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Papua New Guinea
Economic Update

NAVIGATING A FRAGILE RECOVERY

February 2022

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Navigating a Fragile Recovery

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Preface and Acknowledgments

This publication is the eighth in the current series of Papua New Guinea Economic Updates (*PNG EU*). It has two principal aims. First, it analyzes the key recent developments in Papua New Guinea's economy and places these in a longer-term and global context. Based on these developments and recent policy changes, the *PNG EU* updates the outlook for the country's economy and the welfare of its citizens. Second, the *PNG EU* provides an in-depth examination of a selected development issue and evaluates the implications of recent trends and policy reforms in terms of the government's stated development objectives. It is intended for a broad audience, including policy makers, business leaders, and the community of analysts and professionals engaged in Papua New Guinea's evolving economy.

The *PNG EU* was prepared by the Macroeconomics, Trade and Investment Global Practice, under the guidance of Stephen N. Ndegwa (Country Director), Lars Christian Moller (Practice Manager) and Stefano Mocci (Country Manager). The core economic team comprises Ruslan Piontkivsky, John Grinyer, and Rashad Hasanov. The special focus section, representing a summary of the recently prepared Public Finance Review, was prepared by Ilyas Sarsenov, John Grinyer, Rashad Hasanov, Irina Capita, Viet Anh Nguyen, Waewnet Sukkasem, Frederic Tremblay, Colin John Clavey, Aneesa Arur, Rochelle Eng, Alan Cairns, Virginia Horscroft, David Whitehead, Andrew Ragatz, Rythia Afkar, and Kenglin Lai. The team would like to acknowledge contributions provided by David Gould, Ekaterine Vashakmadze, Allan Tobalbal Oliver, Iain Steel, and Wilfred Lus. Michelle Lee and Rachel Leka provided administrative support. Bronwen Brown edited the text. Dissemination is organized by Tom Perry and Ruth Moiam.

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Abbreviations and Acronyms

ADB	Asian Development Bank
BPNG	Bank of Papua New Guinea
CIT	Corporate income tax
CPIA	Country Policy and Institutional Assessment
CHW	Community health worker
DDA	District Development Authority
DoTI	Department of Transport and Infrastructure
DoW	Department of Works
DSIP	District services improvement program
EAP	East Asia and Pacific
GDP	Gross domestic product
GST	Goods and services tax
GTFS	Government Tuition Fee Subsidy
IMF	International Monetary Fund
IRC	Internal Revenue Commission
ITC	Infrastructure tax credit
LLG	Local level governments
LNG	Liquefied natural gas
LMIC	Lower-middle-income country
MP	Member of Parliament
MMBtu	Million Metric British thermal units
NDoH	National Department of Health
NRA	National Roads Authority
NEC	National Executive Council
PHA	Provincial Health Authority
PIP	Public Investment Program
PNG	Papua New Guinea
PNG EU	Papua New Guinea Economic Update
PNG LNG	Papua New Guinea Liquefied Natural Gas Project
PIT	Personal income tax
PSIP	Provincial Services Improvement Program
SOE	State-owned enterprise
TFF	Tuition Fee Free
WGI	Worldwide Governance Indicators

Table of Contents

LIST OF FIGURES

LIST OF TABLES

LIST OF BOXES

EXECUTIVE SUMMARY

Economic Update and Special Focus

A. Economic Update: *Navigating a Fragile Recovery*

Reflecting a strong global economic rebound, Papua New Guinea (PNG) reversed its downward economic growth trajectory in 2021. The World Bank estimates that the PNG economy contracted by 3.5 percent in 2020 before returning to positive economic growth of 1 percent in 2021. Domestic agricultural production continued unabated through the pandemic, and the COVID-19 related mobility restrictions were not as severe as in some other economies. However, GDP growth has lagged global and regional averages. PNG's economic performance in 2021 was constrained by falling gold and liquefied natural gas (LNG) production that resulted in a decline in extractive sector output for a second consecutive year. Despite reversing the trajectory of the widening fiscal deficit, it remained large at over 7 percent GDP. Public debt exceeded 50 percent of GDP, and the country is at high risk of debt distress, according to the latest World Bank–IMF Debt Sustainability Analysis. Despite an accommodative monetary policy, private sector lending remained flat due to subdued economic conditions. The current account surplus remained substantial owing to depressed imports and high commodity prices. However, due to the large debt repayments of the extractive sector, shortages of foreign currency remain a key problem for PNG's economy.

Table 1. Key Macro-Fiscal Indicators, 2017–24

	2017	2018	2019	2020	2021	2022	2023	2024
					Est.	Projections		
GDP growth (percent)	3.5	-0.3	4.5	-3.5	1.0	4.0	3.0	3.0
Extractive sector	8.1	-9.2	11.3	-8.4	-6.2	6.8	2.9	3.2
Non-extractive economy	0.5	4.1	1.4	-1.1	4.2	2.9	3.1	2.9
Overall fiscal deficit (percent of GDP)	-2.5	-2.6	-5.0	-8.9	-7.6	-6.1	-4.5	-3.4
Public debt, net (percent of GDP)	32.5	36.7	39.7	48.8	52.3	53.8	54.5	54.1
Current account balance (percent of GDP)	28.4	24.4	22.9	21.7	21.1	23.8	22.9	22.7

Note: the share of extractive sector in gross value added was 29.7 percent in 2019.
Sources: PNG National Statistical Office; World Bank staff estimates and projections.

In 2022, the economy is navigating a fragile recovery, while uncertainty remains high. On the one hand, after two consecutive years of negative growth, the extractive sector is projected to rebound, driven by the planned reopening of the Porgera gold mine. Extractive sector growth is projected to be the main driver of GDP growth in 2022 of 4 percent. High commodity prices will amplify this bounce-back, supporting the external accounts and providing (potentially) higher dividends to the state-owned companies that hold shares in joint projects in the resource sector. On the other hand, the Omicron variant of COVID-19 has been spreading fast in PNG, the least vaccinated country in the EAP region. Combined with the low capacity of the public health system, this poses a risk of higher casualties and a negative impact on domestic economic activity. Meanwhile, after the recent widening of fiscal deficits, the government is expected to implement a gradual fiscal consolidation. With limited sources of financing available and continued pressing social and development needs, the fiscal space for a significant policy response in case of an economic shock is limited. The repercussions of the conflict between Russia and Ukraine might imply short-term gains from higher commodity prices. However, the overall medium-term impact on growth in PNG is likely to be negative due to higher global uncertainty and lower growth. Additionally, general elections in mid-2022 heighten political uncertainties.

B. Special Focus: *Resuming Fiscal Consolidation While Improving Public Service Delivery*

This Special Topic is built on the recently published World Bank Public Finance Review (PFR) 2022. It focuses on the dual objectives of implementing fiscal consolidation while improving public service delivery. The first part analyses the government's fiscal consolidation strategy, which aims to reduce the fiscal deficit. The second part informs government strategies for improving the efficiency and equity of public service

delivery in the social sector. While some of the recommendations may result in higher social sector spending, the combined effect of all recommendations should be a decrease in the medium term fiscal deficit.

The COVID-19 pandemic is testing the economic and fiscal resilience. Before the pandemic, the government struggled with fiscal consolidation as it sought to reverse expenditure arrears. Despite being a resource-dependent country, nonresource revenues are PNG's most significant revenue source. Revenues from the resource wealth have remained flat despite substantial investment in the sector. The COVID-19 crisis crimped economic performance, resulting in rising health spending and a substantial tax revenue shortfall in 2020. As a result, PNG is currently at high risk of debt distress. Several policy measures are required to safeguard fiscal sustainability. These include: (i) improving the credibility of the annual budget process; (ii) revising the dividend policy for companies operating in the resource sector to increase their contribution to the revenue base; (iii) introducing controls to the wage bill to contain the growth of the operating budget; and (iv) rationalizing the public investment program to improve the quality of spending.

Mobilizing domestic revenue is a prerequisite for fiscal consolidation. PNG has a structurally low tax-to-GDP ratio, averaging 13 percent over the past four years. Revenue reforms will require further tax policy improvements and continued efforts to enhance tax administration. Key recommendations are: (i) goods and services tax (GST): implement a comprehensive compliance improvement plan; (ii) corporate income tax (CIT): eliminate tax holidays and reduced tax rates, replacing them with more efficient tax incentives, and strengthen transfer pricing rules to better protect the CIT base; (iii) personal income tax (PIT): consider changes in the PIT regime to lower the tax burden (effective tax rates) for salary and wage earners, especially those in the lower and middle PIT brackets; and (iv) strengthen tax administration for better compliance and improved revenue collection.

PNG's efforts to strengthen health sector performance over the past decade have not translated into the desired health outcomes. The country still faces high rates of infant and maternal mortality and declining trends in routine services like immunization. Improving health outcomes requires strengthening the health delivery system and the enabling environment. Recommendations include: (i) implementing a health sector monitoring framework to promote accountability and track progress; (ii) conducting a review to establish the cost of health services to ensure it is adequate, reflects relevant factors and addresses issues of equity across provinces; (iii) undertaking a review of the health workforce policy to improve the distribution of health workers and strengthen planning for the future; (iv) developing a package of essential health services to guide a minimum package of activities that aligns with Provincial Health Authority (PHA) funding envelopes; (v) streamlining resources for health to reduce inefficiencies and improve planning; and. (vi) improving the predictability of cash flows to frontline health services, while strengthening subnational planning and budgeting.

The quality of education in PNG is a persistent challenge and accompanied by an acute learning crisis. Although access to basic education has increased rapidly in PNG, primary and secondary school completion rates remain relatively low, signaling internal inefficiencies in the sector. The lack of access to early childhood education (ECE) is a key factor underlying poor schooling outcomes. Insufficient curriculum materials, shortcomings in the quality of the teaching workforce, and high rates of student absenteeism also have negative impacts on education outcomes. Key policy priorities are: (i) developing a roadmap for expanding the coverage of ECE and improving its service quality, collaborating with development partners and other stakeholders to prioritize this subsector; (ii) improving in-service teacher training to enhance knowledge in subject matter and pedagogical skills; (iii) improving education management information system databases to provide accurate and up-to-date data on schools, teachers, and students; (iv) improving budget management and execution through more robust financial management tools and processes; and (v) complementing education spending through subsidies paid directly to schools with proportionate spending at all levels of the system responsible for quality.

A. ECONOMIC UPDATE:
Navigating a Fragile Recovery

Part A

New sanitation facilities at Port Moresby's Koki Primary School; installed to help reduce the spread of COVID-19. (UNICEF PNG)

1. Recent economic developments

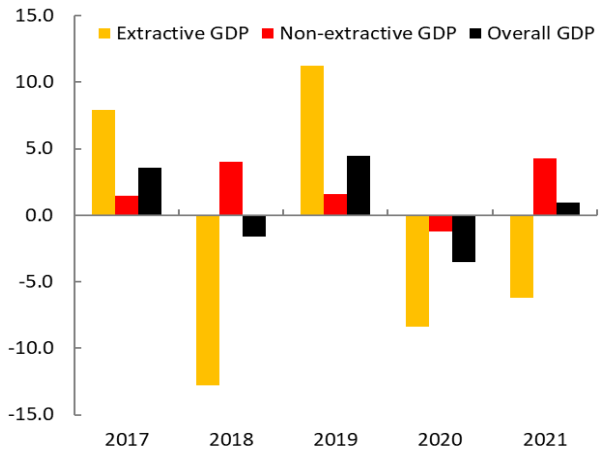
1.1. Economic growth

1. **Global GDP growth rebounded to an estimated 5.5 percent in 2021, the strongest post-recession growth rate in 80 years.** This expansion follows a contraction of 3.4 percent in 2020 owing to the impacts of the COVID-19 global pandemic. However, the global recovery is proving uneven, with growth concentrated in a few major economies. Emerging market and developing economies (EMDEs) are experiencing notably weaker and more fragile recoveries compared to those in advanced economies as a result of slower vaccination progress, a more limited policy response, and the pandemic's scarring effects. Income per capita in most EMDEs will remain below pre-pandemic levels for an extended period. Progress catching up with advanced economies may slow or even reverse in low-income economies.

2. **Real GDP growth in East Asia and the Pacific (EAP) is estimated to have reached 7.1 percent in 2021 after growth of only 1.2 percent in 2020.** This figure mainly reflects a strong rebound in economic growth in China. Growth in the region excluding China also recovered in 2021, but by a modest 2.5 percent, 1.5 percentage points slower than projected in June and about half the trend growth rate. This weaker than expected growth performance reflects a series of significant disruptions from the pandemic in the course of 2021 in several large economies, including Indonesia, Malaysia, the Philippines, Thailand, and Vietnam. By end-2021, the aggregate output of the region excluding China was still about 3 percent below its pre-pandemic level, and output in about two-thirds of countries remained below such levels. The pandemic will continue to dampen GDP growth in many economies, particularly those that endured extended outbreaks of COVID-19 and those that have suffered from the collapse in global tourism.

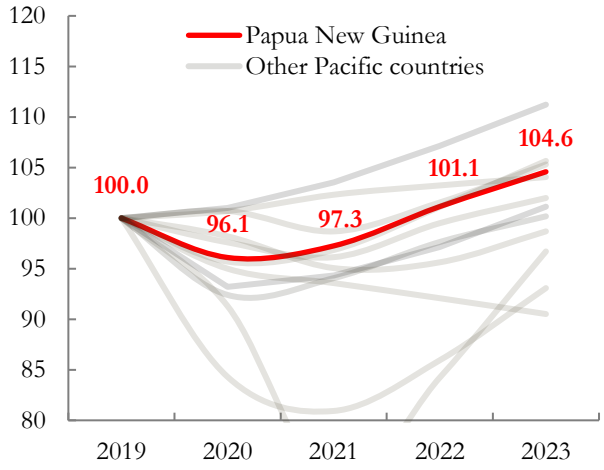
3. The pandemic impacted Papua New Guinea's economy less than other economies in the region, but the recent upsurge of cases makes the future highly uncertain. The World Bank estimates that the economy contracted by 3.5 percent year on year in 2020 (Figure 1) and real income per capita fell by 5.7 percent (a fall from US$2,830 to US$2,630). GDP growth is estimated at 1.0 percent in 2021. Nevertheless, the impact of COVID-19 on economic output has been smaller than in many other EAP economies (**Figure 2Error! Reference source not found.**). The reasons for this include: the negligible contribution of tourism to PNG's GDP; good performance of the agriculture sector; a time lag in the spread of COVID-19 within the country; fiscal stimulus; and the recovery of commodity prices. Papua New Guinea ranks behind Tuvalu, the Solomon Islands, and Tonga in terms of the estimated size of the economy at the end of 2021 compared to 2019. The tourist-dependent economies of Fiji and Samoa have taken the greatest hit.

Figure 1. PNG: Real GDP Growth, 2017–21
(Annual percent change)



Sources: PNG National Statistical Office; World Bank staff estimates.

Figure 2. PNG's recession has been less severe than its Pacific neighbors
(Real GDP index, 2019=100)



Sources: IMF, World Economic Update, October 2021.

4. Falling gold and LNG production and the reintroduction of COVID-19 restrictions negatively impacted PNG's performance in 2021. Gold output fell in the first nine months of 2021 from the Lihir, Simbiri, and Hidden Valley mines, while Porgera[1] remains closed. The total gold production estimated to be around 15 percent lower than 2020 levels (and down 38 percent on 2019 levels). These declines reflect a combination of planned maintenance, the impact of pandemic-related travel restrictions, and other mine-specific factors. Scheduled maintenance at the PNG LNG project led to a drop in LNG production of about 5 percent year on year in 2021, although rising prices meant operating revenues rose by over 32 percent.

5. The non-extractive economy is recovering slowly from pandemic-related disruptions, although the recent COVID-19 wave is slowing progress. According to the available data, the non-extractive economy in 2021 was close to the pre-pandemic levels (Table 2). GPS mobility data show the strongest bounce-back, and the latest Bank of Papua New Guinea's (BPNG) Business Liaison Survey indicates an upward trend in the nominal value of sales in the formal, non-mineral private sector (although still 5 percent below pre-pandemic levels). Bank lending to non-mineral businesses was down -0.8 percent year on year in Q1 2021 (latest available data). Formal employment levels remain 4 percent below pre-pandemic levels, with

[1] The Porgera mine, which produces around 20 percent of Papua New Guinea's gold, went under care and maintenance in April 2020 after it's special mining lease was not renewed.

construction and financial sector jobs struggling most to recover. Nevertheless, manufacturing and agriculture sector employment numbers are now above 2019 levels.

Table 2. Indicators of Economic Recovery

Percentage difference from pre-pandemic level	2020	2021							2019/pre-pandemic	2020	2021 - YTD
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Index		
Mobility data											
Google	-5.5	-6.6	5.6	10.3	3.4	19.7	37.4	35.7	100.0	108.5	129.3
Facebook	-5.6	0.0	4.8	9.1	-1.0	7.3	10.7	4.6	100.0	103.6	105.6
Business Liaison Survey	-17.3	-25.1	-16.7	-9.0	-13.0	-4.3			100.0	83.0	91.3
Private sector credit	1.1	0.1	-1.7	0.0	-0.8				100.0	98.8	98.5
Employment (total)	-1.3	0.0	-5.0	-5.5	-4.6	-4.1			100.0	97.1	95.6

Sources: Google Community Mobility Reports, Facebook Mobility Index, Bank Papua New Guinea.

6. **Investment levels were likely lower in 2021.** Investment in the mining and LNG sectors had been rising until 2019, reaching US$1.1 billion or 4.5 percent of GDP, according to the financial results of the main mining companies and PNG LNG. However, investment dropped by 26 percent to US$820 million in 2020, with investment spending in 2021 estimated near or slightly below this level. Investment in the non-extractive sector also appears to have declined. An annual survey of 100 senior executives from PNG's largest companies reports that businesses are expecting investment levels to be lower than previously anticipated.[2] This decline in investment (both physical and human) is likely to have the greatest long-term impact on future growth.

7. **The agriculture sector shows signs of weathering the pandemic better than other sectors.** While bank lending to businesses has been broadly flat since 2019, lending to agriculture is up nearly 50 percent. The pandemic impacted formal employment in agriculture less than other sectors, with employment up 6 percent since December 2019 (other employment categories average a 10-percent decline). These developments coincided with a sharp reduction in food import spending, which fell by 50 percent year on year in 2020 (other imports fell by 30 percent). The vanilla sector is growing strongly (**Error! Reference source not found.**), and o ther agricultural exports have picked up since the second half of 2020 (see the External Sector section). The relatively strong performance of agriculture may reflect additional government financial support to SMEs—the government has allocated K 280 million (0.3 percent of GDP) to facilitate additional lending by the National Development Bank and Bank South Pacific (BSP).

Box 1. An update on vanilla

PNG on track to becoming the world's second-largest vanilla producer

The December 2017 PNG EU discussed developments in the global vanilla market when prices had skyrocketed—a kilogram of vanilla was more valuable than a kilogram of silver. As the third-largest vanilla producer in the world, PNG experienced a vanilla boom in the Sepik province, where most of the vanilla beans produced by the country are grown. What has happened to the vanilla sector in PNG since those heady days?

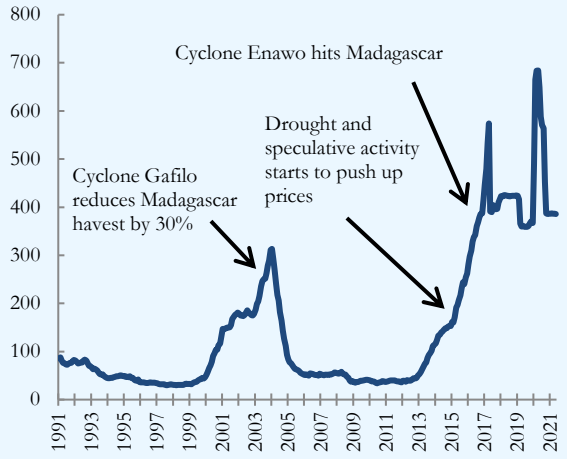
Globally—and contrary to expectations—prices have remained high since 2017, although they have been highly volatile, especially at the local level where farmers negotiate with middlemen. Madagascar has attempted to institute a minimum export price for vanilla of US250 per kg, encouraging buyers to look elsewhere for their supplies, while the COVID-19 shock put severe downward pressure on prices as demand temporarily collapsed for the gourmet vanilla used in high-end restaurants.

[2] Smirk, Justin. 2021. "2021 PNG 100 CEO Survey: a snapshot of the effects of COVID-19 in Papua New Guinea." *Business Advantage PNG,* May 21. https://www.businessadvantagepng.com/2021-png-100-ceo-survey-a-snapshot-of-the-effects-of-covid-19-in-papua-new-guinea-analysis/.

Hard numbers on PNGs vanilla production are patchy; no official data is collected. However, import statistics from PNG's trading partners suggest that production has increased by more than 50 percent since 2017, with over 360 tons exported in 2020. This may partly reflect a decline in unofficial exports across the border to Indonesia, with Aust and Hachmann, a Canada-based vanilla importer, reporting that falling prices and abundant supply in PNG's neighbor have been making smuggling far less attractive. PNG's prices, however, are some of the lowest in the world, averaging US$146 per kg since 2018, compared to US$385 in Madagascar, US$265 in Indonesia, and US$238 in Uganda. Prices can vary for a wide variety of reasons—vanilla type, moisture content, whether the beans have been picked early or 'bulked out'—but they do suggest that there is room to improve the quality and marketing of PNG's vanilla crop. Encouragingly, Aust and Hachmann's latest report suggests that quality has been improving, with green vanilla now only harvested at full maturity, and that efforts are being made to dry down black/gourmet vanilla stocks to industrial moisture levels, which should help attract higher prices.

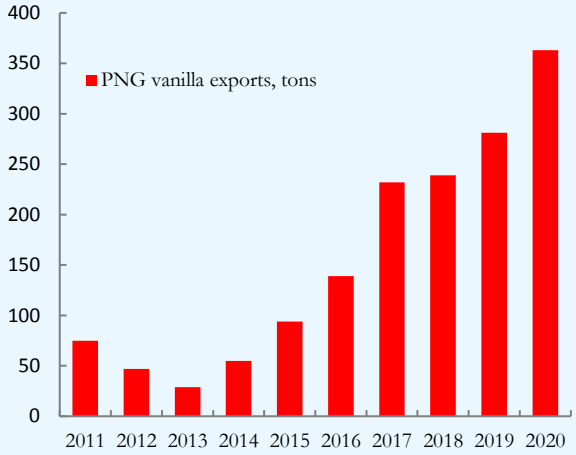
With vanilla export earnings totaling US$40 million in 2020, vanilla is now a more important crop to PNG than copra (coconut) and is catching up with cocoa (US$70 million in exports) and coffee (US$125 million). If production trends continue, PNG is also on track to become the world's second-largest vanilla producer, overtaking Indonesia in the coming years.

Figure B3 International Vanilla Prices, 1991–2021
(US$ per kg)



Sources: Bloomberg, VNB0INM1 index.

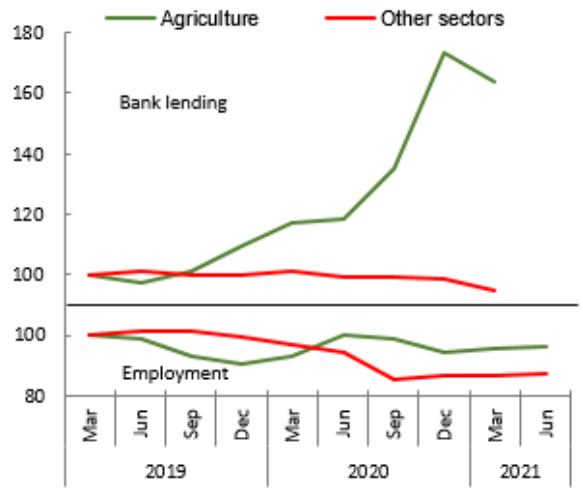
Figure B4 Papua New Guinea Vanilla Exports, 2011–20
(Metric tons)



Source: International Trade Centre based on UN Comtrade data.

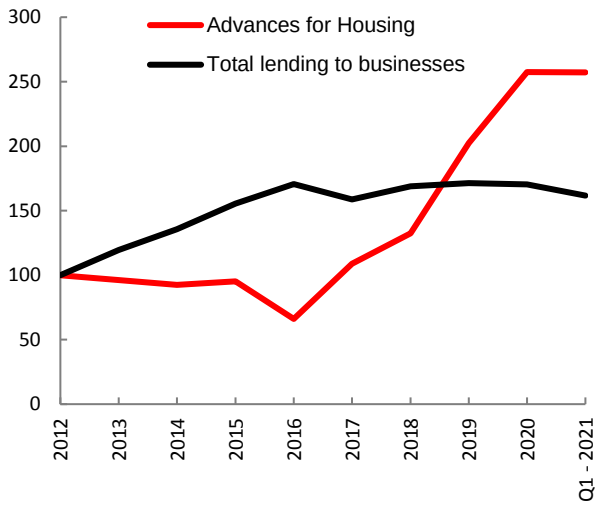
8. **Mortgage lending has remained strong, rising by 14 percent since end-2019.** Mortgages represent a small but rising share of overall bank lending in Papua New Guinea, with the stock of outstanding mortgage borrowing having increased by over 15 percent annually since 2014, compared to only 2.5 percent growth for general business lending (Figure 6). For PNG's largest bank, Bank South Pacific, mortgages are its fastest-growing lending product. This growth is a positive development for PNG's economy if it signals the channeling of additional resources into investment in housing stock through preparing plots and constructing new homes. It is negative, however, if it signals that households are borrowing against the value of their existing home to cover their day-to-day living expenses or if the borrowing is fueling speculative real estate activity.

Figure 5. Agriculture Sector Performance
(Index, Q1 2019=100)



Source: Bank of Papua New Guinea.

Figure 6. Outstanding Housing Advances/Mortgage Lending by Commercial Banks
(Index, 2012 = 100)



Source: Bank of Papua New Guinea.

9. Papua New Guinea's non-extractive economy performed below potential even before the pandemic. Measuring the health of PNGs non-extractive economy is challenging. Its activity follows the booms (and busts) of new mining and LNG projects and their associated construction activity—and higher government spending when resource revenues rise, boosting government-funded construction activity and public sector employment (Figure 7). Two noteworthy examples are the booms of the 1990s (Lihir and Porgera mines) and 2010–14 (PNG LNG), when resource prices (and government spending) were sky-high. Since 2015, the non-mineral economy has performed around 2 percent below its estimated potential level.

10. The long-run, non-mineral sector annual real GDP growth rate is estimated at 2.7 percent. PNG's working-age population (aged 15–64) is increasing by around 2 percent per year (roughly 125,000 people), giving us an approximate lower bound for long-run growth. The additional 0.7 percent is attainable by improving peoples' skills and expanding equipment and technology to enhance productivity. The long-run, non-extractive growth rate of 2.7 percent a year compares to the historical average overall growth rate of 4.4 percent since 1991. As such, the extractive sector, which receives a majority of PNG's investment, has a higher level of productivity that boosts the overall growth rate.

Figure 7. Actual and Potential Non-extractive GDP, 1991–2023
(Kina, billions, 2013 constant prices)

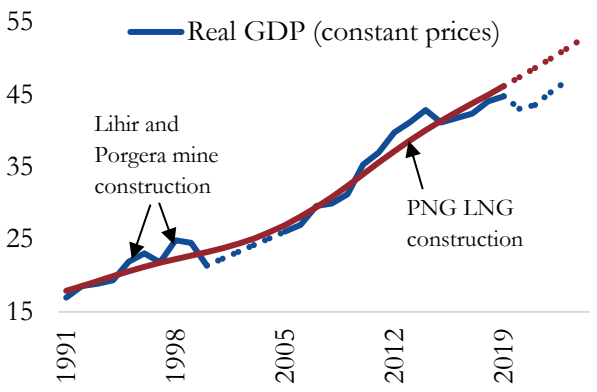
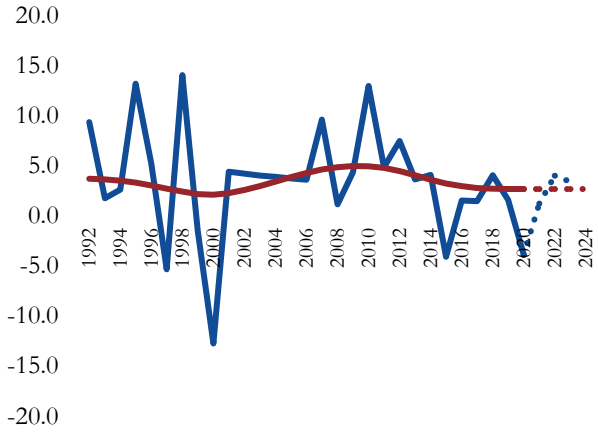


Figure 8. Actual and Potential Non-extractive GDP growth, 1991–2023
(Annual percentage change)



Source: National Statistics Office, World Development indicators. World Bank staff calculations. Potential GDP estimated using an HP filter.

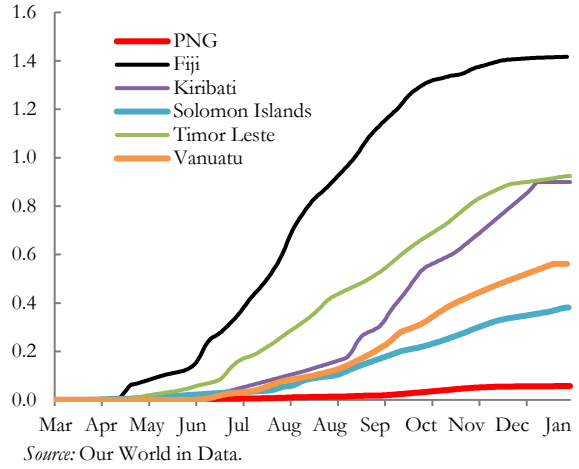
Covid-19 update

11. Papua New Guinea's fourth wave of coronavirus infections was the most intense to date. As of February 2, 2022, the official number of cases had reached 37,400—half of which were recorded since August 2021, when the fourth wave started. The most recent data show signs of a fifth wave (Omicron variant) looming (Figure 10). Officially recorded deaths in PNG to date total nearly 600, with two-thirds occurring since August 2021. According to official data, at 60 deaths per million population, PNG is in the bottom 20 percent of countries globally for COVID-19 mortality.

12. PNG's vaccination rate is the lowest in EAP and one of the lowest globally. As of end-January 2022, less than 6 percent of the adult population had received at least one vaccine dose, with 4 percent fully vaccinated, placing Papua New Guinea in last place in the EAP region. The fourth wave spurred an acceleration in daily vaccination rates, rising from 1,300 per day in August–September to over 5,000 per day in November. However, even at this higher rate, it would take more than 2.5 years to fully vaccinate the adult population. Meanwhile, daily vaccination rates have fallen to an average of just 500 jabs a day in January 2022. In addition to the considerable logistical challenges PNG faces in serving its rural communities, there are high levels of vaccine hesitancy. A World Bank study found that only around 20 percent of adults in PNG were planning to get vaccinated, with more than half not planning to, and the rest unsure.[3]

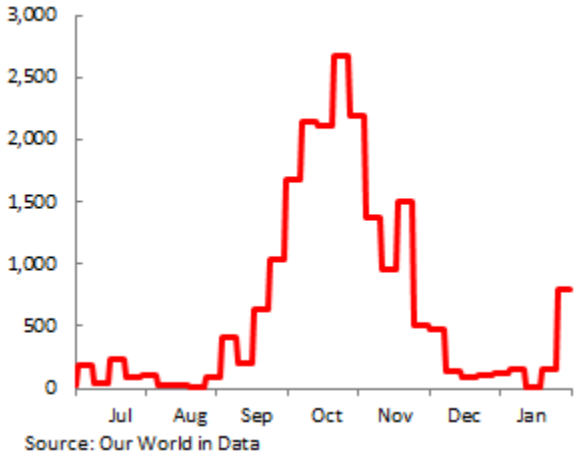
[3] Hoy, Christopher Alexander, Terence Wood, and Ellen Elizabeth Moscoe. 2021. "Addressing Vaccine Hesitancy: Survey and Experimental Evidence from Papua New Guinea (English)." WPS 9837, World Bank, Washington, DC.

Figure 9. Vaccines Administered per 1 Million Population, 2021–22
(Doses, millions)



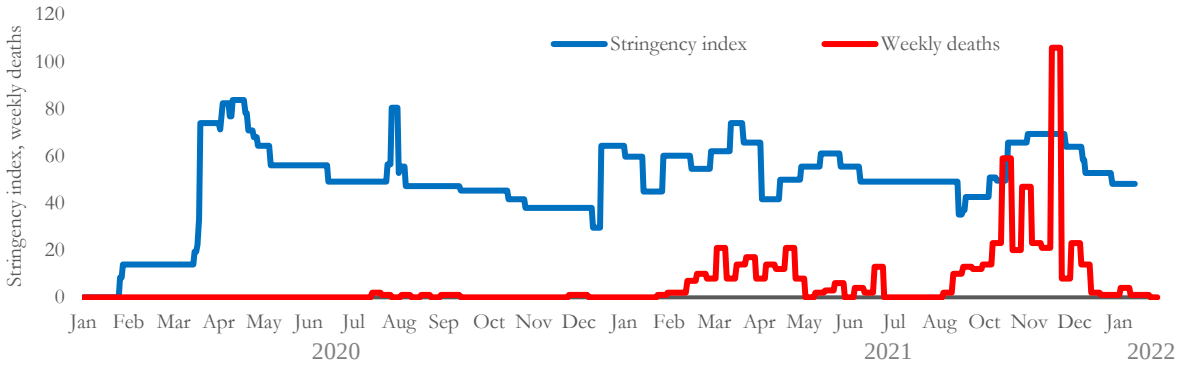
Source: Our World in Data.

Figure 10. Weekly COVID-19 Cases Since July 2021
(Number of + cases recorded over 7 days)



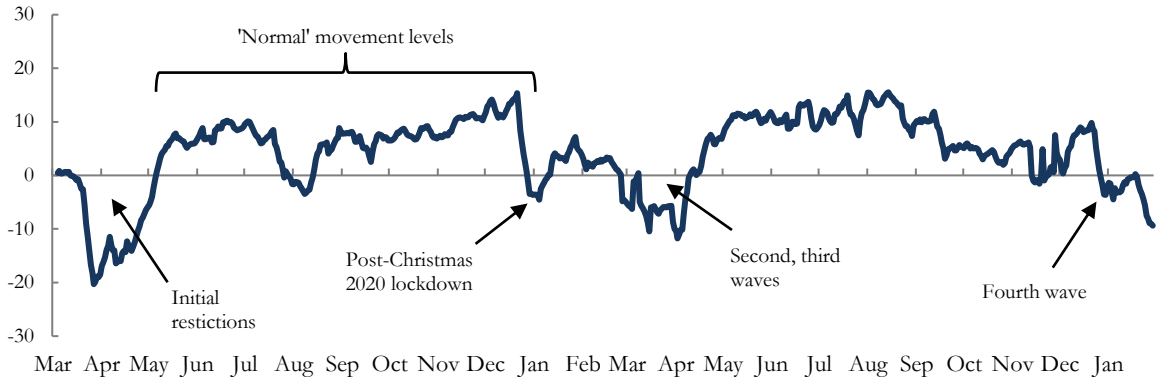
13. Papua New Guinea has reimposed restrictions as successive COVID-19 waves hit. Restrictions were introduced in January 2021 and increased in April and November as the third and fourth waves arrived in PNG (Figure 11). Restrictions include shutting down public transport, work-at-home orders, restrictions on domestic travel and large gatherings, night-time curfews, and school closures. In mid-February, some measures were lifted, including those on international travel (for vaccinated passengers).

Figure 11. PNG: Stringency index and weekly recorded COVID-19 deaths, 2020–21
(Stringency index, 0 = no restrictions, 100 = full lockdown, deaths per week)



Sources: Oxford Covid-19 Government Response Tracker (OxCGRT), PNG Ministry of Health.

Figure 12. PNG: Household Mobility, 2020–21
(Weekly rolling average, 0 = pre-COVID average mobility)



Source: Facebook movement range maps.

The COVID-19 crisis has led to a sharp reduction in government revenue. (RGAPhoto86/Shutterstock)

1.2. Fiscal developments

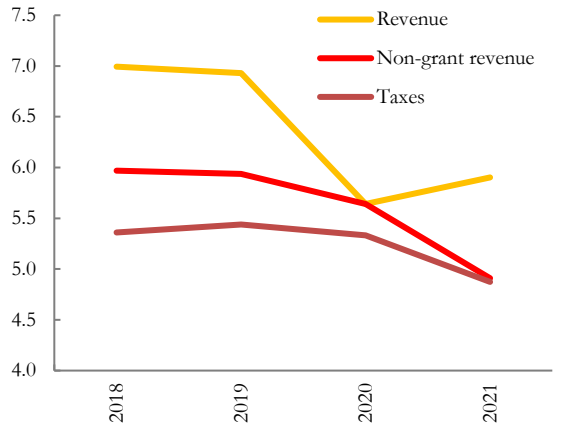
14. The government estimates a fiscal deficit of 7.2 percent of GDP in 2021, continuing a trend of substantial deficits predating the pandemic. The 2021 budget included total spending of K 20.2 billion (21.7 percent of GDP) and revenues of K 13.7 billion, projecting an overall deficit of K 6.6 billion. The 2021 budget was less ambitious as the government tried to counter overly optimistic prior budget projections that had undermined the credibility of PNG's fiscal budgets for several years. The 2021 budget projects revenues 5 percent below 2019 levels (achievable given revenue collection in the first half of the year), with an increase of 10 percent in expenditures compared to 2019 and 2020 levels.

