WORLD BANK GROUP

PAPUA NEW GUINEA PUBLIC FINANCE REVIEW

Resuming Fiscal Consolidation While Improving Public Service Delivery

JUNE 2021

Preface and Acknowledgments

This Public Finance Review (PFR) is an analytical underpinning of the budget-support dialogue between the Government of Papua New Guinea and the World Bank. The objectives of this PFR are to (i) support and contribute analytically to the government's fiscal consolidation strategy and (ii) inform strategies to improve the efficiency and equity of public service delivery in health and education. 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.

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The team is grateful to the Department of Treasury, the National Economic and Fiscal Commission, the Department of Finance, the Internal Revenue Commission, the Department of National Planning and Monitoring, the National Department of Health, the Department of Education, and the Department of Higher Education, Research, Science, and Technology for their collaboration in the development of this analytical report. The team would like to express appreciation for feedback from Tahsin Saadi Sedik, Narayanan Raman, Natalija Novta, Fily Sissoko, Toby Linden, David Gould, Tuan Minh Le, Moritz Piatti, Pedro Cerdan-Infantes, Ruslan Piontkivsky, and Jane Sprouster.

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Abbreviations and Acronyms

ARoB	Autonomous Region of Bougainville
BPNG	Bank of Papua New Guinea
CHW	Community health worker
CPI	Consumer price index
CIT	Corporate income tax
CRS	Creditor Reporting System
CSO	Community Services Obligation
DDA	District Development Authority
DoE	Department of Education
DoHERST	Department of Higher Education, Research, Science, and Technology
DSIP	District Services Improvement Program
EAP	East Asia and Pacific
ECE	Early childhood education
EGRA	Early Grade Reading Assessment
EHB	Eastern Highlands Province
EITI	Extractive Industries Transparency Initiative
ENB	East New Britain
ESP	East Sepik Province
FBO	Final Budget Outcome
FODE	Flexible & Open Distance Education
FSM	Federated States of Micronesia
GDP	Gross domestic product
GER	Gross Enrolment Rate
GloCo LLC	PNG LNG Global Company
GNI	Gross national income
GoPNG	Government of Papua New Guinea
GPE	Global Partnership for Education
GPI	Gender parity index
GST	Goods and services tax
GTFS	Government Tuition Fee Subsidy
HCI	Human Capital Index
HELP	Higher Education Loan Program
IFMS	Integrated Financial Management System
IMF	International Monetary Fund
IRC	Internal Revenue Commission
ITA	Income Tax Act
ITC	Infrastructure tax credit
KCH	Kumul Consolidated Holdings Limited
KPHL	Kumul Petroleum Holdings Limited
LIC	Low-income country
LLG	Local level governments
LNG	Liquefied natural gas
LMIC	Lower-middle-income country
MBP	Milne Bay Province
MPA	Minimum priority activities
MRDC	Mineral Resources Development Company
MTDS	Medium-Term Debt Strategy
MTEF	Medium-Term Expenditure Framework
MTFS	Medium-Term Fiscal Strategy
MTRS	Medium-Term Revenue Strategy

NCD	National Capital District
NDoH	National Department of Health
NEFC	National Economic and
Financial	Commission
NEP	National Education Plan
NER	Net enrolment rate
NGO	Nongovernmental organization
NID	National Identification
NIP	New Ireland Province
OECD	Organisation for Economic Co-operation and Development
OLPG	Organic Law on Provincial Governments
OLPGLLG	Organic Law on Provincial Governments and Local Level Governments
OSPEAC	Organisational Staffing and Personnel Emolument Audit Committee
PEPE	Promoting Effective Public Expenditure
PER	Public Expenditure Review
PHA	Provincial Health Authority
PILNA	Pacific Islands Literacy & Numeracy Assessment
PIP	Public Investment Program
PIM	Public Investment Management
PIT	Personal income tax
PNG	Papua New Guinea
PNG LNG	Papua New Guinea Liquefied Natural Gas Project
PPP	Purchasing power parity
PSIP	Provincial Services Improvement Program
PSS	Pacific island Small States
R&D	Research and Development
SBC	Standards-based curriculum
SHP	Southern Highlands Province
SIP	Services Improvement Program
SOE	State-owned enterprise
STR	Student-teacher ratio
TFF	Tuition Fee Free
TVET	Technical and Vocational Education and Training
UMIC	Upper-middle-income country
UNESCO	United Nations Educational, Scientific and Cultural Organisation
US$	United States dollar
WB	World Bank
WHO	World Health Organization
WHP	Western Highlands Province
WNB	West New Britain

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EXECUTIVE SUMMARY

Papua New Guinea Public Finance Review

1. **This Public Finance Review (PFR) has a dual objective of stimulating the Government of Papua New Guinea (GoPNG) to refocus on the fiscal consolidation agenda while improving public service delivery in health and education.** Specifically, Part A of the PFR aims at supporting and contributing analytically to the government's fiscal consolidation strategy, aiming to narrow the overall fiscal deficit, while Part B tries to inform government strategies for improving the efficiency and equity of public service delivery in the social sector. Part A also puts a greater emphasis on domestic revenue mobilization efforts, both in extractive and non-extractive sectors, as a main driver behind fiscal consolidation. Although some efficiency gains can be expected from a set of suggested reforms in Part B, these gains can be redistributed for priority areas within the sectors considered rather than redirected to other sectors. In fact, some of the recommendations of Part B may lead to higher spending on the social sector. Nevertheless, a combined effect from all PFR recommendations should be a decrease in the overall fiscal deficit going forward.

Part A. Refocusing on the Fiscal Consolidation Agenda

A.1. Macro-Fiscal Policy Considerations to Underpin Fiscal Consolidation

2. **Papua New Guinea (PNG), the Pacific region's largest economy, is rich in natural resources but performs poor when it comes to social sector outcomes.** PNG is the world's 14th largest gold producer and the 9th largest exporter of liquified natural gas (LNG). PNG's natural resource endowment contributes to GDP estimated at US$23.6 billion in 2020 and GNI of US$2,660 per capita. Although PNG is classified as a lower-middle-income economy because of its resource exploitation wealth, its rural population (more than 85 percent of its population of 9 million) sees little of the associated benefits. The country faces substantial challenges in reducing poverty and improving public service delivery. When benchmarked against its peers,[1] PNG's social sector outcomes exhibit the characteristics of a low-income economy. As discussed in this PFR, PNG lags in health and education results, necessitating reforms to improve efficiency in public service delivery.

3. **Economic growth in PNG is characterized by boom-and-bust cycles driven by the performance of the natural resource sector.** These cycles constrain fiscal and public expenditure management—expenditure goes up during booms, which gives rise to macroeconomic imbalances when the boom ends. PNG's key challenge is to complete the macro-fiscal adjustment and continue implementing economic reforms to mitigate the macroeconomic impacts of resource sector volatility. The budgeting process is distorted by the complicated political economy—the need to compensate certain groups is the price for political stability—and the long-running challenge of unrealistic budgeting. The recurrent budget expands at the expense of the capital budget, leading to volatility in the public investment program and undermining the efficiency of public spending and budget credibility.

[1] Benchmarking for each sector was done differently, based on each team's rationale applied.

4. **The COVID-19 pandemic has led to the current economic crisis, which is testing the resilience of PNG's economy and the fiscal/debt position.** Before the pandemic, GoPNG struggled with fiscal consolidation as it sought to reverse expenditure arrears accumulated by the previous government. The 2018 budget discussed reducing the nonresource primary balance (NRPB), a new fiscal anchor, to zero over the medium term, which at the time was projected as 2021. However, subsequent budgets pushed this ambition further out into the future, even before the COVID-19 shock. The COVID-19 crisis crimped economic performance, resulting in rising health spending and a substantial tax revenue shortfall in 2020. The resulting expansion in the NRBP drove an increase in public debt. PNG is currently at high risk of debt distress. The 2021 budget now targets a zero NRPB by 2025. To achieve this ambitious target, GoPNG considers a sharp decline in government spending equivalent to almost 3 percent of GDP and an increase in revenue-to-GDP ratio by a further 3 percent of GDP, rates of change never previously sustained.

5. **This PFR supports government's commitment to resume fiscal consolidation in the post-COVID-19 period while improving efficiency in public service delivery.** In early November 2020, GoPNG adopted the 2021 Budget Strategy Paper (BSP), laying out a revised fiscal policy vision for the medium term. The broad objective of the BSP is to prepare the groundwork for fiscal consolidation while continuing to invest in productive infrastructure. Achieving the targets built into the BSP will require reforms on the revenue and expenditure sides. Starting in 2022, GoPNG will need to consolidate its fiscal accounts, with additional efforts to mobilize domestic revenue sources and some cuts to its operating budget. At the same time, PNG will have to sustain or slightly increase spending in health and education, to improve public service delivery for its population, especially for the most vulnerable. This can be achieved by improving efficiency of public spending on health and education, as described below.

6. **The authorities could increase the efficiency of capital spending by rationalizing the Public Investment Program and strengthening its public investment management 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, it is not being used to its full potential, making it harder to account for and adequately maintain the government's assets. Finally, 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.

7. **The results of our macro-fiscal simulations suggest that PNG's fiscal environment is fragile.** Even a minor economic shock could lead to failure to adhere to fiscal rules and deterioration of debt sustainability. Under a 'business-as-usual' scenario—when the share of total revenue and its components stay at their 2020 level over the projection period while the wage bill continues to rise—public debt becomes unsustainable. The debt-to-GDP ratio would rise to over 140 percent by 2030 and would continue to rise thereafter. Under a 'reform' scenario—when revenues reach 18 percent of GDP and the wage bill falls to 5 percent of GDP by around 2026—PNG still sees debt increase, but at a much slower rate. This scenario leads to a long-term average primary surplus of 1.6 percent of GDP, which in turn keeps public debt close to the 60 percent of GDP ceiling as per the most recent amendment to the Fiscal Responsibility Act.

8. **Several fixes are required in the fiscal consolidation agenda, to achieve fiscal and debt sustainability (Table A).** The macro-fiscal chapter of the PFR advocates for (i) addressing unrealistic budgeting to improve 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 the capital budget.

A.2. Domestic Revenue Mobilization as a Prerequisite for Fiscal Consolidation

9. **Mobilizing domestic revenue to expand fiscal policy space to respond to future external shocks is a prerequisite for fiscal consolidation. PNG has a low tax-to-GDP ratio, averaging 13 percent over the past four years.** GoPNG adopted the Medium-Term Revenue Strategy (MTRS) to improve this ratio in the medium term with the assistance of development partners, including the IMF and the World Bank. Tax policy and tax administration reform measures have also been introduced to stabilize tax revenue. However, tax revenue performance remains far below the level needed for adequate public service delivery. The strong negative impact of COVID-19—which delayed MTRS implementation and skewed fiscal and debt indicators from their targets—underscores the need for additional revenue reforms.

10. **The extensive use of tax incentives and exemptions in PNG likely narrow the tax base for corporate income tax (CIT) and goods and services tax (GST) significantly**. Our estimates suggest that total CIT expenditures amounted to K 148.1 million or about 0.2 percent of GDP in 2018. More than half of this amount (56 percent) comes from the resource sector; other businesses contribute the remainder. The GST policy gap was estimated at K 601 million or 0.8 percent of GDP in 2018. Addressing these tax expenditures may potentially lead to an increase of government revenue of 1 percent of GDP.

11. **GoPNG recognizes the need to rationalize existing tax incentives. To quantify the issue and increase transparency, GoPNG has started preparing an annual tax expenditure statement (TES), a dedicated chapter in the National Budget since 2018.** And, in 2019, GoPNG completed a qualitative review of PNG's tax incentives that recommended (i) phasing out profit exemptions and relying on cost-based tax incentives (accelerated depreciation and investment tax allowances) that target investment expenditure; (ii) simplifying the design of tax incentives so that they are easier to administer, easier to access by smaller firms, and require fewer government resources to administer and audit their use, and; (iii) increasing transparency by reporting 'tax expenditure' accounts that show that tax incentive relief provided to firms.

12. **A recent assessment of the Internal Revenue Commission revealed significant performance gaps in tax administration.** The list of deficiencies is long, but notable issues include the lack of a comprehensive risk management framework to manage compliance and institutional risks; no due process to register taxpayers; the absence of a strategy to scrub the taxpayer register; inadequate direct interaction with taxpayers and territorial coverage outside of the capital city; absence of a well-targeted outreach program; and the lack of an effective debt management strategy. Addressing the identified performance gaps via a transformational program would be beneficial to improving the efficiency and effectiveness of the tax administration and, more importantly, improving revenue performance.

13. **Revenue reforms will require further tax policy improvements and continued efforts to enhance tax administration.** Drawing from a recent tax assessment, this PFR provides recommendations to prioritize and sequence government efforts to reform tax policy and administration (Table A). Key recommendations cover (i) improving goods and services tax (GST) performance by implementing a comprehensive compliance improvement plan; (ii) eliminating tax holidays and reduced tax rates for corporate income tax (CIT), replacing them with more efficient tax incentives, and strengthening transfer pricing rules to better protect the CIT base; (iii) considering changes in the personal income tax (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) strengthening tax administration for better compliance and improved revenue collection.

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 (a 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

Part B. Improving Public Service Delivery in Health and Education

B.1. Adjusting Health Spending Toward Universal Health Coverage

14. **While PNG has experienced economic growth, moving from a low-income to lower-middle-income country status, the gains in prosperity and socio-economic development are yet to be shared equally across the country**. The pathway for every country is unique in achieving Universal Health Coverage (UHC), a goal for all people to have access to adequate health care without falling into financial hardship. Health—a key enabling pillar of human capital development—allows each person to participate in society and access the benefits of economic development. PNG's efforts and financing of the health sector 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 of routine services like immunization. The provinces that tend to prosper reap the cycle of health benefits with better and improving health outcomes. In contrast, the provinces that have historically fared poorly remain at the bottom with the worst health outcomes and reduced access to services.

15. **PNG introduced the Free Health Care Policy intending to alleviate the fee burden at the health facility level, but with limited success.** Most of PNG's population live in rural areas, many in small settlements in remote and hard-to-reach areas, making the delivery of even basic health services an ongoing and costly challenge. Providing a basic level of health services is critical to improving health access and outcomes for the rural and urban poor and vulnerable groups and ensuring no one is left behind. However, due to ineffective targeting and implementation gaps, the Free Health Care Policy did not meet its intended purpose for the most part.

16. **GoPNG commits substantial resources to the country's health sector. In 2009–18, health expenditure in PNG averaged 2.45 percent of GDP.** Although health expenditure as a share of general government expenditure in PNG averaged 10.9 percent in 2009–18, this is not dissimilar to Pacific comparator economies like Fiji (12.1 percent over the same period). In 2018, domestic general government health expenditure accounted for 70 percent of recorded current health expenditure, while domestic private (out-of-pocket) and external health expenditure contributed 9.8 percent and 20.2 percent, respectively. On a per-capita basis, current health expenditure fluctuated between 2011 and 2018, ranging from a low of US$49 in 2015 to a high of US$96 in 2014. In 2018, current health expenditure was US$64 per capita.

17. **The public expenditure review for health shows that many factors constrain PNG's progress to UHC.** These factors include unpredictable and declining operational spending to support basic health services; cashflow interruptions for frontline health services; poor service readiness; key health inputs that are missing, including a health workforce that is aging and insufficient in size; and a lack of strategic health investment, transparency, and health performance tracking. In the context of low absolute levels of health spending and constrained service readiness, PNG's health system is confronting a triple burden of disease—rising non-communicable diseases, high rates of infectious disease like tuberculosis, and the ongoing COVID-19 crisis.

18. **The dwindling of PNG's health workforce may result in a deterioration of its health system in the near future.** The health sector has made progress by establishing Provincial Health Authorities (PHAs) in all 22 provinces, promoting greater autonomy and accountability in delivering health services. However, the modality of financing the sector has not fully adapted to this new governance structure, leading to gaps in execution. Aligning health financing to

support the new PHA operating context effectively will be essential to achieving UHC. Issues to consider will include the adequacy of health resources, the efficient channelling and pooling of funds, and policies to promote accountability—in access, volume, and quality—in service provision.

19. **Improving health outcomes requires strengthening the health delivery apparatus and the enabling environment.** This PFR's recommendations comprise two interconnected parts—suggestions to strengthen the health sector's service delivery capacity and suggestions to develop the enabling environment that is, factors that may fall beyond the control of the health sector but impact the sector's ability to deliver quality health services (Table B). They 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, based on the PHA service delivery model, reflects relevant factors including the burden of disease and population growth, 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 future service readiness; (iv) developing a package of essential health services to guide a minimum package of activities that aligns with PHA funding envelopes (this would support better alignment between resource inputs, services outputs, and health outcomes); (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, including the introduction of facility-based budgeting and direct-facility budgeting as appropriate.

B.2. Aligning Education Spending to Avoid Learning Crisis

20. **The quality of education in PNG is a persistent challenge and accompanied by an acute learning crisis.** PNG experienced a significant increase in the number of schools and students in basic education over the past two decades. Although access to basic education increased rapidly in PNG, primary and secondary school completion rates remain relatively low, signalling 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.

21. **Education spending lags PNG's peers as a share of GDP.** GoPNG 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). Government's expenditure on education is also lower than the OECD norm, where member countries spent an average of 5 percent of GDP. 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. (see Revenue Chapter for further discussion).

22. **At the aggregate level, budget execution in education has been improving over time.** However, performance can vary substantially between institutions and cost items. Despite rising education outlays since 2014, education spending has remained almost flat in per-student terms and even declined for secondary education. Subnational spending continues to increase as transfers to provinces absorb more than half of the education spending. Donors play an important role in financing the education sector, but their contribution has been declining in

recent years. Teacher emoluments are comparable to PNG's international peers, but there is a lack of investment in improving teacher quality. General education absorbed more than three-quarters of education spending among subsectors, but recent reforms shift the focus away from general education toward vocational and higher education. ECE has also become a priority but will require significant investment.

23. **The authorities have achieved higher efficiency in public education spending, but challenges remain.** Notably, 10 percent of children do not progress to higher grades in elementary school. More than one-fifth of children did not move from pre-primary 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. Retention rates are alarmingly low in PNG: 59 percent of students progress from Grade 8 to Grade 9, and just 47 percent progress to Grade 11 from Grade 10. A large number of out-of-school children are from disadvantaged households. Despite improved student grade progression over the years, the low intra-grade retention rate in elementary school signals inefficiencies. Significant variations in student-teacher ratios (STR) at the elementary and primary levels across provinces also indicate inefficiencies and inequitable resource allocation. GoPNG would need to increase teacher emoluments to reduce STRs to a more reasonable level.

24. **Disparities persist despite system aspects to address equity in education.** Provinces with lower fiscal capacity receive more education function grants from the central government to cover pre-tertiary education operational costs. Gender parity—now nearly achieved in elementary and primary education—lags in secondary education. The reintroduction of user fees affects access to education for disadvantaged households. It may undermine school quality when students are allowed to stay in school regardless of their ability to pay. Starting in 2020, parents are responsible for 38 percent of the tuition fee under the new policy. 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. The rise in school fees, combined with the increasing need for household income given the challenging economic situation in PNG, is a potential cause.

25. **Key policy priorities that emerged from the education expenditure analysis include several areas for improvement.** These areas are (i) developing a roadmap for expanding the coverage of ECE and improving its service quality based on better collaboration with donors 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 levels of the system responsible for quality.

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 maximise 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
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

A. REFOCUSING ON THE FISCAL CONSOLIDATION AGENDA

1. Macro-Fiscal Policy Considerations to Underpin Fiscal Consolidation

26. This chapter of the PFR covers a discussion of macro-fiscal policy considerations, structured around the following four sections: (i) section 1.1 covers the macroeconomic context, including key macro-fiscal policy challenges in a changing macroeconomic environment; (ii) section 1.2 takes stock of revenue and expenditure dynamics and composition over the past several years; (iii) section 1.3 provides a forward-looking perspective for fiscal consolidation, including several macro-fiscal-debt scenarios; and (iv) section 1.4 provides a set of recommendations for enhancing the fiscal policy framework over the medium term.

1.1. Macroeconomic context

27. **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. 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.

Figure 1.1. Real Extractive and Non-extractive GDP Growth Rates, 2008–19
(Percent change)

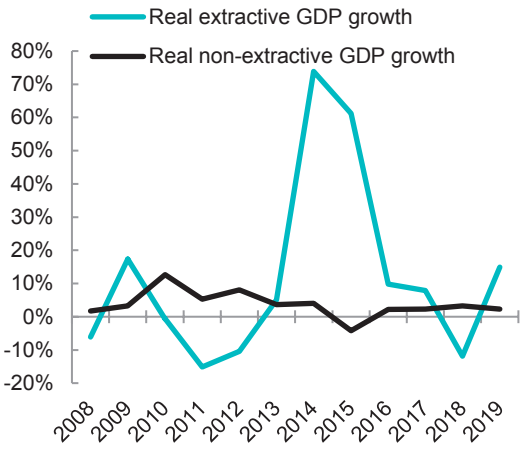
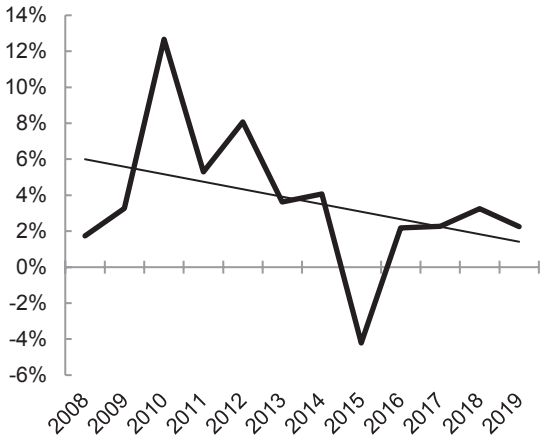


Figure 1.2. Trend in Non-extractive GDP Growth, 2008–19
(Percent change)



Source: World Bank staff estimates.

28. **The economic boom caused by LNG production conceals an overall slowdown in nonresource[2] GDP growth, even before the impact of COVID-19.** From an average growth rate of 6.2 percent per year in 2008–12, nonresource GDP growth averaged just 1.8 percent over 2013–19. This slowdown reflects lower levels of investment, both public and private, in nonresource sectors and the strains that lower government 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.

29. **The COVID-19 crisis has added to these economic challenges, notably the boom-and-bust cycles driven by swings in natural resource sector exports.** These cycles have been exacerbated by suboptimal fiscal and public expenditure management—expenditure rises during booms, followed by spending cuts when the boom ends. Pandemic-related global and domestic travel restrictions weakened external and domestic demand and hit commodity

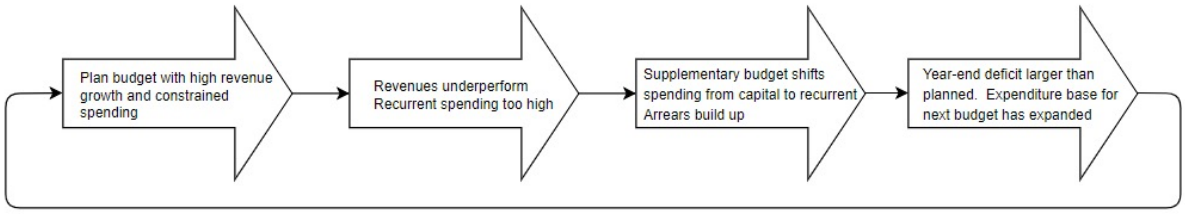
[2] Definitions of "resource" are important here. For the government, the resource sectors include mining and oil and gas. Internationally, "resource" can include all nonrenewable resources as well as renewable resources, including some forestry, fishing and agriculture, and the proportion of the construction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

prices, leading to a sharp economic contraction, a larger fiscal gap, and higher unemployment and poverty, especially among women and the youth. The World Bank estimated that PNG's economy contracted by 3.9 percent in 2020, the fiscal deficit expanded to about 8 percent of GDP, and the debt-to-GDP ratio reached 49 percent (World Bank 2021a). To weather the economic downturn, GoPNG rolled out an immediate health response and economic support package, although its implementation has been slow.

1.1.1. Macro-fiscal management

30. **Unrealistic budgeting is ingrained in the public finance management system.** The typical pattern, shown in Figure 1.3, 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 and 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 1.3. Typical Budget Formulation and Execution Pattern in Papua New Guinea

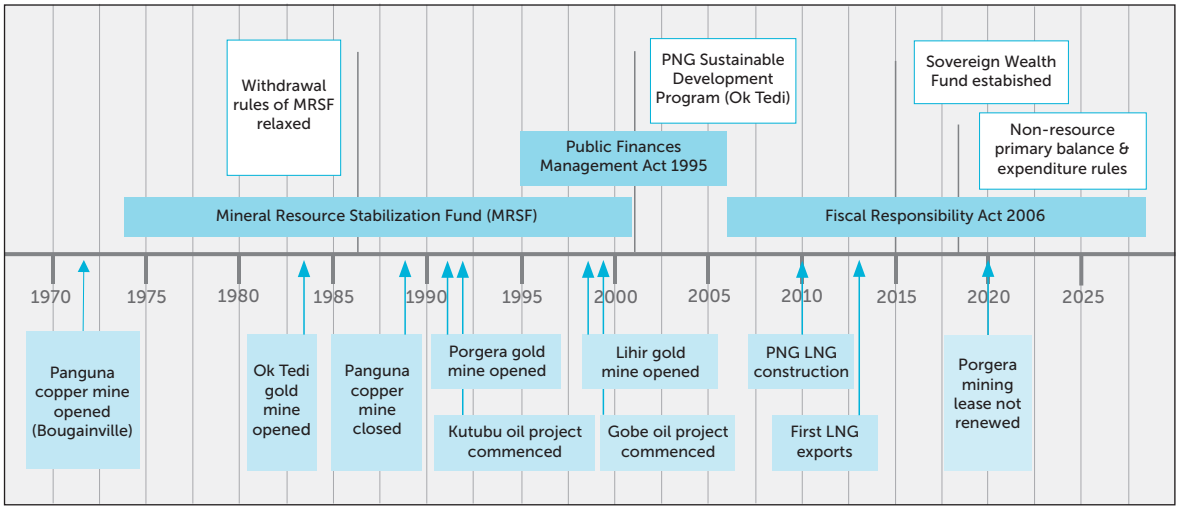


31. **The authorities have attempted many technical solutions to managing the public finances over the decades.** From the Mineral Resource Stabilisation Fund of 1974 to the Public Finances Management Act of 1995, the PNG Sustainable Development Program of 2002, the Fiscal Responsibility Act of 2006, 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.[3] The latest generation of fiscal rules was 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.

32. **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, as illustrated in Figure 1.4, 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 1.5). Furthermore, 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.

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

Figure 1.4. Timeline of Fiscal Rules and Resource Projects



33. **The law establishing the Sovereign Wealth Fund (SWF) was drafted in 2012 but only enacted and certified by Parliament in 2016; as of 2021, the Fund has a zero balance**. The SWF has the ambition to receive all the government's resource revenues, that in turn will provide a steady noncyclical flow of financing to the annual budget. This mechanism, if implemented, would remove much of the boom-and-bust nature of PNG's fiscal policy. However, the authorities note that the SWF was introduced just as the previous resource boom was ending, and the money from that boom had already been spent. The last time PNG ran a primary surplus was in 2011 (1.5 percent of GDP) and prior to that, 2008 (4.3 percent of GDP).

34. **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, which at the time was projected as 2021 (Figure 1.6).** 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 now targets a zero NRPB by 2025. Even then, this will require a sharp decline in government spending equivalent to almost 3 percent of GDP and an increase in revenue-to-GDP ratio by a further 3 percent of GDP, rates of change never previously sustained. The 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 (Box 1.1).

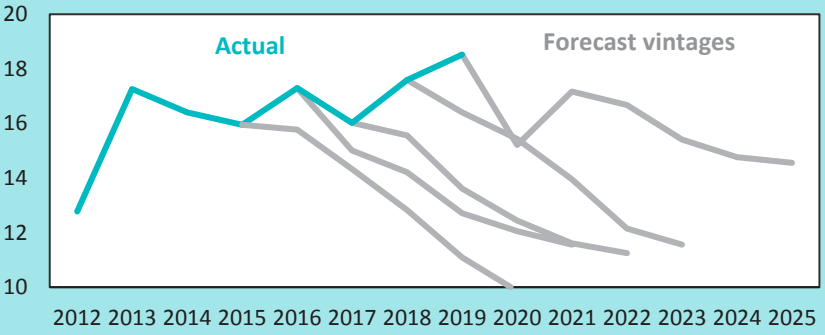
Box 1.1. - Papua New Guinea's New Expenditure Rule

In the run-up to the 2020 budget, the government announced a new expenditure rule to reduce the operating budget (less interest) as a proportion of nonresource GDP. The rule is "intended to complement the path of fiscal adjustment across the medium term by directing more resources to capital investment," and although no ceiling on this ratio has been set, the initial target was for this ratio to fall from 16.0 percent in 2020 to 10.6 percent in 2024.

Definitions are important here: the rule appears to focus on budgets rather than outturns, so to guide the setting of expenditure ceilings in the annual budget; the "operating budget" only includes compensation of employees and goods and services, and hence excludes recurrent grants to other levels of government, recurrent spending in the Public Investment Program (PIP), as well as excluding interest payments; and nonresource GDP includes renewable resources such as forestry.

Figure B1.1 shows the path of the actual expenditure rule outturn since 2012 (in blue) and the forecasts that were set in different 'vintages' of budget documents beginning in 2017 (in grey). The figure illustrates the credibility challenges facing the government's budget forecasts; year after year, budget documents paint a rosy picture of declining wage bill spending, when the reality is one of ever-increasing spending.

