and large tolerated these long outstanding invoices so far. In addition, many firms in PNG are subsidiaries, so their parent companies can help them out with the settling of invoices. Nonetheless, there are also reports of situations where suppliers have lost their patience and temporarily blocked their shipments to PNG. So far commercial banks seem to be able to quickly provide such firms with FX in order to release the blocked cargo.

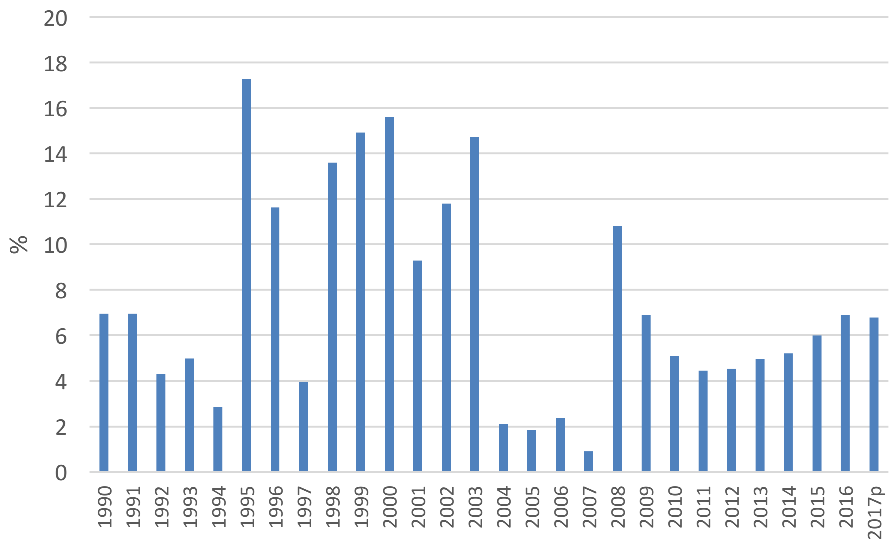
In a 2017 Business Advantage survey of CEOs, 59.5% nominated access to foreign exchange as "the major obstacle … more than double any other challenge" (Business Advantage 2017, p.19). Businesses have to spend significantly more time on finding FX and managing the credit situation with their overseas suppliers. This increases their administrative costs, which are likely passed on to the consumers. In addition, firms are piling up "dollarised" debt when there is depreciating pressure on the Kina. In expectation, this leads to negative balance sheet effects. At the moment, there is no data on the exact amount of debt outstanding so it is not possible to make an assessment as to what extent this could become an issue. In the worst case, such balance sheet effects may trigger a full-blown currency crisis, as evidenced during the Asian Financial Crisis in the 1990s. While such an outcome seems only remotely possible for PNG at present, at the very least this issue generates additional uncertainty in the business environment.

Finally, in light of the difficulties for firms to pay invoices and repatriate profits, parent companies, especially smaller ones, might be at some point inclined to permanently or temporarily close their plants in PNG if the risks become too high while expected returns are decreasing. Much of this decision will depend on for how much longer the foreign exchange crisis persists.

4.4 Inflation

Inflation is below the levels seen in the late 1990s and early 2000s, and has levelled-off in 2017, after increasing each year from 2011 to 2016. It currently sits at 6.8% according to the PNG Treasury 2017 MYEFO (Figure 27). It is the highest of the Pacific Islands region.

Figure 27: Inflation



Source: BPNG

Generally during times of economic hardship such as those PNG is facing, we would expect that inflation would fall. However, this has not occurred. Why? One answer is that foreign exchange restrictions result in effects similar to devaluation. It increases costs to importers through increased time spent on acquiring FX and changing arrangements with suppliers, who in turn may charge higher rates for longer waiting times, and these costs get passed on.

It could also be that FX restrictions affect domestic markets, causing prices to increase in response to restricted supply. FX restrictions also reduce competition. If access to FX is distributed unevenly in an industry then this will favour particular businesses. These businesses could then charge a higher price because their competitors don't have the FX and products to compete.

There is also a large volume of excess liquidity in the PNG banking system, in part due to the difficulty of obtaining foreign exchange to convert Kina into. While the monetary transmission channel in PNG is very weak—i.e. banks hold on to a large amount of reserves while lending little—it is nonetheless possible that some of this excess liquidity is contributing to inflation.

4.5 Policy options

The quickest and easiest way to correct a real overvaluation is through a depreciation of the nominal exchange rate. While developing economies uniformly benefit from such a corrective measure in the long-run, a depreciation is not without costs in the short run. What typically makes highly import dependent countries such as PNG reluctant to devalue are concerns about rising inflation, especially in relation to staple foods such as rice. Moreover, such a correction in the RER causes a fall in real income for predominantly the urban elite, who are often politically influential. Another reason for the hesitation to devalue is the prevalent "elasticity pessimism", the belief that PNG exports are inelastic with respect to prices, due to capacity constraints.

However, there is empirical evidence that a real depreciation boosts the export receipts of even primary product-dependent low-income countries (Ghei and Pritchett, 1999). In the case of PNG, depreciation would boost the incomes of not only agricultural commodity producers (of coffee, cocoa, etc.) but also vegetable producers (since they would be better able to compete against vegetable importers).[10] Allen et al. (2008) show that in PNG "smallholders are responsive to market opportunities" (p. 309) and sensitive to price changes. They show that domestic food production expanded substantially due to the devaluation of the Kina in the 1990s (p. 297).