15. The fiscal deficit widened in the first half of 2021. Official data for the first six months of 2021 indicate an annualized overall deficit of 5.9 percent of GDP, larger than the 4.9 percent of GDP deficit recorded

in the same period of 2020. Revenues did not return to pre-pandemic levels. In cash terms, at K 4.5 billion, tax receipts in H1 2021 were on par with 2019 and 2020. However, this represents a steady decline as a share of GDP (Figure 13Figure 13). Grant receipts of K 900 million in January–June 2021 (compared to 0 in the year-earlier period) were the only reason that overall revenues rose in year-on-year terms in the first half of 2021. Revenues from the extractive sectors remained nominal. No dividends were received between January and June, meaning that while the extractive sector contributed around 25 percent to GDP in the first half, it contributed less than 3 percent (above the general taxes) to total revenues. This continues a trend that has seen extractive GDP increase by nearly 300 percent since 2010 in nominal terms, while nominal revenues have declined by more than half over the same period (Figure 14).

Figure 13. First Half Revenues 2018–21

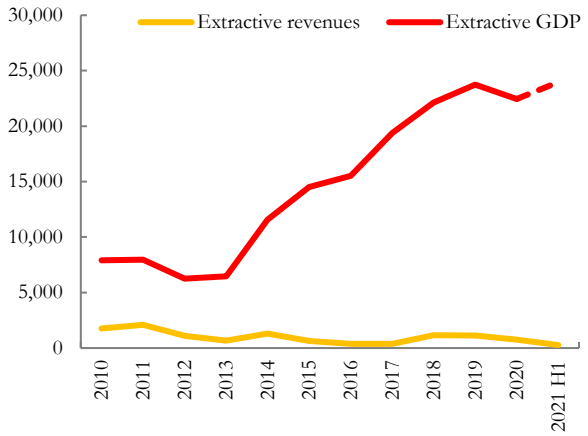
Percent of GDP



Source: PNG Treasury, WB-IMF staff estimates.

Figure 14. Extractive Revenues and Extractive GDP

Kina, millions



Source: PNG Treasury, WB-IMF staff estimates.

16. **Expenditure rose to its highest level ever in January–June 2021, reaching K 8.2 billion (18 percent of GDP).** Employee compensation jumped by 4.8 percent to K 2.8 billion, while goods and services spending was up 38 percent year on year (but still below 2019 levels). Interest on government debt was stable at K 1.0 billion in H1, while grants to other levels of government rose by 16 percent compared to the year-earlier period. Capital spending surged by 57 percent, reaching K 1.4 billion (3.2 percent of GDP), although this may reflect the settling of some arrears from 2020. Spending appears to have bounced back after the dampening effects of the H1 2020 lockdowns. Importantly, spending levels were within the original budget estimates for 2021, indicating improving budget credibility.

Box 2. The fiscal outturn for 2020

Not too bad considering the circumstances

The fiscal deficit widened to 8.9 percent of GDP (K 7.3 billion) in 2020, up from 5 percent in 2018 and 8.1 percent in 2019. The original, pre-pandemic budget projected a deficit of 5.0 percent of GDP, and the supplementary budget raised this figure to 8.1 percent. However, revenue underperformance, an uptick in spending, and lower nominal GDP drove an even greater widening of the deficit.

Revenues fell by K 1.8 billion (2.2 percent of GDP) in 2020, but many factors were at play in addition to COVID-19. The largest revenue underperformers were:

- **Transfers from State Authorities (K 683 million below target)**. This target was missed after the Supreme Court nullified the Public Money Management Regularization (PMMR) Act in mid-2020, forbidding the year-end sweeping of Statutory Authority bank accounts for unspent funds.

- **Company tax (K 531 million below target).** Company tax fell short due to two pandemic relief measures: (i) delayed Corporate Income Tax (CIT) filling to help company cash flows, and (ii) a shift in taxpayer credit offsets away from Goods and Services Tax (GST) refunds and toward offsetting against CIT. The pandemic's impact on CIT will be felt in 2022 when companies submit their tax returns for 2021, but this may be partially offset by CIT payments delayed from 2020.

- **Mining and petroleum tax (K 339 million below target).** PNG LNG pays the bulk of the mining and petroleum tax—effectively company tax for resource companies. The sharp decline is curious given 2020 collections are based on 2019 production, when LNG prices and profits were high. Oil Search reported profits of US$449 million in 2019, of which US$136 million was due in income tax. However, in 2020 Oil Search paid just US$12 million in cash to the Treasury. The sharp fall in MPT warrants further investigation and reporting by the Treasury.

- **GST, import duties, and excise taxes (K 689 million below target).** This underperformance *was* largely due to the impact of COVID-19, particularly on imports, which fell by 30 percent in 2020. GST on domestic supply was down only 6 percent on 2019 collections.

- **Dividends (K 352 million below target).** Although underperforming against the budget target, dividends increased by 0.3 percent of GDP in 2020, reflecting an increase in the dividend from the Ok Tedi gold mine, which was boosted by rising gold prices in 2019. This more than offset the K 300 million underperformance of Kumul Petroleum's dividend payment, which receives the government's share of its PNG LNG revenues.

Although many revenue categories underperformed, others beat their budget targets. For example, revenue from Personal Income Tax (PIT) was K 302 million above target. The increase in PIT was mainly due to the Internal Revenue Commission's (IRC) October 2019 decision to disallow GST credit offsets against PIT liabilities.

Spending was relatively contained in 2020 compared to previous budget overspends. Total government spending was K 19.4 billion, K 670 million (0.8 percent of GDP) higher than the original pre-pandemic budget. This overspend was considerably below those recorded in 2018 (K 1.4 billion) and 2019 (K 1.8 billion). In part, this reflects a general slowdown in spending due to the impact of lockdown restrictions on government operations and that much of the government's COVID-19 response package was delivered via increasing bank lending, delaying tax payments, and allowing households early access to their pensions, rather than through additional expenditure.

The expenditure categories with the largest overspends were:

- **Government wages (personnel emoluments, K 415 million over budget).** This overspend was significantly lower than in previous years as the government took steps to regain control of the public sector wage bill through the Organizational Staffing and Personnel Emolument Audit Committee. However, the government reports that the pandemic caused delays to the public servant retirement program, leading to more public servants (in particular teachers) remaining in employment, resulting in cost overruns. The government also reported that it recruited an additional 2,700 employees during the year, a 2.5 percent increase in the headcount, as well as various arrears in back pay being cleared, pushing up wage bill spending. The retirement program and steps to strengthen recruitment policies and payroll system controls are welcome and will be central to slowing the expansion in the payroll, which is threatening the long-term sustainability of PNG's public finances (see Part B of this report).

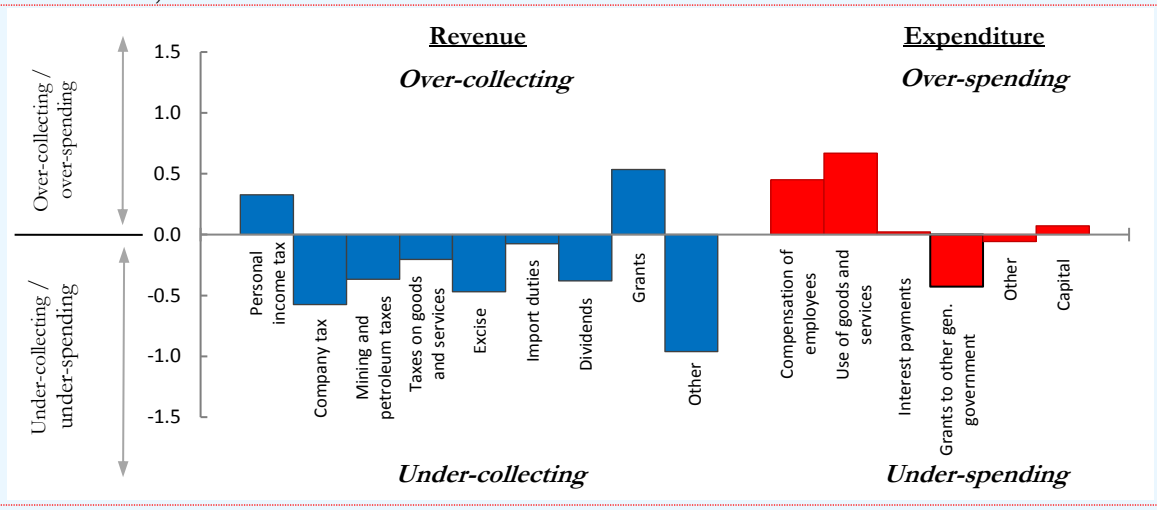
- **Goods and services (K 616 million over budget).** This overspend was expected given the need to respond to the pandemic. Much of the additional spending was donor-funded; government spending on goods and services actually fell in 2020 compared to 2019.

- **Grants paid to other general government (K 394 million below budget).** Treasury commonly cuts back these transfers so as to move the funds to other, over-spending areas. A similar underspend was recorded in 2019.

At K3.5 billion (4.3 percent of GDP), capital spending was in line with the original budget projections. Two-thirds of capital spending was financed by development partner loans or grants; PNG has become increasingly

dependent on this source of funding for capital investment. The largest development partner projects in 2020 include the PNG National Submarine Fiber Cable Network (China), the Nadzab Airport Redevelopment Project (Japan), investment in the National Power Grid (Asian Development Bank), the Keltiga Junction to Kagamuga Airport road (China), and the Road Maintenance & Rehabilitation Project (World Bank). The government spent K1.1 billion of its own funds on capital projects, the largest of which was K 70 million on the Waigani Courthouse complex, a project that was first included in the 2014 budget and has now cost over K 300 million. Most other spending was on road projects, including the Lae–Bulolo section of the transnational highway, the 'missing link' road in Gulf province, and the Kwikila–Ganai section of the Port Moresby–Alotau Highway.

Figure B2.1 Fiscal Performance: Comparison of Original Budget with Outturn, 2020
(Percent of GDP)

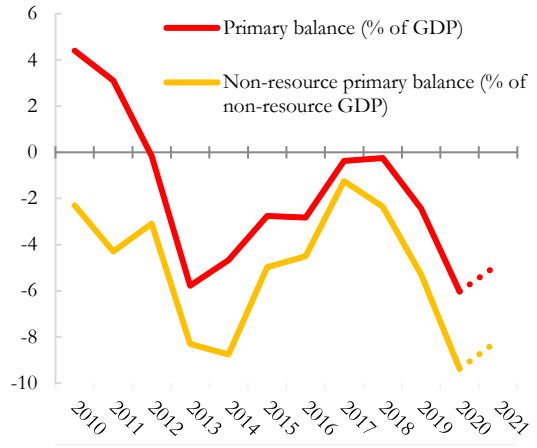


Source: Volume 1a Budget 2020; Final Budget Outcome 2020.

17. Health spending was raised to respond to the pandemic but was pared back in 2021. Typically, the government spends about 1.7 percent of GDP on the health sector. In 2020, this increased to 1.9 percent, but the government's latest numbers suggest health spending fell back to 1.4 percent of GDP in 2021. This decline has been on operational spending, which fell from K 1,564 million in 2020 to an estimated K 1,155 million in 2021 (below 2018 levels).

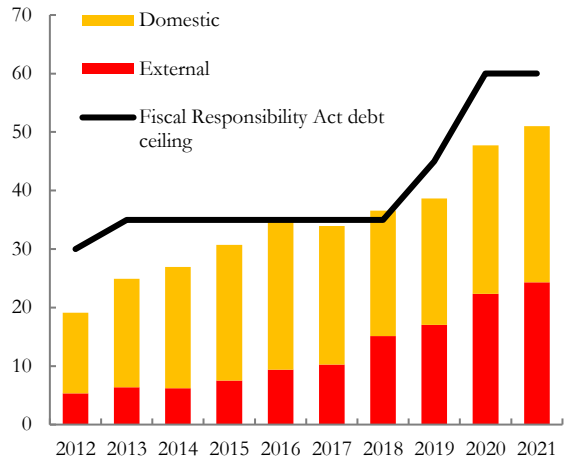
18. The primary fiscal balance deteriorated sharply in 2018–20 but stabilized in the first half of 2021 (Figure 15). Running a primary surplus is required to contain increases in public debt. Conversely, primary deficits tend to lead to increasing debt levels. Growing wage bills and flagging revenues since 2019 have driven growth in the primary deficit, which reached 6 percent of GDP in 2020. The outturn from H1 2021 suggests that the situation may be stabilizing, with the government projecting a primary deficit of 4.9 percent of GDP. The non-resource primary balance (the yellow line in Figure 16) forms part of the government's fiscal framework, aiming to reduce this to zero over the longer term. This measure appears to have stabilized at -8.3 percent of GDP, an encouraging sign but still a long way from the target. Following the non-resource primary balance rule will help remove the link between resource revenue flows and government spending in any year, allowing the non-resource economy to fund the budget. Growth in the non-resource economy is more stable and less at risk of sharp accelerations and downturns and hence should lower the need for significant fiscal adjustments should resource revenues decline in the future.

Figure 15. Primary balances have been deteriorating
Percent of GDP and non-resource GDP, 2010-2021



Source: PNG Treasury, WB-IMF staff estimates.

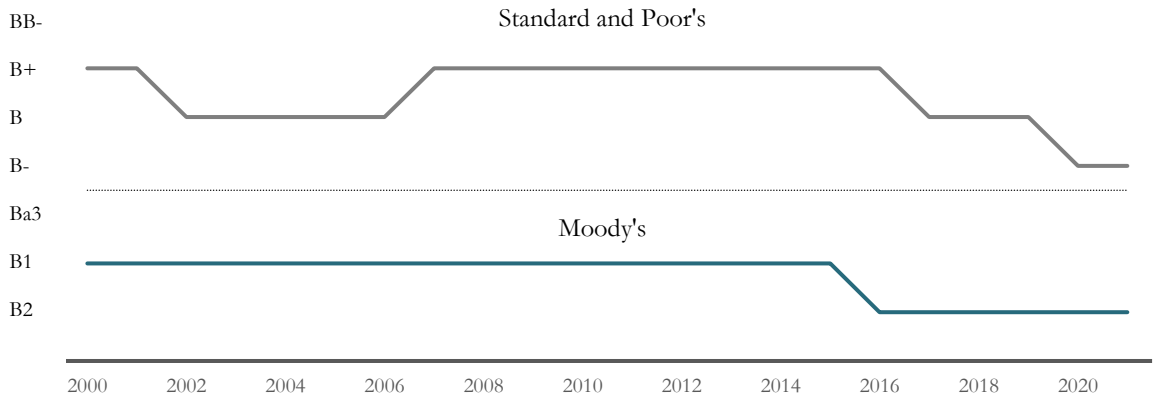
Figure 16. Central Government Debt-to-GDP Ratio
Percent of GDP, 2012-2021



Source: PNG Treasury, WB-IMF staff estimates.

19. **Public debt is estimated to have totaled K 47 billion (52.3 percent of GDP) at end-2021**, marking the fourteenth consecutive year that public debt increased in cash terms (public debt last declined in 2007). The large fiscal deficits between 2018 and 2021 were the main driver of this increase, although a falling nominal GDP also pushed up the ratio. In response to rising debt levels, the government amended the Fiscal Responsibility Act in September 2020, raising the debt-to-GDP ceiling to 60 percent, the third consecutive annual increase. Even before COVID-19, Papua New Guinea's debt situation was precarious. Moody's downgraded PNG to B2 in 2016, and Standard & Poor's followed in 2017(Figure 17). The IMF–World Bank debt sustainability analysis raised Papua New Guinea's risk of debt distress from "moderate" to "high" and, reflecting the impact of COVID-19, Standard & Poor's downgraded Papua New Guinea further to B-. These downgrades reflect growing concerns that PNG will be unable to service its debts in the future if revenues remain weak and debts continue to rise. To reduce the cost of external borrowing, the Government is shifting its borrowing toward concessional external loans and loans with a high grant element.[4]

Figure 17. Credit Rating Agency Classifications for PNG Sovereign Debt, 2000–21



Sources: Standard and Poor's, Moody's Investment Services.

[4] The degree of concessionality of a loan is measured by its "grant element". The grant element is defined as the difference between the loan's nominal value (face value) and the sum of the discounted future debt-service payments to be made by the borrower (present value), expressed as a percentage of the loan's face value.

Box 3. What does the global tax deal mean for Papua New Guinea?

An opportunity to increase tax revenues

In October 2021, the leaders of the G20 group of countries agreed to reforms that will "see multinationals pay their fair share of tax in the countries they do business." These reforms are in response to rising concerns that in an internet-based and globalized economy, firms, while selling globally, are shifting their 'taxable event' to low-tax jurisdictions, reducing their tax liabilities in both the countries where they make their sales and where they are headquartered.

The agreement has two 'pillars'. Pillar 1 proposes consumer country taxing rights on the largest multinational enterprises, allowing countries to levy a tax on profits from sales in that country. Pillar 2 proposes a global minimum corporate tax rate of at least 15 percent with the goal of ending tax competition between countries and the 'race to the bottom.' The full details are yet to be agreed upon; negotiations will continue in 2021 and beyond. Even once agreed, countries will need to legislate changes and introduce them to domestic law. As a result, implementation will not occur until 2023 at the earliest.

What does this deal mean for Papua New Guinea? Pillar 1 includes only the largest multinational companies (with global revenues over €20 billion and profitability above 10 percent), and it only covers automated digital services companies (internet search engines, social media) and firms selling consumer goods and services. Oil, gas, and mining companies and financial services firms are excluded. This exclusion is beneficial to PNG; had oil, gas, and mining been included, some taxation rights could have been shifted from PNG to importing countries. A revenue threshold of €1 million is proposed for countries with a GDP over €40 billion; it is lowered to €250,000 for countries (including PNG) with a GDP below this threshold. As such, a digital services company would need to make €250,000 in revenues in PNG for PNG to gain any additional taxation rights. Even so, these additional taxation rights would be small, with the Organisation for Economic Co-operation and Development (OECD) estimating only a 1-percent increase in CIT revenues in low-income economies. As such, the overall impact of Pillar 1 will be modest at best.

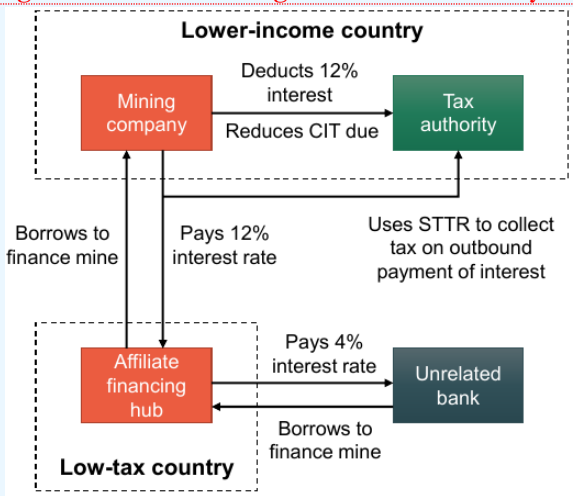
Pillar 2 focuses on a global minimum tax rate of 15 percent and covers all large multinationals (including oil, gas, and mining). Like many other developing economies, PNG has a statutory company tax rate above the 15 percent threshold, so there is little prospect of taxation rights being shifted from PNG to headquarter countries. However, care needs to be taken where special deals and tax incentives exist, as this could lower the effective corporate tax rate below 15 percent, opening the door for the headquarter country to claim taxation rights over profits declared in PNG. Of most interest to PNG is the Subject to Tax Rule (STTR) that aims to reduce profit shifting (see the example in **Error! Reference source not found.**). This would allow PNG to apply a top-up withholding tax of up to 9 percent on any payment of "interest, royalties and a defined set of other payments" from PNG to a low-tax country. Doing so would require changes to PNG's bilateral tax treaties (for example, its double taxation agreements), but all 136 signature countries to the global tax deal have agreed that should a country request an amendment to a bilateral tax agreement, it will be granted.

For PNG, there are two barriers to benefiting from the STTR:

1. Withholding tax exemptions. If an oil, gas, or mining project is exempt from withholding taxes, it will be difficult to apply a top-up tax.
2. Fiscal Stability Agreements. These are granted to reassure investors that should PNG raise its royalty or taxation rates at some point in the future, the rates on existing extractive projects will not change. This could prevent PNG from applying the STTR.

The tax authorities in PNG should remain abreast of the global tax deal and educate themselves as to the potential risks and benefits it could bring. Even if it only raises tax collections by a few percentage points, the change should be permanent and help bolster PNGs flagging tax revenues for many years.

Figure B3.1 Profit-shifting to a Low Tax Country



Source: The Centre for Tax Analysis in Developing Countries (TaxDev).

G20 Rome Summit, October 2021.
Photo: European Council.

Source: Adapted from OECD (2021) https://www.oecd.org/tax/oecd-secretary-general-tax-report-g20-finance-ministers-july-2021.pdf.

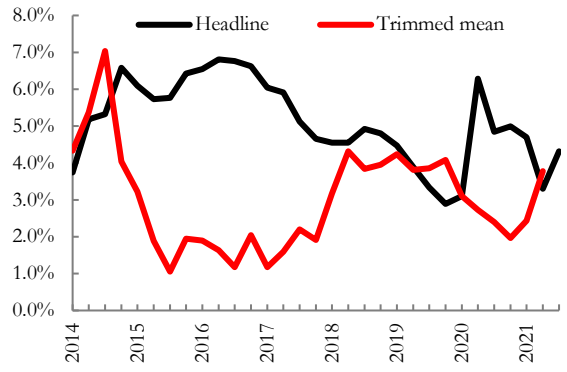
Lower prices for betel nut were a major contributor to decelerating inflation in the first half of 2021.
(Conor Ashleigh/World Bank)

1.3. Monetary policy and price developments

20. Annual headline inflation continued its downward trajectory in the first half of 2021 before picking up in the third quarter. With domestic economic activity recovering and businesses responding to the increased cost of doing business, prices edged higher toward the end of the year. Price dynamics largely reflect a combination of factors related to global conditions, such as rising global energy and food prices, as well as some policy decisions.

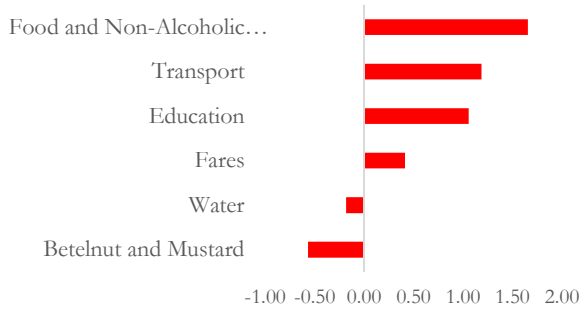
21. Food prices—especially for fruits and vegetables—were the main driver of inflation. An increase in prices for fruits and vegetables, meat, and cereal accounted for over one-third of overall inflation (1.6 percentage points). Combined with varying inflation rates across PNG's regions, this suggests a disruption to supply chains as a potential explanation, including high transport costs for fresh fruit and vegetables, due to interprovincial COVID-19 lockdowns. Transport (contributing 1.2 percentage points) was another major driver of price increases. Anecdotal evidence suggests that a hike in the price of used cars (reflecting disruptions to used car imports from Australia) was the major driving factor in rising transport prices. Higher imported fuel prices also contributed to domestic price pressures. Education, in particular a secondary school fee category (associated with the Government Tuition Fee Subsidy Policy, which introduces changes to the school financing), recorded a large increase adding nearly one percentage point to the annual inflation rate. Starting in 2021, parents are required to cover 38 percent of school fees. Lower prices for betel nut were a major contributor to decelerating inflation in the first half of 2021.

Figure 18. Headline and trimmed mean inflation continued to diverge
(Percent)



Source: Bank of Papua New Guinea.

Figure 19. Most expenditure categories recorded price increases
(Contribution to annual inflation, percentage point)



Source: Bank of Papua New Guinea.

22. **The BPNG maintained the Kina Facility Rate (KFR) at 3.00 percent at its September 2021 meeting.** The last change to the KFR was in April 2020, when the BPNG cut the reference interest rate by 200 basis points in response to the COVID-19 downturn. However, sluggish domestic demand amid COVID-19 uncertainties, coupled with weaker activity in the minerals sector, dampened the economic recovery. As a result, BPNG opted to continue its accommodative monetary policy.

Box 4. Divergence between trimmed mean and headline inflation

BPNG-trimmed mean and headline inflation continued to diverge in 2020 and the first half of 2021. Headline inflation and measures of core inflation generally move in sync over longer periods. However, starting in mid-2019, trimmed mean inflation showed a downward trajectory, while both underlying and headline inflation measures continued to rise.

The trimmed mean measure largely ignores the influence of dramatic price swings, leading to a much more stable estimate of core inflation. It trims 33 percent from the lower end and 27 percent from the higher end of the price change distribution arranged in ascending order. Therefore, unlike the core inflation measure that excludes prices of seasonal (fruits, vegetables) and regulated items (electricity, water, fares), items included in the trimmed mean measure differ every quarter depending on whether they fall within the thresholds.

Some of the items with a larger weight in the consumer basket showed large price variations during the pandemic, thereby having a substantial impact on headline inflation while being excluded from the trimmed mean measure. For example, prices for medical services—included in headline and underlying inflation but excluded from trimmed mean inflation—rose by 46 percent between December 2019 and December 2020. Similarly, the price of betel nut is included in headline inflation but excluded from trimmed mean inflation. The expenditure categories that contributed positively to headline inflation but have been excluded from trimmed mean inflation are shown in table B4.1 (along with their weights in the consumer basket).

Overall, the divergence between headline and trimmed mean inflation usually implies temporary price rises. Under this scenario, trimmed mean inflation may give a better sense as to how broad-based movements in inflation are by focusing on low-frequency price movements.

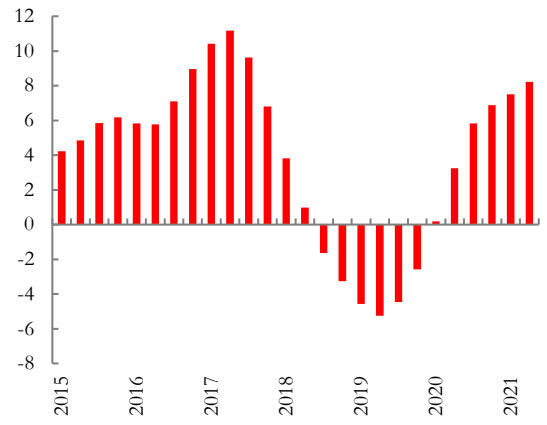
Table B4.1 Weights of Some Expenditure Categories in Consumer Basket

Expenditure category	Weight
Betel Nut and Mustard	10.9
Rent	8.1
Fares	4.4
Motor Vehicle Purchases	4.3
Tobaco	2.8
Alcoholic Beverages	2.4
Takeaway Foods	2.3
Fish	2.3

Source: NSO.

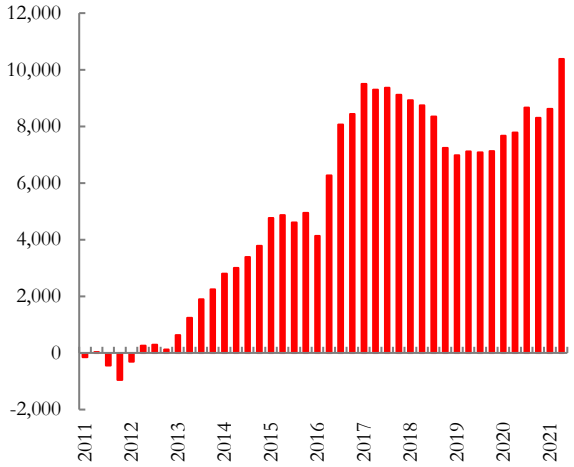
23. The adoption of an accommodative monetary policy framework led to a further expansion in monetary aggregates. Net domestic assets continued to rise, largely driven by depository corporations' holdings of government securities. Similarly, net foreign assets grew by 15.2 percent year on year in the second quarter, reflecting external borrowing by the government. The monetary base expanded by 2.2 percent in 2020, driven by surging BPNG purchases of government securities as it attempted to support the economy. In the second half of 2020, BPNG sold some of these government securities on the secondary market to reabsorb excess liquidity. The increase in the monetary base during this period was led by increasing currency in circulation—up 8 percent in 2020—perhaps reflecting demand for precautionary cash during the pandemic. The monetary base continued to expand in the first half of 2021, driven by a large increase in net foreign assets.

Figure 20. The money supply continued to rise …
(Y-o-y growth, percent)



Source: Bank of Papua New Guinea.

Figure 21. driven by net claims on the central government
(Kina, million)

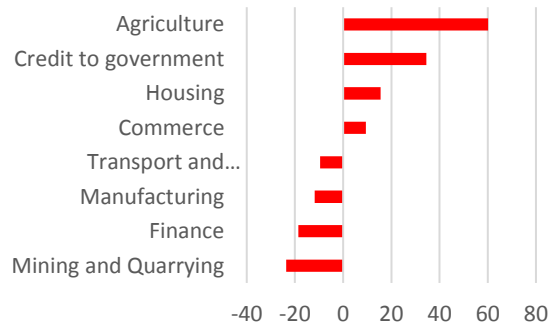


Source: Bank of Papua New Guinea.

24. Private sector lending remained flat due to subdued economic conditions. Credit to businesses edged lower, with only agriculture and commerce recording growth in credit. Weaker activity in the mining and quarrying sector was reflected in credit falling by K 545 million in the first half of 2020 compared to the second half of 2019. In contrast, housing-related credit (16 percent) and advances to government (35 percent) recorded large increases.

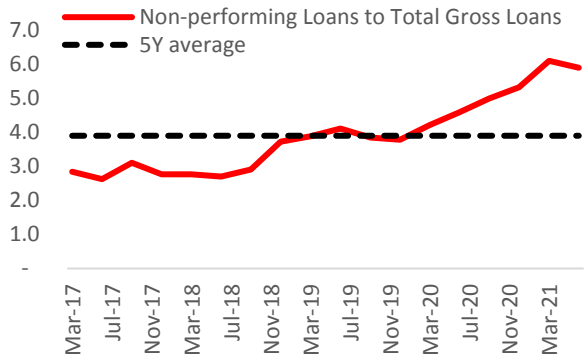
25. The financial sector remained resilient through the pandemic. According to an annual survey of 100 senior executives from PNG's largest companies, the financial services sector was one of three economic sectors that performed better than the overall economy in 2020. PNG's two largest superannuation funds, Nambawan Super and Nasfund, both delivered positive returns in 2020. Some financial stability indicators are encouraging, while others highlight vulnerabilities within the system. PNG's banking sector enjoys ample liquidity and is well-capitalized, with capital adequacy ratios above the legal requirement and higher than most comparator countries. However, nonperforming loans (NPLs) continue to rise, and the pace of growth has accelerated since the start of the pandemic. NPLs reached 6.1 percent of total gross loans in the first quarter of 2021 before declining to 5.9 percent in the second quarter, still substantially higher than PNG's five-year average (3.9 percent). However, despite a modest slowdown in 2020, profitability indicators remained healthy and recovered in 2021. Return on equity stood at 35 percent in June 2021 (from 31 percent in June 2020), while return on assets reached 5.2 percent (from 4.7 in June 2020) in the same period. Profits at PNG's largest bank, Bank South Pacific, fell by 9.7 percent in 2020 owing to impairment expenses arising from COVID-19 and lower interest income from loans (following the cut to the lending rate).

Figure 22. Credit growth varied widely across sectors compared to the pre-COVID period
(2021H1 over 2019H2, percent)



Source: Bank of Papua New Guinea.

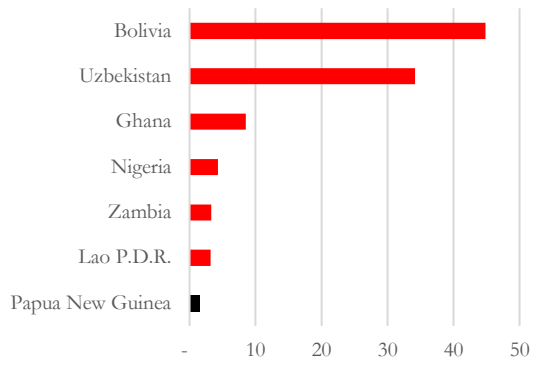
Figure 23. Nonperforming loans are trending upwards
(Percent of gross loans)



Source: Bank of Papua New Guinea.

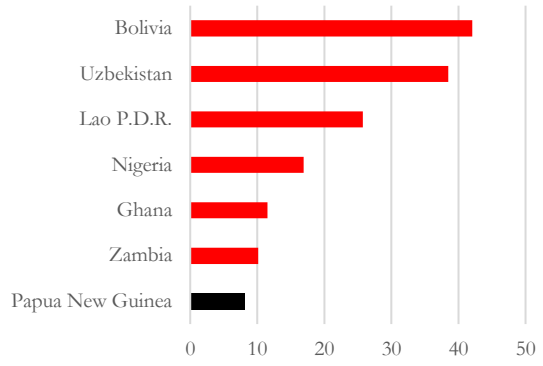
26. The lack of competition in the banking sector remains a challenge. PNG lags comparator countries on financial access indicators. The government recognizes the sector's challenges: the large unbanked population, poor quality of financial services, high fees, and weak competition among financial service providers. PNG's Financial Sector Development Strategy 2018–30 highlights weak competition as a deficiency in the financial sector, noting that this lack of competition stems from market segmentation and concentration. Lack of competition and concentration in the banking sector was also highlighted by a recent report from the Independent Advisory Group on Review of the Central Banking Act 2000. Except for the Australia and New Zealand Banking Group (ANZ), which focuses on institutional lending, BSP and Kina Bank dominate PNG's lending market. The recent attempt by Kina Bank to acquire Westpac PNG posed a risk of further market concentration. However, PNG's market regulator, the Independent Consumer and Competition Commission, rejected the acquisition, citing its negative effects on banking sector competition.

Figure 24. Number of Commercial Bank Branches
(per 100,000 adults, latest available year)



Source: IMF.

Figure 25. Number of ATMs
(per 100,000 adults, latest available year)



Source: IMF.

27. Parliament passed amendments to the Central Bank Act in December 2021 that expanded the mandate of the Bank beyond maintaining price stability to promoting employment and economic growth. The amendments also aim to improve the governance and transparency of the BPNG by setting new limits on the BPNG Governor's term length and reappointment (Box 5). Another reform that will impact the banking sector, the introduction of a 'dominant industry player levy', was included in the 2022 Budget, now postponed until July 2022. Targeting supernormal profits from the excessive industry concentration in the banking and telecommunications sectors, the government announced its plans to impose a levy on licensed commercial banks and telecommunications companies with a market concentration of over 40 percent. In the banking sector, this levy will only apply to the Bank South Pacific, which holds nearly 70 percent market share. BSP is expected to pay an additional K 190 million above its corporate tax payments, the equivalent of almost one-quarter of its total tax and levies paid in 2020. Introducing levies is an attempt by the government to mobilize domestic revenue. However, the proposed levy will have significant implications for the profitability of BSP and the Nambawan Super fund, which holds a 12-percent share in the bank. Unusually, the levy is flat and not linked to payee profits or balance sheet size. Also, the major stakeholders were not consulted, prompting a backlash from the business community. As a result, the government announced the deferral of the levy implementation until July 2022.