Figure B1.1 Actuals and Forecasts of the Operating Budget
(Percent of nonresource GDP)



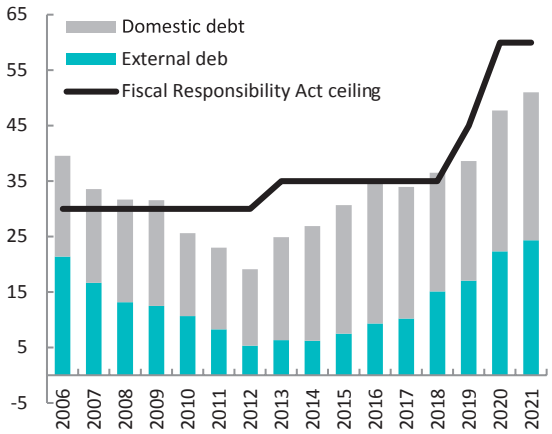
Source: PNG Treasury budget documents, various years.

PNG's fiscal rules lack two essential elements: (i) scrutiny as to whether they are adhered to and (ii) sanctions for their violation. Both the NRPB rule and the new expenditure rule are only considered at the time of budget preparation. The actual outturn, which is only known 18 months later, attracts little attention. Additionally, there is a low reputational risk to lawmakers when the rules are broken, and no legislative sanctions.

35. **Breaking the cycle of unrealistic budgeting will take concerted efforts.** Bad habits are hard to break – and given the years of precedent whereby politically contentious budgets are only passed through overly optimistic revenue growth and unrealistic expenditure constraint, there is no easy fix that doesn't involve hard choices being made on spending priorities. Nevertheless, on improving revenue realism there is evidence to suggest that greater discussion and debate between the finance ministry and revenue collecting institutions can help improve revenue forecast accuracy, whereas steamrolling through high revenue targets with little discussion

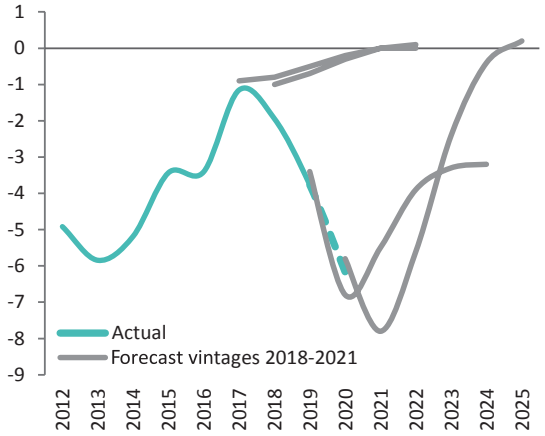
tends to produce poor results.[4] On expenditure greater scrutiny of the realism of line ministry budget proposals can help – this can be achieved by strengthening the "challenge function" of the Department of Treasury, making greater use of existing information on past budget proposals and spending performance, and using payroll data to analyze the realism of personnel emolument forecasts.

Figure 1.5. Government Debt 2014–22
(Percent of GDP)



Source: PNG Treasury; World Bank staff estimates.

Figure 1.6. Evolution of Nonresource Primary Balance Trajectories (2018 to 2021 budget vintages)
(Percent of nonresource GDP)



Source: PNG Treasury, WB staff estimates.

1.1.2. Governance

36. **The underlying political economy constraints to managing the public finances in PNG need to be recognized.** Osbourne (2014) notes that "previous PNG Governments have not successfully reconciled the divergent views of technocrats and politicians." Although technocrats—particularly in the PNG Treasury—support steps to better manage the public finances, this has not been consistently supported by the government executive. This dynamic reflects how the democratic institutions in the country have developed over time (Box 1.2), resulting in a highly fragmented political system based on fragile coalition governments where individual MPs, on the one hand, can leverage considerable influence on government policy in order to keep a coalition together, but on the other hand, are likely to be voted out at the next election (it is common to have over 50 candidates contesting each seat). Incentives often align to ensure that the groups who support and vote for a successful MP are quickly rewarded while the MP holds his or her post, against the broader interests of national economic policy and long-term decision making.

37. **The underlying political economy constraints mean that it will be harder to break the cycle of unrealistic budgeting than it at first appears.** The persistence of unrealistic budgeting suggests that it is serving important purposes – though obviously not the purposes of good fiscal management. It may be, for example, the governing coalitions are sufficiently fragile that they could not be sustained in the face of a realistic budget. If revenues forecasts were realistic and the wage bill were budgeted accurately, the capital projects that could be funded may be insufficient to secure the necessary support from the executive and Parliament. The prioritization of projects would be transparent in the budget and open to scrutiny before the budget is approved. With unrealistic revenue forecasts and an unrealistic wage bill budget,

4. See https://blog-pfm.imf.org/pfmblog/2019/02/-the-politics-of-revenue-forecasting-.html for a discussion on this issue.

capital spending and non-wage operating expenditure can appear to be far greater than it will in fact turn out to be, offering the prospect of the resources required to secure support for the budget. The real prioritization process then occurs during the course of budget execution, as tradeoffs are made between wage bill, non-wage operating and capital spending, and among capital projects, in a non-transparent manner and with only ex-post scrutiny possible. It may also be that, perversely, unrealistic budgets support PNG's ability to secure development assistance more readily than realistic budgets would do.

38. **A further risk of the 'on paper' fiscal consolidation efforts is that they result in unorthodox public financial management practices.** For the authorities to comply with the targets imposed by different fiscal rules, certain practices can arise, some of which have been observed in PNG before. These practices include the accumulation of spending arrears, neglecting operation and maintenance expenditures, and manipulating definitions of recurrent and capital spending to shift activities out of the recurrent budget. Capital investment projects can also suffer when funds are diverted to meet other demands; for multiyear investment projects, authorities can scale back future year budget allocations, thereby delaying the completion of a project or even leading to its abandonment. Each of these practices transfers the costs elsewhere in a non-transparent manner – principally to future budgets (through delayed maintenance spending, uncompleted projects, and expenditure arrears, for instance), but also to the private sector (through arrears). Many also involve the executive making tradeoffs between alternative objects of spending, all of which Parliament appropriated funds for.

Box 1.2. - Papua New Guinea's Political Landscape

The nature of PNG's political landscape, characterized by a highly fragmented parliamentary system (with over 20 parties currently represented in parliament, over half of whom have only one or two MPs), large fields of candidates for each seat (50 or more in an open electorate seat), high political turnover rates (less than 50 percent of MPs are returned in the next general election) and the subsequent rise of 'pacting' where complex coalitions of different parties negotiate arrangements such as the distribution of cabinet posts so as to hold together a parliamentary majority, incentivizes the need to buy support from constituents in order to maintain political power, especially where individual or small groups of elites have power to undo pacts and bring down governments.

Systems have subsequently evolved such that political discretion over public funds is important. Mechanisms like the Electorate Development Funds of the 1980s, the District Services Improvement Program of the 2000s, and the District Development Authorities (DDAs) of the 2010s have been used to channel resources to specific groups and communities at the discretion of individual MPs, often in violation of the governance structures underpinning these mechanisms. With each incarnation of these systems, concerns are raised about inadequate oversight and the risk of resources being wasted or misappropriated.a

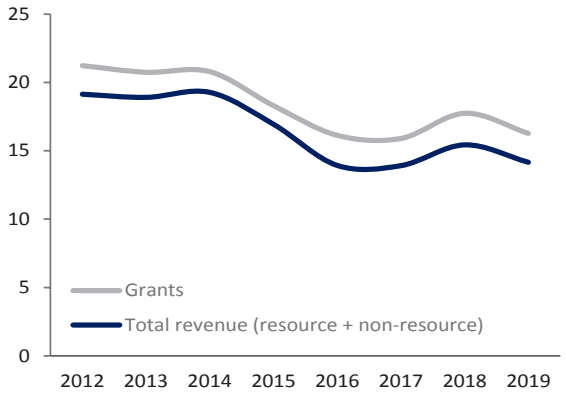
Nevertheless, spending through these channels remains significant, with about 6 percent of total spending allocated through district and provincial support improvement programs in 2020, equivalent to about K 70 million.

a. See, for example, the 2014 report of the Auditor General for the District Services Improvement Program.

1.2. Revenue and expenditure dynamics

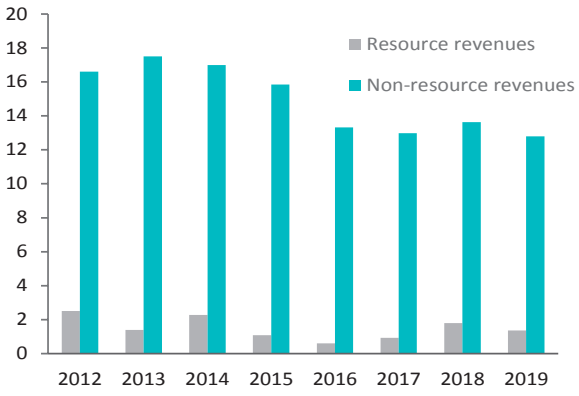
39. **Papua New Guinea has faced long-running pressures on both government revenues and expenditures.** On the revenue side, both resource and nonresource revenue has been declining as a proportion of GDP (Figure 1.7, Figure 1.8). On the expenditure side, the national and provincial level wage bill continues 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 1.7. Revenue and Grant, 2012–19
(Percent of GDP)



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

Figure 1.8. Resource and Nonresource Revenue, 2012–19
(Percent of GDP)



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

Table 1.1. PNG National Budget: Main Revenue and Expenditure Items, 2015–20

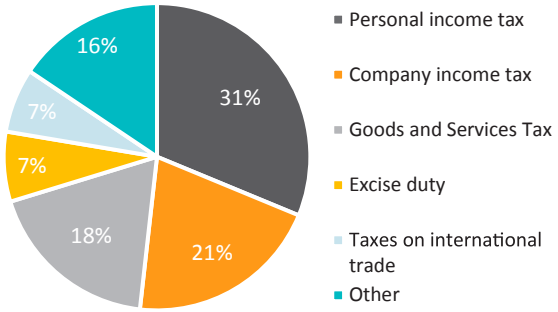
	2015	2016	2017	2018	2019	2020*
Total revenue and grants	**18.3**	**16.1**	**15.9**	**17.7**	**16.3**	**14.9**
Tax revenue	15.2	12.9	12.6	13.2	13.0	11.8
Taxes on income, profits, and capital gains, of which:	9.8	8.1	7.3	7.7	7.2	6.7
Personal income tax	5.1	4.4	4.3	3.9	3.8	4.1
Company income tax	3.9	3.2	2.5	2.4	2.0	2.0
Taxes on goods and services, of which:	4.5	4.0	4.5	4.5	4.7	4.2
Goods and services tax	2.6	2.2	2.6	2.6	2.7	2.5
Excises	1.3	1.3	1.5	1.4	1.6	1.5
Taxes on international trade and transactions	0.9	0.8	0.8	1.0	1.1	0.9
Donor grants	1.4	2.2	2.0	2.3	2.1	2.2
Other revenue	1.7	1.0	1.3	2.2	1.2	1.0
Total expenditure	**22.4**	**20.9**	**18.4**	**20.3**	**21.2**	**23.0**
Expense	16.7	16.8	15.5	17.0	17.5	17.5
Compensation of employees	6.6	6.9	6.0	6.5	6.4	7.1
Use of goods and services	6.3	6.3	5.6	6.0	6.9	5.2
Interest payments	1.8	1.9	2.3	2.4	2.6	2.6
Transfers	1.9	1.7	1.7	2.0	1.7	2.7
Net acquisition of nonfinancial assets	5.6	3.4	2.1	2.6	3.0	4.6
Out of scope for GFS coding purposes	0.2	0.7	0.8	0.8	0.7	0.9
Net lending (+)/ borrowing (-)	**-4.1**	**-4.7**	**-2.5**	**-2.6**	**-5.0**	**-8.1**

Source: Final Budget Outcome, various years, World Bank calculations.
Note: * The 2020 Final Budget Outcome was not available at the time of PFR finalization. The 2020 budget represents its supplementary budget.

1.2.1. Revenue issues

40. **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.

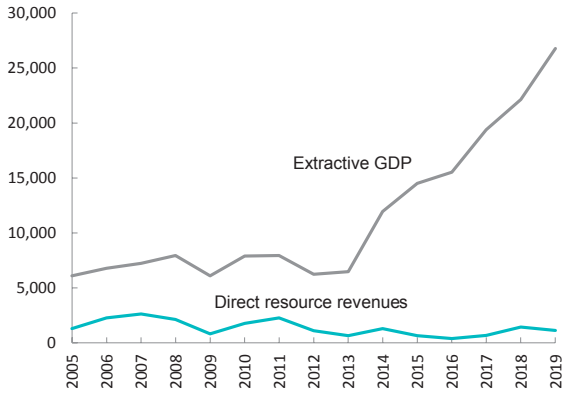
Figure 1.9. Composition of Nonresource Revenues, Average 2015–19
(Percent)



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

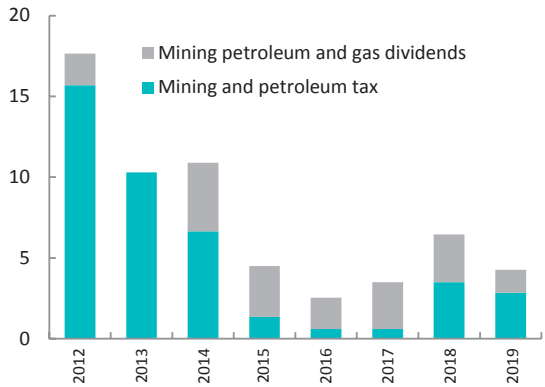
41. **Revenues from PNG's resource wealth have remained flat despite substantial investment in the sector.** In nominal terms, resource GDP has risen sharply since 2013 (Figure 1.10), reflecting both the start of LNG exports and steady growth in both the volume and value of gold and copper extraction. 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 1.11). 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 1.10. Direct Resource Revenues and Extractive GDP
(Kina, millions, current prices)



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

Figure 1.11. Breakdown of Direct Resource Revenues 2014–19
(Percent of resource GDP)



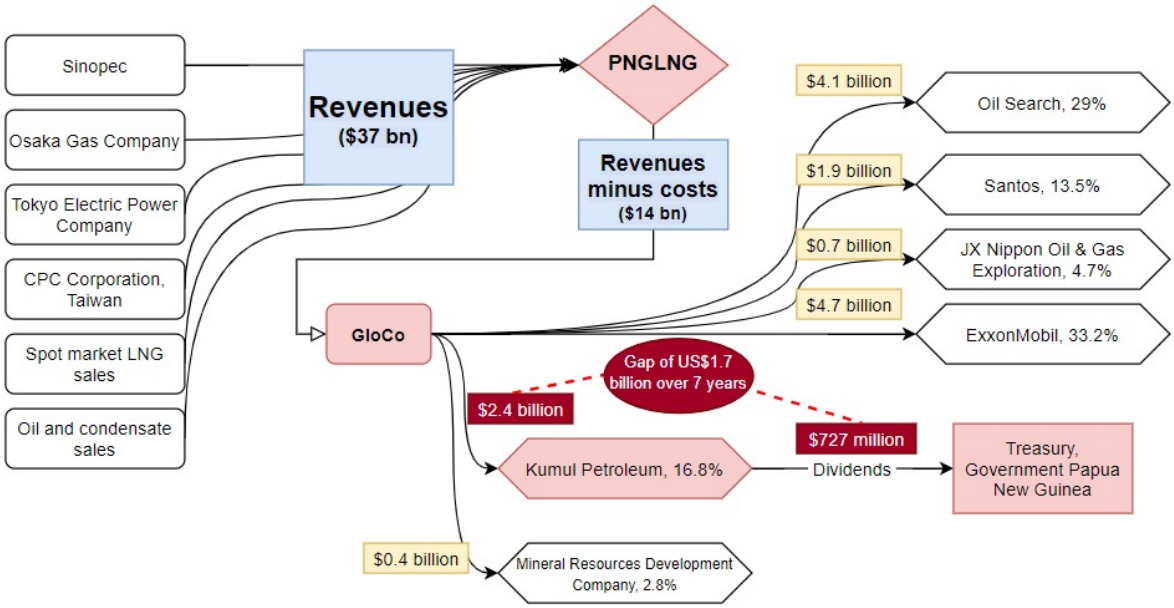
Source: Final Budget Outcome, various years.

42. **In June 2015, Parliament passed legislation to establish Kumul Petroleum Holdings Limited.** 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 after deducting operational funding to meet the requirements of their approved annual plans, as stated in Volume 1 of the 2016 budget.

43. **A key area lacking in transparency is the financial performance of KPHL.** GoPNG owns 16.8 percent of PNG LNG through KPHL (which includes a 0.2 percent share held via Kumul LNG Ltd) and has a 2.8 percent shareholding through the Mineral Resources Development Company (MRDC), held on behalf of landowners. These shareholdings entitle both KPHL and MRDC to receive a share of LNG sales revenue, net of costs, as a transfer from GloCo (PNG LNG Global Company LLC) operated on behalf of all co-venture partners by ExxonMobil PNG Ltd. Neither GloCo nor KPHL publishes their annual reports or financial statements, and the absence of this information is the largest gap in understanding the finances of the PNG LNG project.

44. **Nevertheless, using what limited public information is available, it is possible to estimate the revenue flows from PNG LNG.** Publicly available information on PNG LNG is limited. The principal shareholders, ExxonMobil, Oil Search, and Santos, are publicly listed companies. However, PNG LNG is only a small part of ExxonMobil and Santos' global operations—little specific information is made available through their annual reports. For Oil Search, listed on the Australian stock exchange, PNG LNG is its largest source of revenue, and their annual reports and quarterly results publications provide the most detail on the project. The Extractive Industries Transparency Initiative (EITI) is a second source of information. However, some lags are present in the publication of EITI reports, with the latest data available as of June 2021 being the 2018 report published in December 2019.

Figure 1.12. Estimated Revenue Flows from PNG LNG to Co-Venture Partners, 2013–20



Source: World Bank calculations based on Oil Search annual financial statements.

45. **Since 2013, an estimated US$2.4 billion (K 6.9 billion) in revenue has flowed from PNG LNG to KPHL, and its predecessor, the National Petroleum Company.** Of that total, US$727 million, or 30.2 percent, has been received by the Treasury as dividends, leaving a difference of US$1.7 billion, or K 600 million a year (equivalent to 5.7 percent of total government revenues or 0.9 percent of GDP). A regular feature of the KPHL dividend (and previously, National Petroleum Company) is that the estimated dividend payment in the government's annual budget is rarely achieved, with the actual dividend averaging only around 60 percent of the original budget estimate. Even then, these budget estimates are well below the size of the original transfer from GloCo. Table 1.2 includes details of KPHL dividend payments between 2013 and 2020.

46. **An annual gap of roughly K 600 million exists between the funds received by KPHL and the dividends paid to the government.** The Treasury is aware of these differences, and explanations are offered for the underperformance in the annual Final Budget Outcome (FBO) documents. Recent explanations include:

"The decline in the expected dividend from … [KPHL] reflected its specific balance sheet issues." (2019)

"The decline in the expected dividend from … [KPHL] reflected the retention of the flow-through payment of dividends from the LNG project to support future investments by KPHL rather than a decline in the dividend received by PNG." (2018)

47. **Good progress has been made in 2020 with KPHL paying 71 percent of its PNG LNG revenues as dividends.** The low LNG price in 2020 led to the lowest transfers from GloCo since PNG LNG began operations, with an estimated K 282 million (US$81 million) transferred to KPHL. During 2020 KPHL made K 200 in dividend payments to the Treasury, equivalent to 71 percent of the 2020 transfer from GloCo. This is considerably higher, in percentage terms, than the average 28 percent achieved between 2013 and 2019.

Table 1.2. KPHL Dividends and Estimated Payments from PNG LNG, 2015–20

Kina, millions (unless otherwise stated)	2013	2014	2015	2016	2017	2018	2019	2020	Average
Original budget dividend estimate	-	-	-	543	300	300	800	500	489
Actual dividend payment made	0	414	286	200	300	452	250	200	263
Estimated transfer from GloCo to KPHL	682	1,320	992	488	991	1,197	1,021	282	872
Shortfall:									
Kina, millions	682	906	706	288	691	745	771	82	609
US$, millions	304	368	255	92	217	226	227	24	214
Percent of total government revenues	7.6	8.2	6.9	3.2	6.8	6.1	6.5	0.6	5.7
Percent of GDP	1.4	1.6	1.2	0.4	1.0	0.9	0.9	0.1	0.9

1.2.2. Fiscal risks from the SOE sector

48. **The government targets that SOEs transfer 70 percent of their income to the Treasury, but to date KPHL has only transferred 30 percent.** In 2016, GoPNG 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 Kumul structure is planned with the aim of "ensuring more direct and transparent payment of revenues to the Sovereign Wealth Fund" (Budget 2021, Volume 1).

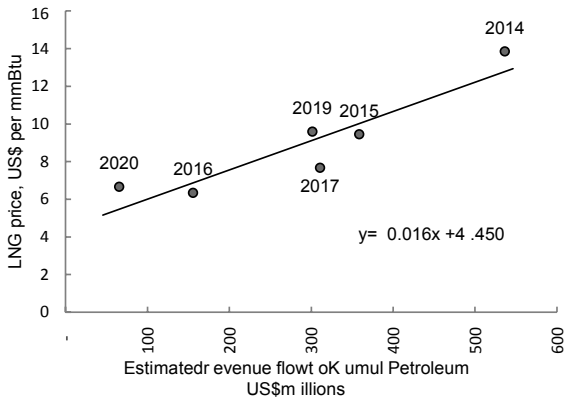
49. **Promoting greater transparency, and quantifying and compensating SOEs for undertaking quasi-fiscal activities (QFA) can help improve SOE performance.** Publishing the details of the revenues received by PNG LNG, the sums distributed via GloCo and the amounts received by KPHL and MRDC would help create demand for greater scrutiny and oversight of these revenues and how they are spent. Similarly, any QFAs, which are activities governments ask their SOEs to perform for which they are not compensated, and hence worsen the corporations' financial position, should be identified and the SOE adequately compensated. For KPHL, examples of QFAs include the support it gives to Port Moresby General Hospital,[5] which while well-intentioned is effectively government spending that does not pass through the budget, and hence is not subject to the same oversight and approval processes.

50. **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 1.13 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.

51. **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.

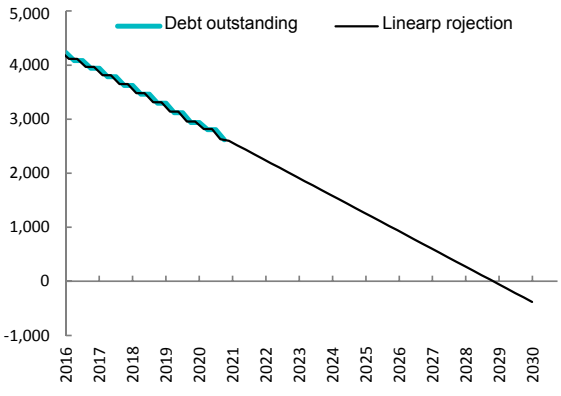
52. **However, extrapolating from Oil Search's financial statements suggests that PNG LNG's loans will only be repaid in 2029.** Figure 1.14 shows the outstanding borrowing for Oil Search, which peaked at just over US$4 billion in 2016 and is being repaid at around US$320 million per year. Projecting these repayments into the future sees the loan being fully repaid only in

Figure 1.13. 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 1.14. Oil Search PNG LNG Debt Repayment Trajectory, 2016–30
(US$, millions)



Source: Oil Search annual reports, World Bank calculations.

[5] See http://kumulpetroleum.com/news-article/kumul-petroleum-signs-moa-with-ministry-of-health-to-support-specialist-health-facilities/ for examples of support given

2029, many years later than initial projections and five years later than recent government statements.[6] 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.

Box 1.3. - State-Owned Enterprises and Financial Transparency

State-owned enterprises can be significant revenue earners in some economies and a significant source of fiscal risk in others. For governments, most taxes and other revenues are deposited directly into the government's bank accounts with the transactions logged in the government's financial management information system. However, for SOEs, revenues are received in separate bank accounts and recorded in the SOEs own accounting systems.

This setup is chosen to help maintain the operational independence of SOEs, allowing them to operate without interference from their parent ministry or others in government, but it can also be a tool to obfuscate the receipt of public revenues or hide SOE spending.

In an ideal world, the board of the SOE makes the key decisions and is held to account by oversight from its parent ministry, and its accounts are scrutinized annually by the supreme audit authority and anyone else who chooses to download the annual reports from the SOE's website. It is generally considered good practice for SOE board members to be made up of leading sector experts and one or two senior government representatives, all of whom have the time and resources to take an active role in steering the direction of the SOE.

However, across the world, there are many examples of poorly-run SOEs, and it is not always the SOEs fault. Poor practices include governments pressuring the SOE to adopt policies or activities that undermine its financial sustainability (called quasi-fiscal activities), the most common of which is to charge below-cost-recovery prices so to placate voters while not providing the resources to cover the incurred losses. Government may tap SOEs for loans, ask them to fund capital projects that the government should be funding, and stuff the boards with semi-retired government officials who are not experts in the field. Some government ministries may not pay its bills to the SOE. SOEs can also operate in ways that do not benefit either its customers or its shareholder (the government). SOEs can unduly focus on the remuneration and benefits policy for its senior management at the expense of investment and profitability. SOEs can attempt to hide their financial operations through the late or nonsubmission of financial statements, ignore audit recommendations, borrow money from commercial banks without telling anyone, and run-up pension fund deficits and other arrears. These SOEs tend to create the largest fiscal risks.

Even a well-run and profitable SOE can return small or zero dividends to a government. Without the proper incentives, and perhaps protected by some monopoly position, an SOE can let its costs creep up over time until those profits have been whittled down to zero. "Why chase nonpaying customers or haggle for lower costs from suppliers if the profits are just going straight to the government's coffers?" SOE management may ask. This is where strong and dedicated oversight from government and a professional and motivated SOE board, guided by a mutually agreed "ownership policy", can help in setting out the expectations and responsibilities of the government and the SOE.

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

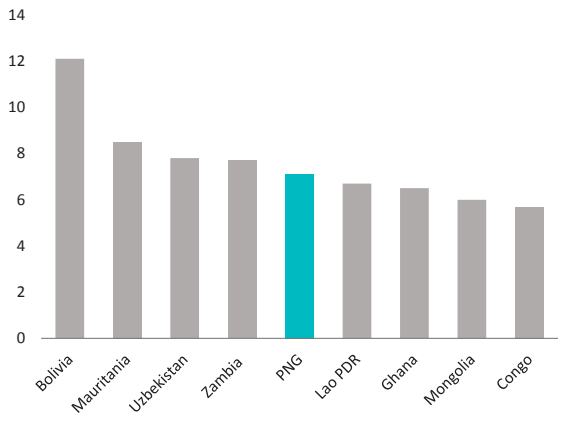
In 2016, PNG adopted a suite of policies, (the On-Lending and Guarantee Policies, Dividend Policy, Community Services Obligation (CSO) Policy) which together make up PNG's " ownership policy". However, implementation is key. One risk that governments can fall into is to focus on dividends at the expense of everything else. For a successful ownership policy to work, both the SOE and the government need to see benefits from its implementation. Otherwise, the policy may be seen as just another attempt to squeeze money out of the SOE for nothing in return.

1.2.3. The public sector wage bill

53. **Papua New Guinea's public sector wage bill is not large in comparison 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 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 1.15).

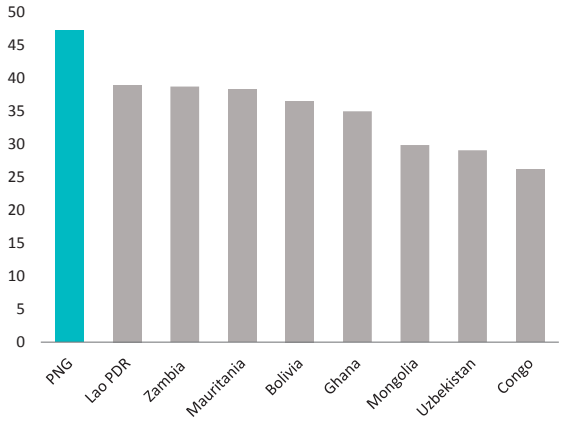
54. **The affordability of PNG's wage bill is the most strained among its peers**. In 2020 public wages consumed 47 percent of government revenues (both resource and nonresource), the highest among PNG's peers (Figure 1.16). This ratio has also been creeping up over time, from just 29 percent in 2012, 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 the fiscal gap and/or squeezing out other 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, as elaborated in more detail in Chapter 2 below. 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 1.15. Wage Bill Spending Compared to Peers
(Percent of GDP, latest year)



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

Figure 1.16. Ratio of Public Sector Wage Bill to Total Government Revenue (excluding grants)
(Ratio to average revenue 2015–18)

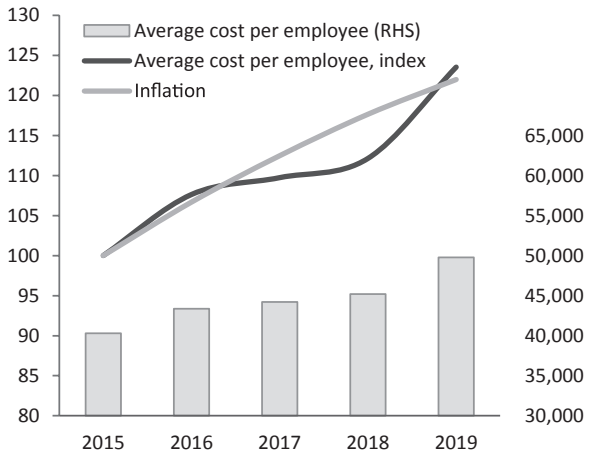


Sources: IMF Government Finance Statistics; IMF Staff Reports.

55. **In every year since 2010, GoPNG has spent more than planned on its payroll.** Read any budget document or FBO—there will be an 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 1.17). The overall number of public employees has been rising by 2 percent per year since 2015, which is in line with the overall population growth, with some disparities in between sectors (Figure 1.18). 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.