Either way, the longer a RER overvaluation persists, the more difficult a correction typically becomes from a political perspective. In the case of PNG, there seems to be a wide-spread optimism in policy circles that the next resource project that will solve the FX shortage is just around the corner. However, it seems unlikely that this will happen within the next 12-24 months (Section 2.2).

[10] Import-substitution industries already benefit from foreign exchange restrictions, but at an unacceptable cost to the rest of the economy.

As mentioned, international experience suggests that every RER overvaluation needs to be corrected eventually, and PNG is no exception. The government could allow the exchange rate to once again depreciate gradually (as it did over 2014 and 2015), or widen the trading bands over time as Chile, Israel and Poland successfully did to transition from a fixed exchange regimes in the late 1990's (notably, unlike these countries PNG already had a floating exchange regime in place, the lack of which contributed to the cautious rate of adjustment in these countries). A faster/larger devaluation would bring forward the benefits. However, given the pent up demand for dollars, a sudden return to a floating exchange rate would be unwise.

A solution to some of the political economy effects of devaluation would be the introduction of a dual exchange rate. This would operate as follows. The current official rate could be maintained for important imports (food, essential pharmaceuticals, and fuel, for example), whereas a significantly depreciated rate, perhaps even one freely determined by the market, could be applied to all other transactions. To minimise the economic distortion costs associated with such a policy, a binding time limited to, say, 18 months could be imposed before the exchange rate is unified again. The downsides of this option are that it requires strong institutions to manage the dual system, to ensure that small extensions are not made to a wider array of imports, and then to remove the dual system after the specified time period (despite political pressure to extend). Secondly, the IMF may object to the introduction of a dual exchange rate, and this would remove the option for multilateral financing.

Another alternative would be to use cash transfers to the urban poor to mitigate the effects of a rise in imported food prices. This has the downside of requiring strong and effective institutions to deliver the cash transfers. It would also be another item of expenditure at a time when government funds are scarce.

In summary, there are no easy solutions to PNG's FX overvaluation and rationing problems, but urgent action is needed to address these problems to stimulate the economy and rebuild business confidence.

5. Conclusion

PNG faces two challenges: to boost growth, and to ensure fiscal sustainability while protecting critical expenditure. We address each in turn.

While the economy may be stabilising now, policy shifts are needed to boost economic growth and therefore jobs and revenue. Waiting for the next resource project, which could be several years off, is a defeatist attitude, and not a strategy commensurate with meeting PNG's employment challenge.

Typically, a government has four instruments to boost the growth rate: the policy interest rate, borrowing, the exchange rate, and structural reform. In PNG, the Central Bank seems to have no influence over market interest rates, and the government is already borrowing as much as it can. That leaves the exchange rate and structural reform. Structural reform is slow acting, and perhaps would not have significant effects in the time scale of the arrival of the next resource project, although there may be other good reasons to implement them. The other channel, which relates to our discussion above about the uncertainty that businesses face, is a resolution of the forex crisis. Movement toward a market based exchange rate will reduce this uncertainty and may stimulate investment.

With a new term of government comes new opportunities. The emphasis in the policy platform of the new coalition in government on agriculture provides a sound basis on which a policy of depreciation could be pursued. No policy would help agriculture (or tourism) more in the short-term than an exchange rate depreciation.

While depreciation would help boost growth and revenue, more is needed. Business confidence has been hurt by the exchange rate restrictions, and proposed reforms to nationalise existing small and medium businesses and restrict trade. A clear message needs to be sent that PNG is open to all business, national and foreign. Institutional reform to address recent growing weaknesses in institutions, for example, a much greater effort to combat corruption, will be key.

Turning to the fiscal position, devaluation will increase revenue, but will increase the foreign debt-servicing burden. Borrowing from current record levels needs to be reduced over time, but slowly to ensure core services are protected, and prevent prolonging the recession. International experience points to the importance of stringent expenditure prioritisation. Politicians should lead by example. PNG cannot afford the K10 million allocated for MPs through the DSIP to spend in their districts.[11] A public sector wages freeze is also required. Here also MPs should lead by example. And new expansion projects (e.g. the new university in the Prime Minister's own constituency) should be stopped so that funding for existing assets and institutions can be better protected. Improvements to tax compliance could deliver more revenue. Tax increases should be limited to avoid a recessionary impact. An audit of all debt and unpaid bills, including those of state-owned enterprises, would promote clearer recognition of the government's liabilities and allow a plan to be developed for clearing superannuation and other arrears.

Multilateral agencies, such as the World Bank, ADB and IMF, could be approached for help, but will need to improve their economic reporting. While the World Bank and ADB have released reports on the Pacific region, only the IMF has been producing regular annual reports on the PNG economy.

Most importantly, international experience suggests that the public will only accept needed reforms if they are convinced that the pain is unavoidable, will be shared, and will lead to better times. The new Treasurer has gone some of the way towards an admission that there is an economic problem, that business as usual is not an option, and that more needs to be done. The new government's "100 Day Plan"[12] commits to fiscal prudence, and promises a business-friendly investment climate, however no reform program will be successful without re-introducing flexibility into PNG's exchange rate regime.

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[11] The 2017 supplementary budget cut DSIP funds to just K1 million. But there was a ban on the spending of such funds for most of the year because of the election. The real test will be the treatment of DSIP in the 2018 budget.

[12] http://www.treasury.gov.pg/html/media_releases/files/2017/Media%20Statement%20-%20100%20Day%20Plan.pdf.

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