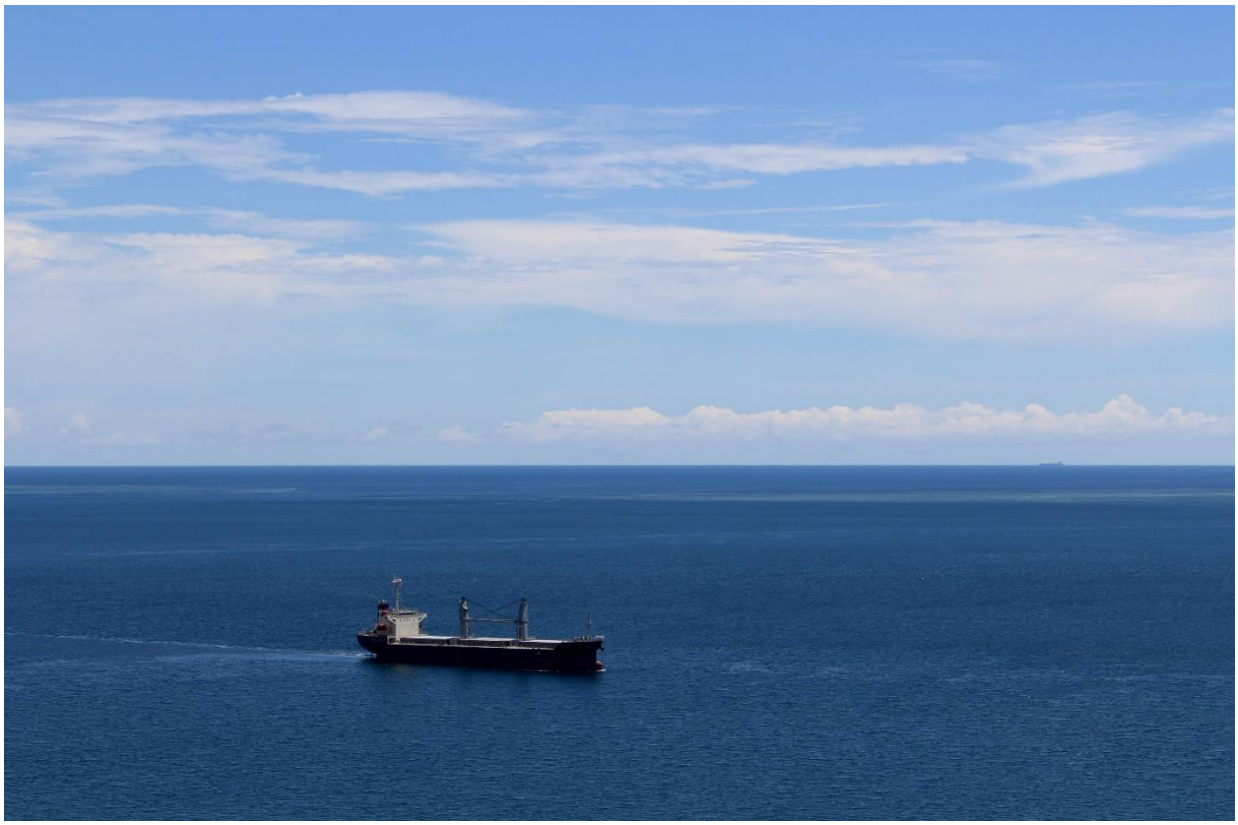
Box 5. Amendments to Central Bank Act

Following a request from the Treasurer, the Independent Advisory Group conducted a review of the Central Bank Act 2000 with the objective of modernizing it to reflect global developments. The review, which was completed in October 2021, included several recommendations focusing on improving the transparency, accountability, and governance of the Bank and broadening its policy objectives.

In December 2021, Parliament unanimously passed amendments to the Central Bank Act. The main elements of the reforms are:

- Broadening the objectives of the Bank to include supporting employment and economic growth in addition to price stability.
- Setting limits on the length of the Governor's term and reappointment. The new rules will allow the Governor to be appointed for four years, with eligibility for reappointment for a maximum of two terms.

- Setting limits on BPNG financing of government. The Temporary Advance Facility (TAF) is currently in place to allow the Bank to provide temporary advances to manage cashflow mismatches. The limit is set at 12 percent of total annual average revenue and grants over the previous three years and is required to be repaid to the Central Bank no later than the end of the financial year.
- Allowing the monetary policy committee to have an external member to improve the quality of its decisions and enhance independence and credibility by transitioning to collegial decision-making.



Weak external demand and domestic supply issues in the resource sector have reduced Papua New Guinea's export volumes. (Julia Peterle/Shutterstock)

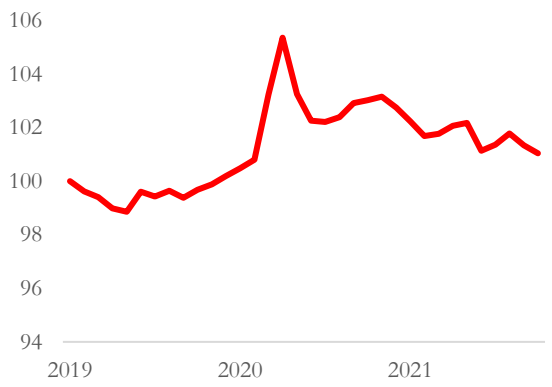
1.4. External sector

28. The current account surplus rose in the first half of 2021 due to a large trade surplus. The COVID-19 crisis and associated containment measures weighed on PNG's external economy throughout 2020. A slowdown in global economic activity led to an 18 percent year-on-year decline in export receipts. Backlogs at container ports and longer shipping times leading to a substantial increase in container prices were among the contributing factors. In addition, disputes around major mineral projects (discussed below) had a large negative impact on PNG's total exports. With restrictions easing and global activity recovering in 2021, export growth outpaced import growth owing to improved terms of trade. As a result, the trade surplus jumped by 29 percent year on year in the first half of 2021.

29. Commodities exports, including agricultural exports, were the major drivers of the large trade surplus. Agricultural export prices and volumes increased, while higher prices drove increased mineral sector export receipts. Overall, agricultural goods exports were affected the least by the pandemic. Total annualized receipts from agricultural commodities in the first half of 2021 were up by 42 percent. All major agriculture commodities except hard log exports recorded strong growth. A combination of flat prices per cubic meter and

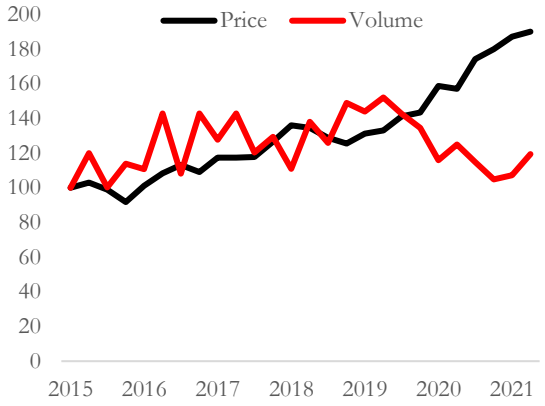
lower volumes (owing to a hike in export tax) were the main causes of lower receipts. However, this loss was more than offset by a strong performance by palm oil exports. As a result of a sharp increase in prices, total receipts for palm oil exports in the first half of the year were almost double those in the same period of 2020. Palm oil continues to be the largest produced agricultural commodity in the country and accounts for the largest share in agricultural exports. Noting growing environmental concerns surrounding palm oil production, ensuring production sustainability would be beneficial from both an environmental and economic perspective.

Figure 26. Commodity Terms of Trade
(January 2019=100)



Source: World Bank staff using IMF data.

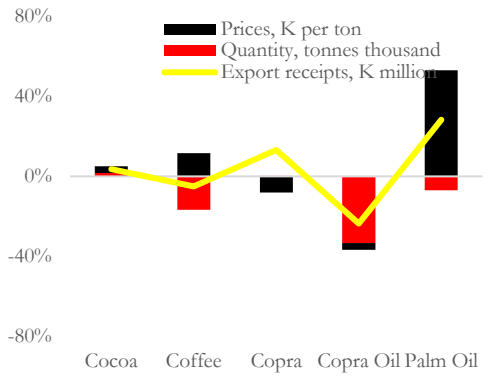
Figure 27. Export Price and Volume Indices
(2015 Q1=100)



Source: Bank of Papua New Guinea.

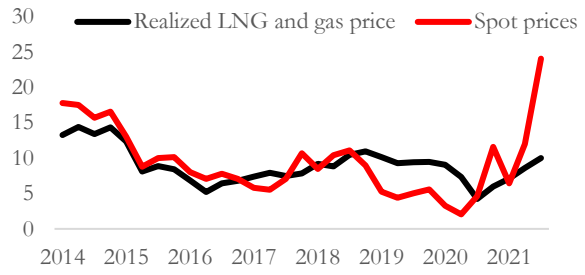
30. Mineral exports were hit hard by the pandemic, although a recovery in global economic activity led to higher receipts in the second quarter. In 2020, a loss of confidence in the global economy pushed prices of gold, one of PNG's major exports, higher as investors sought a safe haven amid uncertain economic conditions. Furthermore, in the weakened U.S. dollar and low interest rate environment, gold is perceived to be a safe investment. As a result, prices rose from US$1,560 per ounce early in 2020 to nearly US$1,900 near the end of the year. Although the price of gold edged lower in 2021, it remains elevated compared to the pre-pandemic period. However, gains from higher international prices were more than offset by a reduction in volumes due to the suspension of operations at the Porgera mine since April 2020 and falling production in other mines. Lower production from the OK Tedi and Simberi gold mines also led to a decline in gold production from 30 tons in the first half of 2020 to 22.3 tons in 2021, leading to a 15 percent year-on-year fall in gold export receipts.

Figure 28. Agricultural Exports
(Annual growth rate in 2020, percent)



Source: Bank of Papua New Guinea.

Figure 29. LNG price
(US$ per mmBtu)



Source: Bank of Papua New Guinea.

31. Export receipts from LNG also edged lower in the first half of 2021, despite record-high prices. Disruption to supply chains, followed by an unusually cold Northern Hemisphere winter, led to a shortage of LNG, pushing prices higher. Within a very short period, prices went from record lows to record highs. However, record-high spot prices are not directly relevant (although related) for PNG—most of PNG's LNG exports are traded under long-term contracts, mostly linked to the price of crude oil. The spot price rose fivefold year on year in the third quarter of 2021, while the average realized price for LNG and gas increased by 2.4 times. Furthermore, planned maintenance work at the PNG LNG plant and the Hides gas conditioning plant resulted in lower production in the second quarter of 2021, containing total export receipts.

32. Despite an uptick in the first half of the year, imports remain well below their pre-pandemic levels. Import compression was a natural response to the pandemic and was experienced in many developing economies. Furthermore, anecdotal evidence suggests that suppliers started imposing minimum order amounts, which may have had an impact on overall imports. This trend continued well into 2021, with the year-on-year decline in imports reaching 26 percent in the second quarter. Food imports fell by nearly 50 percent. An Australian government-funded multi-country study[5] on the impact of rising food prices on consumers across different countries found that despite an increase of 30–50 percent in food import prices in PNG, no major price increase was reported by respondents. The study attributes this to the smaller share of imported food in PNG's typical consumer basket.

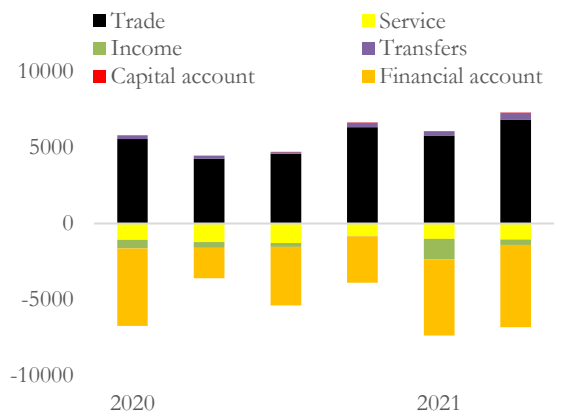
33. Strong growth in the current account surplus was more than offset by a wider financial account deficit resulting in a net outflow of currency. In the first half of 2021, the current account surplus totaled over US$2.7 billion, up more than 30 percent year on year. Nevertheless, a financial account deficit of nearly US$3 billion resulted in a deficit overall. The size of the financial outflow increased by nearly 50 percent compared to the same period of 2020, mainly owing to debt service payments related to LNG project construction and foreign currency held in mineral companies' offshore bank accounts. This has become a salient feature of PNG's external sector.

34. Despite the overall deficit, international reserves remain above IMF requirements. In August 2021, IMF approved the largest disbursement of special drawing rights (SDRs) in the Fund's history in an effort to increase liquidity in the global financial system. A total of US$650 billion of foreign exchange reserves were split among members. As part of this allocation, PNG received SDR252.3 million (K 1,255 million). This inflow

[5] Market Development Facility. 2021. *What's for breakfast? The COVID-19 crisis and rising food prices, a year on.* https://marketdevelopmentfacility.org/wp-content/uploads/2021/09/Whats-for-breakfast-FW-1.pdf

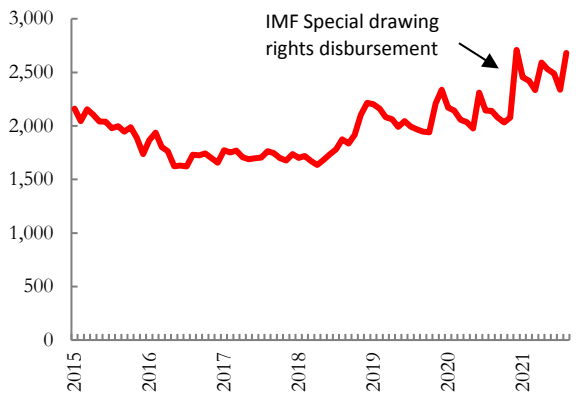
of SDRs explains the sharp increase in foreign reserves in August 2021, although the government announced its intention to use these funds as an external financing source for the budget. As of September 28, 2021, gross foreign exchange reserves stood at US$2,611.4 million (representing eight months of import cover, above the benchmark of three months import cover for floating currencies).

Figure 30. Balance of Payments
(K million)



Source: Bank of Papua New Guinea.

Figure 31. Net International Reserves
(US$ million)



Source: Bank of Papua New Guinea.

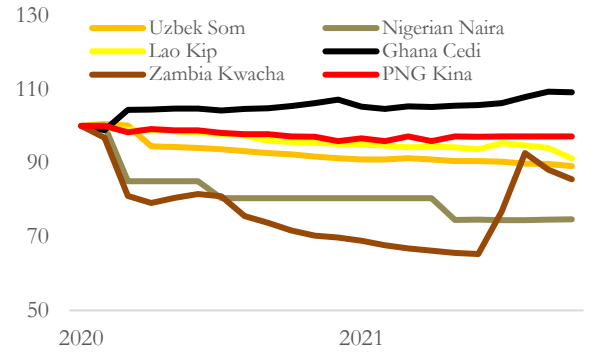
35. Despite the recent upward trajectory, shortages of foreign currency remain a key problem for the external sector of the PNG's economy. Availability of foreign exchange continues to be one of the top concerns of businesses, only second to concerns over COVID-19 restrictions. Survey results[6] show that the lack of foreign currency slows down paying imports and purchasing capital items. The backlog in sell-kina orders remains significant. Surveys have suggested that backlogs in foreign exchange orders are one of the main impediments to doing business in PNG, with recent estimates suggesting that orders are taking 3–12 weeks to complete. Estimates of the size of the forex backlog vary between K 1 billion and K 4 billion. Ongoing support from international donors, including recent SDR allocation and the 2020 disbursement from the IMF under the Rapid Credit Facility, allow the authorities to partially reduce the foreign currency backlog. The BPNG regularly intervenes to clear some of the backlog (in the vicinity of US$50 million per month). However, the only long-term solution to the foreign currency shortages is to allow supply and demand to better determine the exchange rate. This would help the central bank's efforts to shrink foreign currency backlogs.

36. Following a policy of very gentle depreciation of the Kina against the U.S. dollar, the Bank of Papua New Guinea left the exchange rate unchanged in 2021. In its latest monetary policy statement, the BPNG defended its position, claiming that a proposed 20-percent depreciation of the nominal exchange rate would increase inflation by 8–10 percent. As a result, following a minor depreciation in 2020, the exchange rate remained unchanged during 2021. Compared to the currency of comparator countries, the pace of depreciation of the Kina has been slow since the start of the pandemic (Figure 33). However, the Australian dollar has been strengthening, rising by 12 percent against the Kina in 2020 and a further 5 percent in the first half of 2021. Noting that nearly half of PNG's imports originate from Australia, this may have consequences for PNG's inflation rate. However, the consensus is still that the Kina is overvalued, especially given the backlog in foreign

[6] Business Council of Papua New Guinea. 2021. *Market Conditions September 2021.* Available from https://bcpng.org.pg/wp-content/uploads/2021/10/BCPNG-Market-Conditions-Survey-Presentation-Sept-2021.pdf.

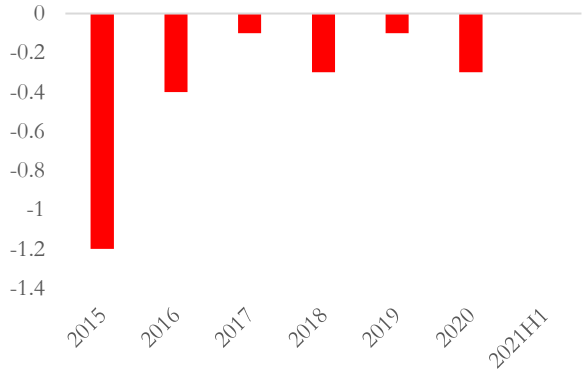
exchange orders. The IMF mission report[7] suggested the Kina is overvalued by 10–20 percent; however, since the start of 2020, the Kina has devalued relative to the U.S. dollar by less than 3 percent.

Figure 32. Emerging Market Currencies vs. US$
(Index, January 2020=100)



Source: Bank of Papua New Guinea.

Figure 33. Average Monthly Depreciation Rate of Kina
(Percent)



Source: Bank of Papua New Guinea.

[7] IMF. 2020. Country Report No. 20/95. Washington, DC: International Monetary Fund. Available from https://www.imf.org/en/Publications/CR/Issues/2020/04/06/Papua-New-Guinea-2019-Article-IV-Consultation-and-Request-for-Staff-Monitored-Program-Press-49307.

Papua New Guineans are seeking better prospects. (Conor Ashleigh/World Bank).

2. Outlook and risks

2.1. Global economic outlook and risks

37. After rebounding to an estimated 5.5 percent in 2021, global GDP growth is expected to slow to 4.1 percent in 2022. Global economic performance will reflect fading benefits from reopening amid continued COVID-19 flare-ups, diminished fiscal support, and lingering supply bottlenecks. The near-term outlook for global growth is somewhat weaker—and for global inflation, notably higher—than previously envisioned due to pandemic resurgence, higher food and energy prices, and more pernicious supply disruptions. Global growth is projected to soften further to 3.2 percent in 2023, as pent-up demand wanes and supportive macroeconomic policies continue to be unwound. Although output and investment in advanced economies are projected to return to pre-pandemic trends in 2022, in EMDEs—particularly small states and fragile and conflict-affected countries—these indicators will remain weak, owing to lower vaccination rates, tighter fiscal and monetary policies, and more persistent scarring from the pandemic.

38. Economic growth in the EAP region is projected to slow to 5.1 percent in 2022. Although GDP growth in China is forecast to ease to 5.1 percent amid tighter regulations and diminished support from exports, growth in the rest of the region is projected to accelerate to 5 percent in 2022, buoyed by the release of pent-up demand and accelerated COVID-19 vaccination efforts. In about one-fifth of countries—most notably in tourism-dependent economies—the projected recovery will be insufficient to return output to its 2019 levels during the forecast period.

39. Various downside risks cloud the outlook. These include a more virulent pandemic, further supply disruptions, sustained increases in inflation, financial stress, climate-related disasters, and a weakening of long-term growth drivers. These risks underscore the importance of strengthening global cooperation to foster rapid and equitable vaccine distribution, calibrate health and economic policies, enhance debt sustainability in the poorest countries, and tackle the mounting costs of climate change. EMDE policymakers also face the challenges of heightened inflationary pressures, spillovers from prospective advanced-economy monetary tightening, and constrained fiscal space. Despite budgetary consolidation, debt levels—which are already at record-high levels in many EMDEs—are likely to rise further owing to sustained revenue weakness. Over the longer term, EMDEs will need to buttress growth by pursuing decisive policy actions, including reforms that mitigate vulnerabilities to commodity shocks, reduce income and gender inequality, and enhance preparedness for health and climate-related crises (World Bank 2022).

40. The conflict between Russia and Ukraine exacerbates the risks. Shocks emanating from the conflict and the related sanctions could affect the EAP region by disrupting the supply of commodities, increasing financial stress, and reducing global confidence. The region's direct dependence on Russia and Ukraine through imports and exports of goods, services, and capital, is limited. But the conflict and sanctions are likely to increase international prices of food and fuel, hurting consumers and growth, and de-anchor inflation expectations. Russia's invasion of Ukraine on February 24, 2022 led to a sharp increase in global financial volatility and contributed to a further tightening of financial conditions. Increasing investor risk aversion could lead to capital outflows, and hence exchange rate depreciation, falling equity prices and rising risk premia. Reduced confidence can inhibit consumer spending and business investment.

2.2. Papua New Guinea's economic outlook and risks

41. In 2022, PNG's economy is navigating a fragile recovery. On the one hand, after two consecutive years of negative growth, the extractive sector is projected to rebound in 2022, driven by the reopening of the Porgera mine. Extractive sector growth is forecast to be the main driver of GDP growth in 2022, supporting a baseline growth forecast of 4 percent. High commodity prices will support the external accounts and provide (potentially) higher dividends to the state-owned companies that hold shares in joint projects in the resource sector. On the other hand, the Omicron variant of COVID-19 has been spreading fast in PNG, the least vaccinated country in the EAP region. Combined with the low capacity of the public health system, this poses a risk of higher casualties and a negative impact on domestic economic activity. Meanwhile, after the recent widening of fiscal deficits, public debt is high, and the country is at high risk of debt distress, according to the latest debt sustainability assessment. To reverse the negative trend, the government is implementing a gradual fiscal consolidation (Box 6). With limited sources of financing available in an adverse scenario and continued social and development needs, the fiscal space for a significant policy adjustment is limited. If growth were to deteriorate significantly, debt would need to further increase to finance the budget and maintain government services, further straining debt sustainability.

Box 6. The 2022 Budget and Medium-Term Fiscal Plan

Targeting Gradual Fiscal Consolidation

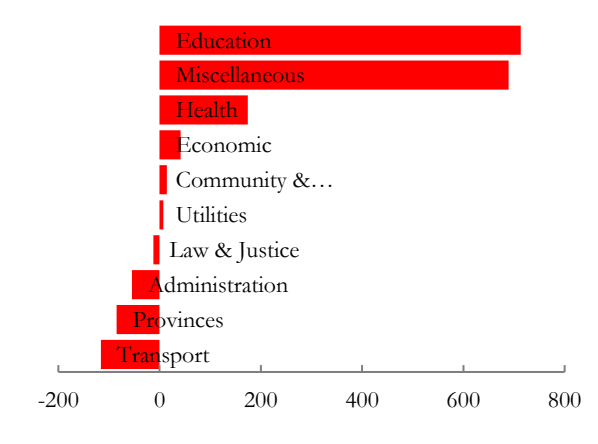
The 2022 budget targets a deficit of 5.9 percent of GDP. The budget plan is based on optimistic assumptions, in particular for revenue growth, and plans for a large increase in capital spending, below-inflation increases in recurrent spending, and a smaller deficit than the previous year. In this regard, the credibility of the 2022 budget can be called into question, risking a repeat of the typical PNG budget experience: revenues underperform, recurrent spending (in particular the wage bill) overspends, and a mid-year supplementary budget slashes capital spending, diverting cash to pay salaries, while arrears elsewhere in the budget accumulate and public servants find yet again that they do not have the resources needed to provide services to citizens.

Revenue growth assumptions appear optimistic. The government forecasts real GDP growth of 5.4 percent in 2022 (above the World Bank's forecast of 4.0 percent) and nominal GDP growth of 9 percent. However, GST revenues are budgeted to increase by 28 percent over 2021 estimates (a jump of 43 percent compared to 2019 levels). The Treasury bases this forecast on the easing of lockdown restrictions and improved compliance activities by the Internal Revenue Commission. Mining and petroleum dividends are also forecast to increase sharply, as are dividends from statutory authorities. Two new taxes are proposed (a banking levy and telecommunications levy, both postponed until after the elections) that are expected to raise K 285 million (0.3 percent of GDP), however, much of this extra revenue is lost through cuts in tariffs on petroleum products and an expansion in the use of infrastructure tax credits.

Comparing 2022 operational budget allocations to pre-pandemic 2019 levels shows that spending on education—not health—has increased. The operational budget for the education sector is allocated K 1.2 billion in 2022 (1.2 percent of GDP), a doubling from the 0.6 percent of GDP spent in 2019. Much of this increase reflects the Government Tuition Fee Subsidy (GIFT) program, which replaced the Tuition Fee Free policy. In 2021 the GIFT policy aimed to split school fees 68/32, with parents funding the smaller share; from 2022, the government will cover 100 percent of the fees. However, the education sector often underspends, reflecting unfilled teaching posts and general cash shortages that limit spending. The miscellaneous category (Figure B6.1) primarily reflects spending to clear arrears and a K 600 million allocation for the 2022 elections.

Figure B6.1 Change in Operational Spending Allocations, by Sector

Kina, millions, 2022 budget vs. 2019 outturn



Source: PNG Treasury

Roads and hospitals are the largest capital projects in the 2022 Public Investment Programme. Total capital spending is budgeted at K 5.2 billion (5.2 percent of GDP), of which about 60 percent will be financed from domestic resources, 25 percent from loans, and the remainder from grants. The 2022 budget does not include new large capital projects but brings together many separate road improvement projects under the Connect PNG roads program.[a] Every major hospital received K 15 million for capital works under the PIP, raising concerns that this is recurrent maintenance spending rather than investment in new facilities. The K 400 million New Enga Hospital is the government's flagship health project, funded with a loan from the China EXIM Bank, and is slated to open in 2023 or 2024.

The 2022 budget discusses a 13-year fiscal plan that targets a balanced budget by 2027 and a continual reduction in debt through 2034. The plan relies on non-extractive real growth of 5 percent annually, revenues increasing faster than economic growth and reaching almost 25 percent of GDP by the end of the plan, and recurrent expenditure growing much slower than GDP growth, falling from 20 percent to 14 percent as a proportion of GDP.

These aspirations are commendable, but past budget performance does not lend them much credibility. On the upside, the plan targets an increase in both taxes and dividend payments from the extractive sector. As discussed in Part B of this report, there is scope to improve the management of the dividend payments that pass through Kumul Petroleum. However, on the downside, increases in non-resource revenues are based on "compliance gains of 3 to 5 percent per year." Internationally, compliance gains rarely exceed 1 percent per year and often prove hard to sustain as taxpayers adapt to new compliance measures. Similarly, containing expenditures is a long-standing challenge for PNG

—political coalitions depend upon and are rewarded by increasing rather than suppressing spending. Wholesale improvements to public expenditure management that focus on improving the efficiency of spending, rather than increasing the volume of spending, and strong political leadership that can navigate the challenges of expenditure restraint, will be required if the plan is to succeed.

a. The Connect PNG roads program aims to prioritize the 20-year National Road Network Strategy into a series of five-year projects that will link PNG's fragmented road network.

42. Political volatility, global uncertainty, and recent legal battles over resource projects weigh on PNG's growth prospects. Several resource projects have been subject to protracted negotiations between the PNG government and foreign investors. Delays and breakdowns in talks on major resource projects, including the Elk and Antelope gas projects, Wafi-Golpu copper-gold mine, and Pasca A gas condensate field, have immense financial implications for the country. The most high-profile case is the suspension of operations at the Porgera mine, which had a huge opportunity cost as it took place at a time when gold prices were at record highs. Apart from financial implications, these cases also carry a high reputational risk for PNG, which is trying to attract more foreign direct investment. The repercussions of the conflict between Russia and Ukraine will affect PNG through multiple channels: higher commodity prices, possible commodity shortages and price pressures, policy uncertainty, risk aversion and weaker confidence. Despite possible short-term gains from higher commodity prices, the overall medium-term impact on growth in PNG is likely to be negative due to higher global uncertainty and lower growth.

43. The Porgera mine is expected to recommence by mid-2022, dictated by the political economy of the mid-2022 elections. Although the government's stance on agreeing on improved terms for PNG has delayed operations, socioeconomic discontent amid the COVID-19 pandemic is building pressure to recommence mining operations. Developments related to the Porgera gold mine are somewhat encouraging, with new 10-year partnership agreement signed between the state and Barrick Niugini Limited (BNL). This agreement will increase the state's ownership to 51 percent, but comes with significant risks (Box 7). The government announced the signing of a framework agreement to restart operations in April 2022. However, some details of the agreement are yet to be agreed upon, making the proposed restart date ambitious.

Box 7. Porgera and the secrets behind long-lasting extractive contracts

Extractive contracts—for example, for mining, oil, or gas—are notoriously unstable. A change in government, a boom in prices, lower-than-anticipated revenues, or an environmental accident can lead to calls for the contract between the government and the private operator to be torn up and new terms agreed. There are countless examples worldwide of fractious and confrontational relationships between governments and resource extracting firms, sometimes with the government threatening to kick out the firm; other times, it is the extractive firm warning that they may leave.

The renegotiation of the license for the Porgera gold mine (PNG's second-largest mine) is a case in point. The mine has been functioning under various operators since 1990, but operations at the mine were suspended in April 2020 after the government refused to extend its special mining lease, arguing that local people and the PNG government were not getting their fair share of the profits.

Recognizing that unbalanced resource extraction contracts are unsustainable, in 2020 a group of 56 high-, middle-, and low-income countries[a] agreed to establish a set of Guiding Principles for Durable Extractive Contracts. The Principles aim to provide host governments, local communities, and investors with a common reference to form better extractive contracts—contracts that are more likely to be long-lasting, equitable, and mutually beneficial to all stakeholders.

Together, eight Principles highlight the need for agreements to be transparent, long-term, and based on shared and realistic expectations that are managed throughout the project's life cycle. These are:

1. Contracts should be based on the continued sharing, in good faith, of key financial and technical data to build a common understanding of the performance, risks, and opportunities of the project throughout its life cycle.

2. Contracts need to include mechanisms that can efficiently respond to significant changes in circumstances (for example, prices or environmental concerns).

3. Contracts are aligned with the long-term vision and strategy, defined by the host government, on how the resource sector can fit into and contribute to broader sustainable development objectives.

4. Contracts are anchored in a transparent, constructive long-term commercial relationship and operational partnership between host governments, investors, and communities. All parties should anticipate their future signed contracts will be made public in accordance with international good practice.

5. Contracts seek to optimize the value from resource development for all stakeholders, including economic, social, and environmental outcomes.

6. Contracts operate in a sound investment and business climate and should be underpinned by a fair, transparent and clear legal and regulatory framework and enforced in a non-discriminatory manner.

7. Contracts are consistent with applicable laws, and international and regional treaties, and anticipate that host governments may introduce bona fide, non-arbitrary, and non-discriminatory changes in law and applicable regulations.

8. Contracts are underpinned by a fiscal system that is consistent with the governments' overall economic and fiscal objectives and provides a fair sharing of financial benefits between the investor and the host government.

Returning to Porgera, details of the renegotiated terms have begun to emerge. At the heart of the deal is that PNG will increase its equity stake in the mine by foregoing all profits until at least 2025. This raises concerns on how the purchase price of the equity will be determined, and if the government will need to inject additional cash should the foregone profits fall short of the asking price. The focus on increasing equity will mean that on a cash flow basis PNG will see a *reduction* in revenues in the coming years, with the government effectively taking on the risk that gold prices will remain high and the mine will remain profitable in the future.

Experience shows that countries can over-estimate the benefits of equity ownership in resource projects, especially as dividends tend to get paid out fairly late in the project life cycle. Additionally, if some profit shifting has occurred (see Box 3), then these dividends can end up being considerably smaller than originally anticipated.

Going forward, all stakeholders in PNG's extractive sectors, including the government, investors, and communities, would benefit from considering these Guiding Principles when negotiating future resource contracts. This would help avoid future disputes, disruption, and lost revenue, similar to what we have seen with Porgera.

a. Under the OECD Development Centre.

44. The external sector will be shaped by a combination of domestic and global developments around key export resources. Higher export prices and volumes, driven by the global economic recovery are key upside risks for PNG's external sector. Elevated LNG and gold prices are likely to lead to a large trade surplus in 2022. However, matching financial outflows are expected to partially offset a large current account surplus. Furthermore, a tightening of global monetary conditions, including interest rate hikes in the U.S., might put downward pressure on the Kina.

45. Inflation is expected to stabilize within the 5–6 percent band in 2022, but with upside risks. Higher fuel and food prices have been major sources of imported inflation, but growth in agriculture is likely to offset upward pressure on prices stemming from recovering domestic demand. With amendments to the Central Bank Act broadening BPNG's mandate to focus on economic growth along with inflation, it may opt to maintain an accommodative monetary policy. However, a further rise in inflation— coupled with tightening

monetary policy globally (particularly in the U.S.)—may leave no choice for the BPNG but to begin a gradual tightening of monetary policy in 2022.

B. SPECIAL FOCUS:

Resuming Fiscal Consolidation While Improving Public Service Delivery

Part B

Policy measures are required to safeguard fiscal sustainability. (RGAPhoto86/Shutterstock).

Refocusing on the fiscal consolidation agenda

1. Macro-fiscal policy considerations to underpin fiscal consolidation

1.1. Macroeconomic context

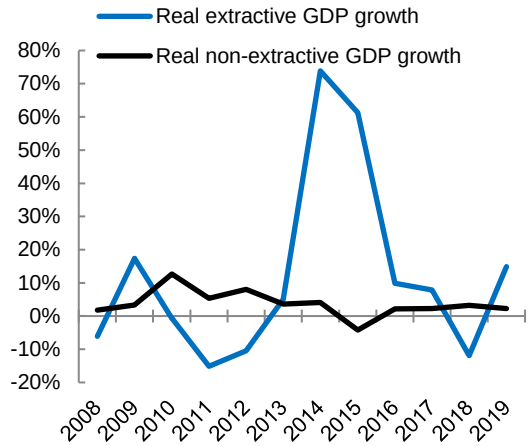
46. Papua New Guinea is subject to volatile swings in economic growth. These swings invariably reflect the construction and opening of resource extraction operations and procyclical changes in government spending. The US$19 billion PNG LNG project, launched in 2008, drove the most recent episode of economic expansion, with the economy growing by an average of 6.5 percent per year between 2010 and 2016 as plant construction, and later gas production and shipments boosted GDP (Figure 35). In 2017–19, GDP growth averaged 3.1 percent per year, only slightly above the population growth rate of 2 percent annually. Previous episodes of resource project fueled growth include the opening of the Ok Tedi mine in 1981 and the Porgera mine in 1993.

47. The economic boom caused by LNG production conceals an overall slowdown in nonresource[8] GDP growth, even before the impact of COVID-19. From an average growth rate of 6.2 percent per year in 2008–12, non-resource GDP growth averaged just 1.8 percent over 2013–19 (Figure 35). This slowdown reflects lower levels of investment, both public and private, in nonresource sectors and the strains that lower government

[8] Definitions of "resource" are important here. For the government, the resource sectors include mining and oil and gas. Internationally, "resource" can include all nonrenewable resources as well as renewable resources, including some forestry, fishing and agriculture, and the proportion of the construction sector involved in building and maintaining mining, oil, and gas assets.

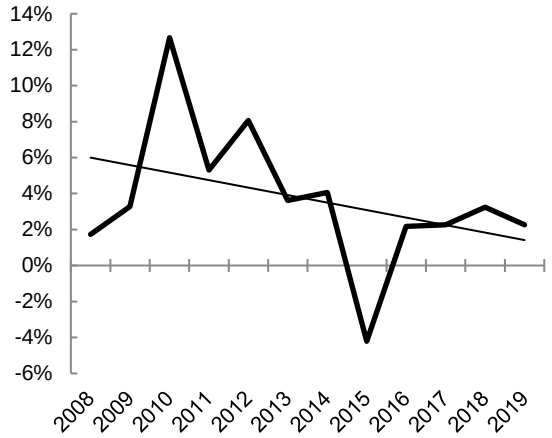
spending and foreign exchange shortages have placed on the economy. At best, there is a weak link between the resource and nonresource economies—a boom in one does not necessarily lead to a boom in the other. This is particularly true for the LNG sector, where government revenues have been well below initial expectations and few links exist between LNG operations and the rest of PNG's economy.

Figure 34. Real Extractive and Non-extractive GDP Growth Rates, 2008–19
(Percent change)



Source: World Bank staff estimates.

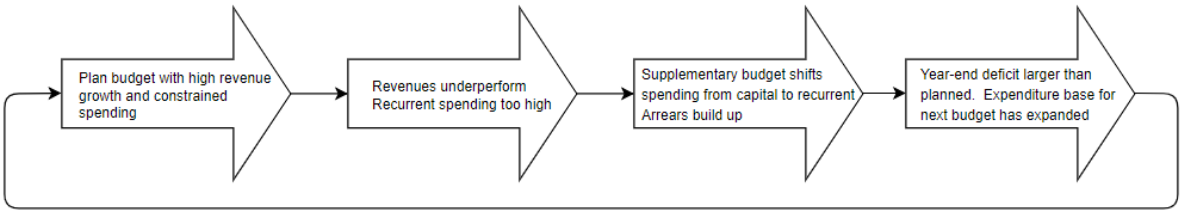
Figure 35. Trend in Non-extractive GDP Growth, 2008–19
(Percent change)



Source: World Bank staff estimates.

48. Unrealistic budgeting is ingrained in the public finance management system. The typical pattern, shown in Figure 36, is one of planning an annual budget that constrains expenditure, boosts revenue, and attempts to reduce the size of the deficit. However, about six months into the financial year, it is usually clear that revenues are underperforming, recurrent expenditure is getting out of hand, and the deficit will be much larger than budgeted, necessitating a cut in the capital budget to avoid an increase in public debt. Cash shortages lead to the accumulation of arrears. A supplementary budget then cuts capital spending, moving those funds to the recurrent budget, typically to cover shortfalls in the wage bill. The increase in salary spending then expands the expenditure base for the recurrent budget for the following year, and the cycle begins again.