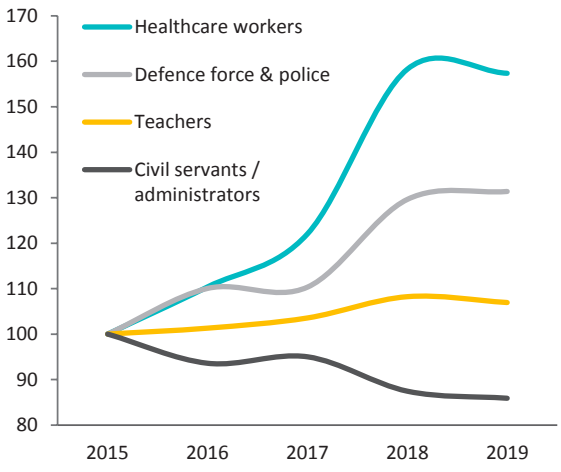
56. **Greater scrutiny and analysis of the government payroll would strengthen its oversight and control.** The publication of employment numbers in the annual FBO publication is a positive first step. Greater transparency and monitoring of public employment can help governments direct staffing to where 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 1.17. Average salary costs are increasing with inflation
(LHS: Index, 2015 = 100, RHS: Kina)



Source: Final Budget Outcome 2019, National Statistics Office.

Figure 1.18. Public Sector Employment Changes, 2015–19
(Index, 2015 = 100)



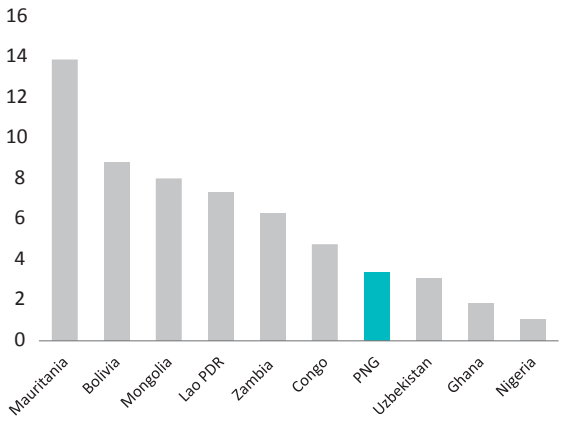
Source: Final Budget Outcome 2019.

1.2.4. Capital spending and public investment management issues

57. **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 1.19).** 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

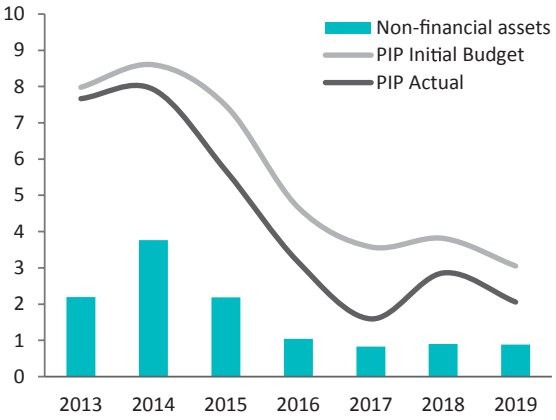
capital spending via development partners is important for PNG, with around one-third of capital spending financed from these sources. Road construction is the largest single spending area, followed by buildings construction and air transport infrastructure.

Figure 1.19. Average Capital Spending Compared to Peers, 2015–19
(Percent of GDP)



Source: IMF GFS, Final Budget Outcome, various years.

Figure 1.20. GoPNG-Funded Public Investment Program, 2015–19
(Percent of GDP)



Source: BOOST database, Final Budget Outcome, various years.

58. **Papua New Guinea has a long-running PIP process to organize the government's capital and development spending.** Since at least 2005, the PIP has been published as Volume 3 of the annual budget. The PIP lays out, line-by-line, the investment projects for every government department, statutory agency, and provincial administration, including estimates of spending for the coming five years, with projects classified as either "capacity building" or "capital investment". The PIP includes both government-funded and grant or loan funded development partner projects, and the PIP includes both current expenditure and capital expenditure, explaining why there are differences between totals for "Development Expenditure" and "Net Acquisition Nonfinancial assets" in the different summary tables published in the Treasury's budget documents. On average, around 64 percent of PIP spending is classified as capital expenditure, with the remainder spent on goods and services and current transfers. Table 1.3 presents an example from the 2020 budget.

Table 1.3. Example from the Public Investment Program 2020–24

a. Department or statutory authority level

245 - Convervation and Environment Protection Authority

PIP No.	Project Title	5 year Total	2020	2021	2022	2023	2024
Capacity Building							
02970	Protected Areas	4,9	4.4	0.5			
03136	Kokoda Track Initiative	45.0	15.0	10.0	10.0	10.0	
Total Capacity Building		49.9	19.4	10.5	10.0	10.0	
Capital Investment							
03137	Waste Management	1.3	0.8	0.5			
Total Capital Investment		1.3	0.8	0.5			
Grand Total		51.2	20,2	11.0	10.0	10.0	

b. Project level

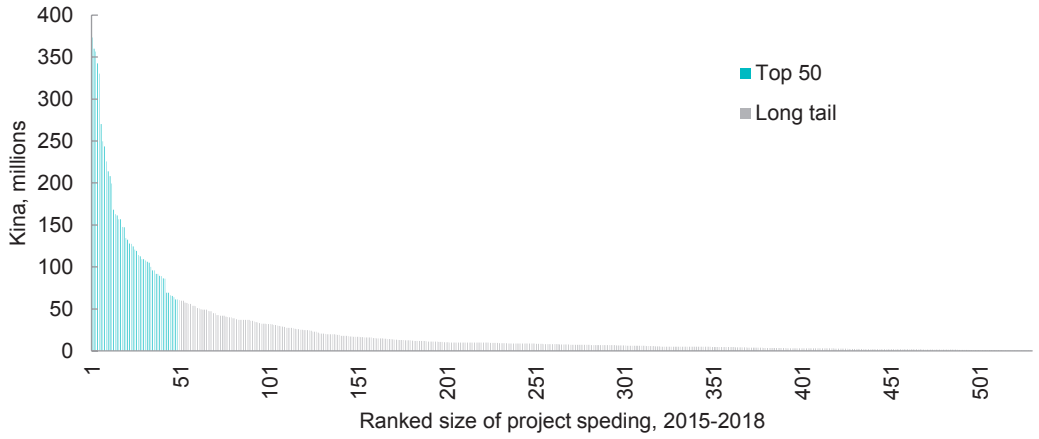
Appropriation Level		2018 Actual	2019 Budget	2020	Total Project
Code	Description				
20799	Protected Areas	7.7	2.0	4.4	14.1
21098	Kokoda Track Initiative	0.0	12.7	15.0	27.7
21256	Waste Management	0.0	8.8	0.8	9.6

Source: Budget 2020 Volume 3A.

59. **A program comprises one or more projects, the level at which budget appropriations are made.** The five-year estimates of project expenditure (Table 1.3) are only indicative of potential spending and may change substantially from year to year. For projects that extend beyond five years, these totals are not an estimate of the total project cost; rather they are the estimated cost for the coming five years and exclude any spending on the project in previous years. Actual budget appropriations are made for one year at the project level, and every project is assigned to a national department, statutory authority, or provincial government.

60. **The 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 1.21). 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 1.21. Public Investment Program Projects Ranked by Size, 2015–18
(Kina, millions)



Source: BOOST database.

61. **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 (Box 1.4).

Box 1.4. - National Procurement Act 2018

The Government of Papua New Guinea enacted the National Procurement Act (NPA) in 2018, coming into effect on April 1, 2019. The NPA provided for the establishment of a National Procurement Commission (NPC) to establish the rules for procurement (by way of Procurement Instructions) and to facilitate government procurement activities above K 500,000. The NPA also captured Government Authorities, whereas previously the procurement provisions detailed in the Public Finance Management Act did not. The NPA provides greater clarity with regards to precedence of donor and development bank requirements over the government's requirements, which is considered as a positive step with regards to implementation of donor and development bank projects. The NPA seeks to protect/reserve/restrict procurement opportunities for PNG citizens and citizen-owned businesses which is at odds with open competitive procurements. The threshold limits for procurement authorizations remain as they were in 2006 whereas the cost of goods, service (consulting/non-consulting), and works has increased overtime. With an increase in funding overtime these arbitrary constraints create bottlenecks and create pinch points in procurement processing. With increased responsibility for procurement oversight at a national and provincial level there has not been a related increase in resourcing and capacity of the organization to fulfil its legislated role. This has impacted the organization's ability to build capacity within its own organization and in the government entities that it was established to support. This includes the development and release of Procurement Instructions and other detailed guidance to help government entities to undertake planned and approved procurements. The legal framework is in place to enable improved procurement practices and overall compliance, provided that the NPC is adequately resourced and financed and is able to prioritize capacity building, facilitation, and procedural compliance.

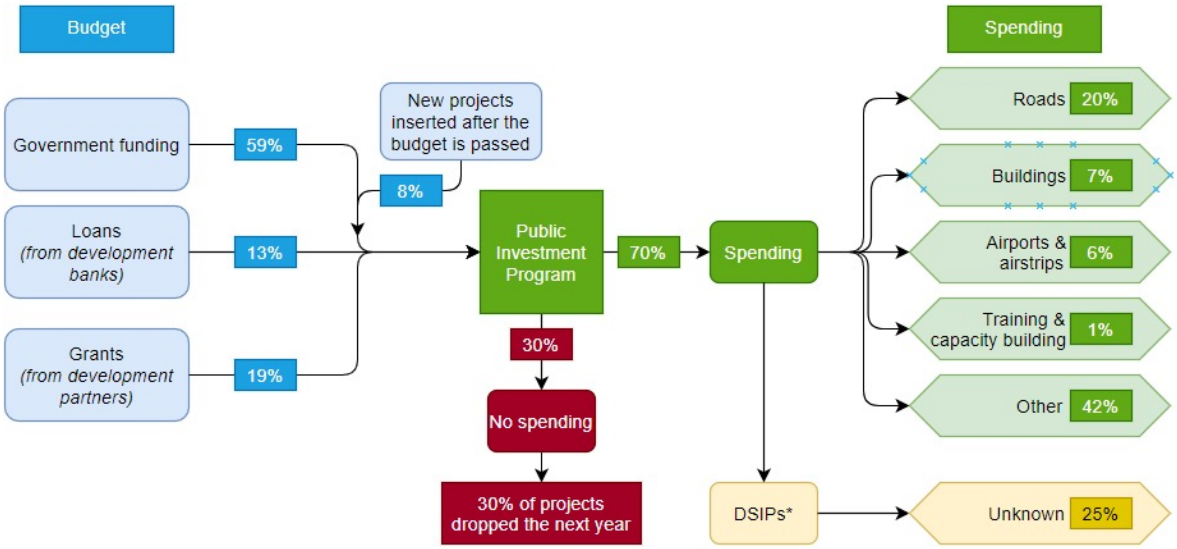
- **Thirty percent of government-financed PIP spending is via "capital transfer".** The largest of these transfers are through the District Support Improvement Programs (DSIPs) and Provincial Support Improvement Programs (PSIPs). Small capital transfers are also made to local governments. The DSIPs and 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 1.22. 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.

62. **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.

63. **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.

64. **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.

65. **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.

66. **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 A forward-looking perspective on fiscal consolidation

67. **PNG needs to deliver services to its rapidly growing and highly dispersed population, which imposes costs on the spending side of the budget.** So, there is a reason for GoPNG to need to spend even though its revenue is falling short. Within that, its wage bill is growing for the reasons outlined in the earlier section, and given that revenues are declining, the wage bill is increasingly squeezing out other essential spending and/or contributing to fiscal gaps that are taking PNG closer to an unsustainable debt position.

68. **To ensure debt sustainability, GoPNG has committed to resume fiscal consolidation, which is dependent on government's ability to mobilize domestic revenue and control big spending items.** Most fundamentally, it needs to address its declining revenues, to expand the expenditure it can afford. Then, on the expenditure side, it needs to maximize the quality of its spending, to get the best (in terms of services and functions) out of the spending it can afford. The one GoPNG has been focusing on is the wage bill; so that is what is modelled in this section.

69. **Although it is difficult to forecast the evolution of economic indicators in the current uncertain environment, this section provides examples of how PNG's public finances will evolve up to 2030 under different policy scenarios.** The purpose of this analysis is to show the direction of key macro-fiscal indicators under different revenue and expenditure paths, all compared to a 'reform' baseline—one that sees the government achieve its stated policy objectives to boost revenues and control wage-bill spending.

70. **The scenarios also assess the fiscal space available for capital spending.** As discussed in Section 1.1.2, capital spending, as a discretionary spending item, is often scaled back to accommodate spending elsewhere. For illustration, the scenarios also look at the path of debt if capital spending is cut back to zero once the 65 percent debt-to-GDP ceiling is reached.

71. **The macroeconomic assumptions used to develop the scenario analysis are based on five-year historical averages.** Preliminary data for 2020 have been included in building assumptions about the future trajectory of variables. In other words, the historical averages—and hence assumptions about future paths—incorporate the impact of the COVID-19 pandemic. This approach allows projections to be more pessimistic to account for a slow recovery from the pandemic. The assumptions to not take into account the new gas and mining projects that are in the pipeline, as their timeframes remain uncertain (Box 1.5).

72. **The analysis considers the following three scenarios:**

- Scenario 1: Business as usual/no reform. Revenues stay at current levels, and the wage bill continues to rise.
- Scenario 2: Revenues improve, but the wage bill continues to rise.
- Scenario 3: Revenues improve, and the wage bill is contained.

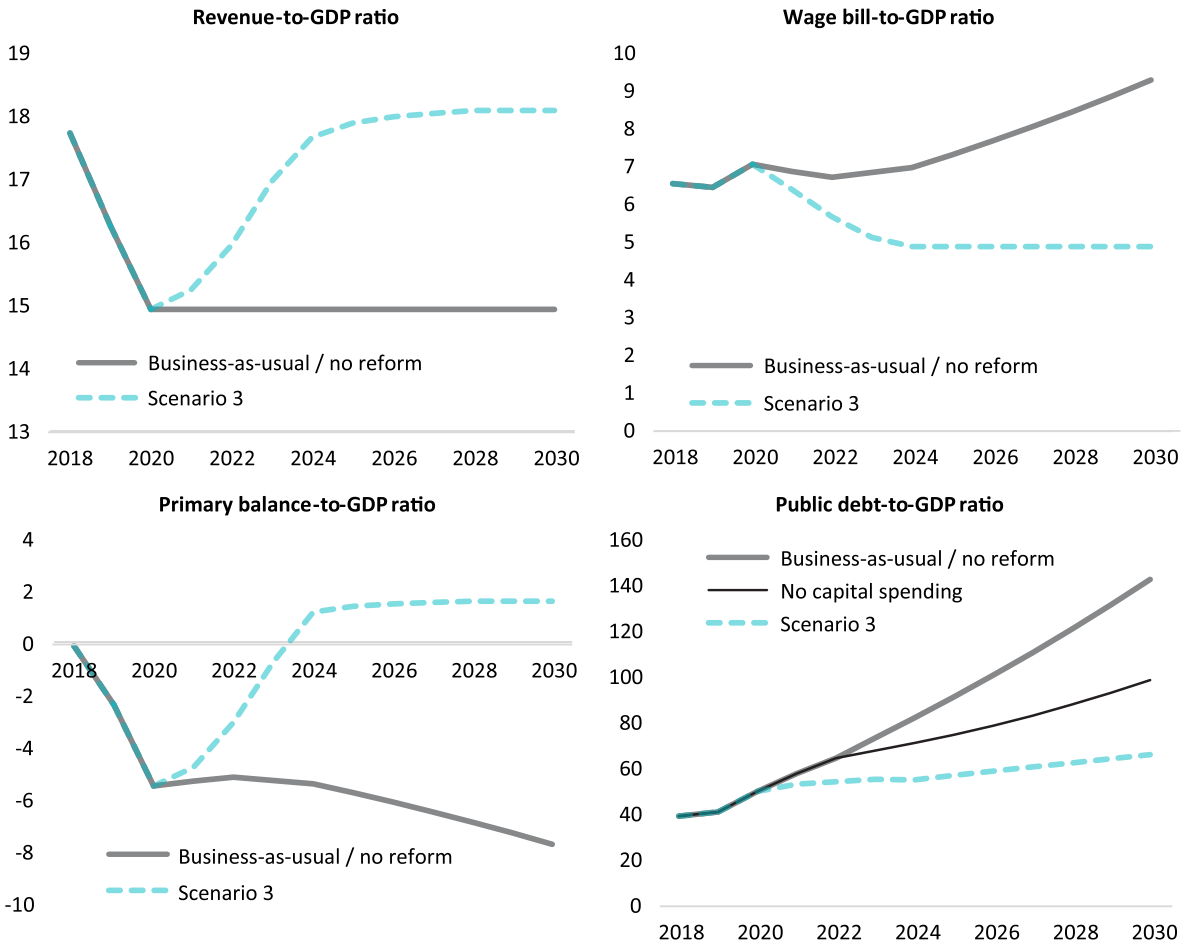
1.3.1. Scenario 1: Business as usual/no reform

73. **Under this scenario, the share of total revenue and its components stay at their 2020 level over the projection period while the wage bill continues to rise.** Since the end of the last resource boom, government revenues (excluding grants) have averaged less than 15 percent of GDP, down from near 20 percent of GDP before 2014. Scenario 1 holds revenue-to-GDP at this recent level. For the wage bill, PNG has seen a steady increase in personnel spending, with the wage bill growing by 8 percent per year on average over the past five years. This increase has been largely driven by wage increases (5.5 percent), while growth in headcount has been relatively modest (2 percent). Under Scenario 1 the public sector wage bill grows by 8 percent going forward. As a result, employee compensation would account for 7 percent of GDP by 2024 and exceed 9 percent of GDP by 2030, violating the target for payroll expenditure in the Medium-Term Fiscal Strategy (MTFS).[7]

74. **This scenario illustrates an unsustainable path of public debt.** The debt-to-GDP ratio would rise to over 140 percent by 2030 and would continue to rise thereafter. Even if capital spending were cut back to zero as a means of reducing the fiscal deficit, debt would continue to increase toward 100 percent of GDP by 2030. It is unlikely that PNG would be able to raise this level of debt, either domestically or externally. At this level of debt, even if interest rates did not rise from 2020 levels (averaging 5.8 percent per year), the interest coverage ratio would more than triple from 17 percent to 55 percent (meaning interest payments on existing debt consume 55 percent of government revenues).

[7] MTFS targets ensuring that personnel emolument costs are contained and brought down from over 45 percent of total nonresource nongrant revenue in 2017 to less than 35 percent by 2022. Using assumptions on GDP growth, this suggests employee compensation is reduced gradually from 7.1 percent of GDP in 2020 to below 5 percent in 2022.

Figure 1.23. Scenario 1 Projections to 2030

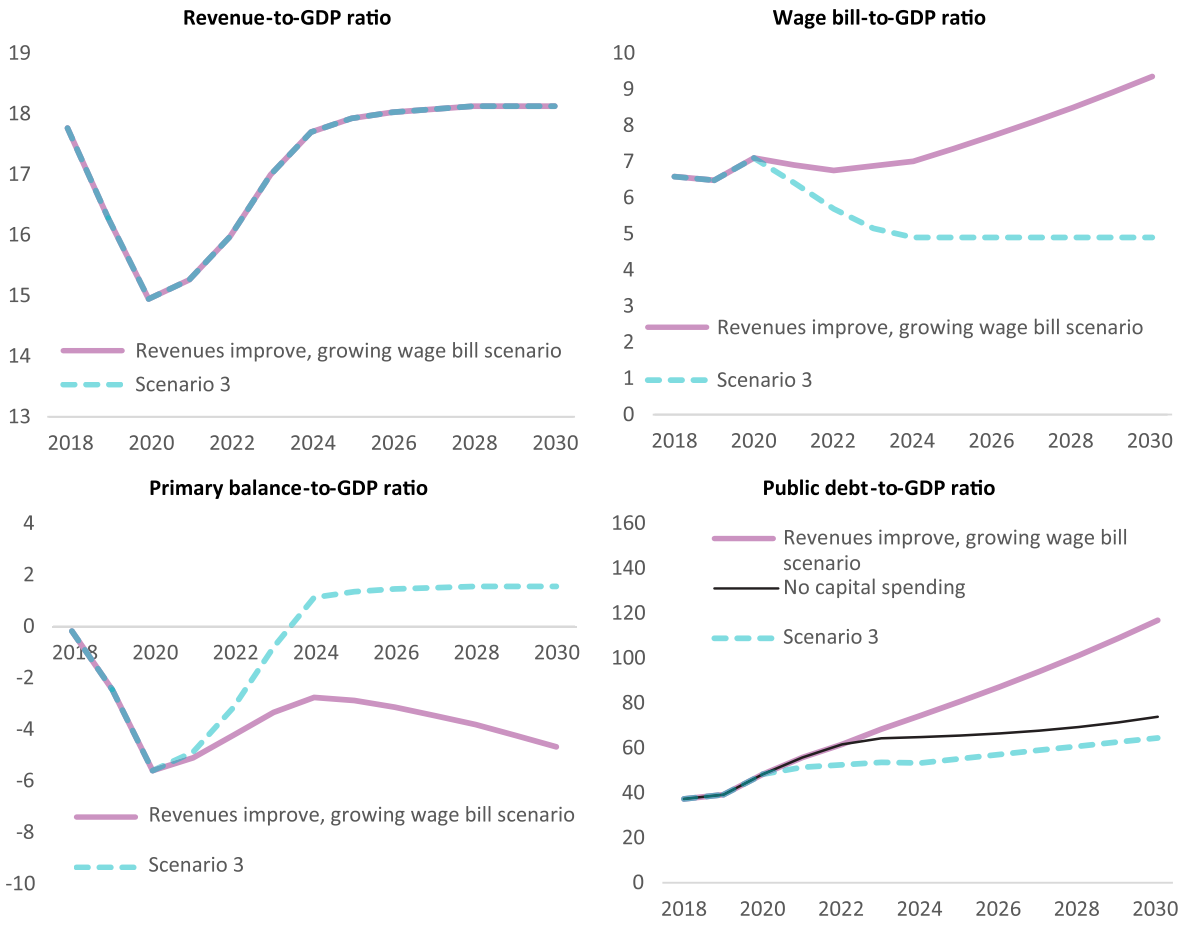


Source: World Bank staff calculations based on WB data and projections.

1.3.2. Scenario 2: Revenues improve, but the wage bill continues to rise

75. **Under this scenario, revenues increase toward 18 percent of GDP, but the wage bill continues to grow.** The improvement in revenue reduces the size of the primary deficit, but this is insufficient to stop public debt from increasing, as the growth in the wage bill overtakes the increase in revenues by 2025. Debt reaches 117 percent of GDP by 2030, although cutting capital spending to zero from 2023 would help limit the increase in debt to 75 percent of GDP. Under this scenario, the interest coverage ratio reaches 28 percent by 2026 and 38 percent by 2030, suggesting that the level of debt would prove unsustainable.

Figure 1.24. Scenario 2 Projections to 2030



Source: World Bank staff calculations based on WB data and projections.

1.3.3. Scenario 3: Revenues improve, and the wage-bill is contained

76. **Under this scenario, revenues reach 18 percent of GDP, and the wage bill falls to 5 percent of GDP by around 2026, which is the government's announced target.**[8] This scenario still sees debt increase, but at a much slower rate, and allows capital spending to continue. This scenario leads to a long-term average primary surplus of 1.6 percent of GDP, which in turn keeps public debt close to the 60 percent of GDP ceiling as per the most recent amendment to the Fiscal Responsibility Act.

77. **Even if revenues increase and the wage bill is brought under control, there are substantial downside risks to this reform scenario that could have detrimental effects on debt sustainability.** Interest rates and hence interest costs may rise, commodity prices and hence revenues may fall, and other spending pressures may reduce the size of the primary surplus.

[8] This target as share of GDP would take PNG from the middle to the bottom of its resource rich peers in terms of wage bill/GDP. We are not aware of there being any analysis done to indicate which sectors will bear the brunt of the (relative) reductions in staff numbers, or how any reduction in real wages will affect the government's ability to attract and retain the skillsets it needs for service delivery. Thus, the service delivery implications of the government implementing this policy have not been assessed.

Achieving the targets built into the MTFS requires reforms on the revenue and expenditure sides. Simulations suggest that PNG's fiscal environment is very fragile. Even a small economic shock may lead to failure to adhere to fiscal rules, with detrimental effects on debt sustainability. Nevertheless, there are also upside risks that are related to the development of new gas and mining projects (Box 1.5).

Box 1.5. - Impact of New Gas and Mining Projects on the Forecast Period

The new LNG projects, comprising Papua LNG and P'nyang,[9] have faced delays and remain in the planning stages. GoPNG and project operator TOTAL signed the Papua LNG Gas Agreement in 2019, but progress toward a final investment decision stalled due to COVID-19. In May 2021, GoPNG and TOTAL announced that they had reconfirmed the 2019 agreement and final investment decision is now planned for 2023. On P'nyang, negotiations with project operator Exxon Mobil stalled in 2020. Re-engagement is reportedly in the works and it is now clear that P'nyang will be developed after Papua LNG. After a Gas Agreement is signed and project developers reach a final investment decision, construction typically runs four to five years.

The development timeline for the Wafi Golpu gold and copper mine has also faced setbacks. Wafi Golpu joint venture partners Newcrest and Harmony submitted an application for a Special Mining Lease in 2018. A Special Mining Lease would pave the way for the project to proceed, but environmental and landowner approvals are required before it can be granted. An environmental permit was issued in December 2020 (though a legal challenge related to the approval poses a risk), and a forum to progress landowner talks is yet to take place. Developers had originally hoped for the Special Mining Lease in 2019 and a new target date is unclear. Similar to the LNG development, first production is expected five years after final approval.

Even in the best-case scenario, whereby all three resource megaprojects proceed without further setbacks, the impact on the forecast period would be limited largely to construction activities. Construction start still remains a few years out for all megaprojects, followed by a construction period of four to five years. For example, if Papua LNG developers are able to reach a final investment decision by 2023, construction on the project could run from 2024 to 2028, with first production in 2029. Once Papua LNG exports begin, government revenues from exports will be limited until developers recover costs.

Government revenue from construction activities, including foreign contractor withholding tax revenue, can be notable. Capital expenditure estimates for the construction of Papua LNG, P'nyang, and Wafi Golpu are US$14 billion, US$9.2 billion, and US$5.4 billion, respectively. A withholding tax applies to any spending on foreign services, which can be significant for highly specialized developments like LNG. Analysis of PNG LNG's construction spending reveals that roughly 80 percent went to foreign contractors (including foreign goods and foreign services) and officials have confirmed that withholding tax revenue during PNG LNG construction was significant. The other 20 percent of PNG LNG spending went to PNG businesses, which adds to tax revenue and stimulates further benefits in the economy.

[9] Papua LNG is a proposed two-train plant next to existing PNG LNG and P'nyang is a proposed expansion of PNG LNG.

1.4. Recommendations

78. **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 temporarily adds to these problems. 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 and fiscal collapse.

79. **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 (i) greater transparency on the revenues paid from the project to government, for example through publishing details of the transfer from GloCo to KPHL and MRDC, and timely publishing KPHL's annual financial statements; and (ii) 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.

80. **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.

81. **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, 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 (i) routinely auditing the payroll to minimize ghost workers, mis-grading, excessive payments of overtime and allowances and other factors that increase payroll costs; (ii) supporting the recruitment freeze policy through forming and implementing a comprehensive plan to redeploy staff from lower to higher priority areas; (iii) ensuring there is no duplication of posts as decentralization continues; and (iv) analyzing payroll data to identify any seniority creep in all levels of government that is pushing up costs.

82. **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. Finally, 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 (i) including fewer projects in the PIP, and classifying projects by priority; (ii) not including additional projects after the budget has been passed, instead putting requests for emergency funding through a contingency fund; (iii) putting more resources in to project planning and costing, including publishing details of total project costs for all projects in the PIP; and (iv) incentivizing the use of the asset registry to record existing and new assets, so to better to plan for asset management and maintenance, and to assist in scrutinizing PIP budget proposals.

83. **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 (i) analysing past budget outturns to identify systematic biases and correcting for these biases in future budgets; (ii) 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'; and (iii) greater collaboration with revenue collecting institutions, including presenting and discussing draft revenue forecasts at senior management level during budget preparation, so to reach a shared position on forecast realism.

2. Domestic Revenue Mobilization as a Prerequisite for Fiscal Consolidation

84. This chapter of the PFR assesses the impact of policies on government revenue to help prioritize tax policy and administration reforms, structured around five main sections as follow: (i) section 2.1 provides an overview of revenue context, covering an analysis of revenue trends and performance over the past several years; (ii) section 2.2 presents the overall rate structure of major taxes from regional and global perspectives and assesses the revenue performance by tax type, drawing implications for further reforms; (iii) section 2.3 discusses tax exemptions and incentives, covering CIT and GST exemptions and incentives introduced to stimulate investment and analyze a revenue impact of these exemptions; (iv) section 2.4 covers tax administration issues; and (v) section 2.5 concludes with recommendations on widening the taxable base and strengthening tax administration.

85. **It is important that the analysis and recommendations of this chapter 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

86. **Papua New Guinea has a low tax-to-GDP ratio (below 15 percent).** PNG adopted a Medium-Term Revenue Strategy (MTRS) for the period of 2018–22 and has been implementing the MTRS with assistance from development partners such as Australia's Department of Foreign Affairs and Trade, IMF, United States Department of the Treasury Office of Technical Assistance, and the World Bank. The MTRS aims to develop sustainable revenue generation through an effective and equitable tax system. Over the last few years, GoPNG introduced a series of tax policy and tax administration reform measures, but many goals and objectives set forth in the MTRS have not yet been achieved. A quick assessment of the MTRS implementation status is presented in Table 2.1 below.