Figure 36. Typical Budget Formulation and Execution Pattern in Papua New Guinea

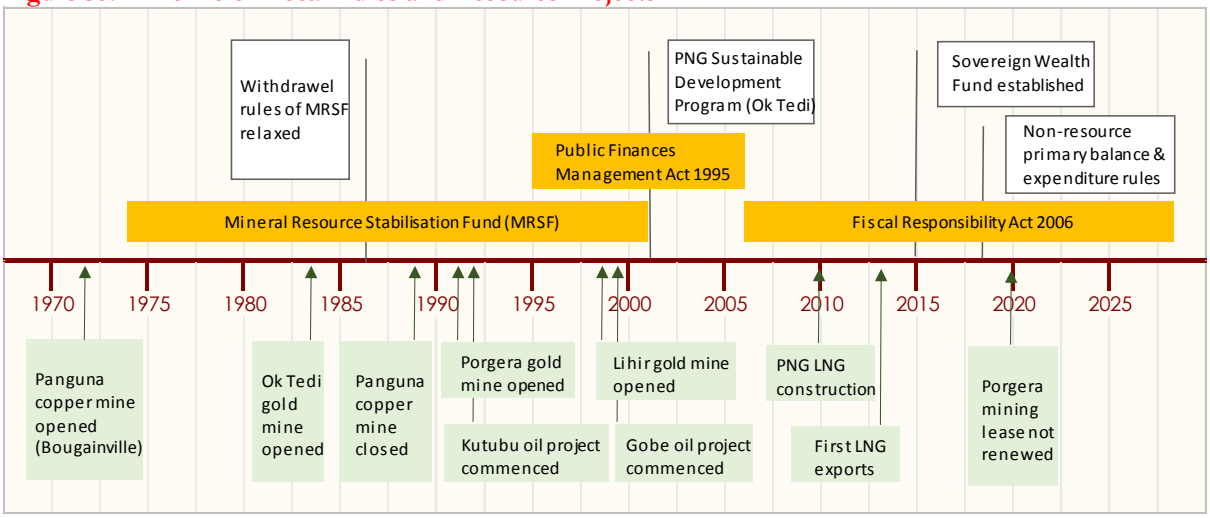


49. The authorities have attempted many technical solutions to managing the public finances over the decades. From the Mineral Resource Stabilisation Fund of 1974 to the Public Finances Management Act of 1995, the PNG Sustainable Development Program of 2002, the Fiscal Responsibility Act of 2006, and the Sovereign Wealth Fund of 2015, various technical mechanisms designed to limit deficits and save money from economic booms for future busts have been unsuccessful (Figure 37.).[9] The latest generation of fiscal rules was

[9] For a fuller overview, see Osbourne (2014).

proposed in 2017 to guide the 2018 budget. These rules revolve around limiting the nonresource primary balance (NRPB), and, since 2020, an expenditure rule has been discussed to reduce the operating budget as a share of nonresource GDP.

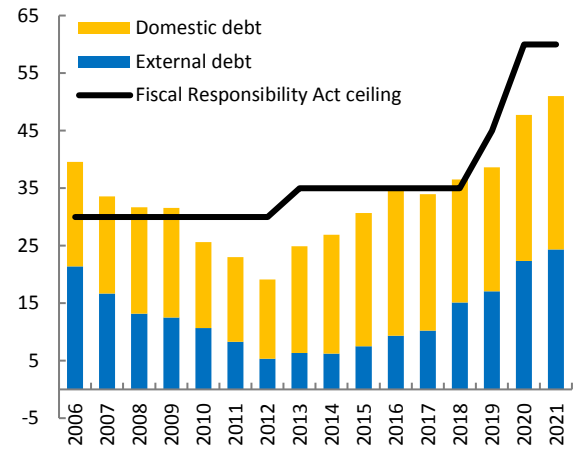
Figure 37. Timeline of Fiscal Rules and Resource Projects



50. The most high-profile technical solution currently in operation is the debt-to-GDP limit. This limit was introduced in the Fiscal Responsibility Act of 2006 and has *not* acted as a ceiling on government deficits or debt levels, with the debt ceiling limit being raised four times over its 15-year lifespan, most recently in the 2020 supplementary budget, where it was increased to 60 percent of GDP (Figure 38Figure 38). Although many other countries also had increased their debt ceilings during the COVID-19 crisis, including in the East Asia and Pacific region, they had more fiscal space compared to PNG. Furthermore, in PNG, debt ceiling fiscal rules do not adequately delink government spending from the boom-and-bust cycle as debt rules do not discourage the spending of 'boom' revenue.

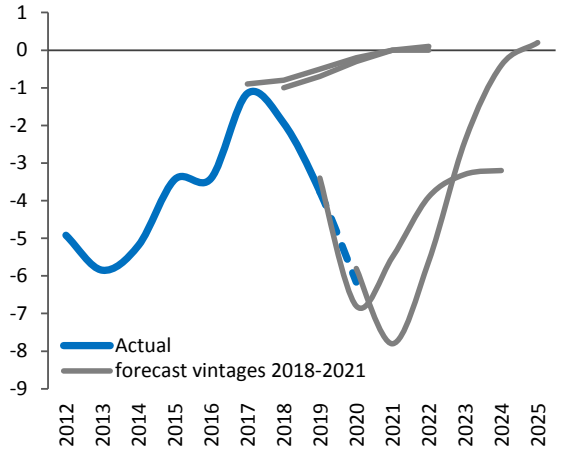
51. A policy of using the NRPB as a fiscal anchor has also been introduced. The 2018 budget discussed reducing the NRPB to zero over the medium term (2019-21) (Figure 39). This goal seemed achievable in 2018 when the NRPB in the previous fiscal year was at a cyclical low of 1 percent of nonresource GDP. However, subsequent budgets pushed this ambition further out into the future, even before the COVID-19 shock. The 2021 budget targeted a zero NRPB by 2025. Even back then, this would have required a fiscal adjustment of 6 percent of GDP. This includes a sharp decline in government spending of 3 percent of GDP and an increase in the revenue-to-GDP ratio by 3 percent of GDP. Such a fiscal adjustment has never previously been sustained in PNG. The required decline in expenditure is linked to a new expenditure rule whereby the operating budget as a share of nonresource GDP will decline from 16.0 percent in 2020 to 10.6 percent by 2024.

Figure 38. Government Debt 2014–22
(Percent of GDP)



Source: PNG Treasury Budget Strategy reports, various years.

Figure 39. Nonresource Primary Balance (Actual and Projected)
(Percent of nonresource GDP)

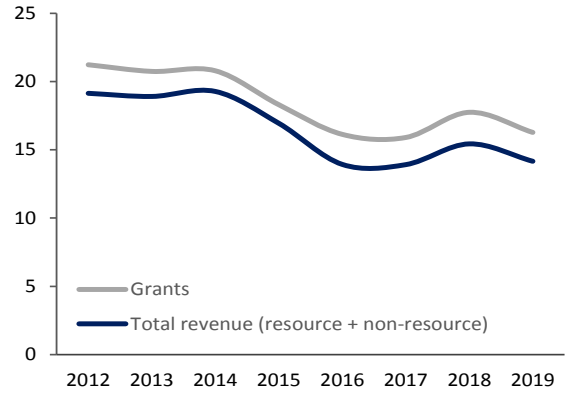


Source: PNG Treasury, WB staff estimates.

1.2. Revenue and expenditure dynamics

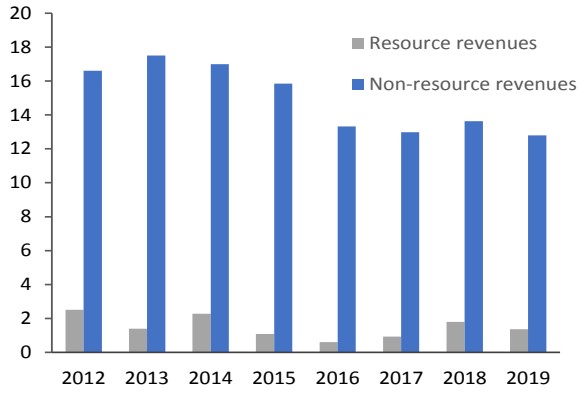
52. Papua New Guinea has faced long-running pressures on both government revenues and expenditures. On the revenue side, both resource and nonresource revenue has been declining as a proportion of GDP (Figure 40, Figure 41). On the expenditure side, the national and provincial level wage bill continues to present the greatest challenge due to weak wage-bill controls. Meanwhile, sporadic cuts to operational, maintenance, and capital spending disrupt the smooth operation of both government and the wider public sector.

Figure 40. Revenue and Grant, 2012–19
(Percent of GDP)



Source: Final Budget Outcome, various years, World Bank calculations.

Figure 41. Resource and Nonresource Revenue, 2012–19
(Percent of GDP)



Source: Final Budget Outcome, various years, World Bank calculations.

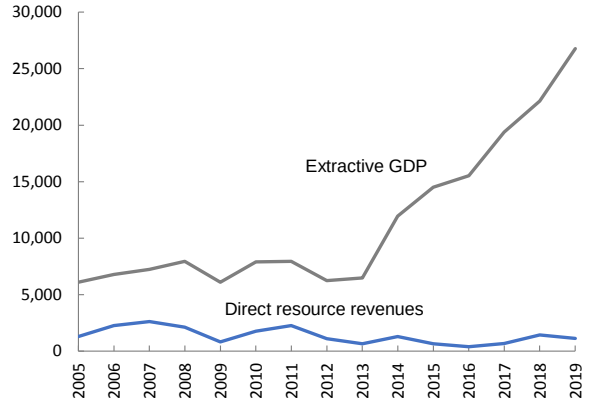
Revenue issues

53. Despite being a resource-dependent country, nonresource revenues are by far PNG's most significant revenue source. Personal income tax is the most important single revenue item, much of which is levied on PNG's 110,000 public sector employees, formal businesses in the cities, and the employees of mining

and gas operations. Around 20 percent of revenues are taxes on corporate profits, the standard rate for which is 30 percent. Goods and Services Tax (GST) accounts for another 20 percent of nonresource revenues, with around half levied on imports and half on domestic supply; the GST rate is 10 percent. Excises on alcohol and petroleum products account for 7 percent, and import duties and export taxes (mainly on logs) account for a further 7 percent of nonresource revenues. A long list of smaller revenue items makes up the remaining 16 percent.

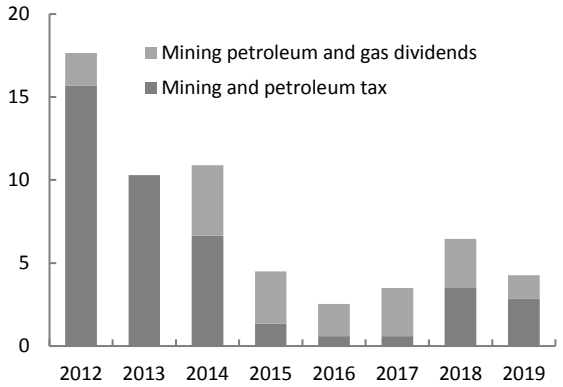
54. Revenues from PNG's resource wealth have remained flat despite substantial investment in the sector. In nominal terms, resource GDP has risen sharply since 2013 (Figure 42), reflecting both the start of LNG exports and steady growth in both the volume and value of gold and copper extraction. Measured in domestic currency prices, oil, gas, and mining revenues have hovered at around K 1 billion per year since 2012. However, as resource GDP has increased, these revenues have fallen as a share of resource GDP, from 18 percent in 2012 to only 4.4 percent in 2019 (Figure 43). As a proportion of total revenues, resource revenues have also fallen, from 13.2 percent to 9.6 percent over the same period. This means that the resource sectors account for between 40 and 50 percent of economic activity but generate less than 10 percent of government revenues.

Figure 42. Direct Resource Revenues and Extractive GDP
(Kina, millions, current prices)



Source: Budget documents (various years), National Statistics Office.

Figure 43. Breakdown of Direct Resource Revenues 2014–19
(Percent of resource GDP)



Source: Final Budget Outcome, various years.

Resource sector dividend payments

55. In June 2015, Parliament passed legislation to establish Kumul Petroleum Holdings Limited (KPHL). Together with Kumul Minerals Holdings Limited and Kumul Consolidated Holdings Limited these state-owned enterprises (SOEs) were to pay dividends directly into the Sovereign Wealth Fund (SWF) after deducting operational funding to meet the requirements of their approved annual plans, as stated in Volume 1 of the 2016 budget.

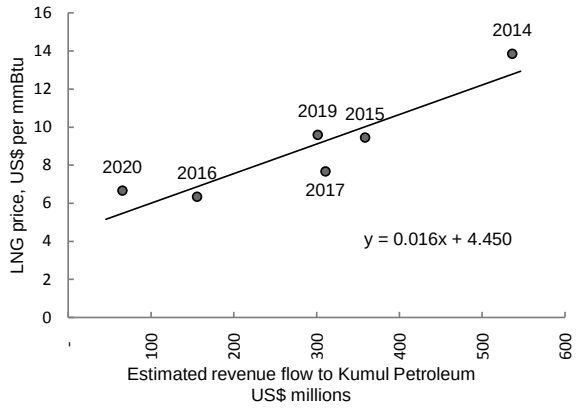
56. The government targets that SOEs transfer 70 percent of their income to the Department of Treasury, but to date KPHL has only transferred 30 percent of its income. In 2016, government endorsed a dividend policy for SOEs and statutory authorities stating that SOEs should return a minimum of 70 percent of after-tax profits as dividends or as transfers to the SWF. The policy also lays out the State's responsibilities to its SOEs and its expectations as a shareholder. Such "ownership policies" are considered good practice in governments' management of SOEs. Recent budget documents have stated that a review of the KPHL structure is planned with the aim of "ensuring more direct and transparent payment of revenues to the Sovereign Wealth Fund" (Budget 2021, Volume 1).

57. Analysis shows that KPHL should be able to return a dividend even when LNG prices are low. Plotting the LNG price against estimated payments to KPHL shows a breakeven price of US$4.45 per mmBtu. Average annual prices have always been above this level, even in 2020 when actual realized prices fell to US$6.66 per mmBtu. Figure 44 shows the historical relationship between LNG prices and the estimated revenue flow from PNG LNG to KPHL. It suggests that for every US$1 dollar increase in the LNG price, annual revenues to KPHL will increase by US$64 million (K 220 million). Revenues equal zero at an LNG price of around US$4.45 per mmBtu.

58. Initial expectations were for PNG LNG revenues to increase significantly from 2022 once the project's loans had been repaid. Around 20 percent of the ongoing costs are related to paying interest on the project loans; once these loans have been repaid, annual operating profits will increase, leading to higher payments to co-venture partners, including KPHL. Additionally, lower costs mean higher profits and hence higher corporate income tax payments from all project partners.

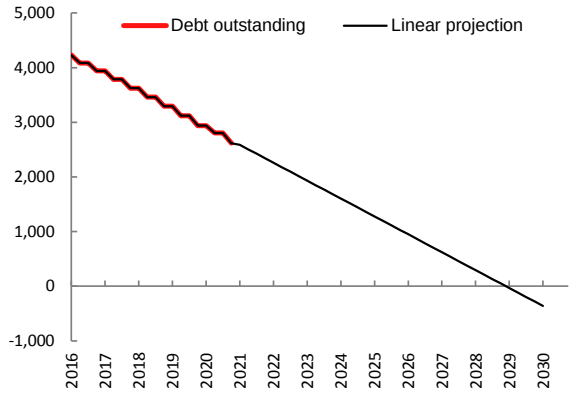
59. However, extrapolating from Oil Search's financial statements suggests that PNG LNG's loans will only be repaid in 2029. Figure 45 shows the outstanding borrowing for Oil Search, which peaked at just over US$4 billion in 2016 and is being repaid at around US$320 million per year. Projecting these repayments into the future sees the loan being fully repaid only in 2029, many years later than initial projections and five years later than recent government statements.[10] If all project partners are following the same debt repayment trajectory, then full repayment will be seven years later than the government's initial expectations. This date will be important for the government's future revenue forecasts.

Figure 44. Relationship between LNG Price and Estimated Revenue Flow to KPHL
(US$)



Source: Extrapolated from Oil Search annual reports.
Note: Data for 2018 are excluded due to the disruption caused by the earthquake.

Figure 45. Oil Search PNG LNG Debt Repayment Trajectory, 2016–30
(US$, millions)



Source: Oil Search annual reports, World Bank calculations.

The public sector wage bill

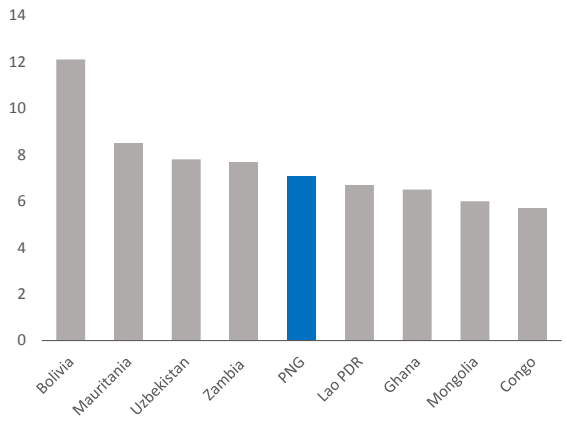
60. Papua New Guinea's public sector wage bill is comparable to peers. Resource-rich countries tend to have public sector wage bills *lower* than other countries (IMF, 2019). Resource-rich countries spend an average of 7.1 percent of GDP on wages, compared to 8.7 percent for nonresource rich economies. In PNG, the public

[10] Mou, Freddy. 2021. "LNG finance repayment up in 2024." *Loop* News, April 30. https://www.looppng.com/business/lng-finance-repayment-2024-99711.

sector wage bill comprises the wages, salaries, and superannuation payments of the approximately 110,000 civil servants, teachers, police and other security services, health care professionals, and employees of SOEs and statutory authorities (which includes parliamentarians and judges). Expenditure on the compensation of employees is estimated at 7.1 percent of GDP in 2020, having crept up from 5.6 percent in 2012, placing PNG in the middle of its resource rich peer group (Figure 46).

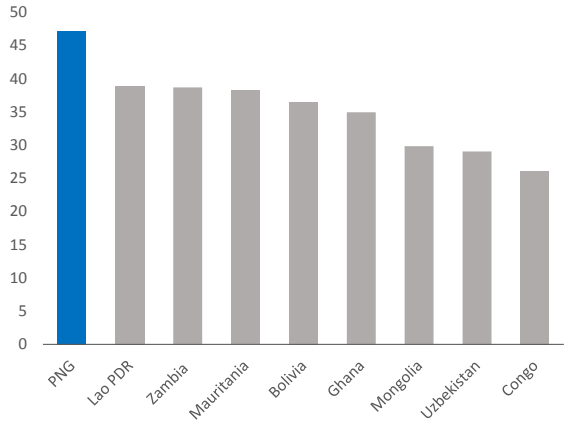
61. However, the affordability of PNG's wage bill is the most strained among its peers when compared to revenues collected. In 2020 public wages consumed 47 percent of government revenues (both resource and nonresource), the highest among PNG's peers (Figure 47). This ratio has also been creeping up over time, from just 29 percent in 2012, suggesting that slow revenue growth contributes to the pressure the wage bill places on PNG's public finances. The rising public service wage bill in a context of flat revenues is contributing to reduced fiscal space and crowding out other public spending. That is not to suggest that the rise in the public service wage bill is unjustified; only that it is unaffordable. It is unaffordable because other critical spending, particularly operational spending, is being crowded out. The issue is not the wage bill per se; the problem is that GoPNG doesn't earn enough revenue, so the given wage bill takes up too great a share of its spending. PNG, first and foremost, needs to address the insufficiency of its revenue. The fiscal problems and expenditure mix problems it faces due to its wage bill are a stark illustration of the consequences of that revenue problem.

Figure 46. Wage Bill Spending Compared to Peers
(Percent of GDP, latest year)



Source: IMF Staff Reports.
Note: Nigeria is excluded due to data limitations.

Figure 47. Ratio of Public Sector Wage Bill to Total Government Revenue (excluding grants)
(Ratio to average revenue 2015–18)



Sources: IMF Government Finance Statistics; IMF Staff Reports.

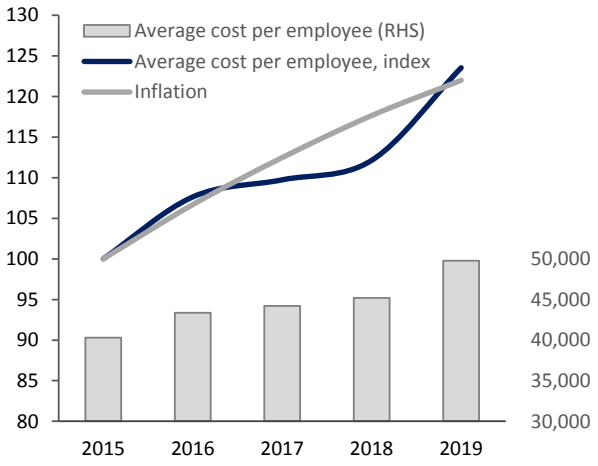
62. In every year since 2010, GoPNG has spent more than planned on its payroll. A review of recent budget documents and FBOs illustrates a public acknowledgment that personnel emoluments have expanded too quickly, budget estimates have been exceeded, and steps are being taken to address the situation. Average wages are rising in line with inflation—at 5.4 percent per year on average—which fits with the policy of awarding annual CPI-based salary increments to public servants (Figure 48). The overall number of public employees has been rising by 2 percent per year since 2015, with some disparities in between sectors (Figure 49). Policies announced to control the wage bill include physical audits of the payroll, migrating all public servants onto a centralized government payroll system that incorporates the national identification registration, and freezes on pay and recruitment.

63. Greater scrutiny and analysis of the government payroll would strengthen its oversight and control. The publication of employment numbers in the annual FBO publication is a positive first step. Greater transparency and monitoring of public employment can help governments direct staffing to where it is needed and away from low-priority areas. Even with recruitment and salary freezes, increasing allowances and rising

average seniority levels can drive up payroll costs. Recruitment freezes can be helped by strengthening processes to redeploy staff across the public sector from lower to higher priority areas, reducing the need for new hiring. It can be useful to track promotions and the grade profile of the workforce to monitor if there is any 'seniority creep'. Monitoring the age profile of employees helps to anticipate retirements. Papua New Guinea is taking steps in this direction. In 2016, GoPNG re-established the Organizational Staffing and Personnel Emolument Audit Committee (OSPEAC) to investigate the structure of the public sector, including the number of agencies, their roles and functions, and internal agency structures.

Figure 48. Average salary costs are increasing with inflation

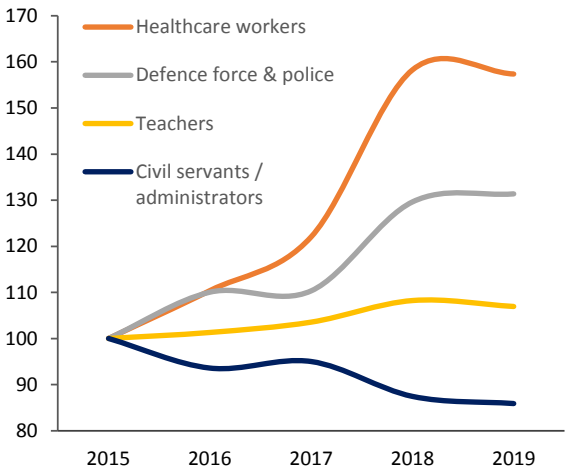
(LHS: Index, 2015 = 100, RHS: Kina)



Source: Final Budget Outcome 2019, National Statistics Office.

Figure 49. Public Sector Employment Changes, 2015–19

(Index, 2015 = 100)

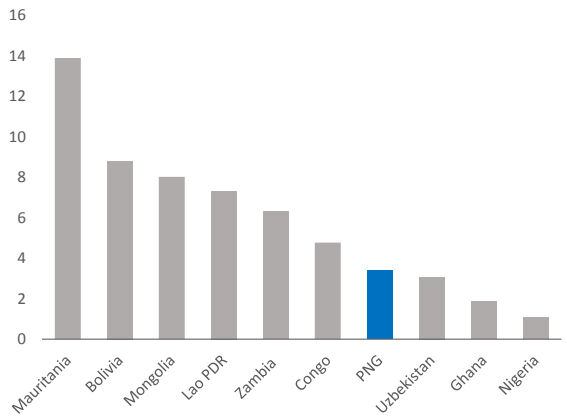


Source: Final Budget Outcome 2019.

Capital spending and public investment management issues

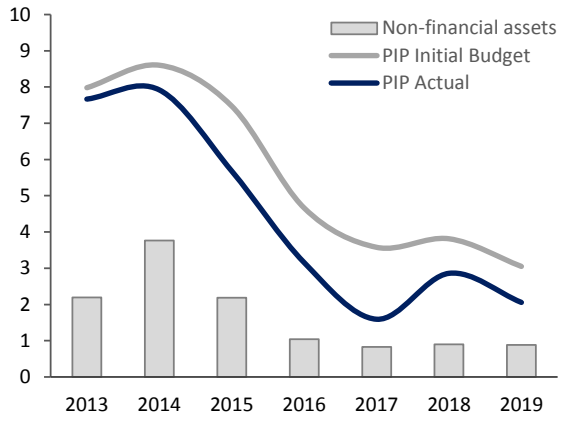
64. Publicly-funded capital spending in PNG has been declining since the end of the resource boom, and levels are now below the average for its peer group (Figure 50 Figure 50**).** Capital spending, also known as the acquisition of nonfinancial assets, has fallen from a high of 7.1 percent of GDP in 2014 to an average of 3.4 percent in 2015–19. Grant and loan financed capital spending via development partners is important for PNG, with around one-third of capital spending financed from these sources. Road construction is the largest single spending area, followed by buildings construction and air transport infrastructure.

Figure 50. Average Capital Spending Compared to Peers, 2015–19
(Percent of GDP)



Source: IMF GFS, Final Budget Outcome various years.

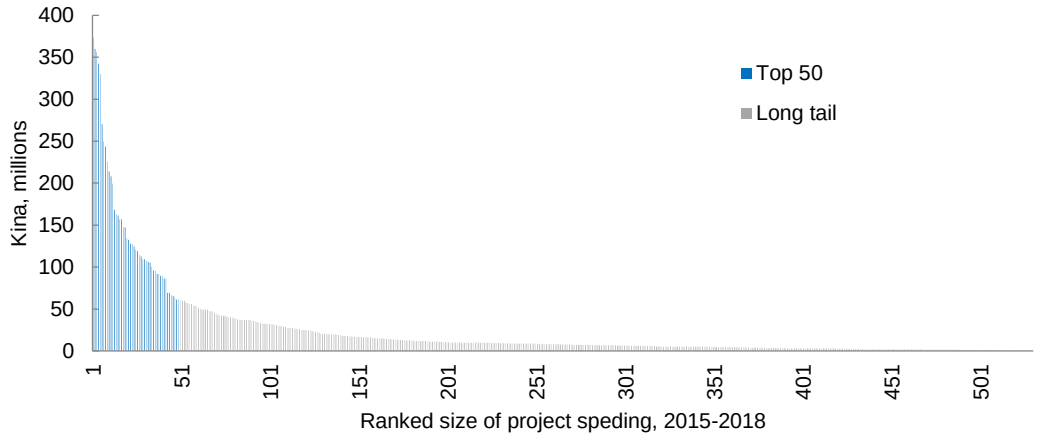
Figure 51. GoPNG-Funded Public Investment Program, 2015–19
(Percent of GDP)



Sources: BOOST database; Final Budget Outcome, various years.

65. Papua New Guinea's Public Investment Program (PIP) is made up of a handful of large projects and a long tail of small projects. On average, the largest 50 projects in any year make up 70 percent of total PIP spending, while the remaining 30 percent is spread over 300 or more smaller projects (Figure 52Figure 52). In any one year, the average project has a budget of K 15 million and spends K 10 million, although 28 percent of projects with a budget appropriation register zero spending during the year.

Figure 52. Public Investment Program Projects Ranked by Size, 2015–18
(Kina, millions)



Source: BOOST database.

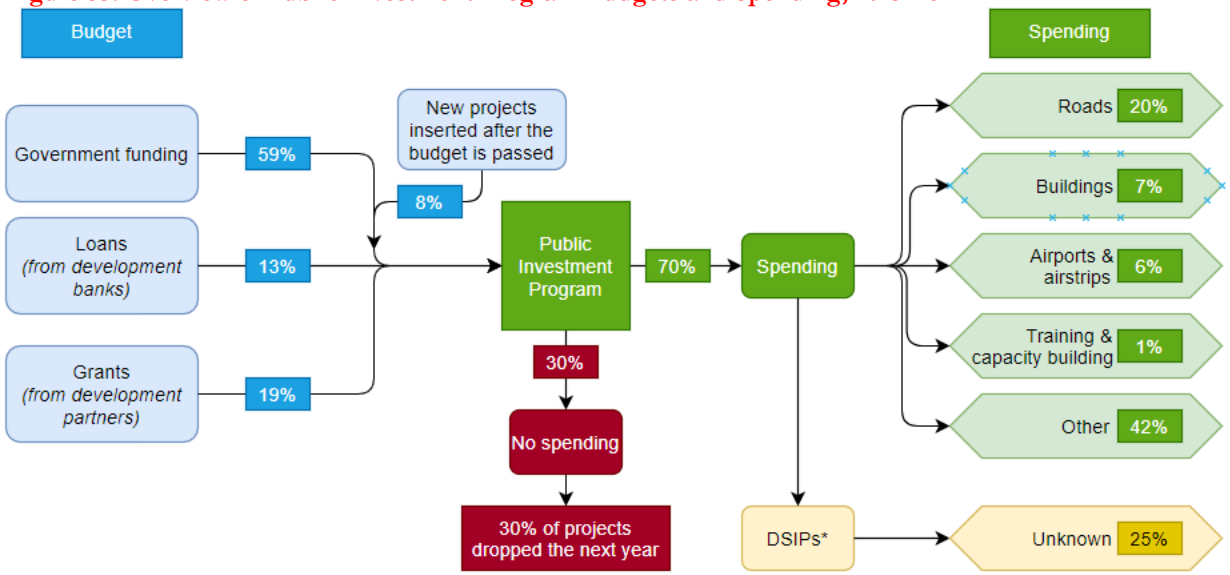
66. An analysis of the government's capital budget between 2015 and 2018 highlights some interesting characteristics and trends in its PIP as well as in public investment management (PIM) practices.

- **More than one-quarter (28 percent) of projects have some donor or development bank involvement.** These projects tend to be larger than average and are more likely to receive funding than purely government-funded projects. These projects comprise around 40 percent of the 'top 50' projects in any year and 32 percent of the PIP budget. With limited procurement capacity and human resourcing, the implementation of these projects by government departments and authorities is often delayed. These delays are exacerbated by differing priorities of government procurement requirements vs. those of development partners. The

government procurement legislation is focused on protecting, limiting, and reserving opportunities for citizens and citizen-owned businesses.

- **Thirty percent of government-financed PIP spending is via "capital transfer".** The largest of these transfers are through the District Support Improvement Programs (DSIPs) and Provincial Support Improvement Programs (PSIPs). Small capital transfers are also made to local governments. The DSIPs and PSIPs have long been criticized, both within and outside of government, for the absence of any oversight or accountability for how these funds are spent. The government procurement rules do not apply to DSIP/PSIP funds.
- **Project-level spending is volatile.** As discussed in Section 1.1.2, capital spending is often the first area to be cut when the budget gets out of hand. In practice, this translates to a large number of projects that either never start or are stopped before completion. Between 2015 and 2018, an average of 23 percent of projects (73 projects a year) saw zero spending even though there was an appropriation approved in that year's budget. For projects that do see some spending, the average execution rate is 85 percent. This also relates to weak cash-management practices.
- **Thirty percent of projects are 'dropped' in the following year, potentially without being completed.** These are projects that, for example, have a five-year spending estimate in the budget for year t, but in year t+1, the budget allocation is zero. This indicates that either a planned project never starts, or that a project that has already started spending is dropped before completion. The available data do not show whether a project has been completed; hence, we cannot distinguish between these two instances. There are also instances of projects "pausing" for one or two years, with spending resuming after a break.
- **Projects are added after the budget has been published.** These "new" projects would not have been published in Volume 3 of the budget, and between 2015 and 2018 averaged 7 percent of all projects and 8 percent of total PIP spending. Typically, these "new" project appropriations are either established to cover some arrears or late payments from an existing project (for example, the loan-funded Highlands Region Roads Improvement Investment Program) or to cover some emergency expense (for example, the Air Niugini Falcon Jet Revitalization project in 2018). These types of emergency spending would be better appropriated through a contingency fund with transparent and enforced assess criteria and subject to parliamentary oversight.

Figure 53. Overview of Public Investment Program Budgets and Spending, 2015–18



Source: BOOST database, Public Investment Programs, 2015–18.
Note: *DSIPs include district, province, and ward level transfers.

67. The volatility of the PIP risks undermining the efficiency of spending. Time and resources are required to plan and approve projects. If project planners anticipate a high likelihood of their project never being implemented, this can reduce the incentives to plan and cost the project accurately. Dropping projects before their completion is also wasteful of scarce resources. Although this can be less serious for capacity building projects, a half-finished building or incomplete sewage pipeline produces zero economic returns and may even create a liability for the government if the half-finished project needs to be made safe or demolished in the future.

68. The register of the government's physical assets is incomplete. GoPNG has rolled out a consolidated fixed asset register integrated within the IFMS (Assetware Manager). Still, few ministries or agencies make use of the software, either only inputting details of major physical assets once and not updating it for disposals and acquisitions, or never using it. In the short term, there may appear to be little benefit in maintaining such a register. However, over the medium term, these records can be used to schedule and cost upkeep and maintenance activities, thereby improving the efficiency of fixed asset use and avoiding the costly practice of build-neglect-rebuild. A functioning asset register is also useful for checking that duplicative capital expenditure is not being requested during budget negotiations and can be used to improve government balance sheet reporting.

69. Project costs are at best only guesstimated and can be wildly inaccurate. Interestingly, the five-year project cost estimates published in Volume 3 of the budget are usually *higher* than the spending achieved. Many projects run slower than expected, or they are dropped and do not see any spending. It is important to note that the five-year project cost estimate does *not* equal the total project cost. Estimates of total project cost are not included in any budget document, and it is unclear whether unpublished estimates even exist. In particular, for 'top 50' projects, the partial estimates of costs can change, with on average around 25 percent seeing an increase in their five-year cost estimate between one year and the next. The absence of robust project costs undermines any preselection project appraisal (for example, multicriteria analysis or cost-benefit analysis) and incentivizes project proponents to systematically underestimate project costs as they compete for space in the budget with other projects also underestimating their costs.

70. Overall, the PIP provides the basis for sound management of the government's investment program, but there are weaknesses in its implementation. There are too many individual projects in the PIP,

and a sizeable number never see any spending. Such overcrowding is compounded by the regular inclusion of additional projects after the budget has been passed. Project costing appears weak, with there being no definite estimate of total project costs, and what multi-year cost estimates are available are liable to large revisions over time. There is no published information on whether or when a project is completed, lowering transparency. The central asset register is underused, reducing the benefits such a system can have for scheduling upkeep and maintenance activities. Finally, a quarter of all PIP spending is via transfers to subnational levels of government under the so-called Service Improvement Programs, with the end use of these funds seeing little scrutiny or oversight.

71. Combined, these weaknesses damage the efficiency of public investment spending. Inadequate project appraisal undermines the process by which projects are selected for inclusion in the PIP. The continual squeezing in additional projects to the PIP lowers the likelihood of any single project being implemented, which lowers the incentives to sufficiently plan and cost a project. The high rate of project abandonment, either before or after the implementation of a project begins, wastes both planning and financial resources. Project implementation could be strengthened with greater emphasis on holding project proponents accountable should timelines slip or costs escalate. And when a project reaches completion, there is room to improve the monitoring of the capital asset to ensure its adequate upkeep and maintenance.

1.3. Recommendations

72. Papua New Guinea's public finances face two fundamental problems: declining revenues as a share of GDP and the ever-increasing public spending pressures due to its rapidly growing and highly dispersed population. The COVID-19 crisis adds to these challenges. Still, the long-term sustainability of the public finances will be determined by PNG's progress in tackling these two issues, which, over the past 10 years, have been driving up fiscal deficits and public debt. PNG is currently at high risk of debt distress. GoPNG has committed to resuming fiscal consolidation in the post-COVID-19 period, laying out a revised fiscal policy vision for the medium term. The challenge, as always, lies in implementation. GoPNG has announced that revenue needs to rise to 18 percent of GDP by 2025 and the wage bill needs to fall to 5 percent of GDP, to put PNG's public finances on a sustainable footing. Even if PNG can achieve these two targets, public debt will continue to rise but at a much slower rate, allowing a continuation of capital spending. Any less ambitious pathway will constrain investment spending significantly and increase the already-high risk of a future debt crisis.

73. If the authorities can manage political constraints, they can boost revenue substantially and rapidly—by 5 percent per year—by regularizing the transfer of PNG LNG revenues. Since 2014, the controlling state-owned enterprise, Kumul Petroleum Holdings Limited, has retained more than two-thirds (70 percent) of revenue from the government's 16.8 percent shareholding in the project (equivalent to US$1.6 billion in total, or K 600 million per year). Greater transparency and oversight of these revenues (presently, almost no details are published) will help support the implementation of the government's dividend policy and the transfer of these revenues to the central government. This can be assisted through greater transparency on the revenues paid from the project to government, for example through publishing details of the transfer from GloCo to KPHL and Mineral Resources Development Company, and timely publication of KPHL's annual financial statements. This can also be addressed by identifying and compensating for quasi-fiscal activities performed by KPHL, or funding these activities through the government budget and implementing through the appropriate line ministry.

74. GoPNG should plan now to ensure that it maximizes foreign contractor withholding tax collection and opportunities for PNG businesses during new resource project construction. Papua LNG is on track to be the first of PNG's proposed megaprojects to proceed, with construction starting as early as 2024.

This still leaves time for government to invest in training and other programs to help PNG businesses meet international standards and successfully bid on LNG project contracts. GoPNG may also consider reviewing the current fiscal regime applied to the extractive sector, to potentially reap more fiscal benefits from any new resource projects that may appear in the future.

75. GoPNG will need to put better controls over its personnel costs. In 2020, public sector wages consumed 47 percent of government revenues (both resource and nonresource), the highest ratio among PNG's peers. To improve the quality of public service provision while restraining wage bill growth, the authorities could redirect staffing from lower to higher priority areas, audit the payroll routinely, ensure no duplication of posts as decentralization continues, and analyze payroll data to identify grade inflation that pushes up costs. This can be achieved through routinely auditing the payroll to minimize ghost workers, mis-grading, excessive payments of overtime and allowances and other factors that increase payroll costs. The authorities may also consider a recruitment freeze policy through forming and implementing a comprehensive plan to redeploy staff from lower to higher priority areas. For that, it would be important to ensure that there is no duplication of posts as decentralization continues. Also, the government should start analyzing payroll data to identify any seniority creep in all levels of government that is pushing up costs.

76. The authorities could increase the efficiency of capital spending by rationalizing its PIP and improving PIM practices. With 30 percent of projects dropped each year before any spending occurs, significant effort is wasted in identifying and planning projects. Although a good physical asset register is in place (Assetware Manager), it is not being used to its full potential, making it harder to account for and adequately maintain the government's assets. Furthermore, capital transfers made through Service Improvement Programs account for 25 percent of investment spending. These have faced criticism, both within and outside government, for lacking any oversight or accountability on how these funds are spent. The PIP rationalization can be achieved through including fewer projects in the PIP and classifying projects by priority. This can also be done by not including additional projects after the budget has been passed, instead putting requests for emergency funding through a contingency fund. The government will need to put more resources into project planning and costing, including publishing details of total project costs for all projects in the PIP. The authorities also need to start incentivizing the use of the asset registry to record existing and new assets, so to better plan for asset management and maintenance, and to assist in scrutinizing PIP budget proposals.

77. The perpetual cycle of unrealistic budgeting needs to be broken to improve the credibility of the annual budget process. Budgets that understate spending and overstate revenues may facilitate their passage in parliament, but they also lead to significant within-year cuts that lower the efficiency of government spending. Recurrent budget cuts impede the ability of ministries to deliver high-quality public services and increases the accumulation of spending arrears. Disruption to capital budgets delays projects, pushing up costs and lowering investment spending returns. While addressing this issue is not a simple task, progress can be made through analysing past budget outturns to identify systematic biases and correcting for these biases in future budgets. This will require working closer with larger line ministries and agencies to scrutinize the realism of their budget proposals and strengthening the Department of Treasury's 'challenge function'. A greater collaboration with revenue collecting institutions, including presenting and discussing draft revenue forecasts at senior management level during budget preparation, would be required, so to reach a shared position on forecast realism.

2. Domestic revenue mobilization as a prerequisite for fiscal consolidation

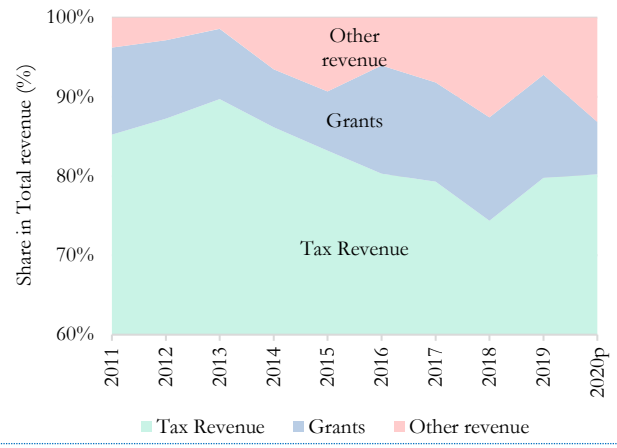
78. It is important that the analysis and recommendations of this section be read in the context of PNG's broader challenge with securing an appropriate share of the benefits of resource sector activity as public revenue. The previous chapter has outlined how revenues from resource sector activity have fallen

significantly as a share of resource sector activity over the last decade. They have also fallen as a share of total revenues. So, while the resource sector has become a larger part of the economy, it has not become a larger source of public revenue. This is the critical problem that PNG needs to tackle if it is to significantly increase public revenue in order to both close the fiscal gap and afford more and better public services over time. There are several measures PNG can take to address policy and administrative weaknesses with specific taxes, and these are the focus of this chapter. But they will not be sufficient to fund existing or improved public services without a broader effort by the state to secure an appropriate share of the benefits of resource sector activity as public revenue.

2.1. Revenue context

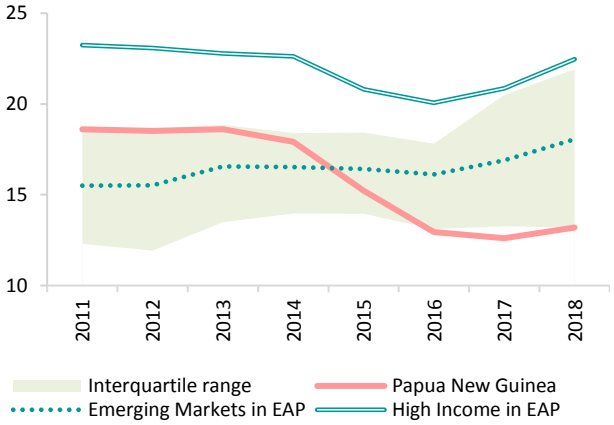
79. Tax revenue is the main source of finance for PNG's development and investment needs. It accounted for 82.6 percent of total revenue, including grants, in 2011–20; total revenue and grants were about 18.4 percent of GDP during this period. Tax revenues decreased sharply from 18.6 percent of GDP in 2011 to 15.2 percent of GDP in 2015, and further to less than 13 percent of GDP in 2016. Tax revenues have stabilized since, at around 13 percent of GDP.

Figure 54. Revenue by Funding Source
(Percent of total revenue)



Sources: PNG DoT; WB Staff calculations.

Figure 55. PNG tax-to-GDP Ratio Compared to EAP Emerging and Developing Economies, 2011–18
(Percent of GDP)



Sources: PNG DoT, IMF, and WB Staff calculations.

80. PNG's tax collection has been below the East Asia and the Pacific (EAP) emerging economies since 2016. It reached a peak of 20.9 percent of GDP in 2007 and stayed in the interquartile range from 2004 to 2016. Tax revenue sharply dropped and has performed worse than EAP emerging economies since 2014, and was below the interquartile range during 2016–18 (Figure 55).

81. PNG's tax system is relatively nonbuoyant across most taxes. Overall, tax revenues seem to grow slower than GDP growth, with a few exceptions. The buoyancy of PIT and GST is higher than 1, meaning that revenues from these taxes have grown much more rapidly than GDP. In contrast, the buoyancy of mining and petroleum tax was negative because of a decrease in mining and petroleum tax collection. Excise on imports is more buoyant than domestic excise. However, it should be noted that the relatively high buoyancy of import excise may not be indicative of strong collection efforts but rather the elasticity of imports to GDP, which typically exceed 1 for developing economies.

2.2. Assessment of major taxes

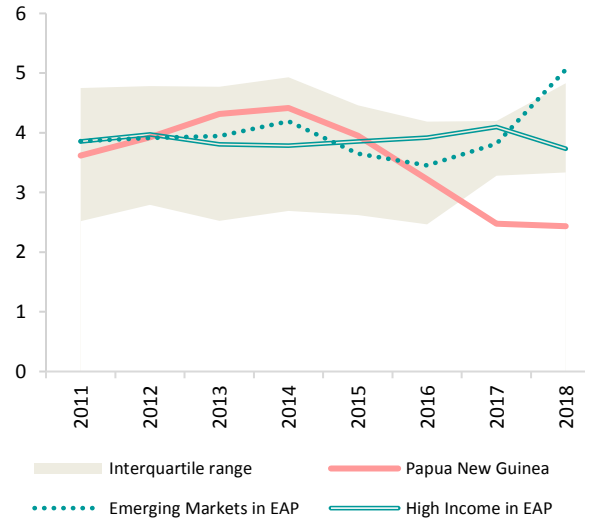
82. This section assesses the revenue performance by tax type, drawing implications for further reforms. The policy recommendations are based on the analysis of the trends in revenue performance and the existing tax regimes with direct reference to the government's strategic reform directions included in the MTRS.

Corporate income tax

83. CIT performance has deteriorated in recent years. The PNG CIT performance was comparable to its EAP peers in the interquartile range and the groups of emerging and high-income economies during 2011–15. However, CIT collection has shown a decline from 4.4 percent of GDP in 2014 to an average of 2.5 percent in 2016–20. Since 2016, PNG's CIT fell outside the interquartile range (Figure 56). As the CIT tax rate in PNG has not changed during the period, the reduction could be attributed to the erosion of the tax base through tax incentives and the degree of taxpayer compliance.

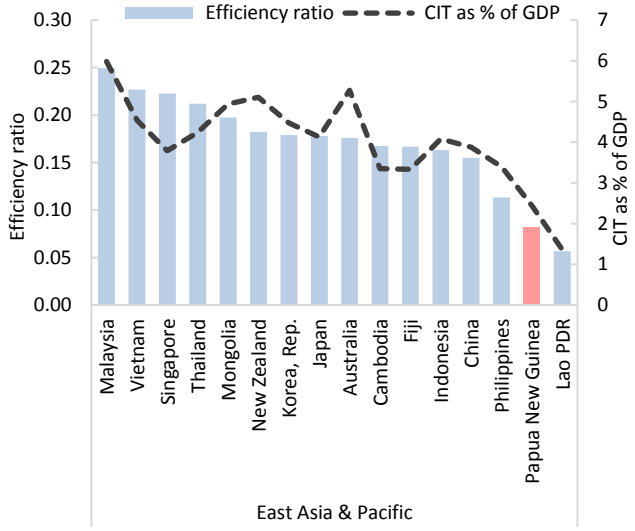
84. A cross-country comparison of the level of CIT revenue and their productivity facilitates a fuller picture of the CIT performance (Figure 57). Compared with the selected EAP countries, PNG performed poorly and ranked second to last in both categories. The PNG CIT revenue as a percentage of GDP and productivity ratio was even lower than the averages of the LMIC group in EAP, 3.4 percent of GDP and 0.14 respectively. Compared to the natural resource-rich economies in other regions, PNG's CIT productivity ratio was lower than most of the selected LMIC peers, except for two countries in Sub-Saharan Africa—Côte d'Ivoire (0.068) and Cameroon (0.058).

Figure 56. CIT Collection in Regional Comparison, 2011–18 (Percent of GDP)



Source: PNG DoT, IMF and WB Staff calculations.

Figure 57. CIT Collection and C-efficiency Ratio in Selected EAP Economies, 2018



Source: PNG DoT, IMF and WB Staff calculations.

85. PNG could consider reducing the CIT rate, with the notable exception of the extractive industries. Its standard CIT rate is higher than the average among the peers in the EAP income group (about 23 percent) or any other regional or global averages (EAP average: 22 percent; LAC and Africa: 28 percent; and OECD: 24 percent). A very high CIT rate with very low CIT productivity are the signs of an inefficient CIT regime that would deteriorate the investment environment and formality. Globally, CIT rates have been falling over the last 20 years, but PNG has not followed this trend. A reduction in the CIT rate will make PNG more competitive in the region and reduce vulnerability to tax base erosion and profit shifting risks.

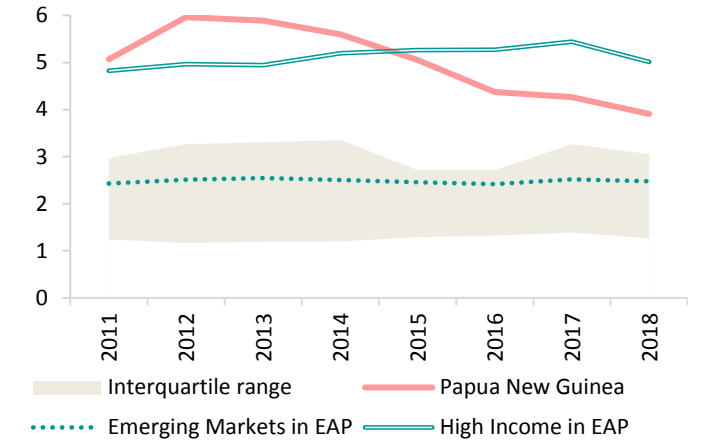
86. A CIT rate reduction would only be advisable after other base-broadening measures and improvements in revenue collection have taken place to avoid the negative impact on the budget. The base-broadening measures identified by the MTRS include introducing a capital gains tax and rationalizing tax incentives. These measures may raise sufficient revenue to offset the loss of revenue from a reduction in the CIT rate. Additionally, a significant improvement in compliance through enhanced tax administration could raise adequate revenue to provide a reduction in the CIT.

87. PNG could also consider strengthening the transfer pricing rules to protect the CIT base. A high-level review of PNG's Income Tax Act 1959 (Consolidated to No 35 Of 2015) (ITA) finds that many key international tax provisions of ITA are dated and require upgrading. For example, the sections concerning residence, permanent establishments, and transfer pricing contain significant flaws that likely reduce their effectiveness. The transfer pricing rules are complex compared to those of most countries. They apply only if and when the IRC Commissioner-General directs, with the effect that taxpayers have no responsibility to apply the arm's length principle at the time of conducting affected transactions or filing their tax returns. This likely impacts taxpayer compliance and creates uncertainty for taxpayers. It also impacts the tax administration's ability to require or enforce transfer pricing documentation or penalties.

Personal income tax

88. In 2011–18, PIT collection in PNG largely outperformed its EAP peers in the interquartile range and the group of emerging economies. Its performance was even higher than the average in the regional high-income group during 2011–14 (Figure 58). PIT revenue averaged 3.8 percent of GDP between 2004 and 2010 and rose sharply to 6 percent of GDP (2012) but has gradually declined since.

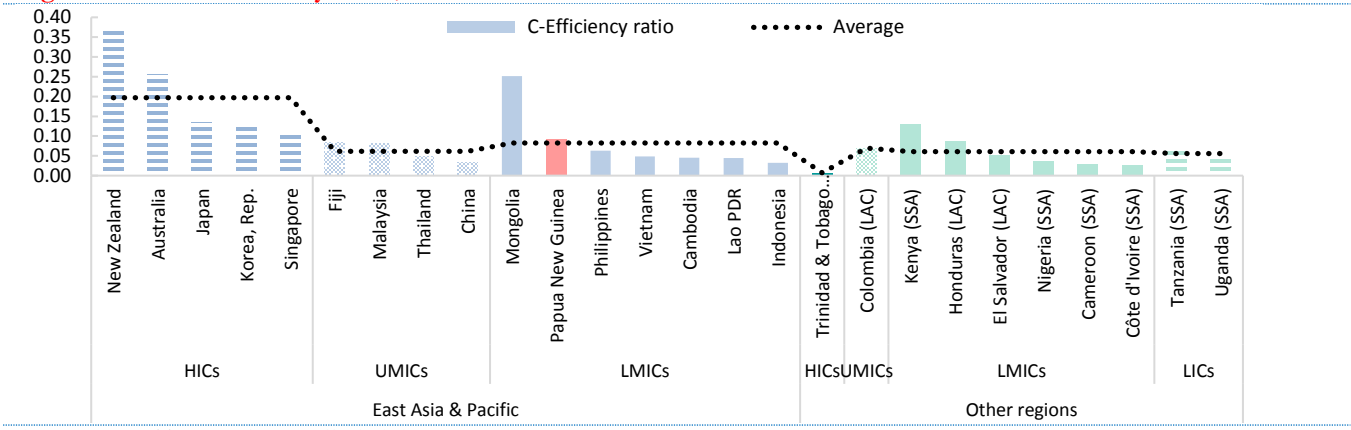
Figure 58. PIT Collection in Regional Comparison
(Percent of GDP)



Sources: PNG DoT, IMF, and WB staff calculations.

89. PNG's estimated productivity falls in the middle of the regional comparison regardless of income groups (Figure 59). The PNG PIT productivity ratio was 0.093 (ranked 7), higher than those of the average and all economies in the LMIC groups except Mongolia (0.251). Compared to the resource-rich economies in other regions, PNG's PIT productivity was also higher than all other economies except Kenya (0.131). However, the highest PIT rate in PNG was higher than in Kenya (42 percent and 30 percent, respectively).

Figure 59. PIT Productivity Ratio, 2018



Sources: PNG DoT, IMF and WB Staff calculations.
Note: LICs = low-income countries; LMICs = lower-middle-income countries; UMICs = upper-middle-income-countries; HICs = high-income countries.

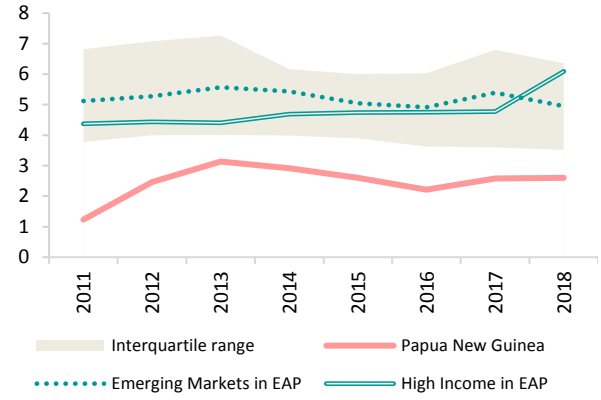
90. The tax wedge for low and middle-income earners is high. The basic exemption for an employee earning a salary or wage income is PGK 12,500 (or US$3,413.94) for residents and PGK 7,000 (or US$ 2,026.05) for nonresidents. The PIT exemption in PNG is similar to that in Cambodia (US$3,492.60) and Myanmar (US$3,432.33) among LMICs but is lower than other LMIC countries and almost all UMIC peers. The first PIT positive rate at 22 percent is very high. In contrast, the top PIT rate is relatively consistent with other countries, but the threshold at which the top rate commences is very high, especially when compared with a multiple of GDP per capita.

91. PNG could consider reducing the tax burden for salary and wage earners to improve the tax system's equity, especially for the lower brackets. The government's Tax Review (2005) recommended reforms to the PIT to reduce the tax burden, broaden the tax base, and simplify its application. The MTRS suggests assessing opportunities to rebalance the tax composition from (personal) income to consumption. However, the current situation in PNG is not conducive to an increase in GST or excise tax rates, as the compliance level is too low. Tax administration efforts to improve the performance of GST revenue could be the driver for the shift from taxing income to taxing consumption. For simplicity, the authorities could reduce the number of tax brackets from five to four.

Goods and services tax (GST/VAT)

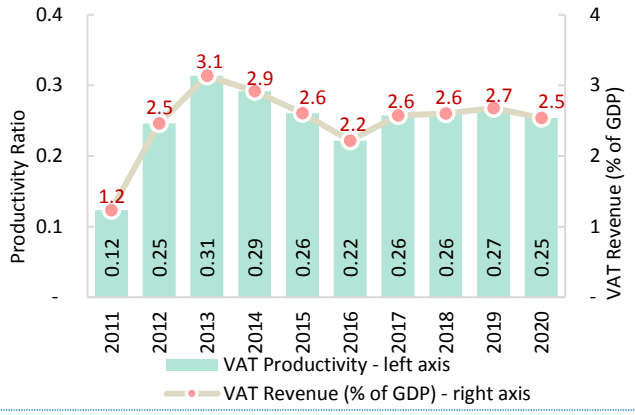
92. The GST performed comparatively poorly between 2011 and 2018. GST collection fell below the average for the interquartile, high income, and emerging EAP economies (Figure 60).

Figure 60. GST/VAT Collection in Regional Comparison, 2011–18
(Percent of GDP)



Sources: PNG DoT, IMF and WB Staff calculations.

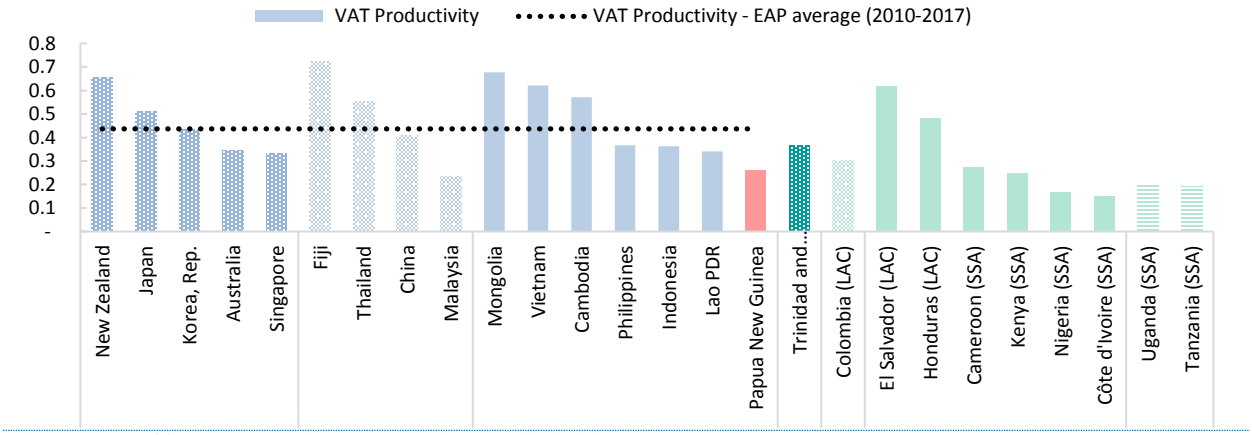
Figure 61. PNG's GST/VAT Productivity and C-Efficiency, 2011–20
(Productivity ratio; VAT Revenue as percent of GDP)



Sources: PNG DoT, IMF, UN Database, and WB Staff calculations.

93. At 0.26, PNG's GST productivity ratio was the lowest among the selected EAP countries and lower than the EAP average during 2010–17 (0.44) (USAID 2017). GST productivity fluctuated during the decade, sinking to 0.12 in 2011 and peaking at 0.31 in 2013, then gradually dropping to 0.22 in 2016 and remaining stable at 0.26 from 2017 to 2020 (Figure 61). Figure 62 shows 2018 GST productivity in selected EAP economies and selected resource-rich countries in other regions that share similar socioeconomic features with PNG, separated into three income groups (UMICs, LMICs, and LICs). Compared to the natural resource-rich economies in other regions, PNG's GST productivity was in the middle rank regardless of income group.

Figure 62. GST/VAT Productivity Ratio, 2018



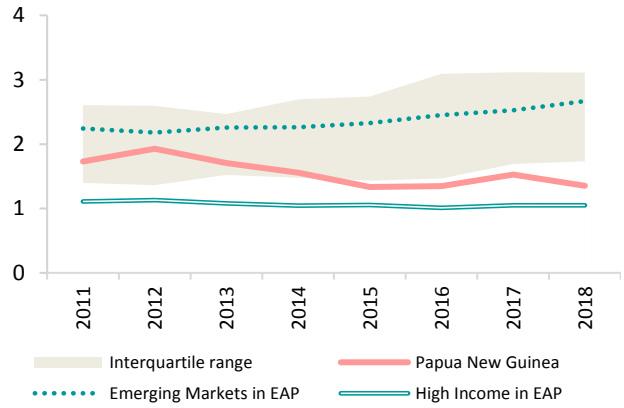
Source: PNG DoT, IMF, UN Database, USAID and WB Staff calculations.

94. GST legislation in PNG provides a reasonably broad tax base, with only a few exceptions. PNG's weak GST performance mainly reflects tax administration challenges in enforcing compliance with existing legislation (confirmed by the analysis of the GST gap in the next section). The Tax Review (2005) recommended rebalancing the tax composition to increase GST revenue by raising the GST rate from 10 to 15 percent. However, given the low level of compliance in GST, such a major policy change may not produce the expected outcome and could provoke strong pushback from the public. Raising the GST rate should only be considered once compliance has improved. It should also be carried out in tandem with the reduction of the PIT to ensure the tax system's equity aspect.

Excise and trade taxes

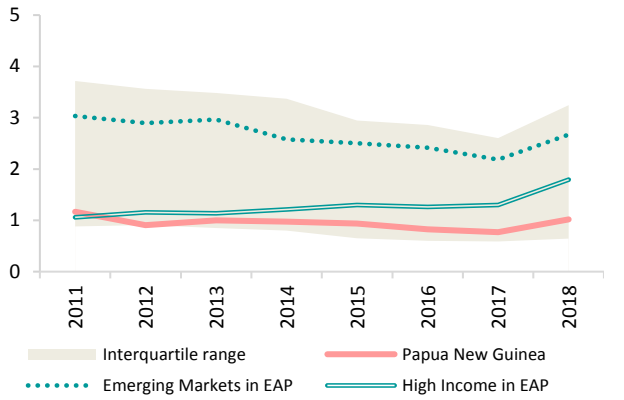
95. Excise revenue as a share of GDP increased from 1.7 percent in 2011 to 1.9 percent in 2012. However, it gradually dropped from 1.7 in 2013 to 1.3 percent in 2015 and fluctuated through 2018 (Figure 63). For most of the 2011 – 2018 period, PNG excise revenue is at the bottom of the interquartile range.

Figure 63. Excise Collection in Regional Comparison
(Percent of GDP)



Source: PNG DoT, IMF, and WB Staff calculations.

Figure 64. Trade Collection in Regional Comparison
(Percent of GDP)



Source: PNG DoT, IMF, and WB Staff calculations.

96. PNG's trade revenue, or import duty, is at the bottom of the interquartile range. Revenue from import duties amounted to about 1 percent of GDP and accounted for 6 percent of total tax revenue between 2011 and 2020. Trade taxes were lower than the average of emerging EAP during 2011–18 but higher than the average of high-income economies in EAP only in 2011 (Figure 64).

97. The MTRS 2018–22 plans to increase diesel excise gradually to align with petrol. It also suggests introducing excise on cellular airtime at a 5–10 percent rate and adjusting other excise rates (for tobacco, alcohol, and fuel) while removing excise duties from luxury items. Another reform is to link the six-month indexing of specific excise duty rates to inflation while keeping a minimum cap on a transitional basis.

2.3. Tax exemptions and incentives

98. This section reviews PNG's CIT and GST expenditures. Most of the CIT expenditures are estimated and are available in the government budget documents. This section uses a microsimulation model to estimate the tax expenditures associated with some other tax incentives that were not included in the government reports. The section also provides the estimates of the overall GST gap and the tax expenditures associated with each exemption and zero-rating. It then provides the findings from the quantitative analysis.

CIT expenditures

99. The 2020 budget estimates total CIT expenditures of K 116.1 million in 2018. More than half of this amount (56 percent) comes from the resource sector; other businesses contribute the remainder. This is about 1.1 percent of total tax revenue (or 0.15 percent of GDP). This number is significantly lower than previously reported in the 2019 budget. One difference was that the numbers reported in the 2020 budget were for revenue foregone; in the 2019 budget, the estimates were published in units of the tax base.

100. The 2020 budget did not report some tax expenditures associated with the tax incentives provided by the Income Tax Act. These additional expenditures (estimated below) bring the total CIT

expenditure to K 148.1 million or about 1.4 percent of tax revenue and 0.19 percent of GDP (Table 2.1). The assumptions in the microsimulation model were that all taxpayers are subject to a CIT rate of at least 30 percent. Given the small share of taxpayers subject to a zero rate relative to the total number of taxpayers benefiting from a reduced CIT rate, it is likely that many firms benefiting from a tax holiday that fully relieves their CIT tax burden are not filing a return. If that is the case, the estimated tax expenditure underestimates the actual revenues foregone due to this policy.

Table 3. Estimates of Tax Expenditure Not Included in 2020 Budget

Tax incentive	Estimated expenditures (Kina, million)
Tax holidays	29.9
Depreciation – 20% Loading	2.1
Depreciation – Fuel Conservation	<1

Sources: PNG IRC (CIT returns submitted: 6,398 returns in total) and WB staff calculations.

101. Data appear to be missing regarding the firms benefiting from a tax holiday. Only a small share of taxpayers eligible for reduced CIT rates have a zero rate, which may indicate that many of the firms benefiting from a tax holiday that fully relieves their CIT tax burden are not filing a return. If that is the case, the tax expenditure associated with the tax holiday is grossly underestimated. The use of tax microdata in a microsimulation model is the only way of accurately estimating income tax expenditures, and so missing data in the income tax microdata prevents the proper estimation of revenues foregone. It would be important to ensure that taxpayers benefiting from a tax holiday file their tax returns promptly. It may be necessary to impose the filing of a tax return as a requirement for maintaining access to the tax holiday in the future.

102. A central element of the tax incentive reform strategy is to phase out profit exemptions ('CIT holidays'). Many years of experience in granting CIT holidays in virtually all developing countries have found that this type of tax incentive is highly inefficient. The results have been almost universally disappointing. The inefficiency stems from the fact that CIT holidays do not explicitly target investment expenditure. Indeed, the amount of tax relief can be disproportionate to the amount of investment. Firms can benefit even where they are not currently investing. CIT holidays also facilitate aggressive tax avoidance—that is, the use of various strategies that enable firms to avoid paying tax on profit that should be taxed and are not in the interest of PNG.

103. In contrast, cost-based tax incentives, such as accelerated depreciation and investment tax allowances, reward companies only if they invest. With cost-based incentives, the tax relief provided is set as a percentage of investment expenditure. If there is no current investment, no tax relief is granted. Intuitively, it is important to tie tax incentive relief to the target to encourage investment—namely, investment expenditure.

GST expenditures

104. The benchmark GST revenues for 2018 are K 4,690 million, or 5.9 percent of GDP (Table 2.2). The overall GST gap equals benchmark minus actual GST revenues and is estimated at K 3,069 million, or 3.9 percent of GDP. The overall GST gap can be broken down further into the policy and calibration gaps, which account for K 601 million (0.8 percent of GDP) and K 2,468 million (3.1 percent of GDP), respectively. In the relative term, actual GST revenues account for 34.6 percent of the benchmark GST revenue, the policy gap for 12.8 percent, and the compliance gap at 52.6 percent. The calibration gap is a large share of the overall GST gap because of the high small supplier threshold and the importance of the informal economy in PNG. It should be noted that since there are no recent IO tables produced for PNG, a pseudo-IO tables was constructed to support the estimation. Therefore, the GST expenditures presented in this section are meant to be indicative figures to suggest reform directions rather than measuring the GST performance in PNG.

Table 4. Components of Benchmark GST Revenues

	Kina, millions	Share of GDP (%)	Relative Share in Benchmark GST Revenues (%)
Actual GST revenues	1,622	2.0	34.6
Policy gap	601	0.8	12.8
Calibration gap	2,468	3.1	52.6
Benchmark GST revenues	4,690	5.9	100

Source: PNG IRC and WB staff calculations.

105. The policy gap includes revenues foregone from domestically-consumed exempt and zero-rated commodities. It is an estimate of the GST tax expenditures from relief on specific commodities. The calibration gap is the remaining gap between the benchmark and actual revenues after accounting for the tax expenditures as part of the policy gap.

106. The small supplier threshold of K 250,000 is equal to over US$70,000, which is very high relative to other economies around the world. Many businesses in PNG likely fall below the threshold and are therefore not required to register for GST, which contributes to the large GST gap. As explained, production by small suppliers is essentially exempt, and while some revenues are recovered through inputs on which inputs tax credits cannot be claimed, the cascading of exemptions can lead to outcomes that approach zero-rating when significant areas of the economy are exempt. Similarly, production in the informal economy accounts for a significant share of total production in PNG, and it is also effectively exempt.

107. Given the available data, it is not possible to disaggregate the calibration gap into its small supplier and informal economy components. Disaggregation would provide insights into the potential revenues that could be raised by lowering the small supplier threshold. The estimate of the GST gap associated with small suppliers is likely to be a significant overestimate of the revenue potential of such policy changes since noncompliance is significantly more likely with small suppliers.

2.4. Tax administration

108. A semi-autonomous revenue authority, the Internal Revenue Commission (IRC) is responsible for collecting direct and indirect domestic taxes, accounting for about 85 percent of the government's total tax revenue. This section draws on the findings of the Tax Administration Diagnostic Assessment Tool (TADAT assessment) conducted by the IMF in November 2020. It provides recommendations on reform priorities for the consideration of PNG's IRC.

109. A number of elements required for effective tax administration are present in the IRC. These include: (i) designated staff for core tax functional areas; (ii) support services (for example, IT, HR, policy, and finance); (iii) internal audit and staff integrity mechanisms; (iii) legislation to support taxpayer compliance including provisions for withholding at source and advance payment arrangements for income tax, penalties for noncompliance, access to third party data and a tiered dispute mechanism; (iv) electronic payment methods; (v) payment of GST refunds from gross collections; and (vii) the IRC is a semi-autonomous institution.

110. However, some current IRC practices hinder its ability to strengthen and manage compliance levels for all core tax types and taxpayer obligation areas. The overarching issue is data quality and, consequently, management information accuracy. Key performance gaps were found in taxpayer registration, compliance risk management, taxpayer services, tax filing and payment, debt management, and tax audit as discussed below.

Taxpayer registration

111. IRC has a central national computerized registration database. The Standard Integrated Tax Administration System (SIGTAS) is available at IRC's main office in Port Moresby and the three IRC regional centers. A unique taxpayer identification number (TIN) is generated automatically by SIGTAS following registration. Taxpayers are also registered for various tax types, and separate accounts with distinct numbers are created for each tax type. Still, no special certificate is issued to GST-registered taxpayers for display at their business to protect consumers and deter fraud.

112. The integrity of the information held in the registration database is low, and key IT system design weaknesses affect compliance management and the security of the taxpayer register. These include: (i) the absence of an audit trail of user access and changes made to taxpayer registration information; (ii) no online access for taxpayers to register and update registration information; (iii) no facility to capture information or link the accounts of associated entities; (iv) the absence of a self-validating mechanism in the TIN; (v) no facility to classify sole traders by economic/industry sector; and (vi) no interface with other IT systems to support the registration process, for example, SIGTAS does not interface with IPA's IT system.

Compliance risk management

113. There is no structured process to assess, rank, and quantify compliance risks in the main tax obligation areas. IRC risk assessment process varies by division, but there is no evidence of assessment and prioritization of risks identified in all core taxes, key taxpayer segments, and main taxpayer obligations. A Compliance Risk Committee has been appointed, and a Risk Management Unit was established recently but not yet operationalized. Further, a compliance risk strategy has been developed but not yet implemented.

114. IRC does not have a compliance improvement plan (CIP). A compliance improvement strategy has been developed that contains elements of a CIP, but the strategy is yet to be operationalized. There is no evidence of monitoring the effectiveness of risk measures implemented across main taxpayer obligations. There is limited intelligence gathering and analysis to build knowledge on compliance levels. There is no evidence of tax compliance gap studies, studies into taxpayer behavior, or use of Customs and other government agencies data to identify compliance risks.

Taxpayer services

115. The IRC's website includes a wide range of information on the main taxpayer obligations and entitlements regarding all core taxes, but the information is outdated. The IRC also launched a Facebook page in September 2019 to disseminate information on relevant events and taxpayer obligations. IRC has no practice of informing taxpayers of changes in law and administrative policy before they take effect but hosts annual roadshows in the first quarter of the year to raise awareness about relevant changes in tax legislation. Tax declarations and other forms are reviewed on an ad hoc basis, mainly as a result of legislative changes.

116. Information is available through various service delivery channels at no cost, but taxpayer education programs are limited and ad hoc. There are walk-in counters at the IRC headquarters in Port Moresby as well as the regional and provincial offices to provide information, but no brochures available. Seminars and other programs for taxpayer education are organized on an ad hoc basis, usually upon invitation by business representatives. There is no routine practice of analyzing frequently asked questions (FAQs) and common misunderstandings to improve information products and services.

Tax filing and payment

117. The on-time filing rates for major taxes could not be determined owing to an inaccurate and unreliable registration database. Data provided by the IRC indicate low on-time filing rates across all core

taxes. There is no electronic filing facility, few taxpayers use electronic payments, and on-time payment rates are low. All tax returns are filed manually using preprinted forms, and are manually captured into SIGTAS.