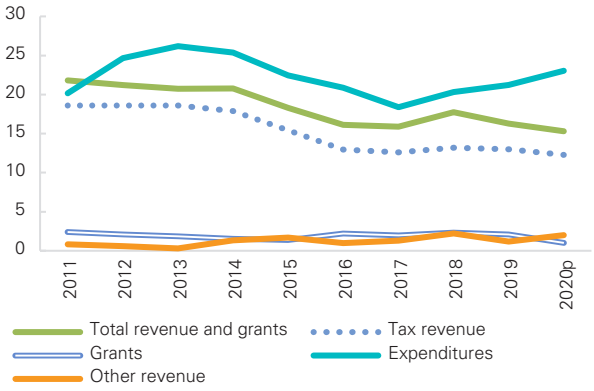
Table 2.1. Medium-Term Revenue Strategy: Key Objectives and Their Implementation Status

MTRS key objectives	Status of achievement
Halt the declining revenue to GDP trend	Somewhat
Increase revenues (excluding grants) to reach 14.0 per cent of GDP by 2022	Not yet
Increase compliance substantially, both through greater enforcement, but also through encouraging a culture of voluntary compliance to reinforce revenue collections at lower administration costs	Not yet. IRC has been implementing a range of compliance measures, but outcomes have been limited.
Broaden the revenue base by introducing measures to fill the tax gaps and rationalize tax incentives, and lessen the tax burden on the current narrow range of personal income taxpayers	Not yet. DoT plans to rationalize the tax incentives as part of the Income Tax rewrite.
Make corporate tax schedules more competitive but do so through the removal of a myriad of concessions, tax exemptions and special arrangements	Not yet.
Strengthen revenue policy, the legislative framework and administration components of the revenue system for a more effective, simpler and efficient tax system.	A modern Tax Administration Bill has been adopted in 2017, however, its implementation was put on hold. The rewritten Income Tax Act has not yet been adopted.

Source: World Bank Staff assessment.

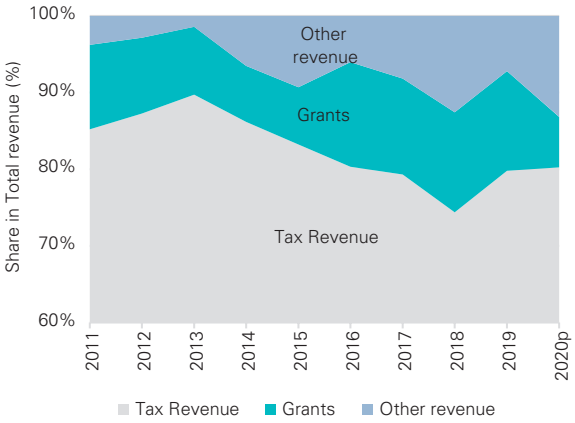
87. **Tax revenue is the main source of finance for PNG's development and investment needs.** It accounted for 82.6 percent of total revenue, including grants, in 2011–20; total revenue and grants were about 18.4 percent of GDP during this period. A comparison of tax collection and public expenditure shows unfavorable developments since 2012 when public expenditure dramatically rose above total revenue from all sources (Figure 2.1). 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 2.1. Revenue Collection and Total Public Expenditures, 2011–20
(Percent of GDP)



Source: PNG DoT; WB staff calculations.

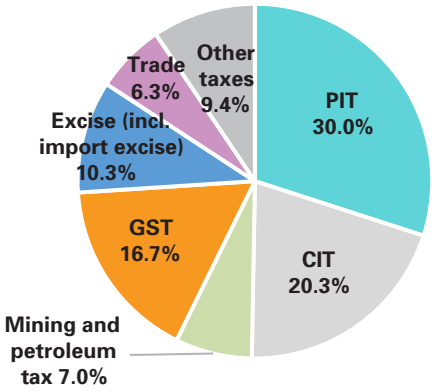
Figure 2.2. Revenue by Funding Source
(Percent of total revenue)



Sources: PNG DoT; WB staff calculations.

88. **National budget revenue comprises taxes, grants, and other revenue**. On average, between 2011 and 2020, the shares of these revenue sources stood at 82.6, 10.3, and 7.1 percent, respectively (Figure 2.2). Over the same period, total revenue followed the pattern of tax collection. Total revenue remains insufficient to meet service delivery needs, at around 18.4 percent of GDP during 2011-20. Within this, tax revenue averaged 15.3 percent of GDP during 2011-20. Although grants were relatively stable at around 1.9 percent of GDP over the period, other revenues increased from nearly 1 percent of GDP during 2011–17 to 1.8 percent in 2018–20 (Figure 2.1). Figure 2.3 shows tax revenue composition in 2011–20. Personal income tax (PIT) and corporate income tax (CIT) account for the largest shares of tax revenue, contributing 30 percent and 20.3 percent, respectively.

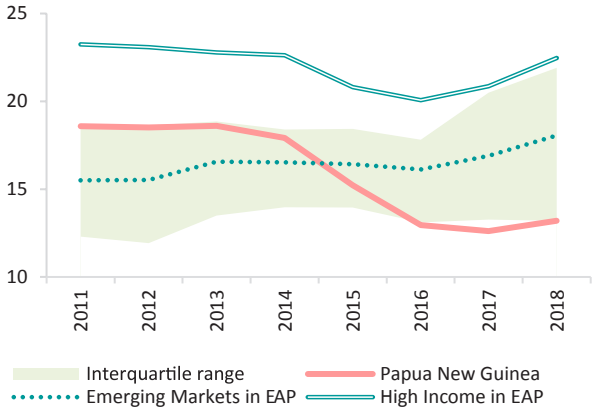
Figure 2.3. Composition of Tax Revenues, 2011–20 average
(Percent of total)



Sources: PNG DoT and WB staff calculations.

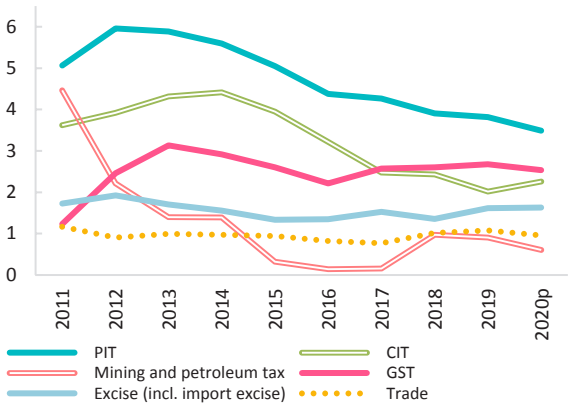
89. **PNG's tax collection was below the East Asia and the Pacific (EAP) emerging economies since 2016.** It reached a peak of 20.9 percent of GDP in 2007 and stayed in the interquartile range from 2004 to 2016. Tax revenue sharply dropped and performed worse EAP emerging economies since 2014, and was below the interquartile range during 2016–18 (Figure 2.4).

Figure 2.4. 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.

Figure 2.5. Revenue Collection by Tax Type, 2011–20
(Percent of total revenue)

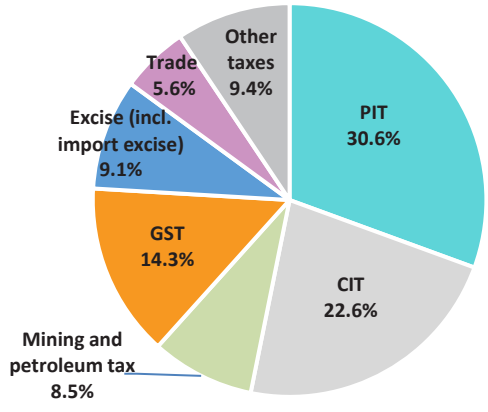


Sources: PNG DoT and WB staff calculations.

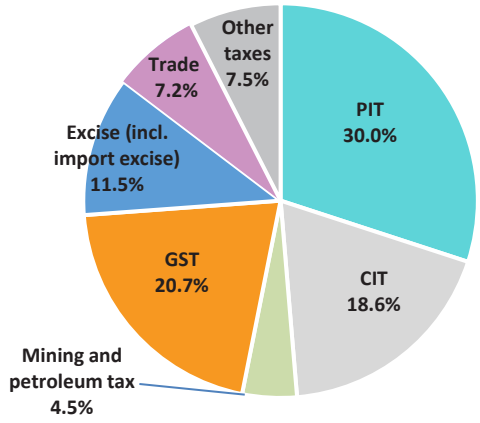
90. **The revenue decline goes beyond the extractive industries, reflecting a general slowdown in economic performance and possibly deteriorating tax compliance.** Figure 2.5 shows the tax revenue structure by tax type as a share of GDP in 2011–20. PIT revenues gradually fell from 6 percent of GDP in 2012 to 3.5 percent of GDP by 2020. Meanwhile, CIT revenues rose from 3.6 percent of GDP in 2011 to 4.4 percent of GDP by 2014, but have decreased steadily since 2014 to average 2.3 percent of GDP in 2017–20. Mining and petroleum tax collection fell sharply from 4.5 percent of GDP in 2011 to 0.1 percent of GDP in 2016 but recovered to about 1 percent in 2018–19. GST and excise revenues from domestic and import excise fluctuated at around 2.5 percent and 1.6 percent, respectively, over the period. Trade taxes were stable at 1 percent of GDP over the same period.

Figure 2.6. Composition of Tax Revenues Over Time

a. 2011–15



b. 2016–20



Sources: PNG DoT and WB staff calculations.

Sources: PNG DoT and WB staff calculations.

91. **To see how the tax composition evolved, the 2011–20 period is split into two intervals: 2011–15 (Figure 2.6, panel a) and 2016–20 (Figure 2.6, panel b).** Among the main taxes, the GST, excise, and trade contributions rose steadily, whereas the share of PIT and CIT fell. The share of GST in total tax revenues increased from 14.3 percent in 2011–15 to 20.7 percent in 2016–20. During the same period, the share of excise went up from 9.1 to 11.5 percent.

Similarly, trade taxes increased from 5.6 to 7.2 percent. On the other hand, the share of PIT and CIT in total tax revenue dropped from 30.6 percent and 22.6 percent during 2011–15 to 30.0 percent and 18.6 percent during 2016–20, respectively.

Table 2.2. Tax Buoyancy, 2006–19

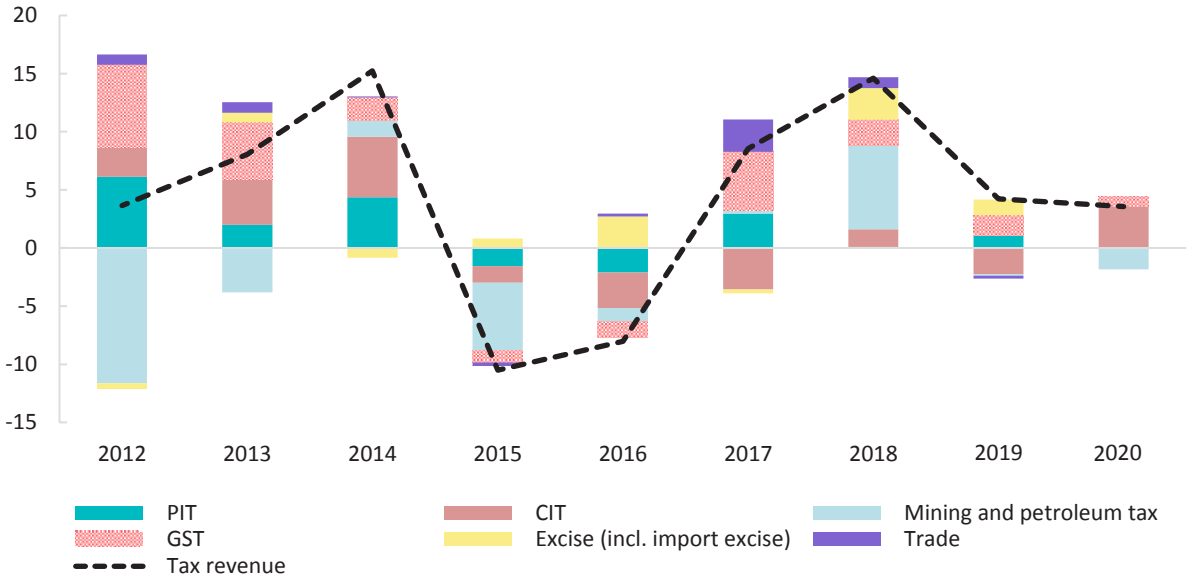
Tax type	Buoyancy
Total tax revenue	0.37
Personal income tax	1.24
Corporate income tax	0.97
Mining and petroleum tax	(4.10)
Goods and services tax	1.67
Excise (incl. import excise)	0.80
Domestic excise	0.72
Import excise	1.02
Trade tax	0.85

Source: PNG DoT and World Bank staff calculations.

92. **PNG's tax system is relatively nonbuoyant across most taxes.** Tax buoyancy is one of the key indicators to assess the efficiency of a government's tax system. It measures the responsiveness of tax mobilization to economic growth. Overall, tax revenues seem to grow slower than GDP growth, with a few exceptions (Table 2.2). 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.

Figure 2.7. Tax Revenue Growth by Tax Type

Contribution to growth (percent)



Sources: PNG DoT and WB staff calculations.

93. **Overall, total tax revenue growth has been driven by PIT, GST, and mining and petroleum tax (Figure 2.7).** The year-to-year growth contribution by a specific tax is estimated as the growth of that particular tax weighted with its share in the total tax collection. For example, overall tax revenue and PIT rose 15.2 percent and 13.8 percent from 2013 to 2014, respectively. Out of a 15.2 percent increase in tax revenue, 4.4 percent is contributed by a rise in PIT (31.6 percent the share of PIT in tax revenue in 2013 multiplied to the PIT growth rate of 13.8 percent). The CIT changed from positioning as one main contributor to rising total tax revenues in 2013–14 to being a drain on total tax intakes during 2015–17 and 2019.

2.2. Assessment of major taxes

94. **This section presents the overall rate structure of major taxes from regional and global perspectives and** 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.

95. **The PNG government introduced a number of fiscal measures on both taxes and expenditures in response to the COVID-19 pandemic.** These measures aimed to protect businesses by providing safeguards to their cashflows, preserving jobs, and supporting small businesses. Due to PNG's limited fiscal space, it is unlikely that GoPNG could afford a generous tax policy stimulus. Nevertheless, there are options that PNG can consider; these are discussed in the key recommendations section.

96. **Table 2.3 presents a snapshot of the rate structure of the three major taxes—CIT, PIT, and GST—in a regional and global comparison.** Compared among nine lower-middle-income countries (LMICs), the standard CIT rate and the highest PIT rate in PNG are the highest rates in the group, 30 percent and 42 percent, respectively. PNG's standard CIT rate is higher than all upper-middle-income countries (UMICs) on average, and PNG's PIT top marginal tax rate is also above nearly all economies (except China at 45 percent). PNG's highest marginal PIT rate is significantly higher than any comparable group average in EAP, Latin America, Africa, and the European Union, and is the same as the Organisation for Economic Co-operation and Development (OECD) average and the Republic of Korea (in the high-income group). PNG's GST rate of 10 percent is comparable with the rate in most economies but below the overall average in EAP (12 percent) and the average for all other regions.

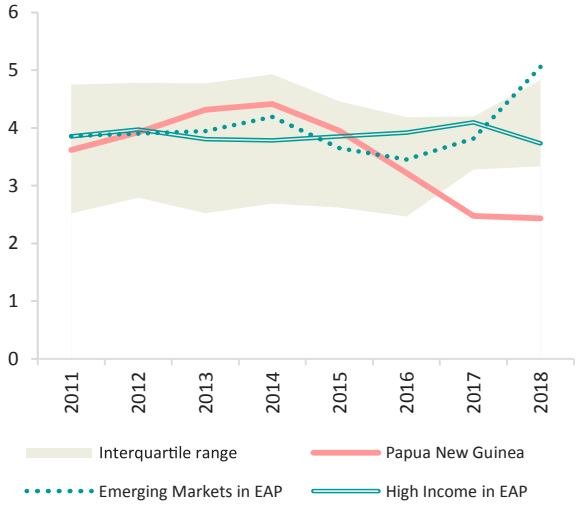
Table 2.3. Statutory Tax Rates in East Asia and the Pacific

Economy	Statutory Tax Rate (in percentages)			Income group
	CIT	PIT (Top rate)	VAT/GST	
Cambodia	20	20	10	Lower middle income
Indonesia	25	30	10	Lower middle income
Lao PDR	24	24	10	Lower middle income
Mongolia	25	10	10	Lower middle income
Myanmar	25	25	N/A	Lower middle income
PNG	30	42	10	Lower middle income
Philippines	30	35	12	Lower middle income
Timor-Leste	10	10	N/A	Lower middle income
Vietnam	20	35	10	Lower middle income
China	25	45	17	Upper middle income
Fiji	20	20	9	Upper middle income
Malaysia	24	28	6	Upper middle income
Samoa	27	27	15	Upper middle income
Thailand	20	35	7	Upper middle income
Australia	30	45	10	High income
Brunei Darussalam	18.5	N/A	N/A	High income
Hong Kong SAR, China	16.5	15	N/A	High income
Japan	23.2	45	8	High income
Korea	25	42	10	High income
Macao SAR, China	12	12	N/A	High income
New Zealand	28	33	15	High income
Singapore	17	22	7	High income
Taiwan, China	20	40	5	High income
UMICs and LMICs, East Asia and Pacific	23.2	27.6	10.1	
--- Excluding PNG ---	22.7	26.5	10.1	
East Asia and Pacific average	22.4	29.1	9.8	
--- Excluding PNG ---	22.1	28.5	9.8	
Asia average	21	28	12	
Latin America average	28	33	14	
Africa average	28	32	16	
EU average	24	42	19	
OECD average	21	38	22	

Source: IMF, PwC, and KPMG.
Note: N/A=no data available; (a) UMICs = Upper-middle income countries and LMICs = Lower-middle income countries.

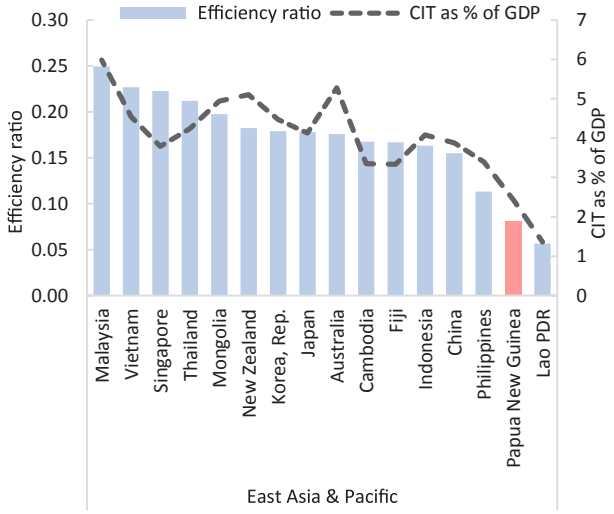
2.2.1. Corporate income tax

Figure 2.8. CIT Collection in Regional Comparison, 2011–18
(Percent of GDP)



Source: PNG DoT, IMF and WB staff calculations.

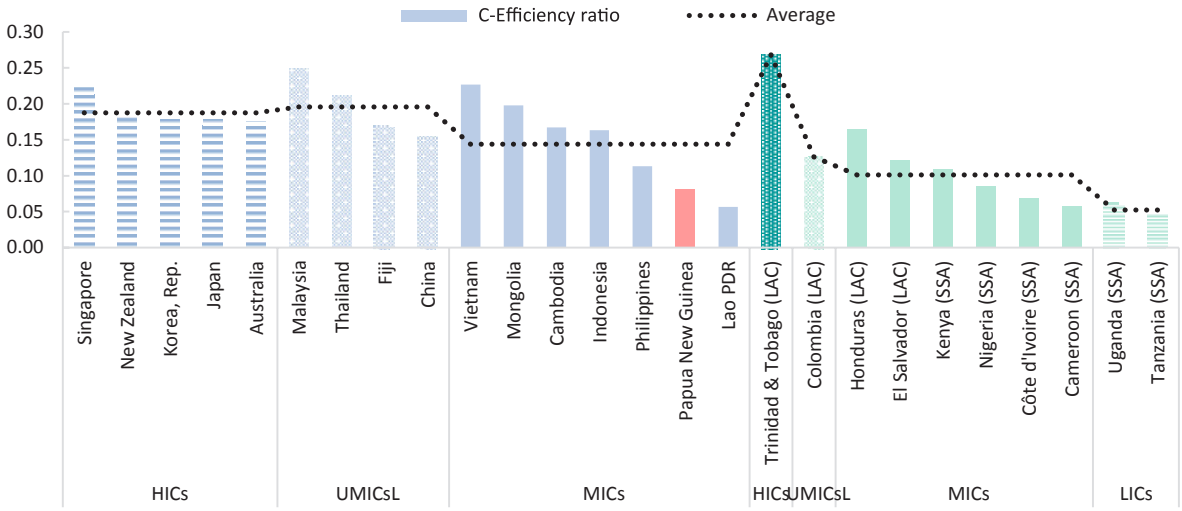
Figure 2.9. CIT Collection and C-efficiency Ratio in Selected EAP Economies, 2018



Source: PNG DoT, IMF and WB staff calculations.

97. **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 2.8). 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.

Figure 2.10. CIT C-efficiency Ratio, 2018



Source: 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.

98. **A cross-country comparison of the level of CIT revenue and their productivity facilitates a fuller picture of the CIT performance.** The CIT revenue and productivity are presented in EAP regional comparison (Figure 2.9 and Table 2.4) and other regions (Figure 2.10). Figure 2.10 illustrates the 2018 CIT productivity ratio in selected EAP countries 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 among the selected EAP countries, PNG performed poorly with 2.4 percent of GDP in CIT collection and 0.08 in CIT productivity ratio, ranked second to last in both categories (Figure 2.9 and Table 2.4). 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).

Table 2.4. CITs of Emerging and Developing Economies in EAP, 2018

Selected Countries	(1) Standard CIT Rate	(2) CIT Revenue (% of GDP)	(3) = (2)/(1) Efficiency Ratio	Efficiency Ratio Ranking
East Asia & Pacific				
High income				
Australia	30	5.28	0.176	9
Japan	23	4.12	0.178	8
Korea, Rep.	25	4.47	0.179	7
New Zealand	28	5.11	0.182	6
Singapore	17	3.79	0.223	3
Average	**25**	**4.55**	**0.188**	
Upper middle income				
China	25	3.87	0.155	13
Fiji	20	3.34	0.167	11
Malaysia	24	5.98	0.249	1
Thailand	20	4.24	0.212	4
Average	**22**	**4.36**	**0.196**	
Lower middle income				
Cambodia	20	3.35	0.167	10
Indonesia	25	4.08	0.163	12
Lao PDR	24	1.36	0.057	16
Mongolia	25	4.94	0.198	5
PNG	30	2.43	0.081	15
Philippines	30	3.40	0.113	14
Vietnam	20	4.54	0.227	2
Average	**25**	**3.44**	**0.144**	

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

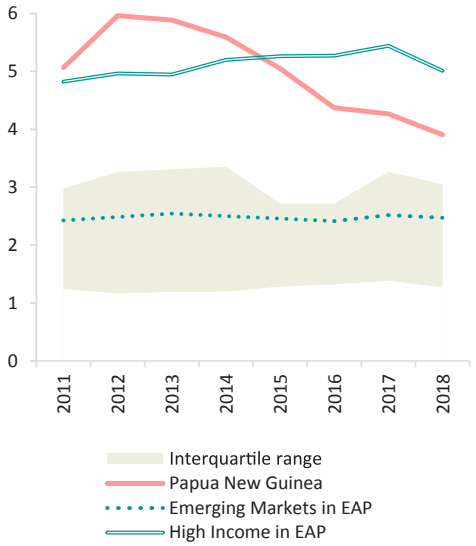
99. **PNG could consider reducing the CIT rate, with the notable exception of the extractive industries.** Its standard CIT rate is higher than the average among the peers in the EAP income group (about 23 percent) or any other regional or global averages (EAP average: 22 percent; LAC and Africa: 28 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.

100. **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.

101. **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 (Annex 2). 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.

2.2.2. Personal income tax

Figure 2.11. PIT Collection in Regional Comparison
(Percent of GDP)



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

Table 2.5. PIT Rates: EAP Emerging and Developing Economies, 2018

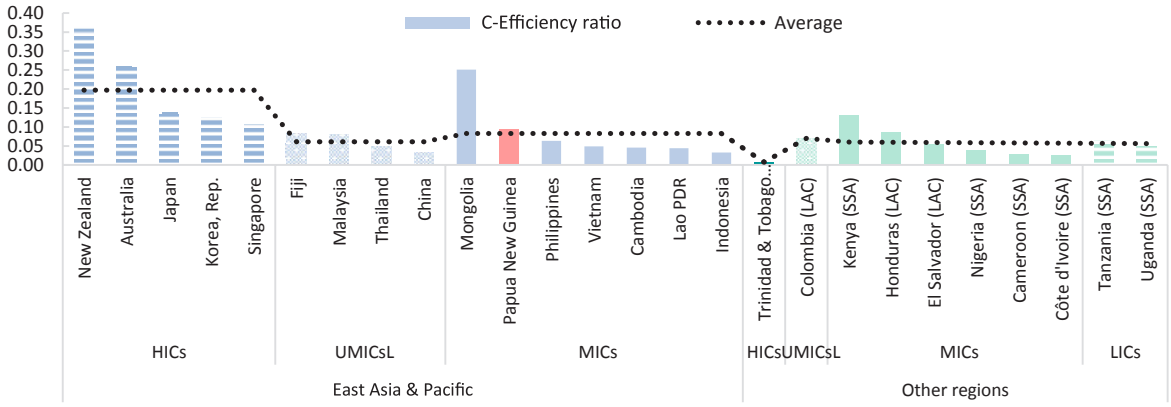
Selected Economies	(1) Standard PIT Rate	(2) PIT Revenue (% of GDP)	(3) = (2)/(1) Efficiency Ratio	Efficiency Ratio Ranking
East Asia and the Pacific				
High income				
Australia	45	11.50	0.256	2
Japan	45	6.00	0.133	4
Korea, Rep.	42	5.23	0.125	5
New Zealand	33	12.05	0.365	1
Singapore	22	2.33	0.106	6
Average	**37**	**7.42**	**0.197**	
Upper middle income				
China	45	1.44	0.032	16
Fiji	20	1.67	0.084	8
Malaysia	28	2.25	0.080	9
Thailand	35	1.72	0.049	11
Average	**32**	**1.77**	**0.061**	
Lower middle income				
Cambodia	20	0.91	0.045	13
Indonesia	30	0.97	0.032	15
Lao PDR	24	1.06	0.044	14
Mongolia	10	2.51	0.251	3
Papua New Guinea	42	3.91	0.093	7
Philippines	35	2.22	0.063	10
Vietnam	35	1.70	0.049	12
Average	**28**	**1.90**	**0.083**	

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

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

102. **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 2.11). 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 2.12. 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.

103. **PNG's estimated productivity falls in the middle of the regional comparison regardless of income groups (Table 2.5).** Figure 2.12 illustrates the 2018 PIT productivity ratio in selected EAP countries and selected resource-rich countries in other regions that share similar socioeconomic features with PNG, separated into three income groups (UMICs, LMICs, and LICs). As presented in Table 2.5 and Figure 2.12, 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).

Table 2.6. PIT Exemption

Economies	Statutory PIT Rate-top rate (%)	Income group	GDP per capita (constant 2010 US$)	GDP per capita (current US$)	Exemption threshold	
					in LCU	in US$
Cambodia	20	Lower middle income	1,203	1,512	14,400,000 KHR	3,492.60
Indonesia	30	Lower middle income	4,285	3,894	-	-
Lao PDR	24	Lower middle income	1,786	2,542	15,600,000 LAK	1,731.22
Myanmar	25	Lower middle income	1,573	1,418	4,800,000 MMK	3,432.33
PNG	42	Lower middle income	2,419	2,720	12,000 PGK	3,413.94
Philippines	32	Lower middle income	3,191	3,252	250,000 PHP	5,013.16
Timor-Leste	10	Lower middle income	848	1,237	6,000 US$	6,000.00
Vietnam	35	Lower middle income	1,964	2,567	-	-
China	45	Upper middle income	7,807	9,977	-	-
Fiji	20	Upper middle income	4,795	6,267	30,000 FJD	13,772.93
Malaysia	28	Upper middle income	12,120	11,373	5,000 RM	1,174.40
Samoa	27	Upper middle income	3,749	4,183	15,000 US$	15,000
Thailand	35	Upper middle income	6,370	7,295	150,000 THB	4,748.34
Australia	45	High income	56,864	57,396	18,200 AUD	20,448.88
Brunei Darussalam	N/A	High income	31,437	31,628	N/A	N/A
Hong Kong SAR, China	15	High income	38,704	48,543	50,000 HKD	6,451.46
Japan	45	High income	48,766	39,159	1,950,000 JPY	17,904.41
Korea	42	High income	28,091	33,340	-	-
Macao SAR	12	High income	58,642	87,209	144,000 MOP	18,049.98
New Zealand	33	High income	38,764	42,950	-	-
Singapore	22	High income	59,073	66,189	20,000 SGD	14,309.22
Taiwan, China	40	High income	N/A	N/A	-	-

Source: PwC and WB staff calculations.
Note: N/A=no data available; "–" in Exemption threshold column = no zero percent tax bracket.

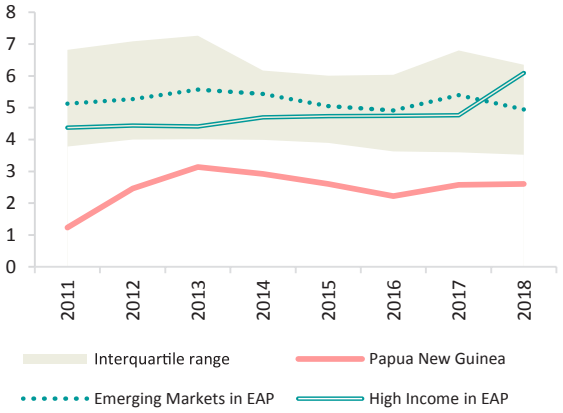
104. **The tax wedge for low and middle-income earners is high.** The basic exemption for an employee earning a salary or wage income is PGK 12,500 (or US$3,413.94) for residents and PGK 7,000 (or US$ 2,026.05) for nonresidents. The PIT exemption in PNG is similar to that in Cambodia (US$3,492.60) and Myanmar (US$3,432.33) among LMICs but is lower than other LMIC countries and almost all UMIC peers (Table 2.6). 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.