118. An incomplete and outdated taxpayer registration database hampers the effectiveness of the non-filers compliance program. A fully staffed 'non-filers' section exists in the Debt and Lodgment Enforcement Division to monitor nonfilers of core taxes. However, delays in receiving the nonfilers list from IT (often 2–3 weeks after the return filing due date) inhibit prompt follow-up action. Furthermore, most nonfilers cannot be located due to missing or inaccurate taxpayer contact details, and most cases are closed without a favorable result. Although legislation provides for non-filing penalties, these are not applied.

Debt management

119. Core tax arrears stand at K 527 million, according to IRC data. However, this data cannot be relied upon as: (i) a number of taxpayer account balances in SIGTAS are incorrect; (ii) inaccuracies exist in SIGTAS calculations of penalties and interest; and (iii) inaccuracies in the account balances stored in the legacy system that SIGTAS replaced were not corrected.

Tax audit

120. The IRC does not have a consolidated annual audit plan. Separate audit plans are in place for large taxpayers and small and medium enterprise (SME) audits. Audits are generally limited to the verification of supporting documents. Indirect audit methods to verify amounts reported are rarely used. The manuals have not been updated in at least two years. There is no checklist for Audit Managers to monitor audit quality. At the corporate level, the IRC does not routinely monitor or evaluate the effectiveness of the audit function.

121. No automated, large-scale, third-party data matching exists to verify tax returns. However, IRC compares information declared in income tax returns against GST returns and bank account balances to determine the correctness of returns. A range of other third-party data is available to IRC for data matching purposes (for example, from Customs, Ministry of Finance, and utilities), but it is not used. There are sufficient funds to meet legitimate GST refunds, but the system is deficient as it is not risk-based.

2.5. Recommendations

122. Declining collection—combined with the sharp, inevitable downturn during COVID-19—heightens the need for measures to raise revenues efficiently and equitably in the post-pandemic period and over the long term. The reform recommendations are presented below by tax type with the grouping of strategic actions and their respective sequenced priorities during the short to medium terms. However, these recommendations need to be read in the context of PNG's broader challenge with securing an appropriate share of the benefits of resource sector activity as public revenue. On their own, the specific measures outlined below will be insufficient to close the fiscal gap and enable PNG to afford the more and better public services its people need over time.

Goods and services tax

123. Prioritize tax administration measures to improve GST revenue performance (short-term). If PNG could close 30–60 percent of the GST calibration gap, tax revenue could rise by 1–2 percentage points of GDP. As discussed in Section 2.2.3, PNG's GST exemptions are fairly consistent with good international practice, and the tax rate is comparable to other economies in the region. The IRC's Commissioner-General included improving GST compliance among his top priorities in 2020. The IRC introduced several measures in 2020 to address GST compliance, including withholding GST from government purchases, scrutinizing GST refunds, and expanding its local presence through collaboration with subnational governments.

124. Implement a comprehensive GST compliance improvement plan (CIP) (short-term). The CIP will identify the risks to GST revenue in all areas and prioritize measures for improvements. Improved GST performance could also have a positive impact on CIT collection. In the longer term, the authorities could consider increasing the rate of GST, but ideally this would occur only when the overall GST compliance level (in filing and payment) has improved significantly. A reduction in the PIT tax rate should accompany any increase in the GST tax rate to ensure tax system equity.

125. Use a bilateral approach to close the calibration gap that includes business formalization and reducing the GST registration threshold (medium-term). However, while small suppliers likely account for a large share of the overall calibration gap, a substantial share of those small suppliers would opt to operate informally if the small supplier threshold were lowered. Therefore, priority should be given to measures that encourage formalization. The implementation of the recently-adopted small business tax regime is a good start. Furthermore, the recovery from the economic crisis associated with COVID-19 presents an opportunity to encourage formalization. GoPNG could design assistance programs to incentivize formalization.

Corporate income tax

126. Removing tax holidays and introducing other base-broadening measures are top priorities in CIT reform (short-term). More efficient tax incentives could be considered, such as accelerated depreciation, investment allowances, or tax credits for training, job creation, and research and development activities. A capital gains tax could also be introduced as part of the Income Tax Act rewrite. As a measure to boost investment after the COVID-19 pandemic, immediate expensing of capital investment could be considered. Furthermore, data improvements are needed to facilitate the cost-benefit analysis of key tax incentives to inform the rationalization of the incentive regime.

127. Consider strengthening transfer pricing rules to protect the CIT base (short-term). This could be done as part of the Income Tax rewrite exercise. In the longer term, reducing the CIT standard rate could be considered once revenue performance is in a better position.

128. Once the based broadening measures are in place and improvements in CIT revenue collection are happening, reduction of the CIT rate could be pursued (medium-term). Revenue impact analysis, including assessing the timing of revenue gains from base-broadening measures, should be carried out, as these gains may take some time to materialize.

Personal income tax

129. Consider changes to the PIT regime as a longer-term measure given the fiscal space needed to finance the reforms (medium-long-term). The reform direction is to lower the tax burden (that is, effective tax rates) for salary and wage earners, especially those in the lower and middle brackets. This would require rebalancing the tax mix and should only be carried out once revenue from consumption taxes is higher.

Tax administration

130. Consider implementing short-term measures. Short-term measures do not require large investments but could deliver a reasonably quick impact. These include developing annual compliance improvement plans and detailed operational plans for core business areas, accompanied by yearly performance indicators, and should be used to allocate operational resources. The IRC should also develop a comprehensive taxpayer awareness program based on taxpayer segmentation and enhance and simplify taxpayer services and tax administrative procedures to make it easier to comply with tax obligations. In addition, extra efforts are needed for data quality improvement, the development of a strategy for cleansing taxpayer registration details, and an effective debt management strategy. Audit operations should be supported by an audit plan, coupled with close monitoring of audit quality, and supported by auditor training.

131. In the medium to long term, modernize IRC to include e-services through integrated ICT solutions. GoPNG planned to purchase a new integrated IT solution for tax administration. However, the current fiscal situation may delay the budget allocation for this investment. Given the importance of an effective IT system to the performance of the tax administration, GoPNG should treat this as a priority investment. A modern IT system would allow the IRC to adopt efficient and effective business processes and facilitate business continuity during crises (like a pandemic).

Schools are widely recognized as a key signal of the state's presence in remote areas. (Conor Ashleigh/World Bank)

Improving public service delivery in health and education

3. Adjusting health spending toward universal health coverage

3.1. Sectoral context

132. The ongoing COVID-19 pandemic, and the resulting disruption to PNG's health system, threatens to deepen the decline in critical areas of PNG's primary care delivery system. Average life expectancy in PNG has improved more slowly in recent decades than in the rest of the world, and PNG has the lowest life expectancy in the Pacific region. Infant, under-five, and maternal mortality rates have improved at a slower pace than in comparator countries. The utilization of basic health services has declined markedly. For example, there has been a decline in measles immunization in children under age five, reflecting in part the reduced frequency of outreach clinics. As a result, PNG is at greater risk of communicable disease outbreaks, including measles and polio. In the recent Global Monitoring Report, PNG scored 33% on the Universal Health Coverage

Service Index,[11] indicating low health service coverage. PNG is currently experiencing another wave in COVID-19 infections which is placing additional demands on the health system and in turn is expected to negatively impact routine health service coverage rates. Further, greater out-of-pocket spending on health along with increased economic hardship associated with COVID-19 may mean ill patients forgo care or delay care seeking behaviors.

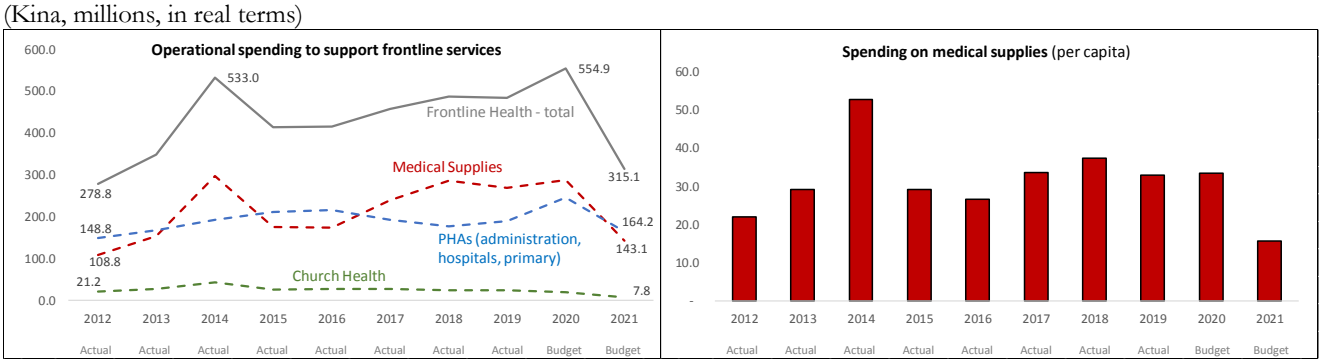
Table 5. Constraints to PNG's Health System

Factors under the health sector's direct influence	Broader issues
Medicine availability at facilities	Prevailing fiscal context, constrained budget and cash
Distribution of staff to best meet service demand	Access, roads, remoteness
Fragmentation, sector coordination	Evolving decentralized governance context
Achieving value for money	Poverty, educational and economic disadvantage
Water and sanitation	Uneven economic development
Frontline staffing, recruitment, development	Inclusion, gender inequities and constraints
Health architecture sustainability, size of health network facilities	Food security, nutrition

133. Spending on health has increased but critical areas of the health sector required to achieve Universal Health Coverage (UHC) are underfunded. When adjusted for inflation, health spending has increased by an average of 3.5 percent per year, or 35 percent over the 10-year period 2012-2021. With annual population growth in PNG averaging 2 percent,[12] the effective increase in spending on health is lower given the need to service a rapidly growing population in a geographically challenging service delivery context. A greater proportion of funding is being allocated subnationally, however, there has been an overall decline in operational spending for frontline services. Frontline health operational spending fell from K 554.9 million in the 2020 budget to K 315.1 million in the 2021 budget, a year-on-year reduction of 43 percent. Churches also saw a 63 percent decline in operational spending in 2021, from K 21.2 million in 2020 to K 7.8 million in the 2021 budget. In 2021, the combined budget for goods and services to support the frontline services delivered by the state and churches was K 172 million—the lowest level since 2012 when it was K 170 million (Figure 65). In 2012, K 22.1 per capita was spent on medical supplies; this peaked at K 52.8 in 2014, only to fall to K 15.7 per capita in the 2021 budget. In aggregate, real operational spending on a per capita basis to support frontline services and procure medical supplies declined by 39 percent between 2012 and 2021, from K 56.55 to K 34.51 per capita.[13]

[11] UHC Service Index is a composite indicator calculated based on various service delivery tracer indicators (reproductive maternal and child health services, infectious diseases, non-communicable disease, and service delivery capacity). UHC Global Monitoring Report. World Health Organization and World Bank. 2021.
[12] WDI data on PNG population growth over the period 2012–19.
[13] Operational spending includes goods and services, utilities, and transfers and excludes personnel emoluments and capex.

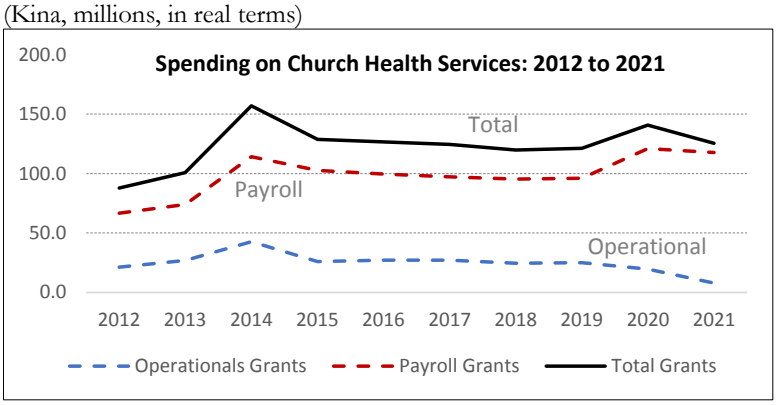
Figure 65. Operational Spending on Frontline Services and Medical Supplies, 2012–21
(Kina, millions, in real terms)



Source: World Bank staff estimates using BOOST data for 2012–21.

134. Grant funding for church-run health facilities has fallen in real terms since 2012, concerning given the fundamental role they play in serving the rural majority in PNG. Total grant funding for church agencies increased from K 88 million in 2012 to K 125 million in 2021 (Figure 66), a modest (4 percent) nominal increase but a real decline of 8 percent. In 2020, as COVID-19 intensified fiscal constraints in PNG, delays in the disbursement of grants to church health authorities lasted several months, leaving church health workers unpaid and funds for operating costs unavailable. This delay undermined frontline facilities at the height of a major health crisis. In 2021, grants to church health authorities have been cut significantly. The impact of fiscal volatility is amplified in the church health sector because its payroll depends on grants. The decrease in operational grants between 2020 and 2021 has been particularly severe—falling from K 19.6 million to K 7.8 million, a decrease of 60 percent in one year. Given the significance of church-run facilities to overall frontline services in PNG, this represents a key vulnerability for the institutional capital of the wider health system.

Figure 66. Spending on Church Health Services, 2012–21
(Kina, millions, in real terms)



Source: World Bank staff estimates using BOOST data for 2012–21.

135. The lack of adequate operational funding will contribute to the decline in the standard of health services delivered across the country. The goods and services budget supports the country's network of hospitals that deliver advanced health services together with the expansive network of lower-level facilities that provide primary care to the rural majority and are the face of accessible health care for most Papua New Guineans. There will be little funding to replace even the most basic of medical equipment needed by frontline workers; facilities will not be maintained; outreach patrols will not be funded leading to poor immunization levels; and staff working in remote locations will not be supported, supervised, or trained. The goods and services budget

needs to grow to keep pace with population growth and inflation, and to address the growing burden of disease more effectively across the country.

136. The intergovernmental financing system in PNG assumes that provincial governments will provide significant funds to PHAs to support the delivery of basic health services within their province; this assumption remains unfulfilled. Of the three largest sectors—education, health, and transport—historically, the health sector has consistently received the least support from provincial governments compared to the other large sectors, according to an analysis conducted by the National Economic and Financial Commission (NEFC) between FYs 2005 and 2015. In 2015, the NEFC conservatively estimated the operational cost requirement for all provinces at K 123 million. The amount allocated in health function grants for the year was K 81 million, leaving a shortfall of K 42 million. The situation is even more concerning given the highly conservative nature of NEFC's costing. In reality, the cost of health services is likely to be considerably higher than the K 123 million estimate.

137. The true cost of health services is not known. The current NEFC costing model, updated every five years, may not be readjusted to include replenishment of medical supplies, operational costs for drugs and medical supplies, and so on. By moving to a more output-based model (immunization delivery, antenatal care, skilled birth at facilities, and so on), the costing model could reflect the service delivery model better under PHAs. It could also focus more on delivering essential health services instead of the current minimum priority areas (operational funding for rural facilities, rural outreach patrols, and the distribution of drugs and medical supplies). By moving to a more output-based model (immunization delivery, antenatal care, skilled birth at facilities, and so on), the costing model could reflect the service delivery model better under PHAs and focus more on the delivery of essential health services instead of the current minimum priority areas (operational funding for rural facilities, rural outreach patrols, and the distribution of drugs and medical supplies). This approach can improve the efficiency and effectiveness of frontline essential service package delivery, health facilities need sufficient funding to operate and cater to their catchment area's service delivery requirements.

138. Under the current health financing arrangements, some PHAs will suffer. There is no way to access alternate funding if provincial governments do not meet their share of operational costs for rural health services. According to an analysis published by NEFC, in 2015, despite many provinces having the financial capacity to meet their funding obligations for health, most provinces fell short. The NEFC reports that in 2015 Western Province spent just one-tenth of what was estimated necessary to support rural health services in the province. There is no recent data on this as the current IFMS has no way to extract the amount spent on the health sector. With PHAs anecdotally noting that they receive no provincial internal revenues (for operational costs, outreach, and transfer of medical supplies for rural health inputs), rural health services are underfunded. There is no accountability mechanism to ensure that provincial internal revenues are allocated to funding for health; it is not legally binding or stated in any policy or legislation. What are the implications of this funding shortfall? Without this operational funding, it will not be possible for PHAs to carry out their service delivery plans effectively. Immunization relies on operational funding to conduct outreach programs in hard-to-reach areas. Without this funding, immunization work will not happen. What is the answer? Something more than greater dialogue and coordination between NDoH/PHAs and provincial governments is required. Considerable effort has been expended since the inception of the intergovernmental fiscal arrangements by NDoH in partnership with central agencies (NEFC, Treasury, and DPLGA) with little apparent impact. It may be time for the health sector to review the impact of the intergovernmental arrangements on PHAs and consider what funding arrangements may be necessary in the future to ensure that all PHAs can access core funding for basic services.

139. Health service volumes in Papua New Guinea have declined over the past decade. Nationally, the inpatient service volumes per capita declined by 14 percent, while outpatient services decreased by 6 percent.

Patient referrals—although still extremely low—increased by 4 percent (Table 2). The level of reported drug shortages across health facilities improved by 13 percent between 2010 and 2019 but remained disturbingly high. The picture with outreach services is concerning, with school visits declining by an alarming 59 percent over the period while outreach clinics also decreased by 4 percent. Meanwhile, the introduction of excise taxes on tobacco, alcohol, sugar-sweetened beverages, and carbon can be a win-win solution for the government to raise revenues and save lives by reducing air pollution and consumption of these goods which are risk factors for developing non-communicable diseases (ex. diabetes, high blood pressure etc.). Funding collected from this revenue stream can be re-invested in health for priority investments.

Table 6. Regional View of Health Performance: Service Delivery, Demand, and Utilization

	Region | Area	Population	Challenge of remoteness	Inpatient per 1,000	Outpatients per 1,000	Patient referrals (%)	Reported shortages of drugs (%)	School visits per 10K	School visits % of schools (elem/primary)	Clinics per 1,000
				---------- Facility-based services ----------				---------- Outreach services ----------		
NCD	National Capital District	420,861	n/a	25	1,063	0.0%	17%	0.05	2%	0.1
S	Southern region	1,297,002	158%	27	1,469	0.19%	45%	3.3	19%	5.2
H	Highlands region	3,145,852	44%	25	994	0.14%	49%	6.5	78%	6.3
M	Momase region	2,412,289	106%	24	1,062	0.12%	47%	1.9	20%	2.3
I	Islands region	937,263	138%	37	1,643	0.24%	49%	7.5	46%	4.2
ARB	Bougainville (ARB)	304,782	93%	33	762	0.17%	66%	6.7	37%	5.0
	Papua New Guinea	8,518,049		27	1,152	0.15%	47%	4.5	41%	4.4
	10-year movement (2010 v 2019)			down 14%	down 6%	up 4%	down 13%	down 59%		down 4%

Source: NDoH population estimates (2019); "Challenge of remoteness" data are from the National Economic and Fiscal Commission (2014); inpatient, outpatient, referral, school visits, clinics held, drug shortages, data are from NHIS (2010, 2015, and 2019).
Note: Data are for all facility levels. Results are displayed as performance metrics; this allows performance to be compared across provinces of differing population sizes. With the blue bars, the larger the bar the more favorable the result; with the red bar, the larger the bar the less favorable the result. The 10-year movement is the difference between the service volumes in 2010 per capita when compared to 2019 per capita.

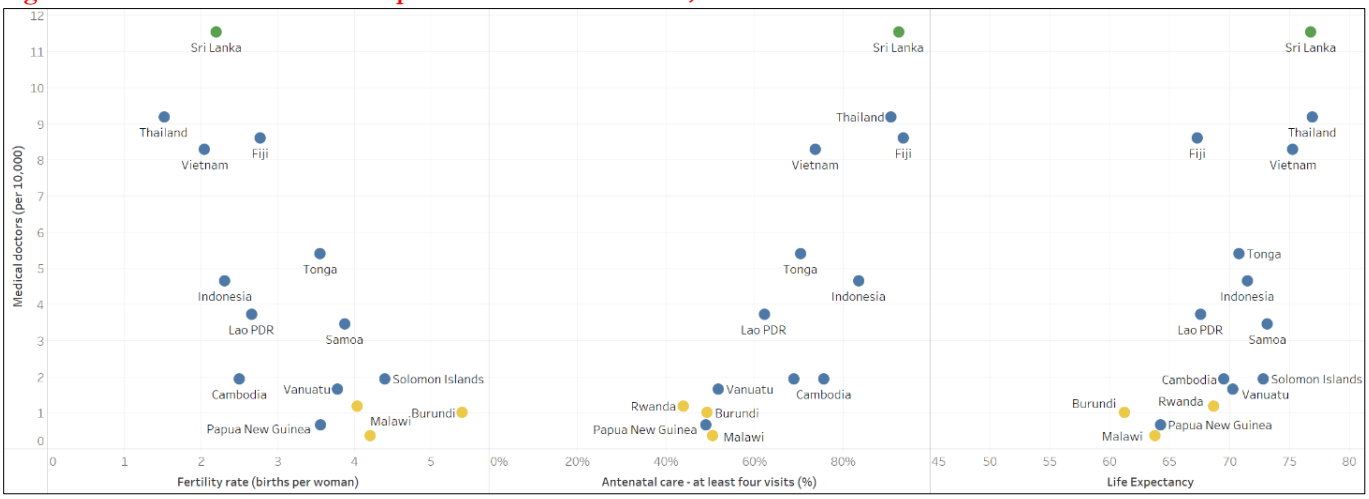
140. There are many opportunities to improve efficiency: by tackling waste and poor allocations on the one hand, and by improving resource investment in priority areas to meet the needs of the growing population on the other. Human resources are the cornerstone of delivering quality health services and a critical element of service delivery readiness. In the current fiscal landscape, GoPNG is working to contain the wage bill.[14] Longstanding issues like redundant workers, ghost employees, and unattached workers—health workers not assigned to a specific health facility but paid—are issues the health sector is tackling to reduce costs. At the same time, the human resource crisis in PNG is real. The COVID-19 crisis is bringing the challenge of health workforce shortages to the forefront and highlighting how a public health crisis can push a health system to the brink of collapse. A high attrition rate and an aging workforce underscore the fragility of the health system; the current skill mix is not adequate to deliver the health services needed by PNG's population.

141. The lack of investment and development in the health workforce is a binding constraint to delivering improved quality and coverage in service delivery. Investment in human resources is paramount to delivering better health outcomes. In PNG, investment in this area has lagged consistently. The number of health professionals in PNG increased from 0.55 per 1,000 in 2009 to 1.03 per 1,000 in 2018 (WHO, 2020). At first pass, this increase is encouraging. However, these numbers fall well short of the 4.45 per 1,000 the WHO estimates are required to meet the Sustainable Development Goals and achieve universal health coverage (UHC).

[14] The wage bill consists of payments for basic salary, remunerative allowances (housing, domestic, risk payments, and so on), expenses incurred on duty (for example, daily subsistence allowance) and benefits like medical coverage.

142. A comparison of countries across income levels shows a positive relationship between higher numbers of health workers and particular health outcomes. Papua New Guinea's low ratio of medical doctors per 10,000 inhabitants is comparable to that of Sub-Saharan African economies including Burundi, Malawi, and Rwanda—which are also highly rural economies, but with incomes lower than PNG. There is a strong relationship between fewer medical doctors and reduced antenatal care and life expectancy (Figure 67). Countries including Cambodia and the Solomon Islands have more doctors and nurses than PNG, suggesting that with moderate increases in the numbers of health workers higher levels of health care and health outcomes are possible. PNG has a low nurse-to-population ratio (comparable to low-income Sub-Saharan African countries) and the lowest number of nurses per 10,000 inhabitants in EAP (Figure 68). Although many factors impact health outcomes in a particular country, PNG's low human resource number and capacity may indicate a clear barrier for the health system to improving health outcomes such as antenatal care coverage and life expectancy. Countries that have excelled with higher health outcomes—Fiji, Sri Lanka, Thailand, and Vietnam—are benefiting from greater numbers of nurses and doctors.

Figure 67. Medical Doctors and Impact on Health Outcomes, Select Economies



Source: Fertility and life expectancy, WDI; ANC and numbers of medical doctors, GHO data.

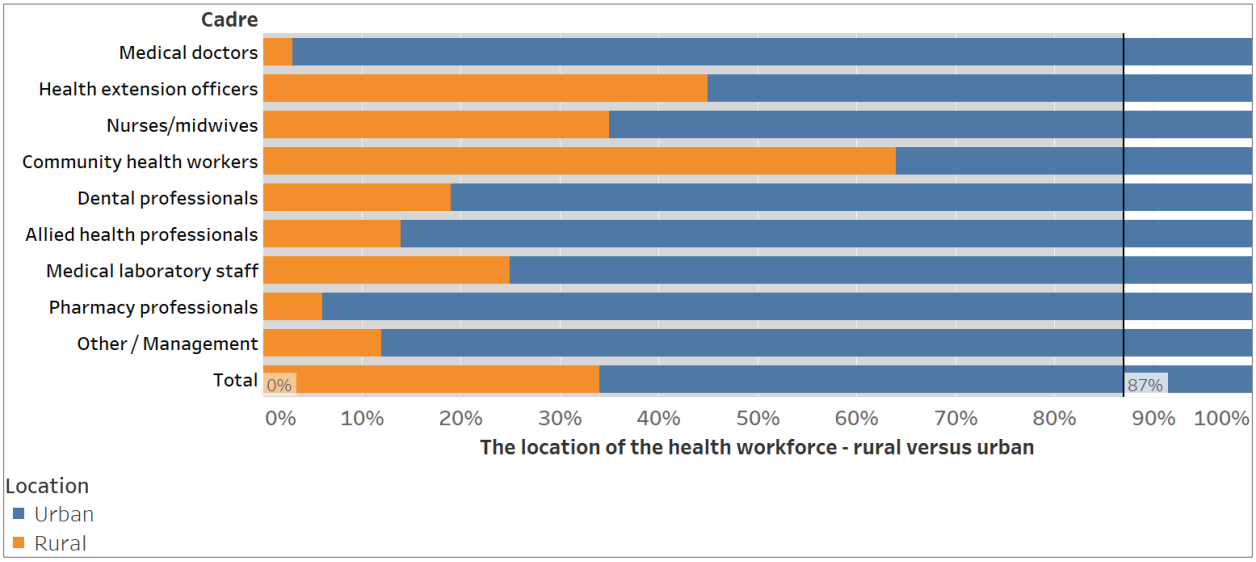
Figure 68. Nurses and Impact on Health Outcomes, Select Economies

Source: Fertility and life expectancy, WDI; ANC and numbers of nurses and midwives, GHO data.

143. The distribution of health workers in PNG does not match the distribution of the population—just 13 percent of the catchment population are in urban areas (Figure 69). About 87 percent of PNG's

population live in rural areas where primary health care services through aid posts, community health facilities, and health centers are the first point of entry into the health care system. The current workforce distribution is biased toward urban settings, where 66 percent of the workforce resides. Community health workers are the only cadre where the distribution of the rural placements (at 64 percent) is higher than in urban settings (36 percent). To rectify this mismatch, one must understand the complexity of how human resources are allocated and whether the right incentives are in place for the workforce to be placed in the needed locations. At the same time, proper checks and balances are needed for each health worker to ensure the right incentives and motivation to drive productivity and quality of care.

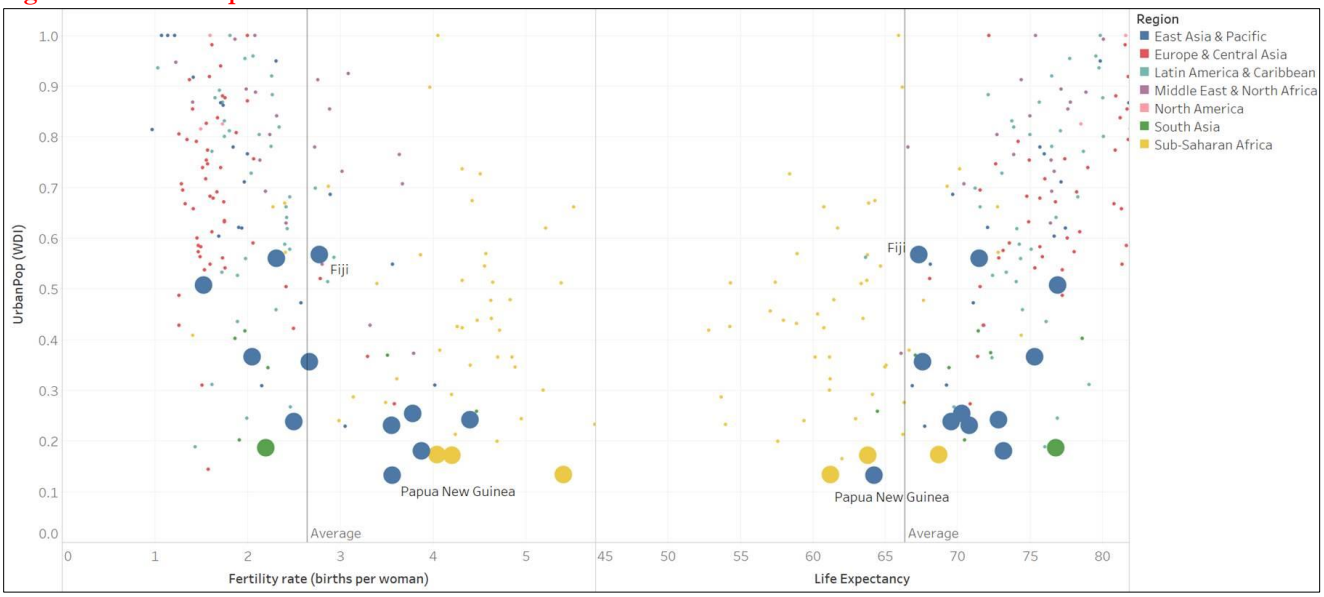
Figure 69. Health Workforce Cadres Distribution, Urban vs Rural, 2018



Source: WHO Human Resources for Health Country Profiles: Papua New Guinea.

144. Countries with high rural populations often have higher fertility rates, less antenatal care, and lower life expectancy. In PNG, rural populations are widespread across different geographic terrain with many small pockets of remote groups. It is assumed that remoteness is a strong determining factor in health sector performance and delivery of service volumes and outcomes. However, provinces like Milne Bay have been able to overcome their remoteness. A deeper understanding of how to address rurality issues and deliver health care effectively is needed and may be explained by where the health workforce is based geographically.

Figure 70. Urban Population and Health Outcomes



Source: Fertility and life expectancy data from WDI; ANC and numbers of nurses and midwives data from GHO.
Note: Sample economies are bolded.

145. Achieving UHC requires delivering equity to ensure that no one is left behind and everyone has access to quality health services without falling into poverty or facing financial hardship. Reaching the most vulnerable populations in diverse terrain with sparsely spread populations requires that service delivery models are shaped and targeted to allow everyone to benefit from good health.

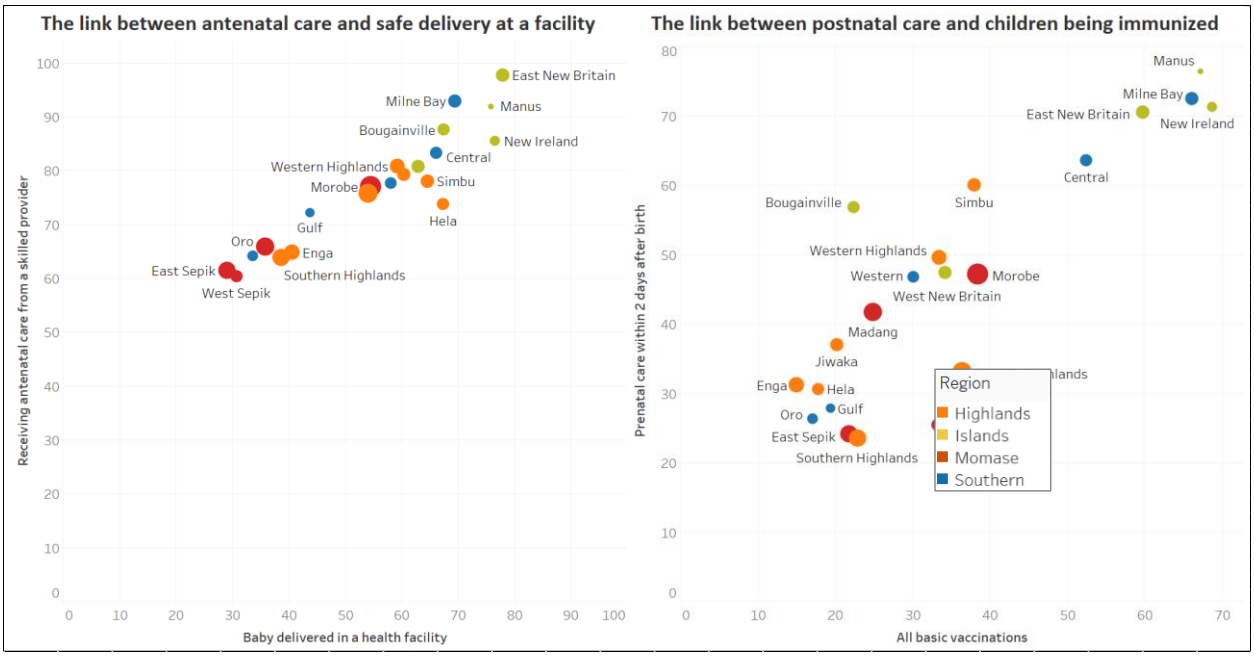
146. The Free Health Care Policy (FHCP) is well-intended but has failed to achieve its aims. In 2014, the introduction of the FHCP aimed to safeguard free basic health services for all by eliminating patient out-of-pocket spending for primary health care. Roughly K 20 million was allocated in 2014–20 with no adjustment for inflation; the budget was cut to K 15 million in 2021. The funding aimed to subsidize operational spending that facilities were charging for patient consultations and medication and is described by facilities as an essential source of revenue for basic health services (Wiltshire & Mako, 2014). However, seven years after the policy's inception, it unclear whether funding is reaching the facilities as intended. This has left gaps for health care providers to fill. Though well-intended, the FHCP suffers with the funding being inadequate in quantum and poorly targeted. FHCP funding needs to be better directed at health facilities, this will mitigate the large funding gaps that have occurred that have resulted in a further decline in rural health care service provision. Unfortunately, with the internal revenue streams unreliable and largely inaccessible, and the free health care policy funding poorly targeted and low in quantum, the network of primary care facilities lacks the funding support to deliver basic health services and thereby bridge the gaps in health equity across PNG.

147. Key health coverage indicators have declined over time. One cannot establish a direct relationship between the new policy and the impact on services. However, it is a disruption for health facilities in terms of receiving direct funding, which may have skewed service delivery (though other factors may have played a part). In real terms, health sector spending plummeted in 2014. The sector being squeezed during that year may be a point of evaluation regarding the allocation of operational funds to the frontlines and whether this impacted health service delivery. In the larger picture, policies linked with direct facility funding (DFF) and facility-based budgeting (FBB) may allow facilities to be autonomous again in bridging some of the immediate funding needed for supply services to be ready to deliver health services in their catchment area. The health sector has trialed some pilots that showed promising results for DFF in Bougainville—facilities improved their service delivery outputs when funds were channeled directly to the facilities. At the same time, an evaluation of the FHCP and

how this funding is used to target issues of equity and barriers to access will be critical to ensure the policy's reach is efficient and effective. It is noteworthy that the FHCP falls under the Treasury—not the health sector budget—and the consolidation of funds for health can be explored.

148. Women across all provinces state that money is the main barrier to health care access, followed by distance and transport. These barriers can result in forgone or delayed care and hinder visits to health care facilities for preventive care, resulting in higher costs for curative care later on. Deteriorating health service indicators for antenatal care, skilled birth delivery, low immunization, and still-high maternal and child mortality rates suggest that PNG is progressing slowly. There is a strong correlation between accessing antenatal care and births at a health facility and postnatal care and those achieving all basic immunizations across all provinces in PNG (Figure 71). The initial barrier to overcome is the first point of entry for women at the health facility level. There is a strong negative correlation between the high level of women noting access barriers and lower health outcomes (World Bank, 2021e). This finding confirms that women's lack of access to health services results in poorer use of health services and worse health outcomes. In particular, the trifecta of access barriers—money, distance, and safety (not wanting to travel alone)—are strongly correlated and very evident in the provinces of Gulf, Southern Highlands, Hela, Enga, and Sandaun. Building trust between the community and health facilities can increase the number of women utilizing health services. Local context matters and the role of districts and local governments to support women to overcome access barriers and generate demand will be important for improvements in health outcomes and increased basic preventive health services.

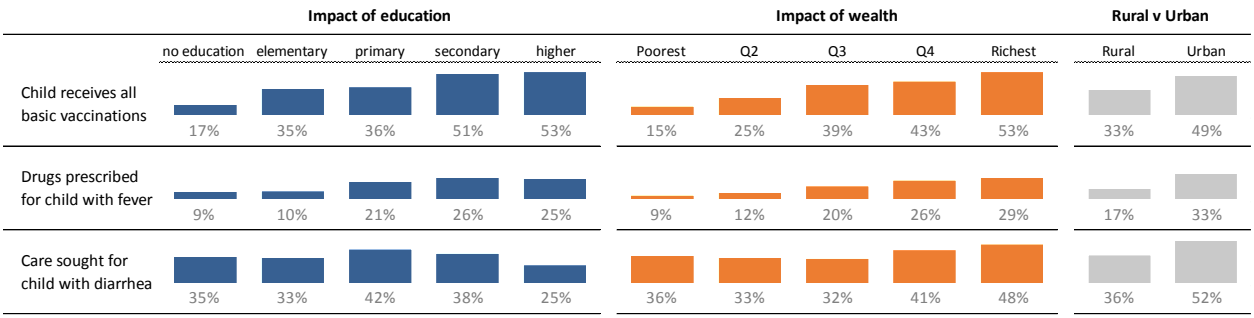
Figure 71. The Virtuous Cycle: Pre- and Postnatal Care, Safe Delivery, and Immunization



Source: DHS 2016–18 (2019).

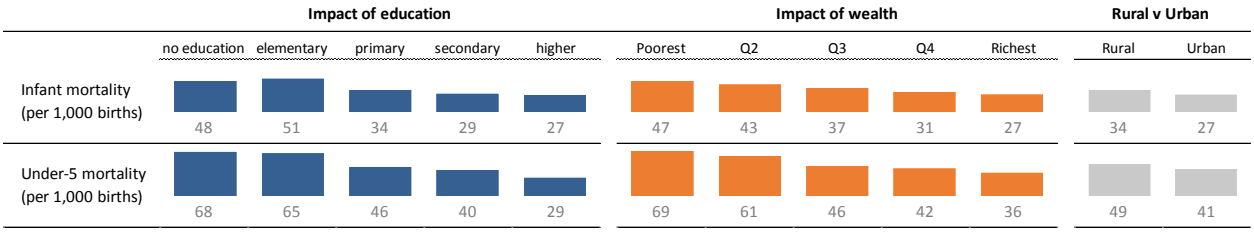
149. Predisposed socioeconomic factors at the individual level link poorer health service usage and health outcomes. Wealth and education are key determinants impacting health service usage and outcomes. For example, when looking at child health services, those with less education, in poorer quintiles, or living in rural areas have lower service access to important preventive services such as immunization, receiving medication for fever, or care-seeking behavior for diarrhea. These socioeconomic factors require other multisectoral policies to address them. From the health sector, a targeted and focused approach to understanding the experience of the poor, illiterate, or rural population and pro-poor policies can also support bridging this inequity gap in health service coverage and outcomes.

Figure 72. Child Health Services and the Role of Educational Attainment, Wealth, and Location



Source: DHS 2016–18 (2019).

Figure 73. Child Health Outcomes and the Role of Educational Attainment, Wealth, and Location



Source: DHS 2016–18 (2019).

3.2. *Recommendations*

150. PNG's systems of governance, management, and financing for health have transformed over the past 15 years. It is time to take stock and reflect on their effectiveness in supporting the delivery of health services and health outcomes across the country. With the implementation of PHAs in all provinces, the National Health Plan 2021–30 presents an opportunity to introduce policies and initiatives to align the health system architecture for future progress. Health financing reforms underpin health system performance and support progress in achieving UHC. Moving the needle may require an evaluation on two fronts: (i) to identify the factors and policies that will support health sector performance with appropriate frontline resourcing; and (ii) promoting health equity and ensuring that PNG's hard-to-reach places and vulnerable populations benefit from basic health services.

1. Factors and policies to support better health sector performance with appropriate frontline resourcing

a) **Strategically, one of the key issues for the health sector is to strengthen the broader governance mechanism to drive good practice in public financial management, promote accountability, and improve organizational performance over time.** Under the PHA arrangement, this starts by creating the necessary 'tone from the top' with an effective and engaged PHA board and chair (and an active and vigilant audit & risk committee), working constructively with a strong CEO and executive management.

b) **Frontline health services require funding levels that are predictable and sufficient to enable the delivery of basic services.** This is not a new message, but the latest public expenditure analysis highlights a continuing decline in operational funding that undermines health service provision, utilization, and outcomes for the sector. The bleak picture of declining operational spending for frontline services between 2012 and 2021 contrasts sharply with the growth in health needs—with high population growth and an expanding set of health conditions. The decline in funding for health facilities compromises the ability of the sector to meet the growing health burden and deliver basic health services. The financing model for the rural health system is not working as intended and needs to evolve. A combination of

funding gaps—from persistently low allocations of provincial internal revenue; the costing of rural health services that needs updating to reflect the Provincial Health Authority structure, differing facility levels, and health service delivery expectations in the 2020s; and the uncertain areas in responsibilities that exist between the state and church health providers—are critical policy-level issues that need to be addressed in consultation with the Treasury, DPLGA, and the NEFC. At a macro level, the sector requires a larger budget envelop (i.e. more funding) to build and maintain a health service suitable to meet the complex needs of a growing yet highly dispersed population. Financing such an increase involves difficult choices, either in finding new revenue streams or in prioritizing health over other sectors. Raising excise taxes on tobacco, alcohol, sugar-sweetened beverages, and carbon is an example of a revenue generating prospect that can also promote healthier behaviors and reduce cases of non-communicable disease which a leading cause to premature deaths in PNG.

c) **Unpredictable cash flow from the national to the subnational level and hard-to-secure capital funds exacerbate low levels of recurrent funding.** The longstanding issue of unpredictable cash flow continues to cripple the implementation of frontline health services in PNG. The situation appears to have become more acute with the advent of COVID-19 and the increased cash constraints facing government. If we accept the fundamental importance of frontline health as a critical and essential government service that impacts all Papua New Guineans – what can be done to secure core recurrent funding? Further, while important progress has been made in consolidating health funds under the PHA umbrella (health function grants and funds for provincial hospitals), other potential sources of health funding are difficult to secure. Provincial and district SIP funds are a significant potential source of capital investment funding for the health sector at the PHA level, but securing and coordinating their use is a continuing challenge for PHAs. This is particularly the case given health appears to attract less priority and discretionary funding than other sectors, such as education and infrastructure – in this sense 'health is a hard sell'. Advocacy alone will not be sufficient to readjust how decision-makers will choose to allocate resources. Stronger policies or a rethink on how health should be financed is needed (NDoH and PHAs).

Key recommendations:

i. A review of the health financing available to support frontline services is required. The review should assess the adequacy and predictability of recurrent funding to meet the sector's service mandate. Lessons relating to efficiency, including the relative costs and performance of state-run and church-run facilities, should be considered during the review process.[15] The review should also consider any further steps required to consolidate and streamline health funding flows to enable better service planning and implementation. The review could explore other potential sources of funding for health (such as health taxes) and inform any broader analysis of sector and intergovernmental financing.[16]

ii. The cost of rural health services needs to be updated to reflect the new health system with the PHA structure, funding arrangements for faith-based providers, the differing facility levels, and the health service delivery expectations in the 2020s. This work can integrate with other concurrent costing initiatives.[17]

[15] World Bank. 2018. Service Delivery by Health Facilities in Papua New Guinea. © World Bank.
[16] The Provincial and Local Level Service Monitoring Authority (PLLSMA) has endorsed a review of the intergovernmental financing arrangements.
[17] Other concurrent costing initiatives include a review of the NEFC cost of services study and a health costing study being prepared to support the health sector strategic plan.

iii. Agreement is needed with central agencies (Finance, Treasury, and the NEFC) to secure predictability of cash flows for the health sector, with priority given to operational funding for frontline services and health facilities.

d) **With the health sector operating in a resource-constrained environment, the system needs to focus on service readiness and maximize its scarce resources.** Funding and service volumes vary significantly across provinces and districts, suggesting considerable realignment scope to promote higher utilization levels and efficiency. At the provincial level, there is scope for PHAs to reflect on the system architecture that has evolved, the model of care. Ideally, a high proportion of primary care attendances would be delivered through lower-level facilities or via outreach, allowing provincial hospitals to focus on secondary care services. Other cost pressures can be observed, with new hospitals and aspirations of distributed specialist services being developed without adequate planning – and with no additional staff resourcing available to make them operational. Critically, the optimal situation will vary in PNG and reflect the local context. The priority is to encourage access and ensure health staff are appropriately located to meet service demand.

e) **A clear linkage between health funding and service performance will promote efficiency and generate forward momentum.** The essential service package in PNG is yet to be defined but will be the basis to measure progress toward UHC. The use of subnational funding in health is currently unclear; improved budget and accounting practices can create a stronger linkage between funding and service performance at both state-run and church-run health facilities. PNG's minimum priority activities (MPAs) system is well established and can be further strengthened for sector monitoring. At present, funding for frontline services (including HFGs and church grants) is not clearly linked to specific deliverables, which creates uncertainty about how resources are spent and what is ultimately delivered. Linking funding for frontline services to the delivery of the essential service package will help align spending to service expectations improving value for money.

Key recommendations:

i. Where appropriate, introduce FBB and DFF policies to improve the targeting and transparency of frontline funding for health facilities (in consultation with relevant central agencies including Finance, Treasury and NEFC). Any such FBB and/or DFF initiatives will require strong, pragmatic, and sustainable accountability mechanisms that provide reasonable levels of financial assurance and can be corroborated where possible with the service provision (e.g. funding provided for outreach and outreach activities recorded on the eNHIS).

ii. Develop a realistic essential service package for health facilities, with clear targets and standards to measure the use of frontline health funding. Re-evaluate, strengthen, and expand the existing MPAs to be output-oriented and trackable.

iii. Review the service capability across provincial hospitals to identify the services available, demand and service volumes, critical resourcing (including HRH[18] and financing), and the opportunities for learning and efficiencies.[19]

[18] Including staff not in permanent positions (i.e., casual staff).

[19] This review can build on relevant recent studies including the 2018 study *Service Delivery by Health Facilities in Papua New Guinea*. (World Bank, 2018); and a concurrent health costing study being prepared to support the health sector strategic plan with the assistance of the Asian Development Bank.

iv. Assist PHAs to critically review their health system architecture and models of care, identifying strategies to promote access and service volumes. Strengthen the capacity of lower-level facilities to deliver primary care through facility-based and outreach services.

v. Implement the health sector performance framework (NDoH). Routinely monitor the health financing and service delivery results and disseminate to PHA Boards and other accountability bodies to work with PHAs to address matters relating to capacity and performance.

f) **The number of health workers in PNG is low by international standards, and the workforce is aging. Additional investment will be necessary to maintain and improve the level of care**. Payroll remains the sector's highest cost driver. There are longstanding issues to resolve to promote productivity and value for money, including misaligned incentives, unattached health workers, and ghost workers. More detailed analysis is required to understand the policy changes necessary to address these issues. A review of human resource structures—currently underway by the Department of Personnel Management—is an opportunity for the health sector and PHAs to promote workforce efficiency. The number of health workers in PNG's workforce continues to be low compared with its peers. These low numbers, and the aging dynamic of the workforce, will constrain the sector as it seeks to deliver health care to a growing population with increasingly complex health needs. The time to develop health workers requires early planning to meet the future health needs of the population. Not doing so leaves the health sector vulnerable to missing its policy objectives. Any significant attempt to grow the health workforce is likely to rely on the sector securing a larger budget envelop from increased revenues (notwithstanding that some efficiencies can be achieved from sector initiatives such as: (i) aligning the health workforce to meet service demand more effectively; and (ii) promoting greater discipline in payroll management).

g) **The distribution of health workers is heavily biased toward urban areas. It needs to be aligned to effectively meet the health needs of the 87 percent of the population living in rural areas.** This realignment will reinforce the move to decentralizing service delivery from hospitals to more cost-effective lower-level facilities. Policies and incentives are needed to persuade and support health workers to be deployed in rural and very remote areas. Increasing the capacity and skill mix of current health workers to deliver quality care up to global clinical standards can improve demand for services and maximize productivity. It is envisaged that NDoH would lead on these matters given its strategic perspective, in consultation with PHAs and the DPM.

Key recommendations:

i. Review the financing options needed to meet the shortfall in the health workforce (including and assistance in HRH from NGOs and development partners). Planning is required to ensure the health workforce is appropriate to meet the country's medium- and long-term health needs in a graduated manner. Over time, the sector will require a larger budget envelop (i.e. more funding) to build and maintain a health service suitable to meet the complex needs of a growing yet highly dispersed population.

ii. Introduce policies and incentives to align the deployment of the health workforce with the country's health needs and service delivery demands. The deployment of the health workforce needs to reflect PNG's overwhelmingly rural population. Explore potential incentive schemes to promote movement.

iii. Increase training of the existing health workforce to improve knowledge and quality while developing models to measure productivity to ensure accountability.

iv. Conduct an analysis of the cost of the health workforce and any policy initiatives that need to be considered to strengthen this area.

2. Promoting health equity and ensuring the hard places in PNG and the more vulnerable groups benefit from basic health services.

a) **Some provinces, and districts within provinces, are struggling to deliver an effective health service. Resourcing and delivery strategies are required to break the cycle and improve health outcomes in these areas**. There are provinces in PNG where delivering health services is even harder than the norm. While remoteness may play a role in this regard, provinces like Milne Bay (with a high level of remoteness) have found ways to deliver health services despite their geographic constraints and dispersed catchment populations. Other factors contribute to the enabling or disabling environment and help determine health equity, and these indirect determinants require a multi-sectoral response. The distribution of resources and funding to PHAs varies significantly (consider the range of per capita allocations for health in Morobe, New Ireland, and Milne Bay). Strengthening the rationale and equity in calculating PHA funding envelopes (including church health) will assist in planning and budget-setting and ensure that resources are targeted to PHAs appropriately and equitably. Helping provinces that consistently lag behind is likely to require specific support and policy interventions aimed at improving health service coverage and utilization. If this is not prioritized, the gaps may persist and widen. At the subnational level, the distribution of development partner funding and support varies significantly, with some provinces benefitting more than others. Development partner support can assist in addressing inequity in the hard places.

Key recommendations:

i. Review and evaluate the calculation and factors that determine the PHA budget envelope (including church health) and consider how the resource distribution and prioritization process reflects equity (NDoH and Treasury).

ii. Strengthen development partner planning for PHA and provincial-level support in keeping with the principles of equity (NDoH and development partners).

b) Improve reach and financing to ensure the inclusion of PNG's most vulnerable citizens. The FHCP has not delivered the intended level of equitable access and delivery of free primary health. The revenue disruption to frontline health services has resulted in a vacuum that may have destabilized health facilities ability and capacity to deliver care. Eliminating barriers to access for health and generating demand for health services requires a multisectoral approach and strong partnerships at the community, local government, and district levels. The health sector can work with local leaders to empower citizens to take control of their own health, strengthen community-based health models, and work to build a sense of trust to increase demand for services. Given limited and unpredictable financing for health in PNG, targeting resources to those most in need, including the poor, is an important measure to ensure health disparities don't widen.

Key policies:

i. Pro-rural and pro-poor policies are required to develop the enabling environment, with district-level policies to ensure DSIP funding is being used effectively to address the barriers to health care access, improve service demand, and reach vulnerable groups (NDoH and DIRD).

ii. Reorient primary health care to focus on a community-based model of care that stimulates greater demand for basic health services and involves effective outreach to build trust between health service providers and the community (NDoH).

iii. Review the free health care policy, considering its adequacy and effectiveness in substituting for the loss of user fees. Consider how the FHCP initiative can be improved to support lower-level

facilities and frontline service delivery more effectively, emphasizing remote facilities that traditionally rely heavily on user fees to sustain basic services (NDoH and Treasury).

151. Health is a critical element in PNG's vision to develop its human capital and a high-performing workforce that drives economic participation and prosperity across the country. The health challenges confronting PNG today are significant: EIDs like COVID-19, NCDs, the return of older diseases in more virulent forms, and the need to expand basic and more advanced health care to a growing and still rural population. A country's investment in better health is an essential springboard that supports a generation of healthy children and moves the country forward in achieving the aspirations of Vision 2050 (MTDP III). For PNG to reap these benefits, it will require longer-term thinking and effective planning. A lack of investment in health has serious implications that may not be easily reversed. Workforce shortages, low health levels of service coverage, utilization, and demand will not support the higher-performing future generations necessary for development.

152. The introduction of PHAs is an opportunity to promote accountability and local solutions, coordinate resources, and develop service delivery models that work well in their local environment. PHAs will need to be supported with recurrent budgets (for staff and operations) that are adequate to achieve their service delivery mandate and predictable in disbursement to support the implementation of their in-year programs. PHA boards and CEOs need to be thoughtful in shaping their provincial health system in the most sustainable and effective manner to maximize their limited resources and deliver the most health services. More broadly, for PHAs to deliver better health services to their communities, a wider view is required that acknowledges the broader enabling context and the need to invest in that which contributes to better health in the longer term—clean water and improved sanitation, education for boys *and* girls, improved road access, and empowering women within communities.

153. Health in PNG is at a critical juncture. The health challenge is growing, and measurable progress needs to be made through careful and targeted investment. The health sector needs to improve its service readiness, quality, and reach—this will foster trust from the community, leading to increased service utilization and demand and better health outcomes. In 2021, despite the efforts and commitment of the sector, the aspirations of UHC are yet to be achieved. A shift in the funding paradigm is needed to enable the health sector to deliver better health care and ensure essential health services benefit all people. Judicious investment in targeted areas will be needed. Still, in times of fiscal constraint, great care is required to ensure any new and additional investment is directed at the areas which will return the greatest health dividend. The burden is on the health sector to present the case for additional investment and to strengthen its monitoring ability to communicate the improvements being made in service delivery, in demand, patient volumes, quality, and better health outcomes. The new health sector performance framework is an important step in the right direction; it promotes transparency and allows the health sector to report progress across provinces and districts. Under the new framework, the sector will have a line of sight in the delivery of health services and health funding and be able to measure coverage to ensure the needs of the population are being.

4. Aligning education spending to tackle the learning crisis

4.1. Sectoral context

System organization

154. The education sector in PNG stands out as a sector of commitment across state and society, where leaders of government, church agencies and communities invest in co-creating education services and take responsibility together to improve outcomes. Political leaders recognize the importance of education to their constituents and usually respond by investing in school infrastructure development and/or

school fee support. Every level of PNG government and society has a significant engagement in education and the sub-national level is vital to improving education outcomes in PNG.

155. Two departments are involved in providing oversight of the education system in PNG. The Department of Education (DoE) that oversees general education, Flexible & Open Distance Education (FODE),[20] and technical and vocational education training (TVET); and the Department of Higher Education, Research, Science, and Technology (DHERST), which administers universities and colleges (including teacher colleges and technical/business colleges).

156. Basic education in PNG involves a partnership between state and nonstate institutions. The country's education system[21] comprises 12,741 educational institutions catering to around 2.3 million pre-tertiary learners. A total of 55,493 teachers renders a student-teacher ratio (STR) of 42:1. Around half of elementary and primary schools are run by churches and other nonstate institutions; this proportion declines to one-third at the secondary level. Many families, clans, and villages participate in this local coproduction of education (in both state and church-run schools) from school board and parish education committee elections and participation to resource provision (school project fees, materials, labor maintaining school facilities, and so on). With nearly 850 languages spoken in PNG, the government established a mother tongue-based bilingual education program in which community languages are taught as a subject and used for instruction in the first three years of formal education. By the early 2000s, over 400 languages were being used in PNG's formal education system.

157. PNG exhibits diverse educational resources with multiple pathways of funding for education. The two decentralization acts, the 1977 Organic Law on Provincial Governments and the 1995 Organic Law on Provincial Governments and Local Level Governments, established an administrative division of labor: the national government became responsible for implementing national education policy; the provinces became responsible for service delivery and planning (Howes and others 2014). As such, the DoE is responsible for developing, implementing, and coordinating national plans and policies, including curriculum development, exams, and teacher standards. It also supports the provinces with planning, professional services, developing and monitoring standards, distributing school subsidies, and managing pre-service training for teachers. Provincial and local level governments are responsible for managing and operating schools on the ground. They have a high level of autonomy in the use of funds transferred from the central government (education function grants and SIP funds[22]). They also allocate different percentages of own-source revenue to fund education based on local priorities.

Service delivery

158. Over the last two decades, PNG experienced a significant increase in the number of schools and students in basic education thanks to population growth and increased enrollment rates. The Tuition Fee Free (TFF) Program, launched in 2012, also helped to drive a rapid increase in school enrollment (World Bank 2020). PNG's gross enrollment rate (GER) increased from 112 to 146 percent in elementary schools (2009 to 2018), 55 to 81 percent in primary schools (2000 to 2018), and 19 to 35 percent in secondary schools (2010 to 2018). However, net enrollment rates (NER) are considerably lower,[23] indicating over-age initial enrollment in schools and grade repetition. On average, children enroll in elementary school at an age that is at least 1.5 years

[20] Distance education is a means of delivering education to people who cannot attend an educational institution. Currently, it is offered primarily through the College of Distance Education to students wishing to complete their Grade 7 to 12 education. According to DoE's ministerial policy statement 01/2021, FODE will be fee-free and will be established in all high and secondary schools from 2021. Retrieved from http://www.education.gov.pg/documents/MPS-No-1-of-2021-GTFS-Policy.pdf.

[21] Refers to the national education system, excluding permitted schools.

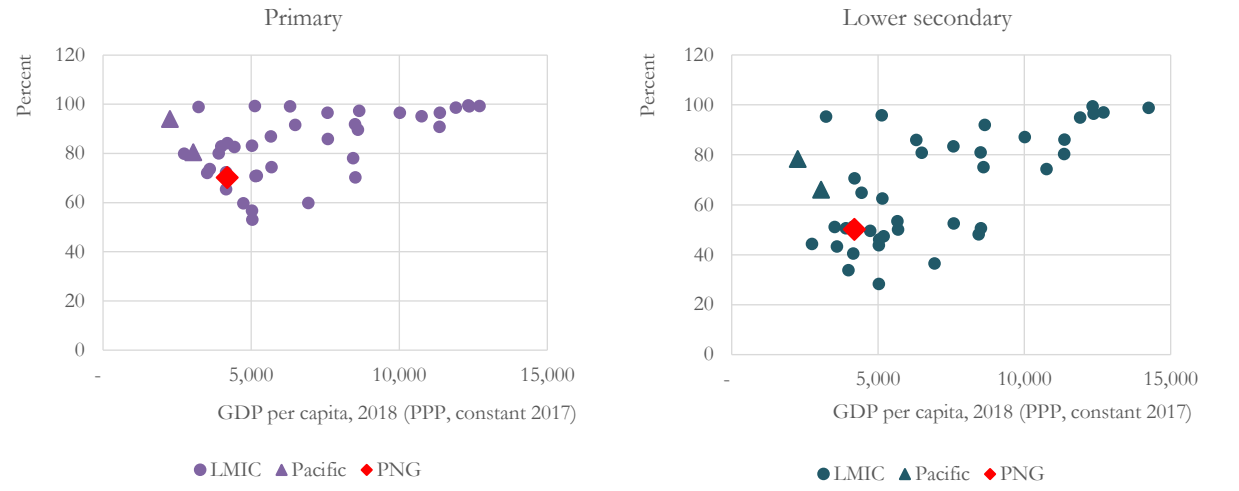
[22] Including Provincial Services Improvement Programs (PSIP), District Services Improvement Programs (DSIP) and Local Level Government Service Improvement Programs (LLGSIP) funds for development purposes.

[23] Between 2010 and 2016, net enrollment rates rose from 49 to 81 percent for elementary school, 44 to 58 percent for primary school, and 12 to 13 percent for secondary school.

older than the official age of school entry (six years old) (Johnston and others 2018). Although enrollment in primary education is on par with PNG's lower-middle-income peers, participation in secondary education lags far behind.[24] Girls' enrolment continues to lag boys' enrolment, with the gap increasing from elementary to primary to secondary levels (DoE 2018b), although girls perform as well as boys in learning assessments once they enroll.

159. Although access to basic education has increased rapidly in PNG, primary and secondary school completion rates remain relatively low, signaling internal inefficiencies in the sector. In PNG, about 70 percent of children completed primary education in 2016, and 50 percent of adolescents completed lower secondary education in 2018. The primary completion rate increased by 19 percent from 2010 to 2016; however, it is still low compared to economic and regional peers (Figure 74). In 2015, one in four children aged 6–18 was out of school.[25] Girls have higher dropout rates at key transition points[26] and are more likely to miss school due to domestic duties. Poverty played a crucial role in keeping children out of school. More than three-quarters of the out-of-school children (for both boys and girls) were from poor households. Children in rural or remote locations, particularly teenage boys and girls whose ages corresponded with official ages for lower secondary or upper grades in primary, were more likely to be out of school than children in urban or accessible areas (DoE 2018a).

Figure 74. Primary and Lower Secondary Completion Rates vs. GDP per Capita, 2018 or latest available



Sources: DoE 2018b; World Bank WDI, Edstats, accessed in February 2021.
Note: If data are unavailable for 2018, the available year that is closest to 2018 falling in the range from 2012–19 is used. PNG's primary completion rate is for 2016.

160. Quality of education has been a persistent challenge, accompanied by an acute learning crisis. As per the Human Capital Index (HCI),[27] a child born in PNG today will be 43 percent as productive when she grows up as she could be if she enjoyed complete education and full health.[28] Students in PNG are expected to complete 10 years of schooling by age 18, but after accounting for the quality of education, this number drops to around six years of schooling (Figure 76). The results of recent Early Grade Reading Assessment (EGRA) carried

[24] According to World Bank Edstats, the average GER in secondary education for lower middle-income countries is 67.3 in 2016.
[25] See footnote 16.
[26] About 92 girls for every 100 boys progress from primary to lower secondary school and about 91 girls for every 100 boys move from lower secondary to upper secondary school.
[27] Retrieved from https://datacatalog.worldbank.org/dataset/human-capital-index.
[28] This is lower than the average for East Asia and Pacific region and the average for lower-middle-income countries.

out in a number of provinces[29] indicate that students' literacy skills did not meet the requirement of the PNG Grade 1 Standards-Based Curriculum (SBC).[30] Overall, less than one-third of students could correctly identify all the letters of the alphabet. On average, more than one-quarter of students could not read a frequently used word, with a much higher proportion (more than 60 percent) unable to answer a single reading comprehension.

Figure 75. Gaps Between Expected Years and Learning-Adjusted Years of School, 2020

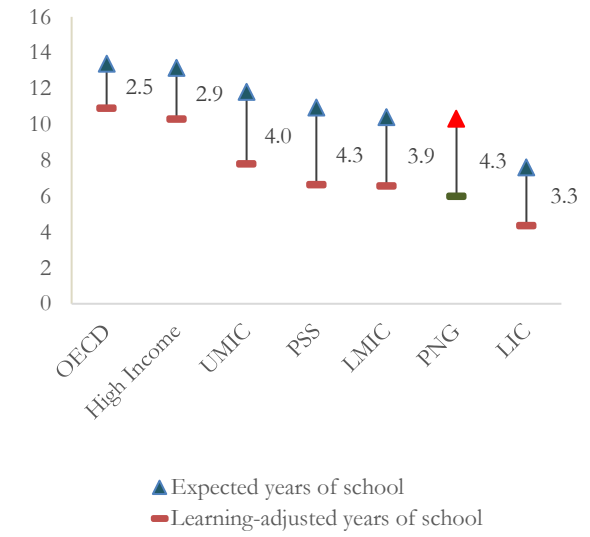
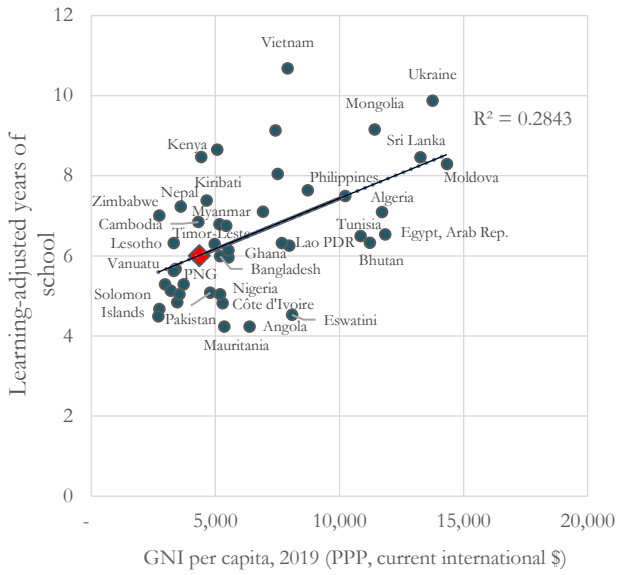


Figure 76. Learning-Adjusted Years of School, GNI per Capita



Source: World Bank WDI, HCI, accessed in January 2021. Retrieved from https://datacatalog.worldbank.org/dataset/human-capital-index

161. The lack of access to early childhood education (ECE) is a key factor underlying poor schooling outcomes. Development of ECE is still at an emergent stage in PNG. Aside from preparatory grade, essential ECE programs for four and five-year-old children are not universally available across the country and are usually not free. The projected minimum enrolment of four- and five-year-old children is around 8 percent of the same age cohort. Nongovernmental organizations and the private sector are the main providers of ECE education services.[31]

4.2. Education expenditure analysis

162. GoPNG is among the biggest education spenders when spending is measured as a share of total public expenditure; but as a share of GDP, it lags its peers. The government spent about K 3.0 billion on education in 2019, constituting 17 percent of total public expenditure and 3.5 percent of GDP. GoPNG spent less on education than its regional peers—outlays account for an average of 4 percent of GDP in lower-middle-income countries and even more in Pacific countries like the Federated States of Micronesia (12.4 percent of GDP), Vanuatu (4.5 percent of GDP), and Samoa (4.2 percent of GDP). GoPNG's expenditure on education is also lower than the OECD norm, where member countries spent an average of 5 percent of GDP (Figure 75).

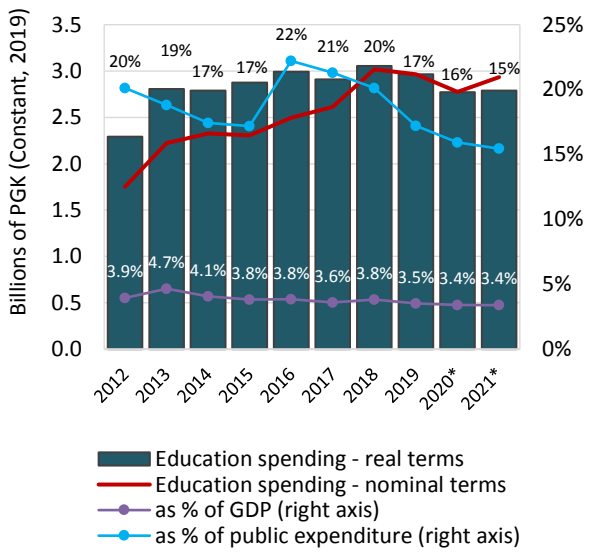
[29] The EGRA was conducted in the following ten of Papua New Guinea's 22 provinces: Central, Madang, Morobe, East Sepik, Eastern Highlands, the Autonomous Region of Bougainville (ARoB), Jiwaka, Simbu, Western Highlands, and West New Britain Province.
[30] The SBC was implemented in elementary education in 2015 and primary education in 2017. This new curriculum outlines specific national standards for each level of education. The new SBC for secondary school is still in process. Compared with the old curriculum, the SBC provides more scaffolding support for teachers, such as scripted lessons and more time location on core subjects.
[31] PNG Department of Education and National Office for Child and Family Services (2020). Early Childhood Education Cost and Financing Study Report.

The current level of spending is insufficient to improve the quality of education and access to it.[32] For PNG, devoting more resources to education would require increases in overall domestic resource mobilization (total government spending as a share of GDP) in addition to increasing the proportion of the budget devoted to education.

163. National government expenditure on education increased significantly in nominal terms since 2012 but declined slightly after peaking in 2018. In real terms, education spending fluctuated over the past six years with a jump in 2013 and 2018, which was mainly driven by the expansion of the national education subsidy (Figure 75a and b). Education's share of the budget dropped modestly, from 17–18 percent from previous years to 15–16 percent in 2020 and 2021, as more resources were allocated to mitigate the impact of the COVID-19 pandemic and rising debt service payments.

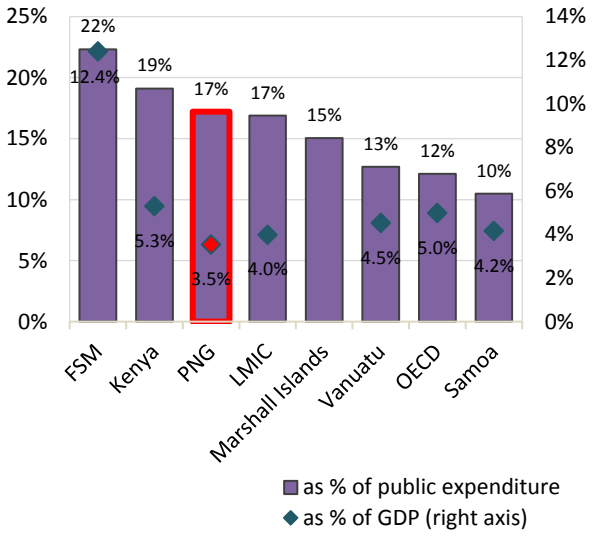
Figure 75. National Government Expenditure on Education

a. As Percentage of GDP and Total Public Expenditure, 2012–21



Note: *Revised budget for 2020 and approved budget for 2021.
Source: World Bank staff estimates using BOOST 2012-2021.

b. International Comparison, 2019 or latest available



Source: World Bank staff estimates using BOOST 2012-2021; World Bank Edstats; OECD Education at a Glance database, accessed in January 2021.

164. Subnational spending continues to increase as transfers to province absorbed more than half of the education spending. The central government spending declined from 51 percent of overall education outlays in 2012 to 39 percent in 2019, driven by decreases in recurrent (excluding national education subsidy) and capital expenditure over time. Correspondingly, transfers to province increased from 49 percent to 61 percent between 2012 and 2019, mainly driven by the rise in teacher emoluments which constitute between 90 to 93 percent of the overall transfers.

165. Donors play an important role in financing the education sector, but their contribution has been declining in recent years. On-budget donor-financed education expenditure decreased significantly in both real amounts and as a percentage of total education expenditure between 2014 and 2018. In 2014, donor funding

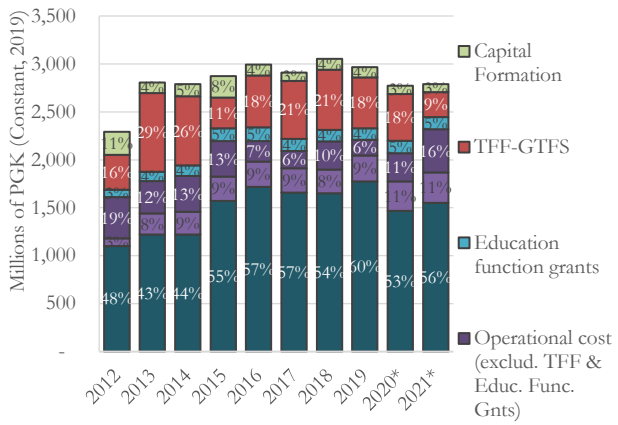
[32] A study undertaken by the Global Education Monitoring Report in 2015 estimated that education spending in low- and lower-middle-income countries would need to increase from 3.5 percent to 6.3 percent of GDP between 2012 and 2030 to deliver universal pre-primary, primary and secondary education (UNESCO 2015).

totaled around K 463 million, accounting for 25 percent of the entire education budget. The share dropped substantially to about K 91 million or 7 percent in 2018 with a decrease of K 372 million in real terms.

166. The size of teacher emoluments is comparable to international peers while there is a shortage of investment in improving teacher quality. In 2019, expenditures on all staff compensation constituted 69 percent of overall education spending, which is close to OECD member countries. Teacher emoluments alone accounted for 60 percent of education outlays (Figure 76). It has continued to expand since 2012, partially due to increase in number of teachers although the increment in elementary and secondary education had not kept pace with the expansion of enrolment, and partially because of the increase in salaries.[33] Expenditures on teacher education were held stable since 2012 except a spike in 2015 due to large investment in building infrastructure for teacher colleges. By budgeting K 15.6 million[34] (0.5 percent of total education expenditure or 0.9 percent of total education expenditure for teachers[35]) for teacher training in 2021, GoPNG has shown an effort to improve teacher quality since 2017. However, the total amount (K 38.0 million)[36] budgeted for teacher education in 2021 is 43 percent short of the amount (K 66.7 million) projected in NEP (2020–29). This is of concern given the urgent needs to upgrade elementary and primary school teachers to the next level of education respectively in correspondence to the ongoing restructuring of the education system.

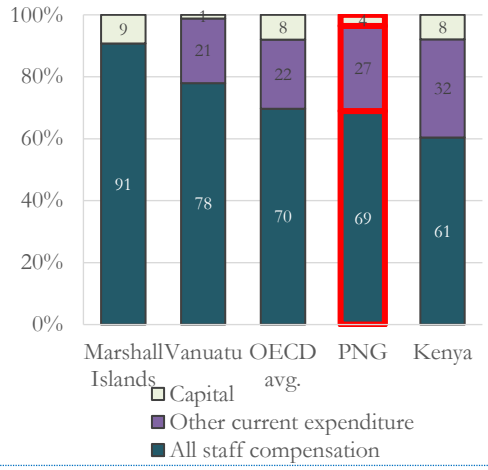
Figure 76. National Government Expenditure on Education

- **a. by Economic Classification, 2012–21**



Source: World Bank staff estimates using BOOST data for 2012–21.
Note: *Revised budget for 2020 and approved budget for 2021.

b. International Comparison, 2019 or latest available



Source: World Bank staff estimates using BOOST data for 2012–21; World Bank Edstats, accessed January 2021.