105. **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. The current situation in PNG is not conducive to an increase in GST or excise tax rates, as the compliance level is too low (see section 2.2.3 and 2.3 for more detail). 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.

2.2.3. Goods and services tax (GST/VAT)

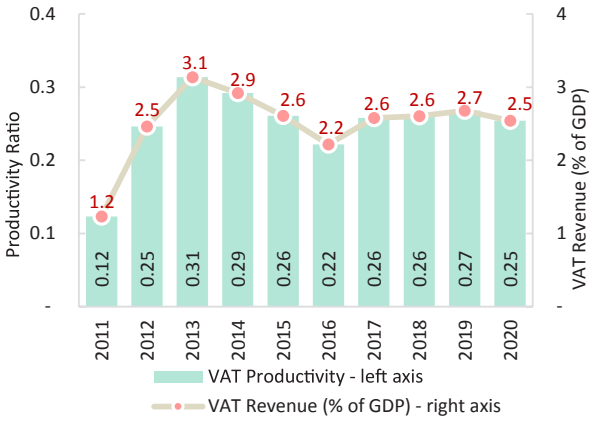
106. **The GST performed comparatively poorly between 2011 and 2018.** GST collection fell below the average for the interquartile, high income, and emerging EAP economies (Figure 2.13).

Figure 2.13. GST/VAT Collection in Regional Comparison, 2011–18
(Percent of GDP)



Sources: PNG DoT, IMF and WB staff calculations.

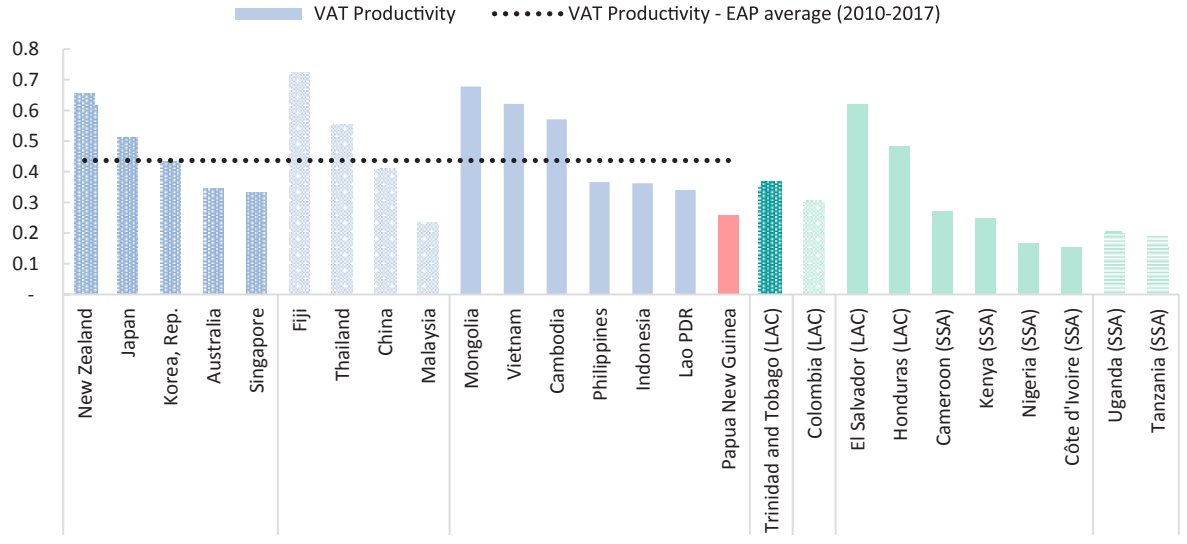
Figure 2.14. PNG's GST/VAT Productivity and C-Efficiency, 2011–20
(Productivity ratio; VAT Revenue as percent of GDP)



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

107. **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 2.14). Figure 2.13 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 2.15. GST/VAT Productivity Ratio, 2018



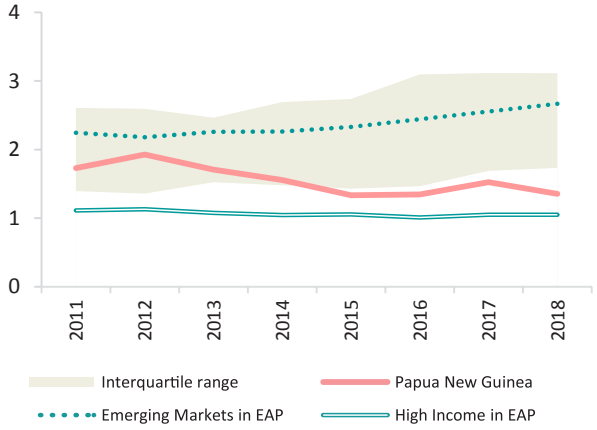
Source: PNG DoT, IMF, UN Database, USAID and WB staff calculations.

108. **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.

2.2.4. Excise and trade taxes

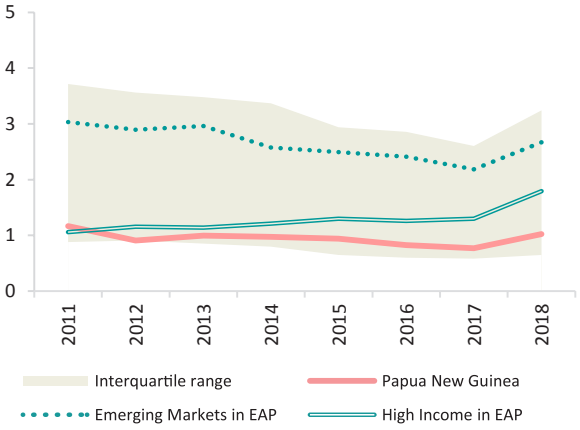
109. **Excise revenue as a share of GDP increased from 1.7 percent in 2011 to 1.9 percent in 2012.** However, it gradually dropped from 1.7 in 2013 to 1.3 percent in 2015 and fluctuated through 2018 (Figure 2.16). For most of the 2011 – 2018 period, PNG excise revenue is at the bottom of the interquartile range.

Figure 2.16. Excise Collection in Regional Comparison
(Percent of GDP)



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

Figure 2.17. Trade Collection in Regional Comparison
(Percent of GDP)



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

110. **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 2.17).

111. **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

112. **The extensive use of tax incentives and exemptions in PNG likely narrow the tax base for CIT and GST significantly.** GoPNG has recognized the need for rationalizing the tax incentives regime. As a first step in the process of quantifying the extent of the problem and increasing

transparency, the Department of Treasury (DoT) and the Internal Revenue Commission (IRC) prepared a tax expenditure statement (TES), which was included as a dedicated chapter in the 2018 budget. The 2019 budget expanded the coverage of the TES to capture additional tax incentives provided in the Income Tax Act (1959), Goods and Services Act (2003), Customs Tariff Act (1990), and Excise Tariff Act (1956). The PNG LNG project agreement was also included in the TES exercise.

113. **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. Due to a lack of data, the authors were unable to conduct a cost-benefit analysis of selected CIT incentives. Therefore, recommendations for rationalization of the CIT incentives are drawn from qualitative analysis and good international practice in designing CIT incentives. Regarding GST expenditures, the section 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.

2.3.1. CIT expenditures

114. **The 2020 budget estimates total CIT expenditures of K 116.1 million in 2018 (Table 2.7).** 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. Further discussions with the IRC and DoT are needed to clarify the differences.

Table 2.7. CIT Expenditures 2018

Tax incentive	Estimated expenditures (K, million)	
	Nonresource	Resource
Interest	5.2	2.1
Fishing Operations	0	0
Dividends	4	0
Export sales	0	0
Rural development incentive	0.1	0
Solar heating	0.1	0
Gifts	0	0
Deduction Educational expenses (individuals only)	0	0
Double Deduction – Staff Training	0	0
Double deduction – Export market development	0.1	0
Double deduction – Tourism	0.2	0
Additional Depreciation – Fuel Conservation	0	0
Additional Depreciation – Nonoil-fired plant (converted)	0	0
Additional Depreciation – Nonoil-fired plant (acquired)	0	0
Additional Depreciation – Industrial Development	30.4	0
Additional Depreciation – Primary Production	6.5	0
Research and development expenditure	0.2	0
Primary production development expenditure	2	0
Primary production 150% extension services	2	0
Double deduction – Unit of property	0	0
Amortization – Exploration expenditure	0	21.8
Double deduction – Exploration expenditure (mining)	0	0
Amortization – Allowable capital expenditure	0	41.4
Remote banking services	0	0
Total	**50.8**	**65.3**

Source: PNG DoT and WB staff calculations.

115. **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 2.8). 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.

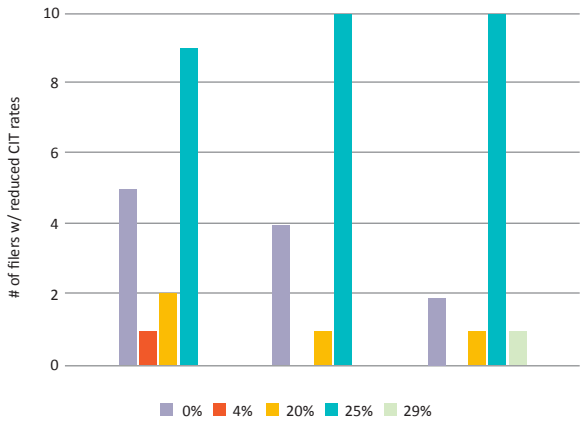
Table 2.8. Estimates of Tax Expenditure Not Included in 2020 Budget

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

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

116. **PNG offers a 10-year tax holiday for income from certain business activities commenced in prescribed rural development areas.** Consistent with this policy, a number of taxpayers are found to benefit from lower than 30 percent CIT rates on their taxable income. Figure 2.18 shows the number of CIT filers with rates of zero, 4 percent, 20 percent, 25 percent, and 29 percent in 2014, 2015, and 2016. Some of those reduced rates may be policy rates provided by the tax holiday, while others may be the weighted average of reduced rates and the benchmark rate in partial years.

Figure 2.18. Filers with Reduced CIT Rates in the Tax Microdata



Source: PNG IRC and WB staff calculations.

117. **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.

118. **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.

119. **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.

2.3.2 GST expenditures

120. **Modeling GST is a complex exercise due to the existence of exempt commodities.** This creates a situation where tax becomes embedded in their price as well as the price of other commodities further down the supply chain. Therefore, estimating GST expenditures requires that the model properly accounts for the flow of embedded tax (as a result of exempt commodities) across industries. This requires the use of Input-Output (IO) tables. Since there are no recent IO tables produced for PNG, it is necessary to find an alternative estimation methodology or construct pseudo-IO tables of high enough quality to obtain sensible estimates. No other alternative estimation methodology has been found to properly account for the interaction effects between exempt commodities and the flow of intermediate inputs in the economy. So, constructing pseudo-IO tables is the best approach given the data limitations.[10] 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.

121. **The benchmark GST revenues for 2018 are K 4,690 million, or 5.9 percent of GDP (Table 2.9).** Benchmark GST revenues are derived under the assumption that all final consumption—by households and government—is subject to GST at the benchmark rate of 10 percent. It can be computed by multiplying final consumption expenditure in net purchaser prices[11] by 10 percent. 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.

Table 2.9. 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.

10. Annex 3 includes a detailed discussion of the methodology used to construct the pseudo-IO tables.
11. Net purchaser prices are equal to purchaser prices minus GST, or basic prices plus margins and other non-VAT taxes on products (such as carbon and excise taxes).

122. **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. It comprises:

- *Small suppliers*. Suppliers with taxable sales below K 250,000 are not required to register for GST. Those small suppliers are effectively exempt, as they do not charge GST but cannot claim input tax credits on the GST paid on their inputs. This portion of the compliance gap is the tax expenditure associated with the *small supplier* threshold policy.

- *The informal economy.* Suppliers with taxable sales above K 250,000 but who fail to register for the GST are part of the informal economy. Like small suppliers, suppliers operating in the informal economy are effectively exempt. They do not charge GST but cannot claim input tax credits on the GST paid on their inputs. This portion of the calibration gap is the compliance gap.

123. **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 from exempt 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.

124. **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.

125. **The following uses the model developed to estimate the direct and indirect effects and the total revenues foregone from each zero-rated and exempt commodity.**

Zero-Rated Commodities

Exported Goods and Services

The zero rate for exported goods and services is not considered to be a tax expenditure. The zero-rating of exports is included as part of the benchmark tax system as it is considered an integral part of GST.

Perishable Goods Bought for Consumption Outside of PNG

This policy is ambiguous. However, to the extent that the goods purchased are consumed outside of PNG, the goods are considered exports, and no GST should be levied. It is not considered a tax expenditure.

Supply of Prescription Medical Equipment, Prescription Drugs, and Lenses

The zero-rating of prescription medical equipment, medical equipment, prescription drugs, and lenses leads to foregone revenues from domestic sales in PNG and is a tax expenditure. The commodities covered are very specific and are small proportions of more aggregated commodities in the Input-Output tables. The value of relieved commodities is estimated using the GST tax microdata to overcome this aggregation bias. In the GST tax microdata, zero-rated "retail sale of pharmaceutical and medical goods" amounts to approximately K 38 million. The relieved commodities are assumed to be almost exclusively consumed by final consumers, and so the tax expenditure estimate is 10% of the relieved sales, which rounds to 4 million.

Supply of Goods and Services to a Mining, Petroleum, or Gas Company (Exception: Cars)

Zero-rating the supply of goods and services to a mining, petroleum, or gas company impacts only intermediate inputs as final consumers are not eligible for relief as per the definition. Firms qualify for input tax credits on their purchases unless they are producing an exempt commodity. Therefore, zero-rating an intermediate input does not lead to any foregone revenues unless the input is used in the production of an exempt commodity. In this case, commodities produced by the mining, petroleum, or gap industries are not exempt, so this policy does not give rise to foregone revenues. The zero-rating of those intermediate inputs is simply shifting the refund temporally. Since there should be no revenues foregone from this policy, it is not considered a tax expenditure.

Supply of Unprocessed Crude Oil

As was the case for the supply of goods and services to a mining, petroleum, or gas company, the supply of unprocessed crude oil has an impact only on intermediate inputs. Final consumers are unlikely to be purchasing unprocessed crude oil. Since crude oil generally needs to be further processed into fuels or other oil-based commodities like plastics, none of which are exempt, revenues foregone are not expected to arise out of this policy. It is not considered a tax expenditure.

Exempt Commodities

Supply of Financial Services

Exempting the supply of financial services impacts both final consumers and intermediate inputs to the production of other exempt commodities. Those are the direct effects and are estimated at K 158 million. Since the commodity is exempt rather than zero-rated, some revenues foregone are recovered through input tax credits that suppliers of financial services cannot claim. Those are estimated at a deficit of K 52 million. The total tax expenditure is the net of those two effects for total revenues foregone of K 106 million, or 0.1 percent of GDP.

Supply of Educational Services

The supply of educational services exemption (K 507 million) has a direct effect on final consumers and intermediate inputs to the production of other exempt commodities. However, there are K 75 million in foregone revenues were recovered since suppliers of educational services cannot claim input tax credits. The total tax expenditure is the net of those two effects for total revenues foregone of K 432 million, or 0.5 percent of GDP.

Supply of Medical Services

The supply of medical services exemption has a direct effect on final consumers and intermediate inputs to the production of other exempt commodities. They are estimated at K 191 million. Indirect effects of K 123 in foregone revenues that are recovered since suppliers of medical services cannot claim input tax credits. The total tax expenditure is the net of those two effects for total revenues foregone of K 68 million or 0.1 percent of GDP.

Supply of Housing or a Motor Vehicle to an Employee as part of an Employment Contract

This policy is ambiguous. The exemption of the supply of housing or a motor vehicle to an employee as part of an employment contract would be expected to relieve the employee of having to pay GST on the housing or motor vehicle benefit provided by the employment contract, but the firm providing this benefit would not be allowed to claim an input tax credit for the housing or motor vehicle expenditure. In this situation, the GST is collected at the firm level rather than at the final consumer level. In either situation, the same amount of GST is expected to be collected since no value-added is added by the firm providing this benefit. Since there should be no revenues foregone from this policy, it is not considered a tax expenditure.

Small Supplier Threshold

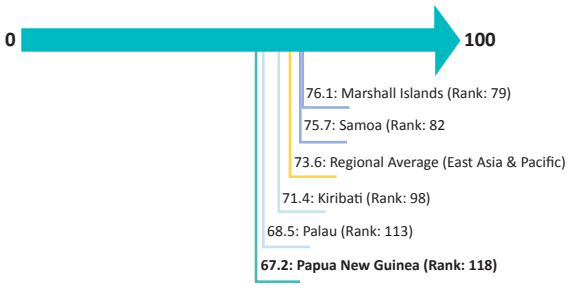
The GST registration threshold of K 250,000 (over US$70,000) is very high by international standards and leads to significant foregone revenues. Firms with taxable sales of less than this threshold are not required to register for GST. If they choose not to register, they do not charge GST on their sales but cannot claim input tax credits on their purchases. They are effectively exempt. While exemptions generally lead only to revenues foregone on the value-added in the last stage of production, exemptions can cascade when large sectors of the economy or a large number of commodities are exempt. Such cascading of exempts is even more likely among small suppliers who may be more likely to buy from other small suppliers. In extreme cases, cascading of exempts may lead to situations where commodities are effectively zero-rated.

126. **As explained above, the tax expenditures associated with the small supplier threshold are included in the calibration gap and cannot be disentangled from the compliance gap.** Since small suppliers are not required to file a GST return, the only small suppliers who choose to file are the ones who benefit from doing so. The sample of small suppliers in the GST microdata is therefore heavily biased and can only be used to estimate the impact on revenues of raising (not lowering) the small supplier threshold.

2.4 Tax administration

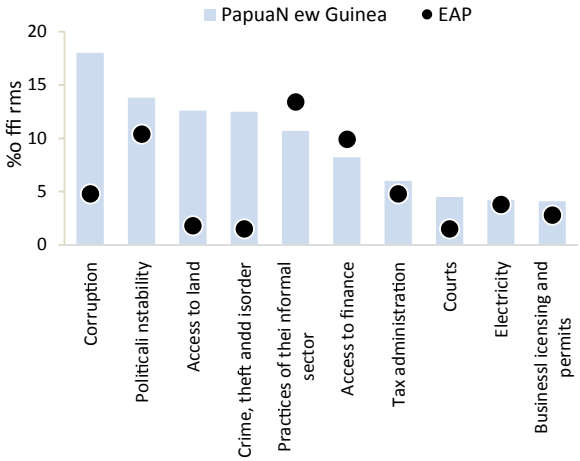
127. **Tax administration in PNG remains a burden for taxpayers, according to Doing Business 2020 and the World Bank Enterprise Surveys.** PNG ranks 118 out of 190 economies—and 5 among LMICs in regional comparison—on the ease of paying taxes (Figure 2.19). On average, PNG firms spend 207 hours a year filing, preparing, and paying three major taxes and contributions (CIT, VAT, and labor taxes, including payroll taxes and social contributions). Firms in EAP economies spend, on average, just 173 hours. The WB's Enterprise Survey (2015) shows that the tax administration makes it hard to conduct business—it ranked 7 out of the 10 top constraints identified by businesses from a list of 15 business environment obstacles. Thirty-five percent and 22 percent of firms stated that tax rates and tax administration are major impediments to business operations in PNG, ranking 1 among LMICs and higher than 20 percent and 14 percent of firms, respectively, on average for EAP (Figure 2.20).

Figure 2.19. Benchmarking Doing Business's Ease of Paying Taxes Index



Source: Doing Business database (https://www.doingbusiness.org/en/data).

Figure 2.20. Benchmarking Top 10 Business Environment Constraints



Source: World Bank Enterprise Surveys 2015.

128. **To explore how PNG tax administration could improve, 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 Internal Revenue Commission (IRC).

129. **A semi-autonomous revenue authority, the IRC is responsible for administering and collecting direct and indirect domestic taxes.** It is one of the two main collection agencies and collects about 85 percent of the government's total tax revenue. The Commissioner-General is the Chief Executive Officer. There are currently two Commissioners and 701 staff.

130. **The IRC is organized along functional lines: Large Taxpayer Office (LTO); Compliance Audit; Taxpayer Processing (registration, return, and payment processing); and Debt and Lodgment Enforcement.** Support functions include Case Selection and Intelligence; Policy and Advice; Internal Audit and Investigations; Legal Services, Information, Communication and Technology; and Human Resources. Tax operations are carried out in four regional and 19 provincial offices.

131. **A number of elements required for effective tax administration are present in IRC.** These include: (i) designated staff to man 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) IRC is a semi-autonomous institution.

132. **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. A detailed discussion of each of these performance gaps follows.

2.4.1. Taxpayer registration

133. **The taxpayer register is the bedrock of a tax administration.** Lack of accuracy and reliability of the taxpayer register will, in turn, lead to deficiencies in collection and enforcement processes and subsequently increase administrative and compliance costs. 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.

134. **A unique taxpayer identification number (TIN) is generated automatically by SIGTAS following registration.** A certificate of registration is issued to each taxpayer. Taxpayers are also registered for various tax types, and separate accounts with distinct numbers are created for each tax type. All accounts are linked to the taxpayers' registration information. Still, no special certificate is issued to GST-registered taxpayers for display at their business to protect consumers and deter fraud.

135. **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.

136. **The integrity of the information held in the registration database is low.** Critical taxpayer background information—for example, contact details—are missing or outdated. A March 2019 IRC internal audit report highlighted significant concerns about the accuracy of the registration database, including incorrect registrations and opening of accounts, multiple accounts, duplicates, and inactive taxpayers. A few compliance interventions are undertaken to detect unregistered taxpayers. These are focused mainly on requiring TINs for persons wanting to open business bank accounts and using data obtained from the banks to register and assess business accounts with positive bank balances. Due to the lack of due process by IRC, both approaches have contributed to the current inaccurate registration database.

2.4.2. Compliance risk management

137. **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.

138. **IRC does not have a compliance improvement plan.** A compliance improvement strategy has been developed that contains elements of a compliance improvement plan, including risks identified in the main taxpayer obligation areas and mitigation measures. However, that strategy is yet to be operationalized. IRC does not monitor or evaluate the impact of risk mitigation initiatives. There is no evidence of monitoring the effectiveness of risk measures implemented across main taxpayer obligations.

139. **There is limited intelligence gathering and analysis to build knowledge on compliance levels.** Data are gathered mainly from internal sources by comparing data in CIT, PIT, and GST returns and information received from the banks to select audit cases and detect unregistered businesses. A one-off exercise in 2016 using immigration data to raise salaries and wages tax (SWT) best-of-judgment assessments was undertaken. However, 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.

2.4.3. Taxpayer services

140. **Information on core tax obligations and entitlements is readily available and tailored to key groups.** The IRC's website (http://irc.gov.pg/) includes a wide range of information on the main taxpayer obligations (registration, filing, payment, and reporting) and entitlements regarding all core taxes. Information on the website is segmented according to the type of taxable persons (businesses and employers, individuals, trusts, and other entities) as well as tailored to tax agents. The IRC also launched a Facebook page in September 2019 to disseminate information on relevant events and taxpayer obligations. There is no customization for disadvantaged groups, but the IRC answers taxpayers' questions in the local language(s) during the annual roadshow.

141. **The information available on the IRC's website is outdated.** There is no staff assigned to keeping the information updated, and documented procedures to guide the process are not in place. 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.

142. **Information is available through various service delivery channels at no cost, but taxpayer education programs are limited and ad hoc.** Information is generally available through the IRC's website and Facebook page as well as via email, letter, and telephone inquiries during office hours. 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. While the IRC organizes an annual roadshow to present the latest developments in taxation, seminars and other programs for taxpayer education are organized on an ad hoc basis, usually upon invitation by business representatives. There is no taxpayer education program tailored to micro and small businesses, new businesses, and first-time employers.

143. **There is no routine practice of analyzing frequently asked questions (FAQs) and common misunderstandings to improve information products and services.** A process to routinely monitor and analyze FAQs and common misconceptions detected through service and verification activities is also not in place. Tax declarations and other forms are reviewed on an ad hoc basis, mainly as a result of legislative changes. There is no regular process of reviewing forms to ensure that only information that is needed and used is sought from taxpayers.

144. **The IRC receives service delivery improvement feedback from taxpayers on an ad hoc basis, and there is no structured mechanism to monitor the feedback received.** IRC does not consult taxpayers and intermediaries to design and test new processes and products and has not conducted any surveys to monitor trends in taxpayers' perception of IRC services and products.

2.4.4. Tax filing and payment

145. **The on-time filing rates for CIT, PIT, GST, and SWT 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. However, due to weaknesses in the registration process, the number of taxpayers required to file for each tax type per tax period is unknown to IRC.

146. **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. The nonfilers list is generated by the IT Division outside of normal work hours due to limited server capacity. 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.

147. **There is no electronic filing facility. All tax returns are filed manually using preprinted forms.** Taxpayers have the option to file paper returns in person at any of the IRC offices or by emailing them to the IRC lodgments box. All returns are manually captured into SIGTAS. Payable returns filed in person are captured immediately to allow for the timely processing of payments. Other returns, including those filed via email, are at times processed more than two weeks after receipt.

148. **Few taxpayers use electronic payments.** Taxpayers may make payments by check, online bank transfer, bill-pay through online banking platforms, and by using an electronic funds transfer point-of-sale system at an IRC office. Although the value and number of electronic payments is increasing, the use of electronic payment methods by large taxpayers is low at just 6.0 percent for 2018.

149. **On-time payment rates are low.** Data provided by the IRC show on-time payment rates of 6.9 percent and 22.6 percent in relation to the number and value of on-time payments, respectively, among all GST taxpayers. However, the number and value of GST payments made by the statutory due date could not be ascertained, as the registration data is unreliable.

2.4.5. Debt management

150. **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 is incorrect; (ii) inaccuracies in SIGTAS calculations of penalties and interest; and (iii) inaccuracies in the account balances stored in the legacy system that SIGTAS replaced. A dedicated team has been assigned to correct account balances in SIGTAS; however, most accounts are corrected based on referrals by IRC staff and taxpayers.

2.4.6. Tax audit

151. **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. Audit cases for SMEs are mostly selected centrally by the Case Selection and Intelligence Division (CSID), while the LTO carries out large taxpayer audits. The large taxpayer audit case selections are weighted toward

industry sectors, such as finance/banking, construction, and extractives. A range of audit types is used, including comprehensive, specific issues, special projects, and GST refund audits.

152. **Audits are generally limited to the verification of supporting documents. Indirect audit methods to verify amounts reported are rarely used.** There are audit procedures for CIT, SWT, and GST, but there are no special audit procedures for major economic sectors. The manuals have not been updated in at least two years. Furthermore, there is no checklist for Audit Managers to monitor audit quality. Audit cases are reviewed by managers prior to finalization by the auditor to ensure correct tax computation and application of the law as well as proper case file management. However, there is no evidence that managers routinely monitor and document findings in respect of the quality of the audits.

153. **The IRC does not routinely monitor or evaluate the effectiveness of the audit function.** There is no quarterly or semi-annual monitoring of the rate of audit adjustments accepted without objections and appeals and effectiveness of the taxpayer audit function. No routine surveys are conducted of audited taxpayers to review professionalism and competence in the performance of audits.

154. **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.

155. **There are sufficient funds to meet legitimate GST refunds, but the system is deficient as it is not risk-based.** All refund claims, except in cases where a taxpayer makes a request to offset against other liabilities, are subjected to desk audit prior to payment. Refunds are paid out of revenue collected by IRC. The law does not provide for the payment of interest on delayed VAT refunds, and the IRC does not monitor the time to process GST refunds.

2.5 Recommendations

156. **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. As highlighted in the introduction to this chapter, 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

157. **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.

158. **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.

159. **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

160. **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.

161. **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.

162. **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

163. **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

164. **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 operation 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 and understand taxpayer rights and 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.

165. **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 the 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).

B. IMPROVING PUBLIC SERVICE DELIVERY IN HEALTH AND EDUCATION

3. Adjusting Health Spending Toward Universal Health Coverage

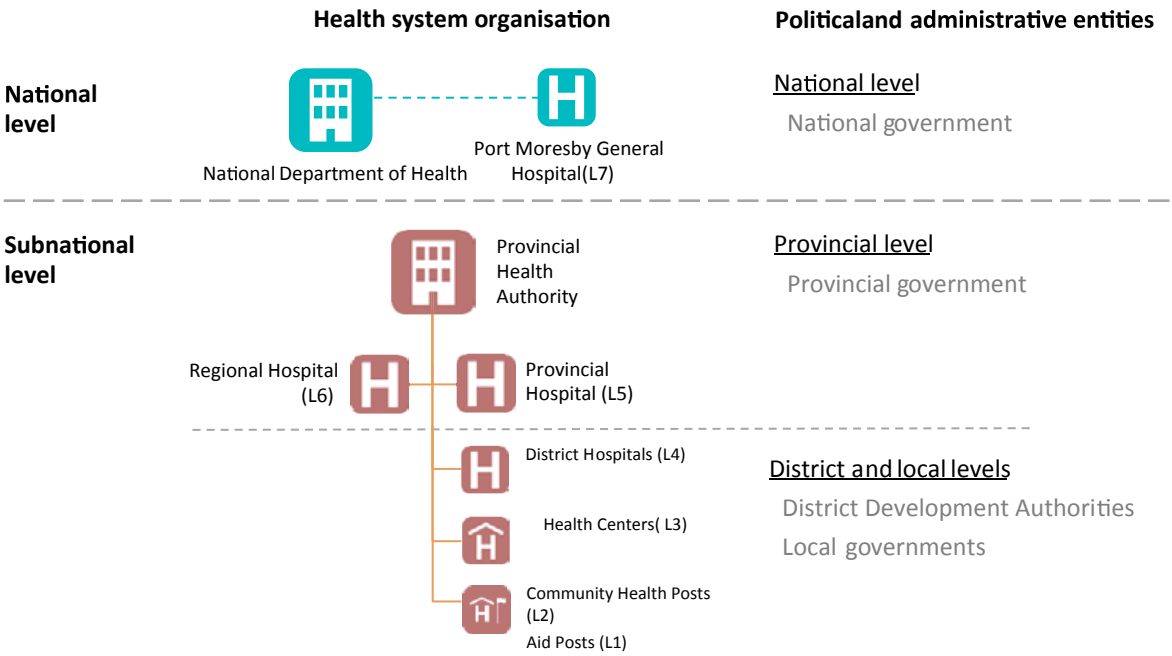
166. This chapter of the PFR is structured around five main sections: (i) section 3.1 provides sectoral context information, including health system organization and service delivery; (ii) section 3.2 focuses on recent trends in the level, composition and drivers of public health spending, including by level of health facility and province; (iii) section 3.3 examines the extent to which public spending on health is efficient; (iv) section 3.4 examines the extent to which public spending on health is equitable; and (v) section 3.5 concludes with recommendations to improve value-for-money and equity of public spending on health.

3.1. Sectoral context

3.1.1. System organization

167. **Following an extended period of sectoral reform, Provincial Health Authorities (PHAs) are now established in all PNG provinces to oversee the delivery of health services**. The country's health sector operates across an increasingly complex decentralized governance structure with a large number of important actors (Figure 3.1). These include government agencies at the national, provincial, district, and local government levels and nonstate participants like faith-based organizations, which play a critical role in service coproduction. At the national level, the National Department of Health (NDoH) has responsibility for a range of matters, including policy and standards, sector planning, coordination and monitoring, and the procurement and distribution of medical supplies and equipment. At the subnational level, PHAs were created with the aspiration to reduce health service fragmentation and, through better coordination, strengthen the delivery of health services. Under the Provincial Health Authorities Act (2007), PHAs are established as public bodies with both administrative and financial responsibility for hospitals and primary health services and the coordination of government and nongovernment service providers within the province.

Figure 3.1. The Structure of PNG's Health System



L= level.
Source: World Bank staff.
Note: Most health facilities (L1–L4) at the district and local levels are managed by the State or faith-based organizations.

168. **The PHA Chief Executive Officer (CEO) and PHA Board support the institutional functioning of the PHA and its governance.** The strength of leadership and oversight plays a large part in determining the level and effectiveness of sectoral institutional capital. The transition to the PHA structure has been gradual, with as many as nine new PHAs having been created in the last two years. Establishing a new institutional management structure—with its roles, positions, and enabling functions (including finance)—can be a lengthy process that requires close coordination and cooperation between the provinces, the newly-formed PHA, and various

central agencies (Department of Personnel Management, the Department of Finance, and Treasury). This process has taken time; many roles in the PHA are filled by acting staff, which has resulted to instability and hindered the PHA's ability to fully take on their function (possible human resource changes present challenges to long-term planning). Lessons can be learned from previously established PHAs. Knowledge exchange, especially with new PHAs, will be critical to sustaining and developing the PHA as an institution over time.

169. **The delivery of frontline health services in PNG relies heavily on a longstanding partnership between the State and faith-based organizations.** The health system in PNG includes 801 health facilities,[12] including 21 provincial hospitals in each of the provincial capitals and the national referral hospital in Port Moresby. This health facility network provides a range of facility-based and outreach services to a widely dispersed population in settings that are often remote and present extreme access challenges. At the district and local levels, churches run about half of all Level 2–4 health facilities; the State runs the large network of aid posts. The country's network of health facilities is staffed by 10,265 skilled health workers and allied health staff.[13]

170. **The health sector contends with constraints that impact sectoral efforts and the pursuit of better health.** Health sector capability is the ability to deliver health services at facilities and outreach services to ensure that the health needs of individuals and the broader population are met. Because so many factors constrain and inhibit the achievement of better health outcomes, it can be helpful to view these key constraints in two groups (Table 3.1). The first group are those factors that the health sector has responsibility for or a high level of influence over; the second are those factors that, although important to achieving good health, are broader issues that fall under the purview of other sectors. The model explained in the 'Health Equity' working paper unravels the contributing factors to disparities across provinces in the ability to provide 'reach' and achieve better health (World Bank, 2021d). The first group of constraints includes matters for the health sector to lead on, monitor, and address. The broader issues are matters for the sector to be mindful of, to work strategically with other sectors on, and to fashion health policies and practices that are effective in different local situations.

Table 3.1. Constraints to PNG's Health System

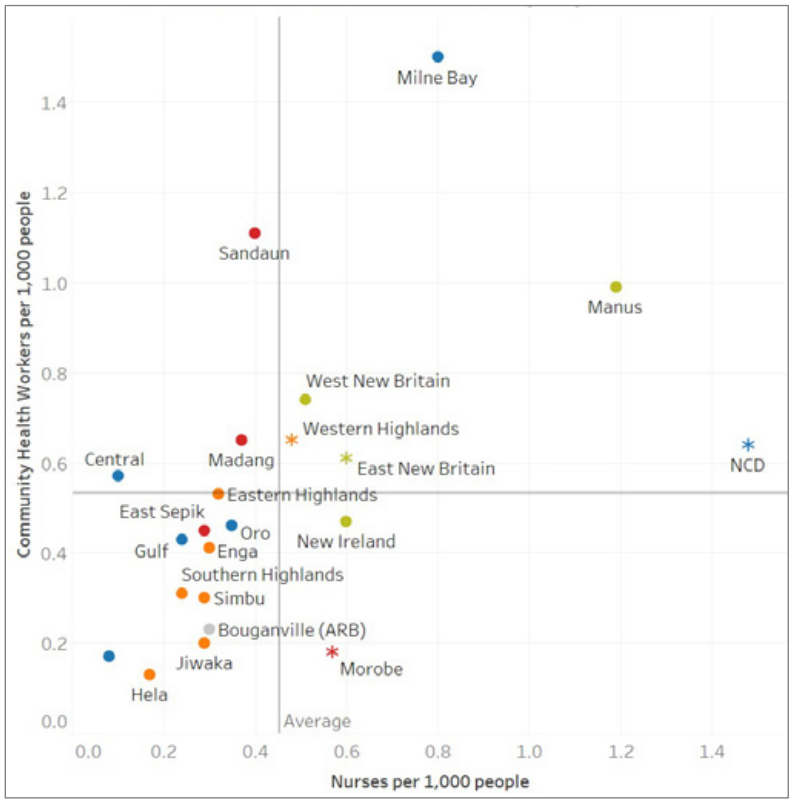
Factors under the health sector's direct influence	Broader issues
Medicine availability at facilities	Prevailing fiscal context, constrained budget and cash
Distribution of staff to best meet service demand	Access, roads, remoteness
Fragmentation, sector coordination	Evolving decentralized governance 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

171. **Addressing longstanding challenges in critical gaps for health before a health workforce crisis.** With an aging health workforce serving a fast-growing and overwhelmingly rural population, human resource issues—including the training, recruitment, development, and deployment of skilled health personnel—are an ever-present and looming issue in PNG. 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 4.45/1,000 the WHO estimates are required to meet the Sustainable Development Goals and achieve universal health coverage (UHC). The gap between the actual number of health workers and the WHO indicative benchmark highlights the challenge facing PNG and other countries in a similar situation. The answer is not simple. The country suffered extreme fiscal pressure in recent years, exacerbated further by the current global pandemic. The immediate challenge is to use the current resourcing to achieve maximum impact and, in doing so, build the case for additional resourcing as and when new funding becomes available.

172. **At the provincial level, health workers—doctors, nurses, and allied health—are not distributed equally (WHO, 2020).** Figure 3.2 shows the numbers of nurses and community health workers (CHWs) in each province per 1,000 population. The Hela and Western provinces have very few nurses and CHWs per capita compared to Manus and Milne Bay. Interestingly, we can observe a relationship between the numbers of frontline health workers per capita and broader health performance measures, suggesting that the number of frontline health workers may be an important factor in achieving higher or lower health performance.

Figure 3.2. Nurses and Community Health Workers by Province



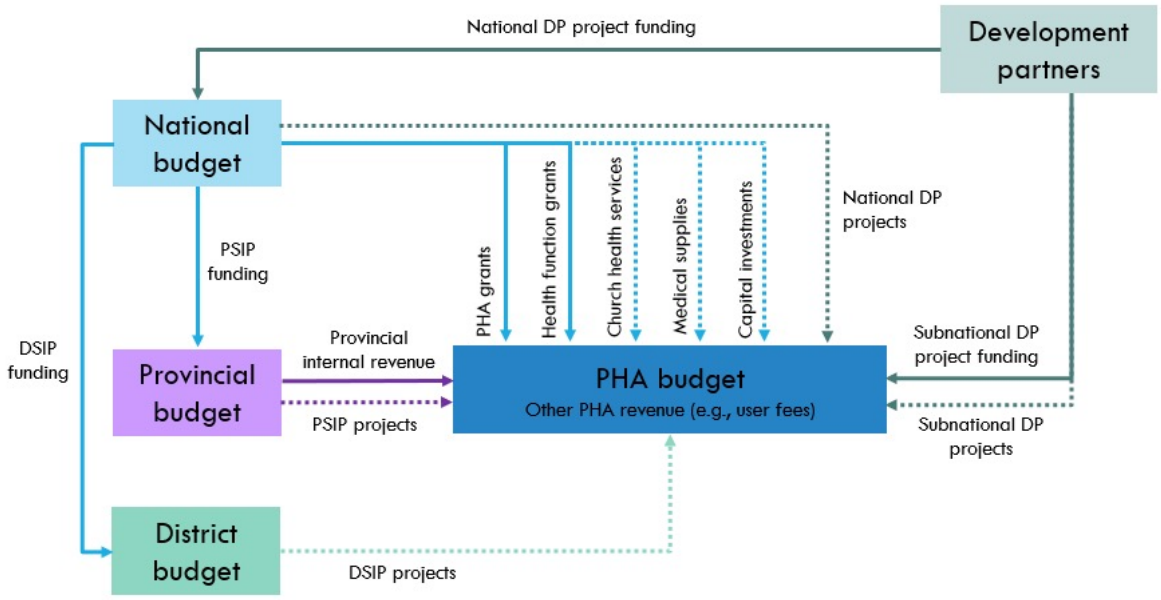
Source: World Health Organization.

173. **The health sector faces myriad concurrent challenges that collectively impact its institutional capacity and service capability.** The twin challenges of a growing fiscal crisis and a rare global pandemic—that wrought health, economic, and social carnage on PNG and the region—is a trial of the highest order. Not only does the health sector need to respond to an unprecedented health event, but it must do so during a period of biting fiscal contraction. But this is not all. The health sector in PNG was already contending with a number of significant public health issues—the spreading menace of drug-resistant tuberculosis, an emerging realization that

stunting was a pervasive issue across the country, and the need to address the growth of noncommunicable diseases (NCDs). Addressing these health issues requires significant health responses from a health system that is already thinly stretched.

174. **Health financing in PNG is fragmented, leading to uncertainty in resource allocation and monitoring.** Most of the sector's financing is from the national government, with lesser amounts from household out-of-pocket payments, voluntary health care payment schemes, and external financing from development partners. The level of recorded household out-of-pocket spending in PNG is comparatively low. Development partners play an important role in complementing domestic resources.

Figure 3.3. Health Sector Budget Funding

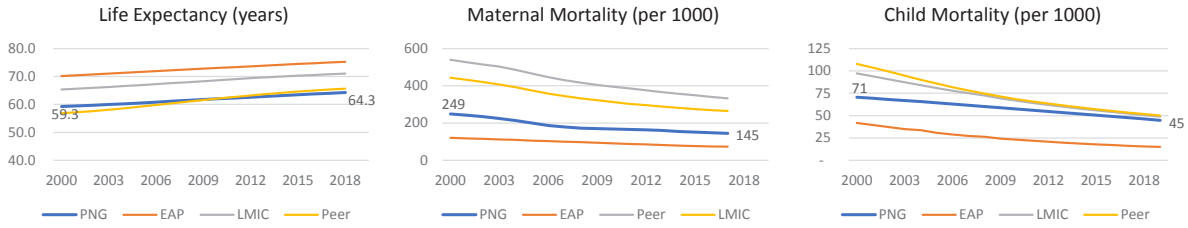


Source: Asian Development Bank. Line of Sight: How Improved Information, Transparency, and Accountability Would Promote the Adequate Resourcing of Health Facilities Across Papua New Guinea. June 2019.

3.1.2. Service delivery

175. **In recent years, PNG has made progress with health outcomes, including improved life expectancy and reduced maternal and child mortality.** However, poor child nutrition and low immunization rates remain a concern. Average life expectancy in PNG 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 (Figure 3.4). 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.

Figure 3.4. Health Outcomes in PNG, 2000–18

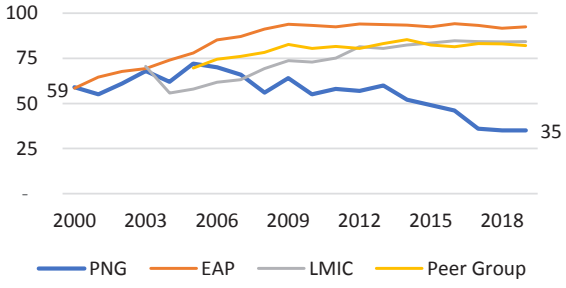


Source: WDI.

176. **In 2021, the demands on the health sector continue to grow as the country faces a triple challenge with an expanding burden of disease, including recent outbreaks of infectious disease, growth in NCDs, and a global pandemic that is yet to peak and abate.** The triple burden of disease is reflected in the prevalence of longstanding but evolving infectious diseases, including malaria and drug-resistant tuberculosis; the noted growth of NCDs; and the arrival of emerging infectious diseases (EIDs) as evidenced by the global COVID-19 pandemic. The demands of this expanding disease burden, together with the challenge of developing an effective and accessible health service delivery system in PNG's challenging geographic context, place intense pressure on the sector and its leadership at NDoH and across the PHAs.

177. **The impact of the 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.** With cases rising at the time of this report, COVID-19 is likely to impact basic services further, reducing the country's already low level of immunization coverage and disrupting service provision for maternal and child health. PNG already has a poor level of immunization: just 35% in 2019 (Figure 3.5). The failure in routine health outreach to the country's rural population, which has contributed to the decline in child immunization, highlights the challenge for the health sector in not only reversing the low levels of child immunization but also in implementing an effective vaccination campaign to the wider population in response to COVID-19.

Figure 3.5. Immunization Rates
(Percent)



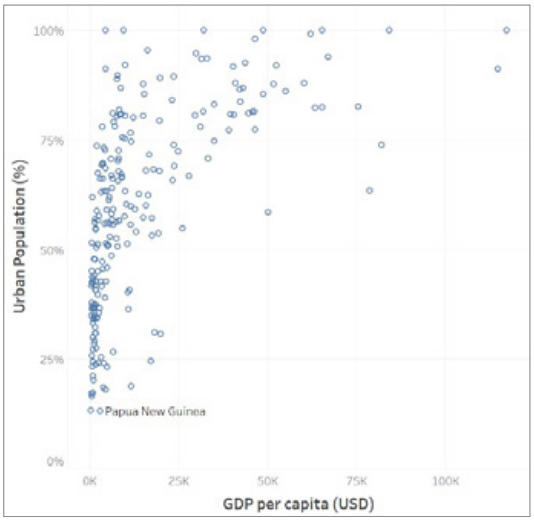
Source: WDI.

178. **PNG's geography is central to any discussion of its health sector.** The population is highly dispersed, with as much as 87 percent of the population living in rural—often remote—localities that are difficult to access. To put this in a global context, PNG has the highest proportion of people living rurally in the world (WDI, 2019). In comparison, just 43 percent of the population on average lives rurally in the EAP region (excluding high income); countries in the lower-middle-income group have on average 60 percent of their populations living rurally (Figure 3.6).

179. **This geodemographic reality shapes the sector's service challenge.** The sector's reach—or capacity to deliver services effectively—is a fundamental issue and challenge. Designing and maintaining an effective health system for an overwhelmingly rural, remote population is difficult and expensive. Meeting the 'reach' challenge involves a sustainable, well-placed network of facilities supported by effective outreach, a maturing referral mechanism, and initiatives to counter accessibility constraints.

180. **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 3.2). 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.

Figure 3.6. Share of Urban Population



Source: WDI.

Table 3.2. Regional View of Health Performance: Service Delivery, Demand, and Utilization

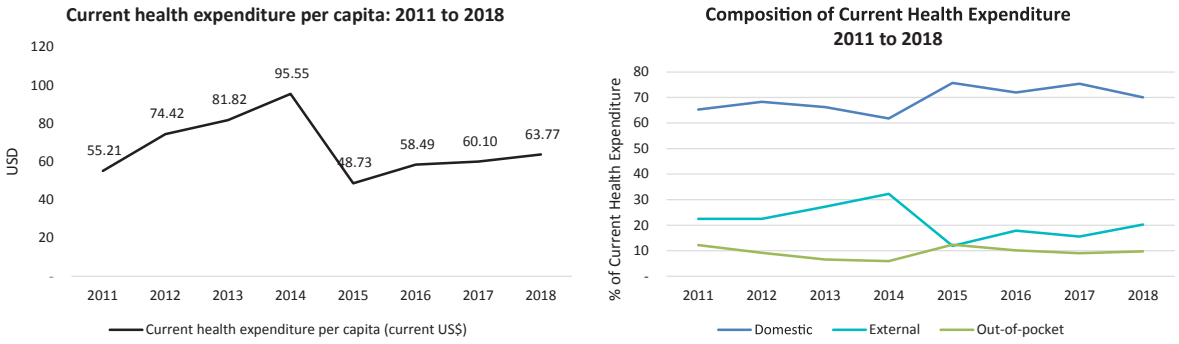
	Region | Area	Population	Challenge of remoteness	Inpatient per 1,000	Outpatients per 1,000	Patient referrals (%)	Reported shortages of drugs (%)	School visits per 10K	School visits % of schools (elem/primary)	Clinics per 1,000
				Facility-based services				Outreach services		
NCD	National Capital District	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.

3.2. Health expenditure analysis

181. **GoPNG commits substantial resources to the country's health sector.** In 2009–18, health expenditure in PNG averaged 2.45 percent of GDP.[14] Although health expenditure as a share of general government expenditure in PNG averaged 10.9 percent in 2009–18,[15] this is not dissimilar to Pacific comparator economies like Fiji (12.1 percent over the same period). In 2018, domestic general government health expenditure accounted for 70 percent of recorded current health expenditure, while domestic private (out-of-pocket) and external health expenditure contributed 9.8 percent and 20.2 percent, respectively (Figure 3.7). On a per-capita basis, current health expenditure fluctuated between 2011 and 2018, ranging from a low of US$49 in 2015 to a high of US$96 in 2014. In 2018, current health expenditure was US$64 per capita.

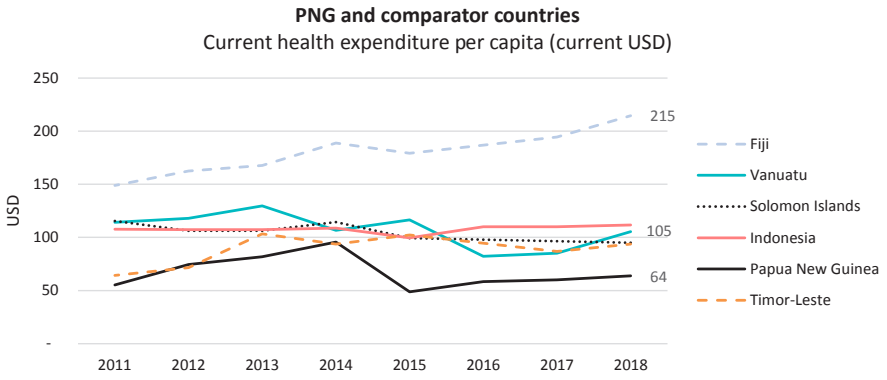
Figure 3.7. Current Health Expenditure in Papua New Guinea, 2011–18



Source: WDI.

182. **PNG continues to trail comparator economies with health spending on a per capita basis.** PNG's 2018 per-capita spending of US$64 is lower than a selection of comparator countries in the region, with Vanuatu and Fiji spending US$105 and US$215 per capita, respectively (Figure 3.8).

Figure 3.8. Current Health Expenditure Regional Comparisons, 2011–18



Source: WDI.

[14] According to data from the PNG Health Facility Information Database, 801 health facilities were open and operational in December 2020.
[15] Human resources data from PNG Health Human Resource Information Database. Port Moresby: National Department of Health. 2018. The total of 10,265 excludes a further 4,972 staff comprising management, health administration, and support staff.

Box 3.1. - COVID-19

In 2020, the advent of the COVID-19 pandemic placed enormous strain on the country's health system and health financing while causing significant disruption to the broader economy. In response to the pandemic, reprioritized and emergency funding from government and development partners was and continues to be allocated to the health sector to support a range of critical activities. Some of this funding is sourced by reallocating funds from existing budgets to priority COVID-19 activities, while other funding is 'new' additional money committed to the health sector. In 2020, more than K 314 million in health funding was allocated to activities related to COVID-19, with K 175 million from the government and K 140 million from development partners.

Navigating COVID-19 is not an either/or proposition. It involves making funding available for specific priority COVID-19 activities while also ensuring frontline health services are appropriately funded in a timely manner. Although some budget reprioritization may be possible from within the existing budget envelope to meet some COVID-19 costs, this avenue should be approached with genuine care. Defunding or late-funding core services or other health priorities will have serious consequences for the integrity of the health system and the health outcomes it delivers. For example, PNG immunization levels are already poor; yet the rates have fallen further during the pandemic. Another example relates to the disruption in FY 2020 of funding for church health services with all providers significantly impacted by the slow release of funds.

The government allocated K 600 million in COVID-19 funding in the 2021 budget. This allocation is multi-sectoral; the precise breakdown of the total and the amount that will be available to the health sector is yet to be confirmed. Financing for the health sector response is critical and will be required to enable a range of key activities and to support the procurement of vital drugs and equipment. The health sector anticipates that funding from both government and development partners will be critical given the enormity of the required health response and the logistical challenges present given PNG's highly dispersed rural population and diverse and complex terrain. In 2021, the health sector is preparing for the procurement of vaccinations and the rollout of its vaccination program—with an estimated one-third at fixed sites and two-thirds reached through mobile clinics and outreach. The cost of the initial vaccination program is estimated at US$113.7 million, with the costs and program spread over 2021 and 2022. Two-thirds of the estimated cost relates to procuring the vaccines, and the other third to related costs, including personal protective equipment, staff training and deployment, transport and logistics, cold chain, communications and socialization, and monitoring and surveillance.

The vaccination rollout will place unprecedented pressure on the health system and its staff. As many as 854 full-time trained vaccinators will be needed, the equivalent of roughly 15 percent of the existing health workforce. This presents an immediate dilemma for the country's PHAs, which will need to find a balance that effectively supports the rollout while continuing to provide routine health services. Many uncertainties and unknowns exist. For instance, is this a one-off vaccination campaign, or will this be the beginning of multiple or routine cycles of immunization? Is the estimated target population (50.8 percent) sufficient, or will it need to be expanded? Planning and costing has already begun, but it is impossible for PNG's health sector (or indeed in any country) to anticipate all eventualities, suggesting a level of adaptability and responsiveness will be required by the sector with active support from the central and subnational governments and development partners.

COVID-19 highlights again the need to address and strengthen the health sector's readiness to respond to and support future public health emergencies. Whilst the pandemic is uppermost in our minds, PNG is regularly affected by public health emergencies ranging from severe natural disasters to disease outbreaks, to the less frequent but devastating pandemic events such as COVID-19. In 2018, PNG experienced a major earthquake in the highly populated Highlands region which resulted in significant health needs, loss of life, disruptions in livelihoods and economic activity, and damage to service capacity. The 2018 earthquake and the current pandemic both highlight the need for the sector – and other key actors – to use this time to better understand what responses work well in PNG and what areas need to be strengthened to be better prepared for future local, regional, and national events. Some lessons and information have already been compiled from these events – such as approaches for accessing emergency funding and supplies, strategies for redeploying health workers from other localities to reinforce affected areas and health facilities and instituting practical and effective coordination mechanisms.[16] As with all infrequent emergency events the danger is that the vital lessons learned may be lost in the urgency of responding to the current crisis. These lessons should be captured in briefs and guidance notes and made available to relevant health managers at the national and subnational levels (including PHA leadership and faith-based health providers).

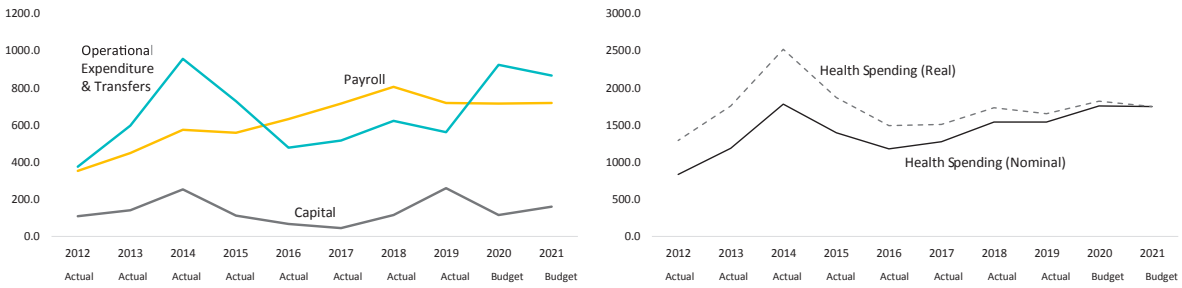
183. **Between 2012 and 2021, aggregate visible spending on the health sector doubled in nominal terms (Figure 3.9).** In 2012, health spending (from government and development partners) was K 834 million. Spending fluctuated in the following years before rising to K 1.75 billion in 2021.[17] Spending on payroll has generally increased, rising from K 351 million in 2012 to K 718 million in 2021. In contrast, spending on operations and transfers fluctuated markedly from K 374 million in 2012 to K 561 million in 2021. Capital spending in the health sector also fluctuated, ranging from a low of PK 43 million in 2017 to a high of K 259 million in 2019. However, the real amount of capital spending is likely to be even higher, with significant amounts of capital spending on hospital redevelopment and rehabilitation recorded under the recurrent goods and services item classifications rather than capital formation.[18]

184. **In real terms, health spending growth has been more modest.** 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. With annual population growth in PNG averaging 2 percent,[19] the effective increase in spending on health is even lower given the need to service a rapidly growing population in a geographically challenging service delivery context.

16. The health response to the 2018 Hela earthquake and emergency was discussed in the Asian Development Bank. Line of Sight, how improved information, transparency, and accountability would promote the adequate resourcing of health facilities across Papua New Guinea. June 2019. (Refer to pages 16, 17, 30 and 57).
17. GoPNG data from BOOST for 2012–21. This contains all data sources as recorded by BOOST: GoPNG (recurrent and development) and development partners (recorded within the GoPNG IFMS) but excludes 'less visible' spending by provincial governments, including some payroll costs for health staff in lower-level, state-run health facilities who historically were under the oversight of provincial governments (before migrating to PHAs), and internal revenue (if any) that was allocated from provincial governments for health services.
18. In 2021, an additional K 246.9 million was allocated for hospital redevelopment and rehabilitation, this funding was recorded within economic item '22 Goods & Services' but appears to be capital in nature; if so, would normally be recorded under economic item '27 Capital Formation'.
19. WDI data on PNG population growth over the period 2012–19.

Figure 3.9. Overall Health Sector Spending, 2012–21

(Kina, millions)

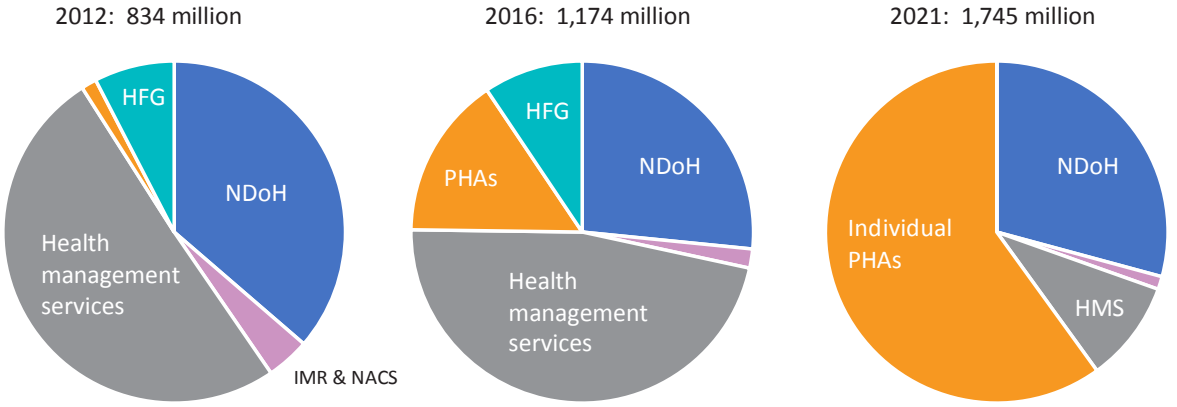


Source: World Bank staff estimates using BOOST 2012–21 (2012–19 actual; 2020–21 budget).
Note: Due to IFMS coding, capital spending may be understated and operational expenditure (goods and services) overstated in the figure.