167. General education absorbed more than three-quarters of the education spending among subsectors. In 2018, from the total budget of K3.1 billion (equivalent of US$0.9 billion) spent on education, GoPNG allocated the highest amount to primary education (around 43 percent of the total budget), followed by elementary education (25 percent), secondary education (13 percent), universities (10 percent), TVET (7

[33] According to the Teaching Service Pay Fixation Agreement 2014–16, increases to teacher base salary provided in each year shall comprise of two components, namely: a) a 7.5% general across the board increase; plus b) an increase of 2.5 percent of the average base salary being paid to recognize ongoing increases in productivity as a result of Government reforms, free education policy, increasing class sizes and curricular demands. https://edu.pngfacts.com/uploads/1/1/3/2/11320972/extract_of_the_moa_for_the_determination_of_salaries_and_allowances_in_the_teaching_service_2014_to_2016.pdf.

[34] Lower-bound estimates. This amount does not include expenditure on Teachers' Personnel Management Services.

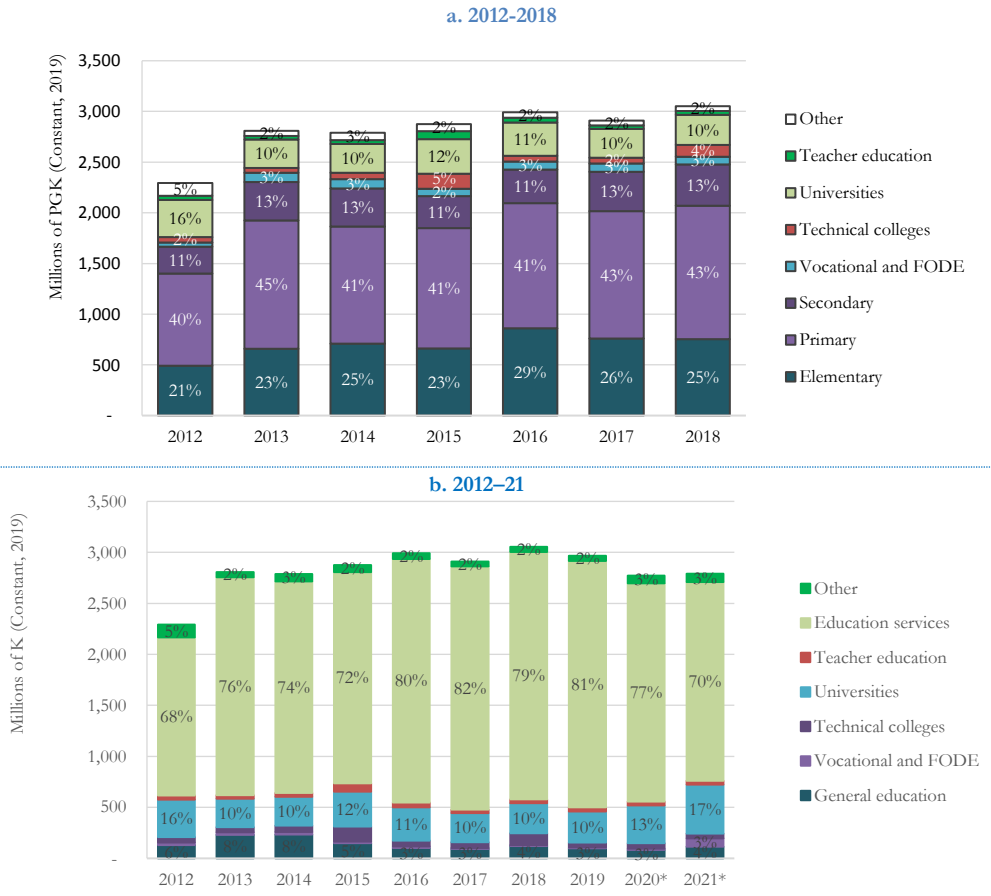
[35] Total education expenditure for teacher includes teacher emoluments.

[36] Lower-bound estimates. This amount does not include expenditure on Teachers' Personnel Management Services. If including spending on Teachers' Personnel Management Services, the amount would total K 47 million, a 30 percent shortage of the projection in NEP.

percent),[37] and teacher education (1 percent) (see Figure 76a). Spending on higher education (i.e., universities) shrunk from 16 percent to 10 percent between 2012 and 2018, whereas general education absorbed a corresponding increase of 9 percent in spending over the same period, which can be partially explained by the expansion in enrolment and partially due to the population growth.

168. Recent reforms shift the focus away from general education toward vocational and higher education. Expenditures on education services decreased from 79 percent in 2018 to 70 percent in 2021, indicating a shrink of budgets for curriculum development and national education subsidy, of which a lion share will be spent on general education and the rest on vocational education and FODE (Figure 76). In corresponding to GoPNG's national education plan to strengthen multiple pathways with FODE and TVET for students, an increase of 3 percent was budgeted to vocational education and FODE in 2021 compared to that in 2018. Budgets for universities also increased from 10 percent in 2018 to 17 percent in 2021. The increase is mainly driven by infrastructure development budgeted in universities, as well as the introduction of the Higher Education Loan Program to which an initial funding of K 150 million was allocated in the 2021 budget.

Figure 77. National Government Expenditure on Education by Functional Classification, 2012–21



Source: World Bank staff estimates using BOOST 2012–21.
Note: *Revised budget for 2020 and approved budget for 2021. Other includes general administration, R&D, and cultural services. Education services include curriculum development, national education subsidy, and teacher emoluments and education functional grants earmarked for the provinces.

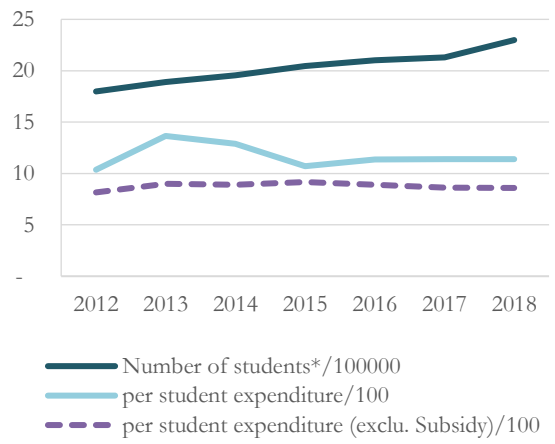
169. With limited resources, GoPNG will need to provide subsidies to achieve full access to ECE for four- and five-year-old children strategically. A joint team from the DoE and National Office of Child and Family Services (NOCFS) conducted an early childhood cost and financing study in February–May 2020 to better

[37] Includes vocational centers, FODE and technical colleges.

understand the characteristics, income, and costs of the ECE subsector. The study explores the estimated cost to the government in different scenarios if parents were to contribute K 50 per child per year (indexed to inflation). In three increasingly ambitious policy targets to expand access to ECE to 50, 75, or 100 percent of four- and five-year-old children in PNG. The total estimated cost of government subsidies under each scenario ranges from K 2.1 billion to K 4.1 billion or between K 452 and K 902 million per year by 2030 (11–22 percent of the projected education budget). Estimates when reducing the policy target to just five-year-old children reduces the range to K 1.2–K 2.0 billion or between K 250 million and K 430 million per year by 2030 (6–10 percent of the projected education budget).

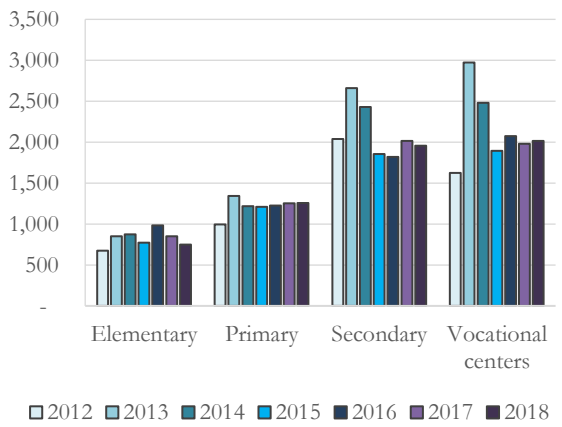
170. In per-student terms, education spending has remained almost flat and even declined for secondary education. *Error! Reference source not found.* introduces the dynamics of aggregate student enrollment a nd how real spending has evolved in per-student terms. Although the number of students enrolled in school has risen steadily over time, together with the increase in education spending, per-student spending has remained relatively unchanged. The school fee subsidy appears to drive the change in per-student spending; recurrent spending per student held steady over the years. Further disaggregation by subsectors (**Error! Reference source n ot found.**) indicates that the flat trend is mainly driven by the decrease in secondary education. In contrast, growth of the unit cost of elementary, primary, and vocational education fluctuated between 2012 and 2018. Despite the slight rise in primary education, per-student spending as a percentage of GDP per capita in primary education is still low in PNG (13 percent) when compared to the OECD average (20 percent); however, spending for secondary education in PNG (21 percent) is on par with OECD countries (22 percent).[38]

Figure 78. Total Enrollment and Per Student Expenditure (Real Terms), 2012–18



Source: World Bank staff estimates using BOOST data for 2012–18.
Note: *Includes enrolments in elementary, primary, secondary, and vocational education. Enrolments in universities, technical and teacher colleges are not included due to lack of data.

Figure 79. Unit Cost by Level of Education (Real Terms), 2012–18



Source: World Bank staff estimates using BOOST data for 2012–18.

4.3. Efficiency of education expenditure

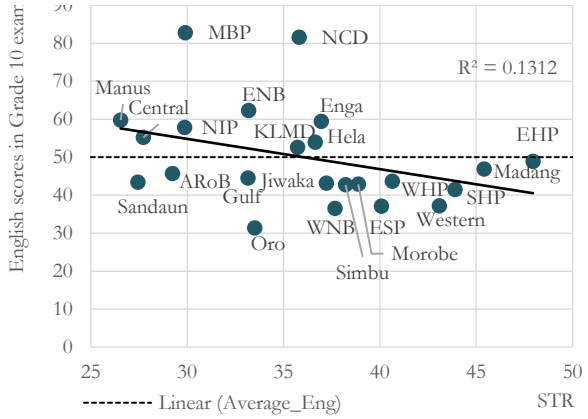
171. Despite improvement in student grade progression over the years, a low intra-grade retention rate in elementary school signals inefficiencies in the education system. Notably, 10 percent of children do not progress to higher grades in elementary school. More than one-fifth of children did not move from

[38] World Development Indicators, World Bank.

preprimary to Grade 1. Although these children can drop out of school, they are more likely to repeat the grade at the elementary level. Primary-level students fare better: less than 10 percent of children repeat a grade or drop out. Students are most likely to drop out when transitioning to secondary level.

172. Large variations across provinces in student-teacher ratios (STRs) at the elementary and primary level also indicate inefficiency and inequitable allocation of resources. STRs range from a low of 23 in elementary schools in Manus to 70 in Madang and Oro. Likewise, the gap between the lowest and highest primary STRs is about 50; the variation is significantly less (21) at the secondary level. Although low STRs do not necessarily translate into good learning outcomes, high STRs appear to have a negative impact on education quality. For example, all provinces that had above-average English scores in the Grade 10 exam kept STRs below a rate of 37 in secondary schools.

Figure 80. Secondary STR vs. English Scores in Grade 10 Exam, 2017



Sources: DoE 2018b; DoE 2017.
Note: KLMD is located in the Western Province.

4.4. Equity of education spending

173. The reintroduction of user fees is likely to affect access to education for disadvantaged households. Starting in 2020, parents are responsible for 38 percent of the tuition fee under the GTFS policy that replaces the TFF policy implemented since 2012. Total funding for GTFS in 2020 and 2021 is K 486.3 million, comprising a School Operations and Functional Grant of K 388.3 million (80 percent) and a commodity component of K 97 million (20 percent), a 19-percent cut in nominal terms compared to the 2018 budget (K 602 million). Evidence shows modest declines in enrollment at the upper primary level between 2019 and the start of the 2020 school year. In 2019, 98 percent of students aged 12–14 attended school; this number fell to 94.4 percent at the start of the 2020 school year (World Bank 2021c). The rise in school fees, combined with the increasing need for household income given the challenging economic situation in PNG, is a potential cause. The school fee policy may undergo another change. In May 2021, President Marape announced plans to make a make education free for all from elementary schools up to universities and colleges in 2022.

174. The potential learning loss caused by the COVID-19 pandemic is quite concerning, particularly for students in hard-to-reach areas, although most of students resumed classes when school reopened. In PNG, schools were closed in March 2020 following government's COVID-19 mitigation measures and

reopened in May 2020 under the DoE's "New Normal" COVID-19 protocols.[39] According to the second round of High-Frequency Phone Surveys (HFPS) conducted by the World Bank in early 2021,[40] less than 10 percent of primary and elementary school students participated in distance learning while schools were closed. Just over 60 percent of students participating in distance learning indicated that they had received hardcopy or printed study materials shared offline, compared with the rest participating in classes or session broadcast through multimedia such as television, radio, non-interactive videos, and two-way video communications (Zoom, Skype, WhatsApp, Viber). The main reason for students not participating in distance learning is a lack of programs provided by the school, compounded by the lack of basic learning materials, necessary electronic equipment and internet connection at home.

175. Remedial measures were taken by DoE to ensure learning continuity during and after the COVID-19 pandemic with international support. In April 2020, DoE took the lead to conduct a rapid needs assessment of the COVID-19 impact on the education system in more than 400 schools to inform medium- and long-term strategies. In March 2020, GPE contributed US$70,000 to support the launch of radio and TV programs to broadcast English, math and science lessons, and to provide educational resources for teachers and students on the ministry's website which was accessed by more than 300,000 students throughout the country. Furthermore, DoE launched its COVID-19 Education Emergency Response and Recovery Plan, with a substantial donor support of over K 32 million from the GPE and K 52 million from the Government of Australia, to support distance learning and school reopening while building a more resilient education system.[41] For example, under the program, learning kits are distributed to students living in the most remote areas; teachers are trained on delivering remote lessons and conducting psychosocial well-being assessments with students; handwashing stations are installed along with the distribution of hygiene kits in selected areas.[42]

176. Provinces with lower fiscal capacity receive more education function grants from the central government to cover operational costs of pre-tertiary education. Figure 81 shows a modest correlation between education function grants and provincial fiscal capacity in 2018, indicating that education function grants were distributed in consideration of provincial wealth. Compared to the random pattern in 2015, this signals an improvement on compliance of the funding formula with an equalization procedure that takes into account provinces' revenue, the varying cost from province to province of delivering basic services, and geographic remoteness (World Bank 2014).

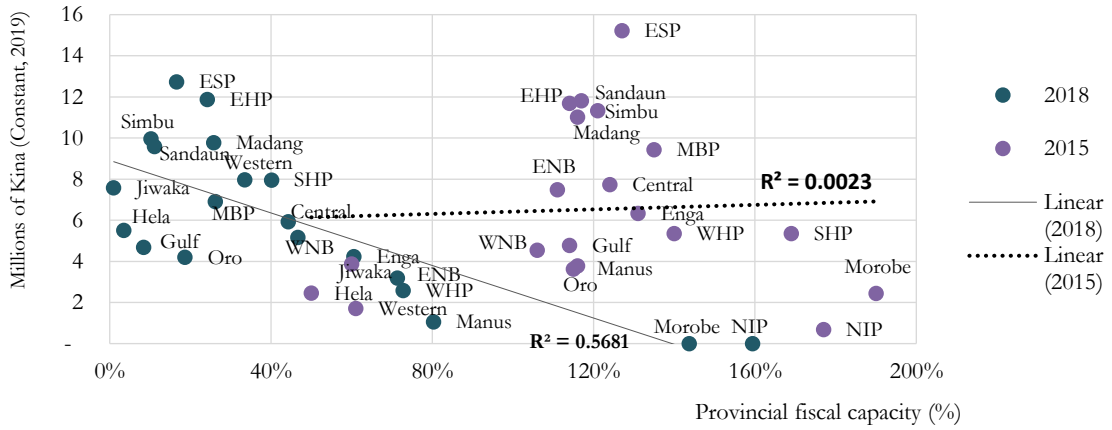
[39] The World Bank planned to conduct five quarterly rounds of HFPS to monitor and assess the socioeconomic impacts of COVID-19 in Papua New Guinea. The first round of data collection began in June 2020; the collection for the second round was completed in January 2021.

[40] The survey also included preschool and secondary school students, but these two groups were excluded from the analysis. Only a small share of students in the 3–5-year-old age group was enrolled in the first place, making it difficult to interpret the findings. In terms of secondary school students, only 10 were captured in the sample, and therefore the sample size was insufficient to include these students.

[41] https://www.unicef.org/png/press-releases/papua-new-guinea-launches-its-covid-19-education-emergencies-response-and-recovery

[42] Global Partnership for Education: https://www.globalpartnership.org/blog/papua-new-guinea-reinventing-learning-time-coronavirus;

Figure 81. Correlation Between Education Grants and Provincial Fiscal Capacity, 2015 vs. 2018



Source: World Bank staff estimates using BOOST; NEFC 2018; NEFC 2015.
Note: Fiscal capacity refers to a province's ability to meet its costs of basic service delivery. It is expressed as a percentage and is calculated by dividing available revenue by estimated costs.

4.5. Recommendations

177. There are significant needs in the education sector and this section highlights gaps and priority areas; but the prioritization must also take into consideration affordability given the financial shortfalls of the overall government budget. As previously highlighted, the current level of spending is insufficient to improve the quality of education and access to it but devoting more resources to education would require increases in overall domestic resource mobilization (total government spending as a share of GDP) in addition to increasing the proportion of the budget devoted to education. This creates a significant challenge, as highlighted in this PFR: without more revenue PNG cannot afford the significant improvements that are urgently needed in education (as well as other sectors).

178. The recommended focus areas are identified and costed where applicable, framed in terms of potential short, medium, and long-term elements, and grouped into different combination scenarios. The categorization into the short, medium, and long term is intended to meet the most urgent needs of the education system while sustaining government's overall funding envelope for education in the long run. Simulation of costings for different scenarios of spending items and estimates of potential savings from efficiency use of resources are presented at the end of the section in Table 4.3.

Recommendation 1: Expand the access to quality early childhood education

179. Spending on ECE in PNG currently represents a negligible share of central government spending[43] despite being a key government priority and should be increased. International agreement exists on ECE's critical role for children's well-being and their future educational achievement, as well as a country's overall economic development. Investment in early childhood generates a higher return on investment than the same spending on later education (Heckman and Maserov 2007). The government could develop a roadmap to expand ECE coverage and improve the quality of ECE services by providing appropriate funding, provide technical support, and promoting collaboration among donors and other stakeholders to prioritize this subsector. Incentivizing subnational governments to invest in ECE could help to accelerate the expansion.

180. For ECE prioritization, target the most disadvantaged children first. To achieve international commitments on ECE access, the government and its development partners should consider how subsidies can initially improve access for disadvantaged students (for example, in provinces with limited ECE provision and

[43] Publicly funded ECE is largely absent in PNG; therefore, its share of total education expenditure is hardly identified.

students in remote areas or in areas of poverty). School fees should not be a barrier for poor children, girls or children with disabilities to access quality ECE. Also consider partnerships and sustainability at each stage. Increasing government oversight and resourcing of the sub-sector will take many years. DoE should consider the short and medium activities that will support continued expansion of quality ECE services and build on the foundations that already exist. The government recognizes the efforts made by partners, especially the church agencies, and has opted for a partnership approach combined with continued parental contributions. This will need to be codified and agreed. For example, providing subsidies through established church education agencies may lower transactional costs and keep salary costs in check. In the scenario of reaching 100 percent NER for all 4-5 year-olds it is estimated that an additional K 85.8 million (3 percent of the 2021 education budget) would be required, while 50 percent NER would be K 57.2 million. Rollout of early childhood education with short-, medium- and long-term targets is the most feasible approach given budget and logistics constraints.

Recommendation 2: Improve in-service teacher training to support learning recovery and recruit the best teacher candidates and distribute them effectively

181. The education sector should prioritize expanding and improving in-service teacher training to equip teachers with the ability to identify and take actions to support the needs of each student. Teachers and teaching play the largest role in student achievement. However, in PNG only three-quarters of teachers in primary schools are qualified; even less are qualified in secondary schools (61 percent). Improving the qualifications and quality of teachers can be done by upgrading the knowledge and skills of existing teachers and strengthening current in-service curriculum to ensure high-quality programs are provided. The current teacher training program,[44] which has spent 1.3 percent of total education expenditure, should be regularly evaluated to ensure its effectiveness in improving teacher's competencies and expanded if the evaluation is satisfactory. Teacher training on using technology and other measures to support distance and accelerated learning is of most importance for learning recovery amid the COVID-19 crisis. Teacher skills to identify students' needs, tailored lesson plans which can help improve student learning, and ensure that students reach at least minimum learning competencies should be included in the in-service teacher training. It is estimated that addressing the gap between the 2021 budget and projected amounts in the NEP (2021-2029) requires K 28.6 million, which would be 1 percent of the 2021 education budget.

182. Strengthen the teacher recruitment process to attract sufficient qualified teachers with strong knowledge in their subject matter and pedagogical skills and ensure proper distribution of teacher resources across regions. The gap of teacher distribution across regions should be tackled as well to avoid unreasonably high STRs in some areas (e.g., 70:1 in elementary schools in Madang and Oro) so as to reduce unnecessary costs of hiring more teachers. In order to ensure only high-quality teachers are hired, new teacher recruitment mechanisms should be established. In addition, new teacher recruitment must be regulated carefully to ensure that it is targeted only at those schools/areas with teacher shortages. DoE has prioritized the hiring of teachers and the reduction of student-teacher ratios. The NEP (2020-29) targets STRs of 35:1 for Elementary and Primary and 30:1 for Secondary by 2029. In the medium term a reasonable target would be 45:1 for elementary and 35:1 for Primary and Secondary, which would have an additional cost of K 153.7 (5.3 percent of the 2021 education budget). An important associated cost-saving and efficiency improvement measure is proper distribution of teachers. Improving the distribution of teachers across regions could lead to cost savings of an estimated K 6.39 million. This would involve placement of new teachers in areas where there are shortages as well as redistribution where possible. The additional cost to reach 30:1 STRs in elementary, primary, and secondary schools would require K 640.4 million (equivalent to 21.8 percent of the 2021 education budget), which is not feasible in the medium term, but should be a long-term goal.

[44] Includes both pre-service and in-service teacher training.

Recommendation 3: Strengthening education management information system including education budget and expenditure data for policy planning and decision making

183. Incomplete data make it challenging for the government to plan, budget, execute, or evaluate educational programs and activities. There is incomplete data in key areas of school conditions, learning resource availability, demand for teachers and other education personnel, student performance, and education expenditure. Improving education management information system databases to provide accurate and up-to-date data on schools, teachers, and students—and ensuring that the databases clearly identify inequities and disparities in the education system such that the data can be disaggregated by province, district, urban/rural, remote/nonremote—would help the government and other education stakeholders to identify actions to improve learning. PNG's low level of education resources affects the quality of its education service delivery. The classroom environment in PNG lacks learning resources and facilities (32 percent), especially in remote areas (42 percent) (Howes and others 2014). Improved data use could be used to identify which schools do not have the minimum inputs, including learning resources, staffing, infrastructure and sufficient discretionary funds, so that prioritized plans can be developed to meet these gaps.

184. At every level of the system, data are under-utilized, essentially depriving policy makers and administrators of the key information they need when they need it to manage the system. The school census and DoE's Education Management Information System (EMIS) has improved in recent years but is still not fully reliable and data is often lagging. Furthermore, years of exam results are warehoused in paper form, instead of digitized to monitor performance more effectively. An education system in which 'funds follow students' and that places such importance of direct facility financing to schools requires more, better quality and timely information on resource management, school and student performance. By requiring data before payment of the school subsidies, DoE has 'incentivized' timely reporting by schools of enrollments and other important system statistics. However, delays and gaps in reporting indicate that more incentives are probably required, as are changes to lower the administrative burden of reporting.

185. Information on what is being spent in the sector is also necessary to further measure effectiveness and efficiency of education spending. For example, more than 10 percent of education outlays are spent on universities; however, it is unknown how these funds translate into educational inputs (enrollment and staffing), outputs (completion rate), and outcomes (employability). With investment in PNG's universities rising (from 13 percent of the education budget in 2020 to 17 percent in 2021), there is a need for better monitoring of inputs, outputs, and outcomes of education services in universities. PNG's school subsidy program (previously TFF now GTFS) has been implemented since 2012, but there is still no systematic reporting or information on how schools use the funds.

186. Even when available, access to important expenditure management and administrative data is unnecessarily difficult. PNG benefits from quite a lot of financial and administrative data. But key datasets are difficult to access, either because of bureaucratic barriers between levels of administration, government departments, and even units within the same department. Even where there are few official restrictions, there may simply be too few people with knowledge and skills to manage and update key information from systems like (PBS) Integrated Financial Management System (IFMS), and the payroll management system, ALESCO Provincial Government Accounting System (PGAS). When key administrative data are difficult to access, they do not benefit from regular, independent scrutiny than can help identify and correct errors and ultimately improve the quality of information available to inform service delivery.

Recommendation 4: Strengthening public financial management systems and practices to improve effectiveness and efficiency of education spending

187. Budget execution has improved, but public financial management tools are still weak in the education sector. As identified in the 2014 PER, GoPNG has gradually shifted away from prioritizing capital

spending and toward increasing investment in contributors to education quality (for example, teacher training). However, total investment remains below the amounts projected in the sector plan. As such, the three important inconsistencies or 'disconnects' in the sector budget process identified by the 2014 PER program still hold. These disconnects exist between: (i) the education Medium-Term Expenditure Framework (MTEF) and GoPNG's overall fiscal plan; (ii) what the MTEF model says is required and the budget requests made by DoE to the Treasury; and (iii) what is appropriated in the national budget, and what is spent. Greater scrutiny by central agencies and parliamentary committees is required to determine whether: (i) the projected needs for education spending according to the MTEF are realistic given GoPNG's overall fiscal stance; (ii) annual budget request submissions are consistent with the sector MTEF; and (iii) why DoE, province, and district authorities perennially underspend in some areas and overspend in others. This type of independent scrutiny could be strengthened as part of the annual budget process (World Bank 2014).

188. Education spending through subsidies paid directly to schools could be complemented with proportionate spending at levels of the system responsible for quality. Sending funds directly to schools can empower school administrators and boards of management, which benefit from community participation. Indeed, the National Research Institute – Australian National University Promoting Effective Public Expenditure project found that strong community decision-making and school accountability institutions have made a positive, measurable difference to education performance relative to health. Furthermore, the government has learned from and improved on past experiences, managing to get more funds to schools faster. This is a significant, positive achievement, however there is a need to also provide funding to national, provincial and district level structures responsible for raising and sustaining quality, for example curriculum development, production of textbooks and other materials, training and deployment of teachers, and school inspection.

Table 7. Projections on Finance and Costing of Various Scenarios Based on Recommendations

Scenario	Recommendations	Cost (Kina, millions)	Share of 2021 education budget (%)	Share of 2021 GDP (%)	Total as a share of 2021 GDP (%)
Short-term (ST)					
ST1	Reduce the gap in teacher education (i.e., gap between approved budget and projected amounts in NEP)	28.6	0.98%	0.03%	0.06%
	National subsidy to ECE for 58% NER Just 5-year-olds	26.7	0.91%	0.03%	
ST2	Reduce the gap in teacher education (i.e., gap between approved budget and projected amounts in NEP)	28.6	0.98%	0.03%	0.08%
	National subsidy to ECE for 80% NER Just 5-year-olds	36.8	1.25%	0.04%	
Medium-term (MT)					
MT1	Reduce the gap in teacher education (i.e., gap between approved budget and projected amounts in NEP)	28.6	0.98%	0.03%	0.10%
	National subsidy to ECE for 50% NER 4-5-year-olds	57.2	1.95%	0.07%	
MT2	Hire additional teachers to reach target STRs (Elementary-45; Primary-35; Secondary-35)	153.7	5.24%	0.18%	0.26%
	National subsidy to ECE for 75% NER 4–5-year-olds	71.5	2.44%	0.08%	
Long-term (LT)					
LT1	Hire additional teachers to reach target STRs (Elementary-30; Primary-30; Secondary-30)	640.4	21.84%	0.74%	0.84%
	National subsidy to ECE for 100% NER 4-5-year-olds	85.8	2.93%	0.10%	
Savings from efficiency use of resources					
	Improve distribution of teacher resources across regions*	6.39	0.22%	0.01%	0.01%

Note: *Rough estimates using 2017 provincial STRs and teacher salary.
Source: DoE and National Office for Child and Family Services 2020; World Bank staff estimates using BOOST data for 2012–21; DoE 2017.

Summary of recommendations

Table A. Summary of Recommendations for Fiscal Consolidation and Their Fiscal Impact

Recommendations	Agencies in charge	Rationale for the action	Fiscal impact and savings
Fiscal policy			
Addressing unrealistic budgeting	Treasury & NEFC, DNPM, DPM	To improve the credibility of the annual budget process	Neutral
Revising the dividend policy for the companies operating in the resource sector	Treasury and DNPM	To increase their contribution to the revenue base	Positive impact, with potential fiscal savings of 0.5% of GDP
Introducing controls of the wage bill	Treasury and DPM	To contain growth of the operating budget	Positive impact, with potential fiscal savings of 2% of GDP
Rationalizing the public investment program	Treasury and DNPM	To improve the quality of public investment spending	Positive impact, with potential fiscal savings of 0.5% of GDP
Revenue mobilization			
Implementing a comprehensive compliance improvement plan for GST	IRC and Treasury	To improve GST performance	Positive impact, with potential fiscal savings of 1% of GDP (combined effect)
Removing tax holidays and reduced tax rates for CIT, while replacing them with more efficient tax incentives and strengthening the transfer pricing rules	Treasury and IRC	To better protect the CIT base	
Considering changes in PIT regime	Treasury and IRC	To lower the tax burden for salary and wage earners, especially those in the lower and middle PIT brackets	Negative impact, with possible fiscal losses
Strengthening tax administration	IRC	For better compliance and easier revenue collection	Positive impact, with fiscal savings unidentified

Table B. Summary of Recommendations and Value-for-Money and Equity Impacts

Recommendations	Agencies in charge	Value-for-Money impact	Equity impact
Health expenditure			
Implementing a health sector monitoring framework	NDoH & PHAs	Positive impact supporting clear line-of-sight between resourcing and services delivered across the country by increasing accountability	Positive impact by contributing to pro-poor service delivery
Conducting a review to establish the cost of health services	NDoH, PHAs, Treasury & NEFC	Positive impact supporting a better understanding and alignment between the cost of services, funding, and service expectations	Positive impact by improving resource allocation and targeting across levels of the system
Undertaking a review of the health workforce policy	NDoH, PHAs, DPM	Positive impact with 70 percent of frontline spending on health workforce, needs to be distributed to maximize productivity and service reach may	Positive impact by improving alignment between health needs of the population and availability of health workers
Developing a package of essential health services	NDoH & PHAs	Positive impact guiding a minimum package of activities that aligns with PHA funding envelopes	Positive with clear minimum services to be offered to all citizens
Streamlining resources for health	NDoH & PHAs	Positive impact that identifies opportunities for cost savings and lessons learned across PHAs	Neutral
Strengthening subnational budget and planning, including the introduction of facility-based budgeting and direct-facility budgeting as appropriate	NDoH, PHAs, DoF, Treasury, NEFC	Positive impact by reducing leakage and inefficiencies and improving predictability/ adequacy of financing for frontline services	Positive with transparency on how funds are distributed across and within provinces
Education expenditure			
Developing a roadmap for ECE development	DoE, Treasury, and donors	Positive impact that improves the quality of ECE services	Positive impact that expands the coverage of ECE
Improving in-service teacher training to enhance their knowledge in subject matter and pedagogical skills especially in distance learning and supporting learning recovery during COVID-19 pandemic	DoE and development partners	Positive impact that improves teachers' competencies and student achievement	Positive impact that equips teachers with ability to identify and take actions to support low performing students

Recommendations	Agencies in charge	Value-for-Money impact	Equity impact
Improving education management information system databases to provide accurate and up-to-date data on schools, teachers, and students	DoE and other education stakeholders	Positive impact on government's ability to plan, budget, execute, and evaluate educational programs and activities	Positive impact by ensuring that the databases clearly identify inequities and disparities in the education system
Strengthening financial management tools and processes	DoF, Treasury, DoE	Positive impact that improves budget management and execution	Neutral
Complementing education spending through subsidies paid directly to schools with proportionate spending at levels of the system responsible for quality	NEC, DoE, and school administrators and boards of management	Positive impact that strengthens community decision-making and school accountability	Positive impact that supports access to education for the most disadvantaged

ANNEXES

Annex 1. Selected Economic and Social Indicators

	2016	2017	2018	2019	2020	2021 Est.	2022 Projections	2023
National income and prices	*(In percent, unless otherwise indicated)*							
Nominal GDP (US$ billions)	20.8	22.7	24.1	24.8	23.8	25.5	27.4	28.6
Real GDP growth	5.5	3.5	-0.3	4.5	-3.5	1.0	4.0	3.0
Resource sector	15.3	8.1	-9.2	11.3	-8.4	-6.2	6.8	2.9
Non-resource economy	2.4	0.5	4.1	1.4	-1.1	4.2	2.9	3.1
Consumer price inflation, period average	6.7	5.4	4.6	3.7	4.9	5.1	5.5	4.6
GDP deflator	2.5	7.7	9.8	1.1	0.8	7.7	5.6	4.5
Real exchange rate change, US$/PGK*	-6.9	1.4	-1.1	-1	1.7	0.7	…	…
Fiscal accounts	*(In percent of GDP, unless otherwise indicated)*							
Revenue and grants	16.1	15.9	17.7	16.3	14.2	14.4	15.6	15.6
Non-resource tax revenue	12.9	12.6	13.2	13	11.5	11.7	12.3	12.5
Resource revenue	0.6	0.9	1.8	1.7	0.9	0.9	1.2	1
Grants and other revenue	2.6	2.4	2.7	1.6	1.8	1.8	2.1	2.1
Expenditure and net lending	20.8	18.4	20.3	21.3	23.1	22.0	21.7	20.1
Primary expenditure	18.9	16.3	18.0	18.8	20.6	19.8	19.4	17.9
Interest payments	1.9	2.1	2.3	2.5	2.5	2.2	2.3	2.2
Overall fiscal balance	-4.7	-2.5	-2.6	-5.0	-8.9	-7.6	-6.1	-4.5
Non-resource primary balance (% non-extractive GDP)	-5.0	-1.9	-3.0	-6.1	-10.4	-8.8	-7.0	-4.7
Net public debt	33.7	32.5	36.7	39.7	48.8	52.3	53.8	54.5
Gross government debt and guarantees	33.7	32.5	38.2	40.2	48.8	52.3	53.8	54.5
Gross government savings	0	0	1.5	0.5	0	0	0	0
External accounts	*(In millions of U.S. dollars, unless otherwise indicated)*							
Exports, f.o.b., *of which:*	8,202	9,958	10,504	11,402	9,283	10,300	11,652	12,215
Extractive sector	6,730	8,335	8,862	9,965	7,473	8,370	9,626	10,107
Imports, c.i.f.	2,077	3,066	3,519	4,012	3,290	3,586	4,016	4,297
Current account	5,286	5,402	5,676	5,520	4,604	4,889	5,468	5,774
(in percent of GDP)	25.5	23.8	23.5	22.2	19.4	19.2	20.0	20.2
Overall balance of payments	-184	36	517	101	410	-221	124	120
Gross official reserves	1,681	1,717	2,235	2,335	2,686	2,465	2,589	2,709
(in months of goods and services imports)	4.3	4.0	4.8	6.6	6.4	5.4	5.3	5.3
(in months of non-extractive imports)	12	8.6	9.5	15.5	15.0	12.6	12.5	12.3
Money and credit	*(In percent, unless otherwise indicated)*							
Broad money growth	10.9	-0.9	-3.8	4.4	7.2	8.1	8.3	8.8
Domestic credit growth	24.6	-0.1	-6.7	5.2	2.3	12.2	9.9	9.7
Growth of credit to the private sector	7.2	-3.8	7.4	4.1	4.2	9.1	5.6	8.7
Interest rate of 182-day T-bills, period average	7.4	7.1	7.0	6.4	5.6	5.9	5.8	5.9
Social indicators								
Population, total (millions)	8.3	8.4	8.6	8.8	8.9	9.1	9.3	9.5
Population growth (percent)	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9
Life expectancy at birth (years)	63.7	64.0	64.3	64.4	..	..	..	..

Sources: Official historical data; World Bank staff estimates and projections.
Note: * An increase represents appreciation and a decrease is depreciation.

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