185. **The emergence of PHAs has seen a significant restructuring of the overall health sector budget in 2012–21.** PHAs are now the primary administrative modality for managing the delivery of health services in PNG and each PHA is a separate entity with a separate budget. In 2012, PHAs as a category comprised only 1 percent of the overall health budget; in 2021, they receive 60 percent of the sector budget. This share may rise further as the last PHAs are established and their finances are aligned. Under the new order, the overall structure of the health budget will comprise: the national budget for the Department of Health; a vastly reduced budget for Health Management Services that will mainly comprise financing for Church Health Services; allocations for small national-level health agencies (IMR and NACS); and the largest share for the group of PHAs. 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.

Figure 3.10. The Changing Budget Structure for the Health Sector, 2012–21

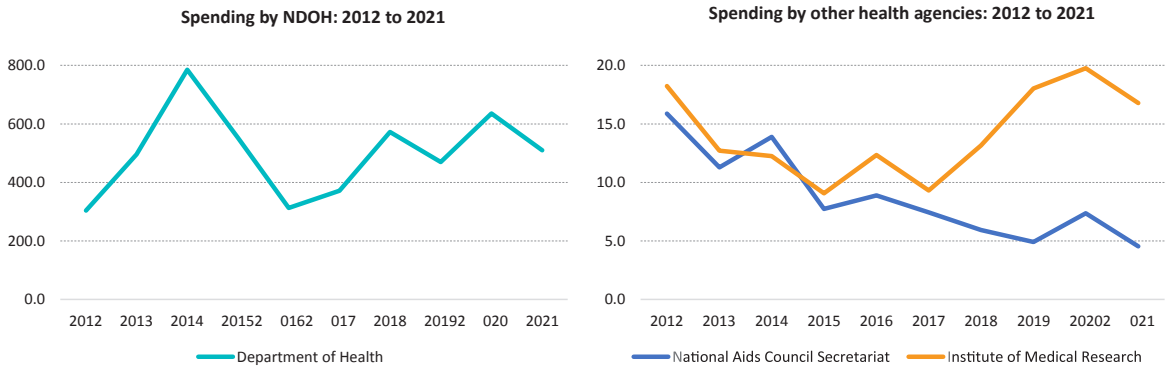
(Kina, millions)



Source: World Bank staff estimates using BOOST 2012–21 (2012–19 actual; 2020–21 budget).
Note: HFG = health function grants; NDoH = National Department of Health; IMR = Institute of Medical Research; NACS = National AIDS Council Secretariat; HMS = health management services.

186. **At the national level, spending by NDoH increased while spending on smaller national-level health agencies declined between 2012 and 2021.** Spending by NDoH fluctuated considerably over the period (Figure 3.10). The NDoH's budget has increased by 7 percent per year between 2012 and 2021 in nominal terms; in real terms, this represents a modest increase of less than 1 percent per year over the 10-year period. In contrast, spending on the Institute of Medical Research (IMR) and the National Aids Council Secretariat (NACS) declined from K 34 million in 2012 to K 21 million in 2021. Funding for the IMR dropped alarmingly between 2012 and 2017 before recovering in recent years. In contrast, funding for NACS declined markedly and has not recovered. NACS funding fell by two-thirds, from K 16 million in 2012 to K 4.5 million in 2021. In real terms, these budget reductions are even more concerning.

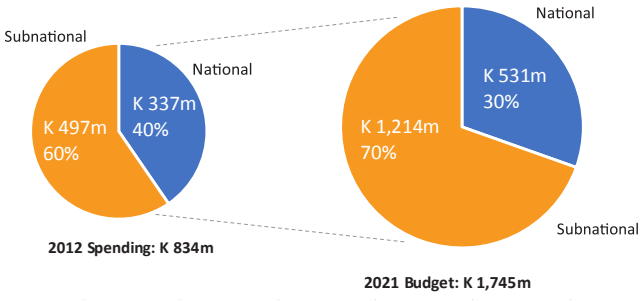
Figure 3.11. Trends in Spending by NDoH and Other National-level Health Agencies: 2012 and 2021
(Kina, millions)



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

187. **In 2021, most health spending—both in nominal terms and as a share of the total—is managed at the subnational level.** In 2012, 40 percent of health spending was managed at the national level through the NDoH and other national health agencies and 60 percent at the subnational level through provincial hospitals, rural health services at provincial administrations, and church health services (Figure 3.12). In 2021, not only has total health spending increased significantly, but the share of money directed at and managed by the subnational levels has increased to 70 percent of the total. These allocations are now managed by the PHAs and church health services under the new PHA administrative modality. The decentralization of health financing from the national to the subnational level in PNG is consistent with international practice in fiscal decentralization, which supports aligning funding more closely with the entities mandated to deliver basic health services. It is also consistent with the thrust and direction of broader government policy in PNG that seeks to support the expansion and strengthening of services at the district and local levels.

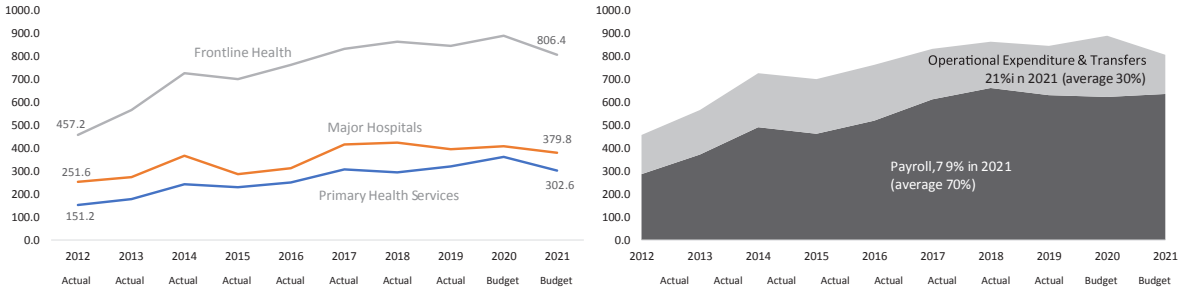
Figure 3.12. National and Subnational Health Spending, 2012 and 2021



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

188. **Nominal spending that is visible on frontline health services at the subnational level has increased since 2012.** Frontline health services are the critical resources that sustain and enable the network of health facilities that operate at the subnational level across the country. These amounts include the allocations for PHAs (including provincial hospitals and rural health services) and the grants provided for church health services. Some of this vital spending is, or was, recorded at the provincial level and difficult to identify without collating and analyzing individual provincial government records.[20] This 'less visible' spending includes the payroll cost of health staff in lower-level state-run health facilities that traditionally were under the oversight of provincial governments, and internal revenue (if any) that was allocated from provincial governments for health services. The overall spending on frontline health services that is visible to the national level increased by 131 percent between 2012 and 2021, rising from K 457 million to K 806 million.[21] During this period, the government implemented PHAs; the increased funding for frontline services is largely driven by their budget allocations. Grant funding for PHAs—including funding for PHA administration, provincial hospitals, and lower-level state-run facilities—increased by 84 percent in nominal terms during the period, rising from K 369 million to K 681 million. This increase reflects the establishing of PHAs over the period with much frontline health funding then being centralized under the individual PHA umbrellas. Overall grant funding for church health services grew at a slower pace, rising by 42 percent between 2012 and 2021 (from K 88 million to K125 million).

Figure 3.13. Spending on Frontline Health Services between 2012 and 2021
(Kina, millions, nominal)



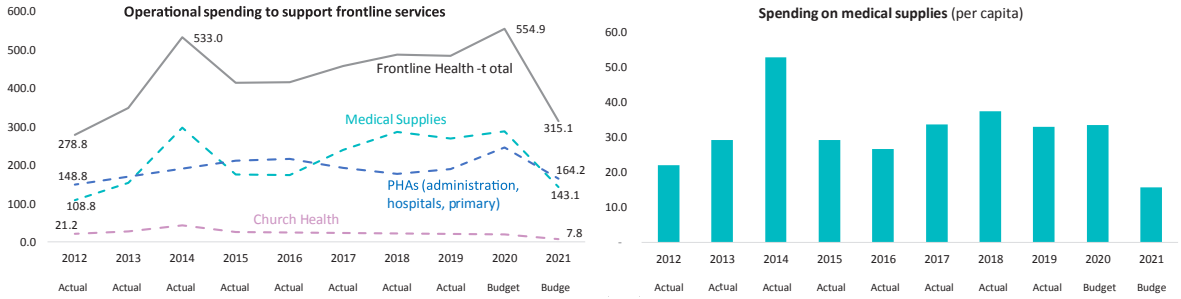
Source: World Bank staff estimates using BOOST 2012–21 data (2012–19 actual; 2020–21 budget).
Note: Frontline Health does not include the major source of spending on medical supplies (by NDoH). Amounts exclude any spending by provincial governments on health staff at state-run lower-level health facilities, and recurrent spending on health from provincial internal revenue (if any).

189. **One of the more concerning observations is the decline in operational spending for frontline services, even in nominal terms the 2021 budget has declined to the level it was 10 years ago in 2012.** 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 3.14). 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. The lack of adequate operational funding will contribute to the decline in the standard of health services delivered across the country. 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. What may be contributing to the low and declining level

[20] As PHAs have been established in each province, health staff in lower-level state-run health facilities are progressively moved from the provincial government budget to the PHA budget.
[21] GoPNG data via BOOST 2012–21. This contains all data sources as recorded by BOOST being both GoPNG (recurrent and development) and from development partners that are recorded within the GoPNG IFMS.

of spending on frontline operations (i.e. good and services)? A number of factors will be placing pressure on the goods and services budget. Firstly, the payroll budget has increased significantly over the period and once payroll increases are put in place they act largely as a 'fixed cost'. Secondly, spending on capital development fluctuates but may also be placing pressures upon the operational funding available to support frontline services. And thirdly, during times of fiscal constraint the goods and services budget is often the more vulnerable to 'trimming', when departments are looking to reduce costs to meet new reduced budget ceilings.

Figure 3.14. 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.

190. **Per capita spending on medical supplies in PNG fell in real terms between 2012 and 2021.** Medical supplies are another critical aspect of spending on frontline health. In PNG, the key budget allocation for this purpose is managed by NDoH at the national level. 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 (Figure 3.14). The decline is unusual and concerning given PNG's growing triple burden of disease discussed above. The rising burden of disease and the rapidly growing population mean that more spending on drugs and medical supplies will likely be needed to support the delivery of basic health services across the country.

191. **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.**[22] The overall decline in operational funding and spending to support frontline health services (including medical supplies) is concerning and is likely to intensify the challenges faced by the health system and hasten the decline in key health outcomes. Operational funding is a critical and necessary ingredient that supports and enables health workers in their day-to-day work. The challenge for the health system in PNG is twofold: first, to maximize the existing operational goods and services budget (including the medical supplies budget administered from the national level) and ensure existing funds are targeted to achieve maximum impact; and second, to reverse the decline in per capita operational funding and spending to more adequately support the standard of health service that PNG requires in the 2020s.

192. **The country's 22 provincial hospitals provide about half of all inpatient services.** In PNG, each province has a level 1–3 hospital located at the provincial capital. These hospitals typically offer more advanced curative inpatient services and, in many cases, general outpatient services. Yet the size of the hospitals, their capacity, and the demand upon their services vary markedly—as does their budget and the cost of providing these services. Across hospitals, the average cost of an inpatient service varies by a multiple of 8.5 times (from K 1,559 to K 13,355 per patient) (Table 3.3). Similarly, the average cost of an outpatient equivalent visit (OEV) varies by a multiple of 5.3 times (from PGK 60 to PGK 314 per OEV).

22. Operational spending includes goods and services, utilities, and transfers and excludes personnel emoluments and capex.

Table 3.3. Provincial Hospitals: Service Demand and Unit Costs

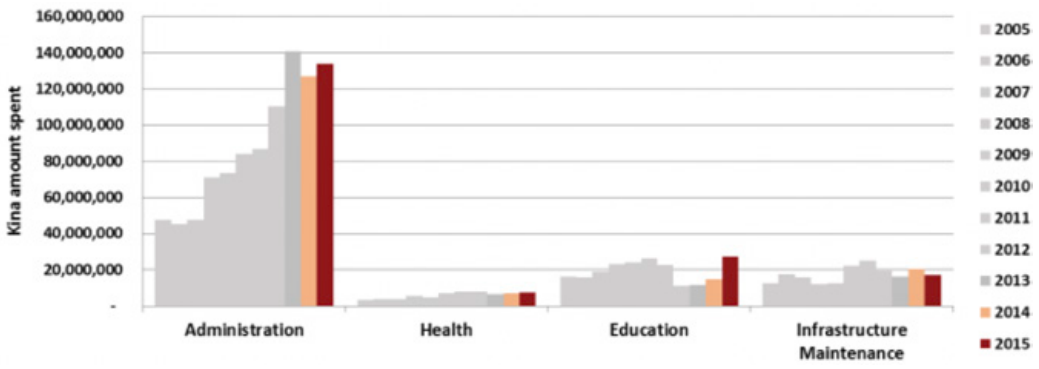
Grouping	Inpatient loads	#	Provincial Hospitals	Unit costs	
				ave. per inpatient	ave. per OEV
High volume	9,000 - 14,000 pa	4	Angau, Goroka Base, Mount Hagen, POM General	K 3,452	K 135
Upper-mid	5,000 - 7,000 pa	4	Kundiawa, Madang, Mendi, Nonga	K 8,539	K 197
Mid	3,000 - 5,000 pa	8	Alotau, Boram, Buka, Kimbe, Kudjip, Popondetta, Tari, Wabag	K 4,724	K 137
Low	1,000 - 2,600 pa	6	Arawa, Daru, Kavieng, Kerema, Lorengau, Sandaun	K 4,237	K 136
			Range	K 1,559 - 13,355	K 60- 314

Source: World Bank staff estimates using GoPNG data from IFMS 2019 and eNHIS 2019; World Bank. forthcoming. *Delivering Value for Money in the Health Sector: Exploring Performance, Productivity and Utilization* (draft). Washington, DC: World Bank.

193. **The service demand, spending levels, and unit costs of PNG's provincial hospitals vary considerably.** Table 3.3 groups hospitals according to their inpatient loads and summarizes the average unit cost per inpatient and OEV. Within the group averages, the analysis shows considerable variation within groups. For example, one hospital in the high-volume group is four times as expensive as the other larger hospitals in the group. The upper-mid volume group returns the highest average unit costs, with three of the five hospitals in this group reporting high unit costs. Even among hospitals with similar inpatient loads, budget and cost variations suggest there may be scope for learning and improved resource utilization.

194. **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 (Figure 3.15). For example, 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. If the intergovernmental fiscal arrangements were working as envisaged and designed, provincial governments would meet this shortfall of K 42 million and ensure PHAs had the bare minimum operational funding necessary to deliver rural health services. Yet, in 2015, provincial governments only allocated K 7.2 million in internal revenue (and much of this was from one province, Morobe, which allocated K 4.7 million), leaving an unmet shortfall of K 35 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.

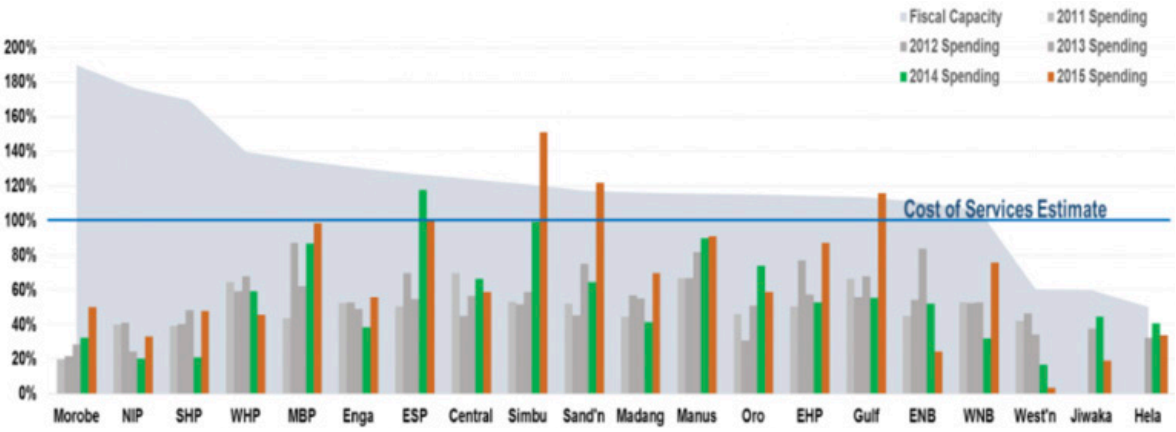
Figure 3.15. Operational Spending from Provincial Internal Revenue in Major Sectors, 2005–15



Source: NEFC 2015.

195. **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 (Figure 3.16). 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. 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? Readers may be forgiven in thinking that all that is required is for greater dialogue and coordination between NDoH/PHAs and provincial governments. 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.

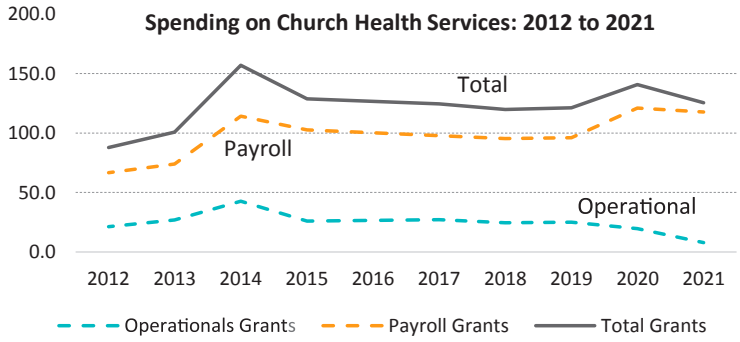
Figure 3.16. Provincial Health Spending from Health Function Grants and Internal Revenue, 2011–15



Source: NEFC 2015.

196. **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.** Church agencies receive separate staff and operational grants under Vote 241 from the government to meet the costs of running rural health facilities under their management. Total grant funding for church agencies increased from K 88 million in 2012 to K 125 million in 2021 (Figure 3.17), 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 3.17. Spending on Church Health Services, 2012–21
(Kina, millions, in real terms)



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

197. **Limited health sector funding is recorded and administered separately and centrally under the Treasury and Finance Miscellaneous division 207.** Many health allocations that appear under division 207 are sporadic, and it is unclear whether the allocations made are ultimately fully utilized. One of the more prominent and important health programs housed under division 207 is the Free Primary Health Care (FPHC) budget allocation that was introduced in 2013 as part of a wider government initiative to promote access to core social services by reducing out-of-pocket fees related to both health and education. For the health sector, K 20 million was allocated for FPHC for fiscal years 2013 to 2019; this was subsequently increased to K 30 million in 2020 and then reduced by half to K 15 million in 2021. The decrease in the budget in 2021 is particularly alarming given the widespread concern within the sector that the amount allocated for FPHC is insufficient to compensate health facilities for the fee income they are expected to forgo. As a point of comparison, the allocation to support the free education initiative was K 451 million in 2016, which dwarfs the K 20 million allocated to support free health.

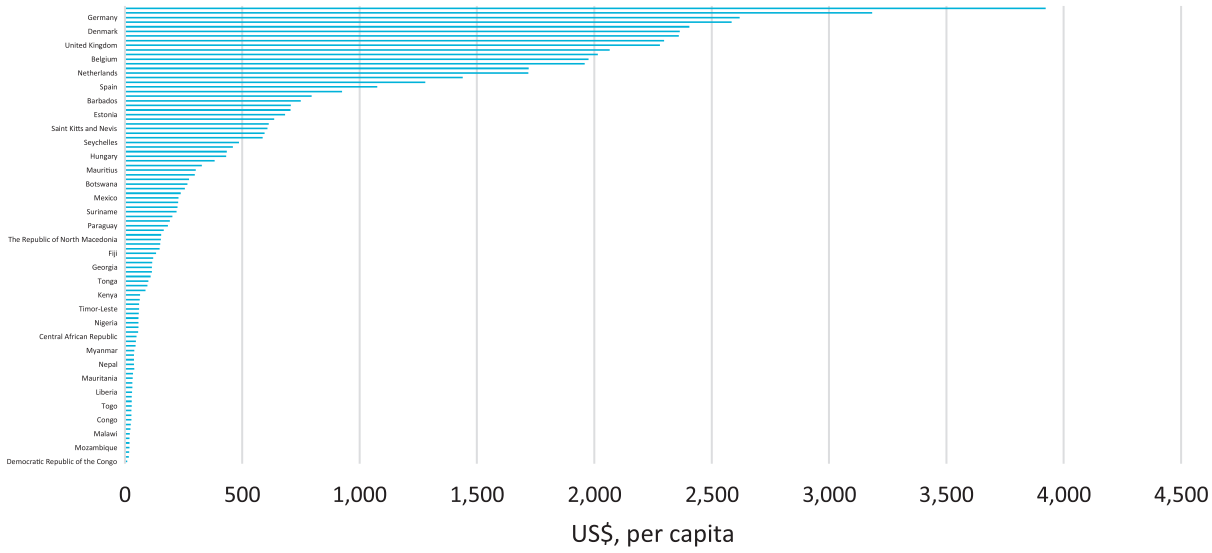
3.3. Value for money in health – measuring efficiency

198. **Investing in UHC and promoting access to basic quality health services has seen many countries excel in improving their population's health.** It is viewed globally as a good investment that yields a high return. The delivery of an essential service package is an effective approach to ensure that the basic breadth and depth of health services required is provided for each person to allow them to actively participate in society and the economy. Achieving UHC is a longstanding policy in PNG. It is a key element of the National Health Plan 2011–20 and the upcoming National Health Plan 2021–30. PNG's pathway to achieving UHC has been disappointing, however, with many health outputs and outcomes failing to progress at the pace of its socioeconomic peers.

199. **Value for money in health can be measured through the effectiveness of spending to deliver the required health outputs and outcomes.** The linkage of each dollar spent in the success and effectiveness in the delivery of health services impacts the population's well-being. As outlined in Figure 3.14, the picture of investing in frontline services to fund primary health care in PNG has increased since 2012, but operational spending (Figure 3.15) shows a bleak picture in terms of funds reaching the frontlines to deliver services effectively. Figure 3.18 illustrates the variation in spending on primary health care. Many of the richer economies invest more than US$2,000 per capita, while countries with the lowest spending—below US$50 per capita—are mainly low-income countries (including PNG at US$38 per capita). India

is another lower-middle-income country that is an outlier at the bottom of the table, spending US$32 per capita on primary health care. Funding impacts overall service readiness, which are all the required inputs needed for health services to be delivered at quality and standard.

Figure 3.18. Primary Health Care Spending per capita, Select Economies, 2018



Source: WHO Global Health Expenditure Database (https://apps.who.int/nha/database).

3.3.1. The human resource dilemma

200. **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.[23] 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. As of May 2, 2021, there were 11,273 positive COVID-19 cases in PNG and 121 deaths. Health staff falling ill with COVID-19 has reduced service provision at major hospitals. COVID-19 has overwhelmed the most developed economies; health staff can barely keep up with the COVID-19 crisis. The pandemic has brought PNG's health care crisis to the forefront. Human resources for health will take time to foster and groom. The overall weakness of the health system will require a resurgence of investment to ensure that PNG's health workforce can keep the population healthy to further the country's economic development.

201. **PNG lags other comparator countries in developing the health workforce required to achieve progress toward UHC.** PNG has one of the lowest human resource-to-population ratios globally, although a recent WHO study showed improvement from 0.55 per 1,000 in 2009 to 1.03 per 1,000 in 2018. The development of human resources for health requires long-term planning and investment in pre-service and in-service training to develop the skills

[23] 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.

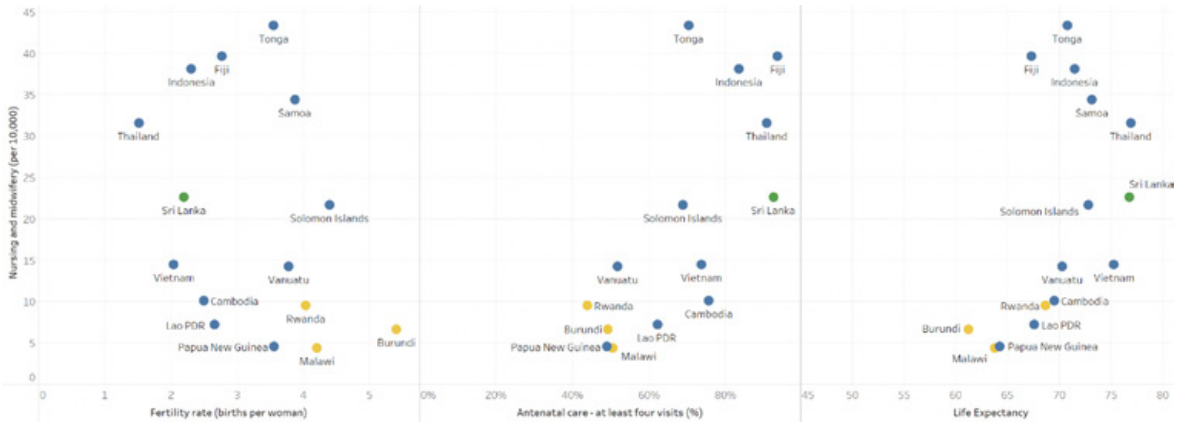
and knowledge required to meet changing demographic and health trends. PNG's lack of investment and current personnel policies makes absorption of new graduates challenging. A high attrition rate and an aging workforce underscore the fragility of the health system; the current skill mix is not adequate to deliver the health services needed by PNG's population.

202. **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.

Figure 3.19. Medical Doctors and Impact on Health Outcomes, Select Economies

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

Figure 3.20. Nurses and Impact on Health Outcomes, Select Economies



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

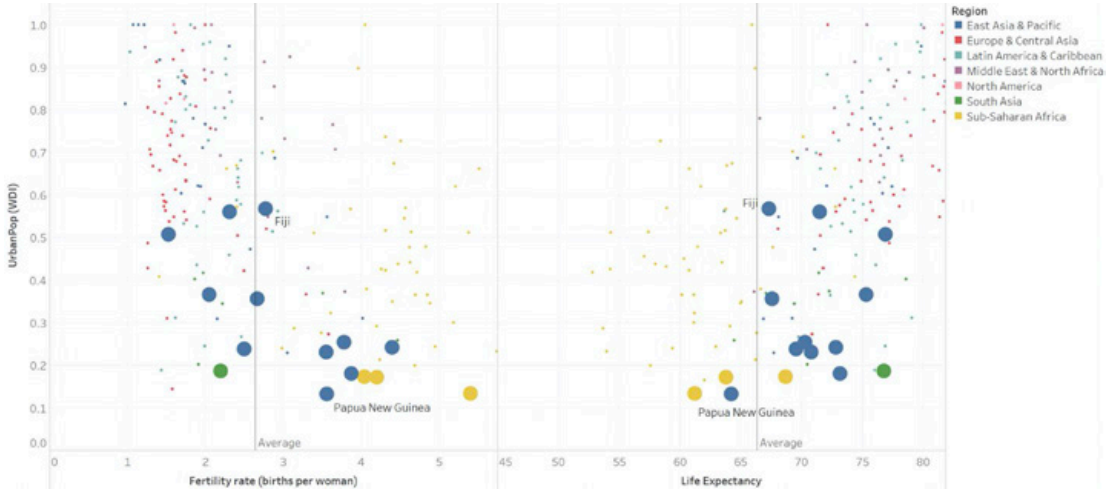
203. **A comparison of countries across income levels shows a positive relationship between higher numbers of health workers and particular health outcomes.** Papua New Guinea's low ratio of medical doctors per 10,000 inhabitants is comparable to that of Sub-Saharan African economies including Burundi, Malawi, and Rwanda—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 3.19). 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. In Cambodia and the Solomon Islands, life expectancy is higher and roughly 70 percent of women are reported to have received four antenatal care visits. For the same

sample group, a low number of nurses has a strong correlation with lower antenatal care coverage, although the relationship between the number of nurses and life expectancy and fertility is less clear. 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 3.20). 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 pivot forward 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. Countries like Sri Lanka, Thailand, and Vietnam tend to have higher number of doctors to nurse ratio, while Indonesia, Tonga, and Fiji have a larger nurse workforce to doctors. Designing the appropriate composition of skills and cadres for PNG based on health needs will determine these ratios and direction for health workforce planning.

204. **Many factors impact the effectiveness of the health workforce, and the local context matters.** In a predominantly rural country like PNG, the composition of workforce cadres requires careful consideration to ensure that investments are focused and aligned with the delivery of a robust primary health care system while also advancing medicines to offer improved secondary and tertiary care. The former is vital given the low service coverage of basic services like antenatal care, immunization, high infant and maternal mortality rates, and the high prevalence of infectious diseases like tuberculosis. At the same time, NCDs are spreading, and PNG has one of the highest stunting rates globally. As a lower-middle-income country, PNG can learn from its peer countries. The PNG Human Resource for Health Strategic Plan 2021–30 aims to address some of these workforce gaps and increase the efficiency of resource investment by supporting forward planning through budgetary investments to build the robust workforce required to meet PNG's health needs and improve health outcomes. There is a time lag between investment in health worker development and becoming an effective service delivery provider, requiring several years of pre-planning.

205. **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 can 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 3.21. Urban Population and Health Outcomes

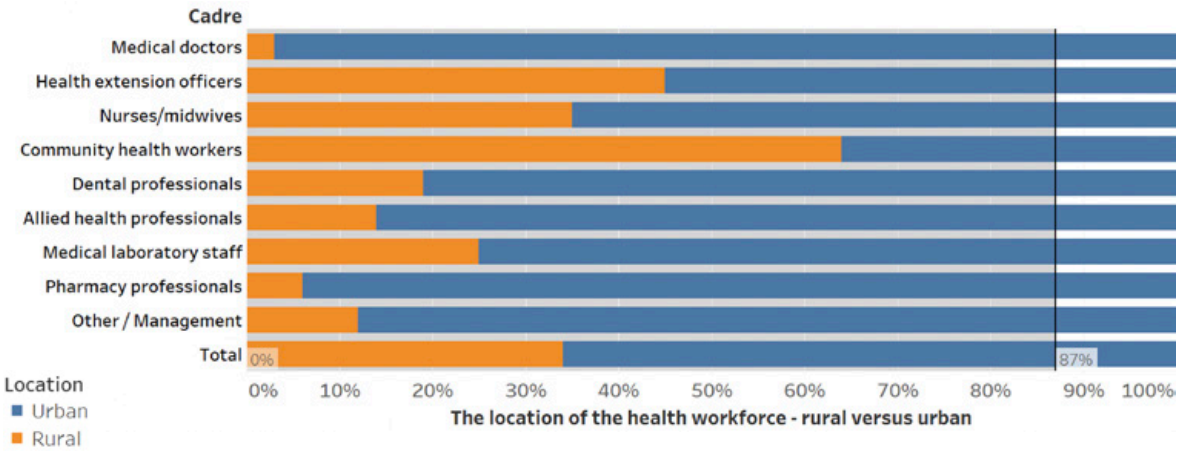


Source: Fertility and life expectancy data from WDI; ANC and numbers of nurses and midwives data from GHO. Note: Sample economies are bolded.

206. **In PNG, efficiency gains are possible by redistributing the health workforce based on the health needs of the various provinces.** Incentives and policies to encourage health workers to go to more rural and remote areas are required to address this overall mismatch of the distribution of the population, health needs, and workforce. With the WHO, the NDoH is working to roll out the Workload Indicators of Staffing Need (WISN) tool to support provinces in identifying skill gaps and the over- or under-supply of health workforce by facility. The overall trends in terms of which workforce cadres are required to meet PNG's growing health needs will also be useful for long-term planning (it takes years to develop the skills required).

207. **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 3.21).** 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 3.22. Health Workforce Cadres Distribution, Urban vs Rural, 2018



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

3.3.2. Fragmentation in funding streams for primary health care and sufficient resourcing

208. **Budgets for PHAs and frontline services are fragmented.** Although some progress has been made, further work remains to ensure that the funding envelope for frontline health is equitable, adequate, targeted, and transparent. Lack of coordination and transparency in the funding received by the health sector through various entities outside of health creates fundamental gaps in gauging whether health is receiving adequate funds to run health services. Advances have been made to rectify this fragmentation challenge—HFGs were recently moved under the control of the Provincial Health Authority (from the Provincial Administration). This move allows PHAs to increase their level of autonomy in spending on rural health services. Table 3.4 shows the transition from the traditional model of fund flow to the PHA model, the latter with more streamlined funding. Although HFGs are now channeled through PHAs, this only represents a portion of the funds; provincial internal revenues cannot be tracked to cover the balance of the cost of services.

Table 3.4. Main National Budget Funding Channels (by input factor and service level)

Facility Level	Personnel and Opex	Medical supplies	Capital
National hospital (L1)	Port Moresby General Hospital (Vote 620)	NDoH (Vote 240)	Port Moresby General Hospital (Vote 620)
Regional hospital services (L2)	Regional hospitals (Vote 241)		Regional Hospitals (Vote 241)
Free health care policy (Other)	Treasury (Vote 207)		
Subnational health services – traditional model			
Provincial health services (L3)	Provincial Hospitals (Vote 241)	NDoH (Vote 240)	Provincial hospitals (Vote 241), provincial administrations (PSIP)
Rural health services (L4 and below) – Government	Provincial administrations (Votes 571–592) •		DDAs (DSIP administered via provincial administration Votes 571–592) •, NDoH (Vote 240)
Rural health services (L4 and below) – Churches	Christian Health Services and Catholic Health Services (Vote 241)		
Subnational health services – PHA model			
Regional and provincial hospital services (L2 and L3)	PHAs (Votes 601–619, 621, 622) Provincial internal revenues (Votes 571–592) •	NDoH (Vote 240)	Provincial hospitals (Vote 241), provincial administrations (PSIP) • plus minor allocations to PHAs (various votes)
Rural health services (L4 and below) – Government			DDAs (DSIP – administered via provincial administration Votes 571–592) •, NDoH (Vote 240) plus minor allocations to PHAs (various votes)
Rural health services (L4 and below) - Churches	Christian Health Services and Catholic Health Services (Vote 241)		

Source: Updated from *Line of Sight* Report; • = funding outside of NDoH.

209. **The lack of recurrent operational spending on frontline health is a binding constraint for PHAs in delivering basic health 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. The cost of HFGs and church operational grants is based on a costing study conducted every five years to measure the cost of delivering services in rural areas and inform spending on recurrent operational expenses. Considering the provinces' internal revenues, the government allocates a proportion of funds to PHAs through HFGs to cover rural health care costs, assuming that provincial internal revenues would cover the remainder. In the current IFMS, there is 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 the assumption of provincial internal revenues funding for health; it is not legally binding or stated in any policy or legislation. Table 3.4 outlines the various types of funds that are received to manage public and curative care, including hospitals in the provinces, and underscores the complexity of managing health resources at the subnational level. Such fragmented fund flows complicate the ability of provincial health authorities to manage and coordinate with various stakeholders to secure sufficient budget and deliver services in the provinces.

210. **To 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.** For example, a stronger link between the HFG and church operational grants to outputs like health indicators and delivery of the essential service package could clarify how resources are spent. The health sector can also introduce various tools and policies to improve subnational-level resource tracking and ensure processes are in place to equip health facilities with the inputs needed to deliver the essential service package.

211. **The true cost of health services is not known.** Table 3.5 outlines the current costing used to inform the overall health budget. The "information gap" column provides insights into which areas of the health sector are not costed or included in the health sector budget. For example, the NEFC's costing model 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).

Table 3.5. Main National Budget Funding Channels (by input factor and service level)

Service level	Costing information available	Recurrent Ops	Costs Staff	Information Gap	Primary Funding Sources
PHA administration				Not costed	Main PHA grants
National and regional hospitals	Service Delivery by Health Facilities in PNG (WB, 2018)	yes	yes	WB study based on average actual costs (L5/6, and 7), not necessarily a reasonable minimum required. Broad cost categories Large variations in hospital size	Main PHA grants
Provincial hospitals					Main PHA grants
District hospitals (DHs)				WB study average costs which groups HCs and DHs; not ideal.	- DHs fall between the gaps - If church-run, church grants (staff and ops)
Lower-level facilities: - ealth centers (HCs) - aid posts	Cost of Service Study (NEFC, 2015)	yes	no	1. Ops: Cost of Drugs & medical supplies, 2. Replenishment of medical equipment 3. Staff costs?	- Health function grant - Provincial internal Revenue - Church grants (staff and ops)

Source: World Bank staff.

212. **In the long term, as provinces increase internal revenue, provinces like National-Capital District, Morobe, and New Ireland will not receive any funds for rural health care from the government budget, leaving them reliant on PHAs budget to plug funding gaps.** With overall health service coverage declining across many indicators in PNG and maternal and under-five mortality rates high, bolstering low-level facilities to deliver these basic primary health care services adequately is critical to achieving value for money.

213. **A deep dive into the district-level performance of Milne Bay, Morobe, and New Ireland provides insights into the diversity of service delivery models in PNG and highlights some of the strengths and challenges in service delivery effectiveness and efficiency.** In 2019, the PHA budget allocation for these three provinces differed marginally, ranging from K 26.3 million to K 32.7 million. However, on a per capita basis, Morobe allocated just K 57 per capita; Milne Bay and New Ireland allocated K 156 and K 218 per capita, respectively, highlighting the drastic variation in provincial budget allocations to health. Morobe has the largest population in the country, and this is not reflected in the resource distribution. Actual expenditure in Morobe was low in 2019 (just 39 percent of the total allocation). New Ireland spent 92 percent of its health budget; Milne Bay spent 142 percent. Morobe's low health budget execution requires further exploration. Most services are concentrated in Lae rather than spread across districts. Per-patient costs are low at Morobe's provincial hospital (K 1,892 compared to the national average of K 5,401), with a high patient load reflecting some efficiency. Morobe receives no health function grants and has one of the lowest results in rural health care conducting only 1.1 outreach clinics per 1,000 inhabitants (one-quarter of PNG's national

average of 4.4). The province is less remote than the other two provinces; poor service delivery results suggest that remoteness is not necessarily a hindrance to effective health care delivery. New Ireland has no HFGs but benefits from a larger PHA budget allocation and a high budget execution rate (92 percent). The province's hospital has a low patient load and one of the highest per-inpatient hospital costs compared to the national average. New Ireland's dispersed service delivery access across multiple facilities alleviates pressure and focus on care-seeking just at higher-level facilities. Milne Bay overcomes the remoteness barrier with high levels of outreach compared to the national average. The cost per inpatient at the provincial hospital is lower than the national average, and the patient load is medium.

214. **Variations in budget allocations, the performance of provincial hospitals, and primary health care reflect diversity in capacity and also the resources available to the provinces.** The system's design impacts where people choose to enter the health system; with no proper gatekeeping effects, some provinces experience higher concentration levels in hospitals and reduced use of lower-level facilities, potentially reflecting inefficiencies in the system. The low volume of outreach clinics in Morobe—just 1.1 per 1,000 inhabitants compared to the national average of 4.4—is concerning, as is the lack of funding for HFGs and church operational budget (Table 3.6). In New Ireland, the lack of HFGs and church operational grants does not appear to impact the number of outreach clinics, which is above the average. The higher PHA budget allocation may help to bridge this resource gap. The dispersed service delivery access to various lower-level facilities can also explain better delivery of outreach services. Resource allocation across provinces and how this is determined will be an essential policy question to design an effective model of service delivery in each of the provinces that meets the population's needs.

Table 3.6. Provincial Differences in Budget Allocation, Service Delivery Volumes, and Costs

	New Ireland	Morobe	Milne Bay	National
Budget allocation per capita (Kina)	218	57	156	
PHA budget 2019 (Kina, millions)	31.0	26.3	32.7	
Actual expenditure 2019 (Kina, millions)	28.6	10.2	46.5	
Budget execution 2019 (%)	92	39	142	
Population	200,204	866,549	339,599	8,518,049
Provincial Hospital				
Cost per inpatient (Kina)	12,061	1,892	4,652	5,401
Cost per OEV (Kina)	282	70	159	152
Inpatient per 1,000	9	16	13	13
Outpatient per 1,000	382	440	366	393
Patient load	Low	High	Medium	-
Primary health care				
Clinics per 1,000	5.7	1.1	10.7	4.4
Rural health cost per person (HFG + Church)	4	0	24	
Catchment per LLF	6,458	16,350	7,898	10,935
Service delivery				
State run (%)	63	71		
Referral (%)	0.48	0.07	0.24	
Drug shortage (%)	45	37	58	
Remoteness (%)	123	78	169	
Service delivery model of care	Dispersed services across multiple health facilities	Concentration in provincial hospital; lower results in other 8 districts	Dispersed services across multiple health facilities	

Source: World Bank. forthcoming. *Delivering Value for Money in the Health Sector: Exploring Performance, Productivity and Utilization* (draft). Washington, DC: World Bank.

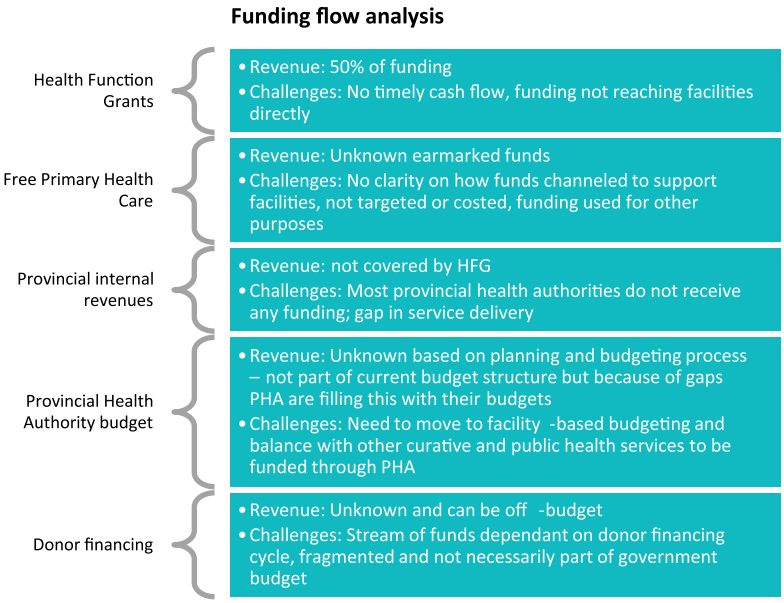
3.4. Driving health equity

215. **Key health priorities for PNG include UHC and the related Sustainable Development Goals.** Enshrined in health sector policies through the National Health Plan are (i) access to primary health care for the rural majority and urban disadvantaged; (ii) government policies like the Medium-Term Development Plan III (MTDP III) to be a "Smart, Wise, Fair, Healthy and Happy Society by 2050"; and (ii) joining the top 50 countries in the Human Development Index (HDI) ranking. A healthy workforce and society underpin the success of driving economic and social development for the country. 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. The picture of health equity varies across PNG in terms of health access; health outcomes are diverse.

216. **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 got 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. Operational funding for primary health facilities is fragmented and comes from a variety of sources – HFGs, internal revenue, FHCP funds, and PHA allocations. 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. Figure 3.23 summarizes the shortfalls in funding to support operational costs for rural health care policies.

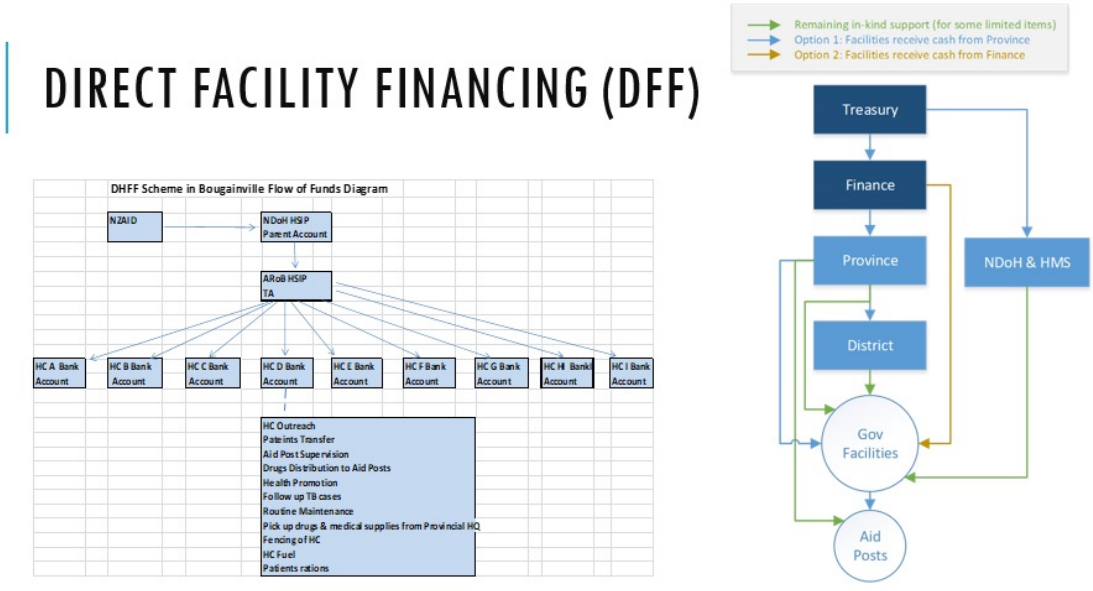
217. **Key health coverage indicators have declined over time.** One cannot establish a direct relationship between the new policy and the impact on services. However, it is a disruption for health facilities in terms of receiving direct funding, which may have skewed service delivery (though other factors 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 (Figure 3.24). 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.

Figure 3.23. Operational Revenues for Rural Health Care Policies/Primary Health Care



Source: Author.

Figure 3.24. Direct Facility Funding



Source: ADB.

218. **Women across all provinces state that money is the main barrier to health care access, followed by distance and transport (Table 3.7).** These barriers can result in forgone or delayed care and hinder visits to health care facilities for preventive care, resulting in higher costs later for curative care. 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

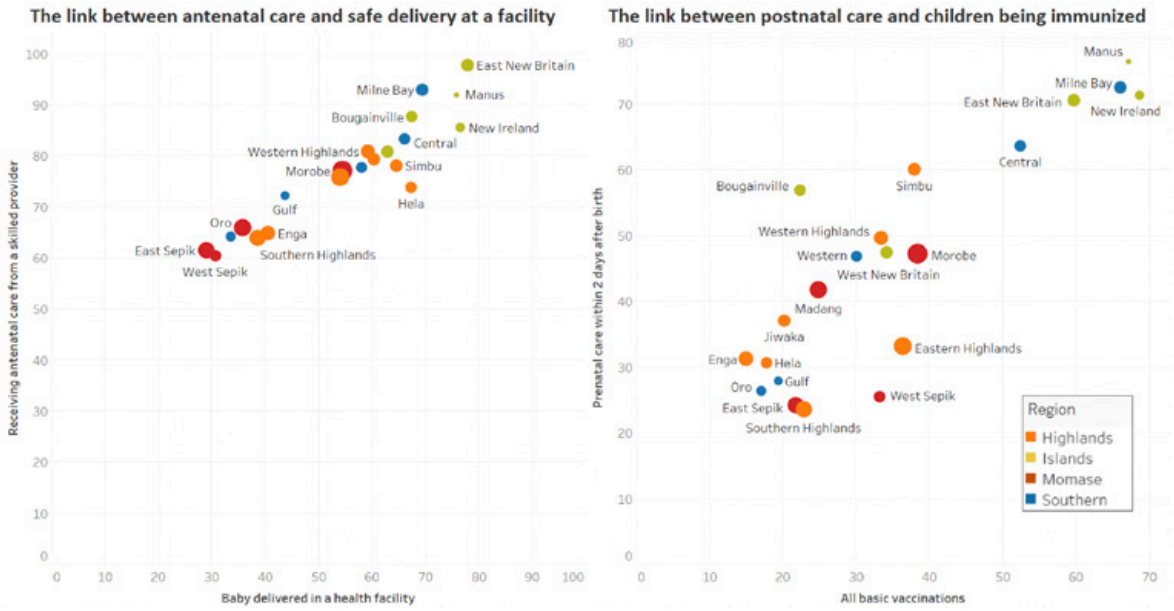
births at a health facility and postnatal care and those achieving all basic immunizations across all provinces in PNG (Figure 3.25). The initial barrier to overcome is the first point of entry for women at the health facility level. There is a strong negative correlation between the high level of women 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. The health sector's role in promoting public health interventions and generating demand can also reinforce the message to the community to use the health facilities. At the same time, health facilities need to be ready to provide services and medicines.

Table 3.7. Major health access issues for women

Province	Biggest Issue
National Capital District	Money
Western	Money
Gulf	Money
Central	Money
Milne Bay	Money
Oro	Mon/Dist
Southern Highlands	Money
Hela	Mon/Dist
Enga	Money
Western Highlands	Money
Jiwaka	Money
Simbu	Money
Eastern Highlands	Money
Morobe	Money
Madang	Money
East Sepik	Money
Sandaun	Mon/Dist
Manus	Money
New Ireland	Money
East New Britain	Money
West New Britain	Mon/Dist
Bougainville (ARB)	Distance

Source: DHS 2016–18.

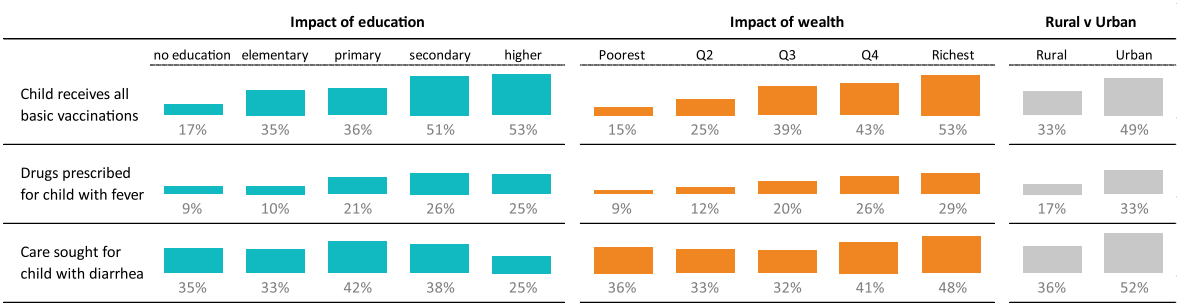
Figure 3.25. The Virtuous Cycle: Pre- and Postnatal Care, Safe Delivery, and Immunization



Source: DHS 2016–18 (2019).

219. **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. 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. In terms of child health outcomes, a similar pattern emerges where lower levels of education, wealth, and living in rural areas are linked with higher infant and under-five mortality. 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 3.26. Child Health Services and the Role of Educational Attainment, Wealth, and Location



Source: DHS 2016–18 (2019).

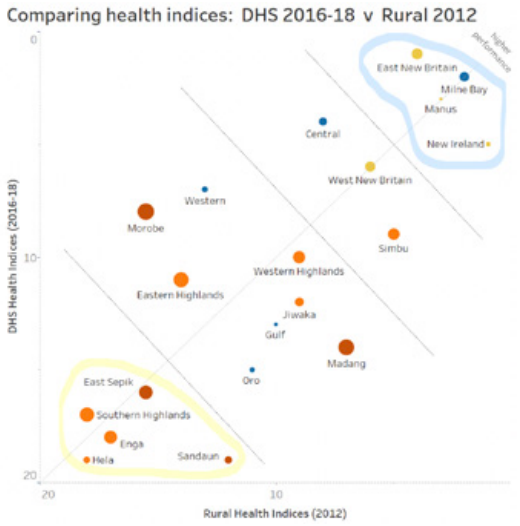
Figure 3.27. Child Health Outcomes and the Role of Educational Attainment, Wealth, and Location

Source: DHS 2016–18 (2019).

220. **Delivering equitable resourcing across provinces to bridge the health equity gap is a challenge that can be addressed in the current distribution of funding for provinces.** The health sector can consider how the distribution of resources reflects the drivers of health equity. In comparing health indexes, composite indicators[24] indicate the provinces' ability to meet their populations' health needs. In comparing data for 2012 and 2016–18, some provinces—East New Britain, Milne Bay, Manus, and New Ireland—perform well while others, including Southern Highlands, Enga, Hela, Sandaun, and East Sepik, fair worse. Further analysis suggests that it is harder to deliver health care in these provinces; direct determinants like health utilization, demand for health services, and social determinants are the lowest in the country (World Bank, 2021d). To add to the complexity, these cluster of provinces are lowest performing for indirect determinants of health such as women agency, food security, and financial access, among other factors. The indirect determinants of health that sit outside of the health sector and social determinants like clean water and hygiene require the support of other sectors to bridge health inequities.

[24] Challenges include geographic remoteness, impediments that women experience in accessing health services, a sample of key service indicators including facility visits by men and women; services for children under-five and in maternal health; and the social determinants of improved water and sanitation.

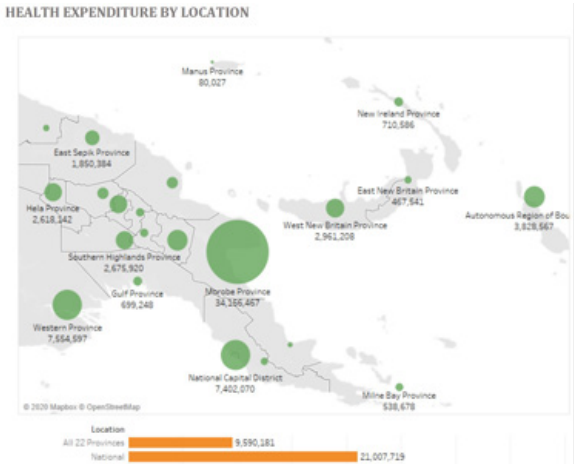
Figure 3.28. Comparing Health Indices: DHS 2016–18 and Rural 2012



Source: World Bank.

221. **A WHO-NDoH donor survey in 2016 shows that the distribution of donor funding varies, with some provinces benefiting significantly while others receive a small share of donor funds (Figure 3.29).** Donor funds account for around one-fifth of total health expenditure in PNG. As such, authorities should consider equity factors in their distribution. Doing so can support health equity. For example, clarity on how resources are allocated across PHAs and within provinces can be coordinated to take gaps in health equity into consideration. Partnerships at the district and local level can support this process.

Figure 3.29. Donor Financing by Province, 2016



Source: WHO-NDoH, donor survey, 2016.

3.5. Recommendations

222. **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.

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.[25] 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.[26]

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.[27]

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.

25. World Bank. 2018. Service Delivery by Health Facilities in Papua New Guinea. © World Bank.
26. The Provincial and Local Level Service Monitoring Authority (PLLSMA) has endorsed a review of the intergovernmental financing arrangements.
27. 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.

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[28] and financing), and the opportunities for learning and efficiencies.[29]

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 more effectively meet service demand; and (ii) promoting greater discipline in payroll management).

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

[29] 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.

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.

Key policies:

i. Pro-rural 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).

223. **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.

224. **The introduction of PHAs is an opportunity to promote accountability and local solutions, coordinate resourcing, 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.

225. **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 met.

4. Aligning Education Spending to Avoid Learning Crisis

226. This chapter of the PFR is structured around five main sections: (i) section 4.1 provides sectoral context information, including education system organization and service delivery; (ii) section 4.2 focuses on recent trends in the level, composition and drivers of public education spending; (iii) section 4.3 examines the extent to which public spending on education is efficient; (iv) section 4.4 examines the extent to which public spending on education is equitable; and (v) section 4.5 concludes with recommendations to improve value-for-money and equity of public spending on education.

4.1. Sectoral context

4.1.1. System organization

227. **Papua New Guinea's education system is highly regulated.** Two departments currently manage the education system: the Department of Education (DoE) that oversees general education, Flexible & Open Distance Education (FODE),[30] 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). Early childhood education targeting three to five-year-olds falls under the Department of Community and Religion; it is currently in transition to the Department of Education. Recent reforms have aimed at aligning the education structure with international standards and transitioning from a 3-6-4 structure to a 3-6-6 model (Table 4.1); and providing multiple pathways with FODE and TVET for students.

Table 4.1. National Education System Structure

Previous National Education Plan (2015–19) 3-6-4 structure		Age	New National Education Plan (2020–29) 3-6-6 structure	
Level	Grade		Level	Grade
Children at home, play groups, or day cares Regulated by the National Office of Child and Family Services under the Lukautim Pikinini Act		0-3	Children at home, play groups, or daycares Regulated by the National Office of Child and Family Services under the Lukautim Pikinini Act	
		4	ECE	Kindergarten (K1)
		5		Kindergarten (K2)
Elementary	Preparatory (EP)*	6		Preschool Preparatory*
	Grade E1	7	Junior Primary	Grade 1
	Grade E2	8		Grade 2
Lower Primary	Grade P3	9		Grade 3
	Grade P4	10	Senior Primary	Grade 4
	Grade P5	11		Grade 5
Upper Primary	Grade P6	12		Grade 6
	Grade P7	13	Junior Secondary	Grade 7
	Grade P8	14		Grade 8
Lower Secondary	Grade 9	15		Grade 9
	Grade 10	16	Senior Secondary	Grade 10
Upper Secondary	Grade 11	17		Grade 11
	Grade 12	18		Grade 12

Source: PNG Department of Education and National Office for Child and Family Services (2020). Early Childhood Education Cost and Financing Study Report.

Note: *compulsory.

228. **Basic education in PNG tends to involve a partnership between state and nonstate institutions.** The country's education system[31] comprises 12,741 educational institutions catering to around 2.3 million pretertiary learners. A total of 55,493 teachers renders a student-teacher ratio (STR) of 42:1 (the same ratio as for general education[32]). Around half of elementary and

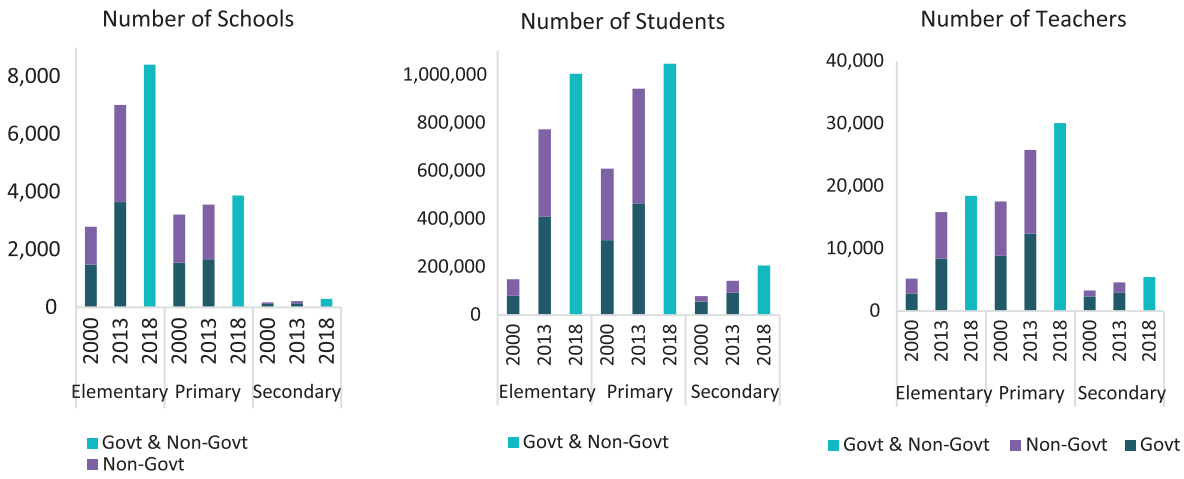
[30] Distance education is a means of delivering education to people who cannot attend an educational institution. Currently, it is offered primarily through the College of Distance Education to students wishing to complete their Grade 7 to 12 education. According to DoE's ministerial policy statement 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.

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

[32] Includes elementary, primary, and secondary general education.

primary schools are run by churches and other nonstate institutions; this proportion declines to one-third at the secondary level (Figure 4.1). 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 language spoken in the 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.

Figure 4.1. Schools, Students, and Teachers by Level of Education, 2000–18



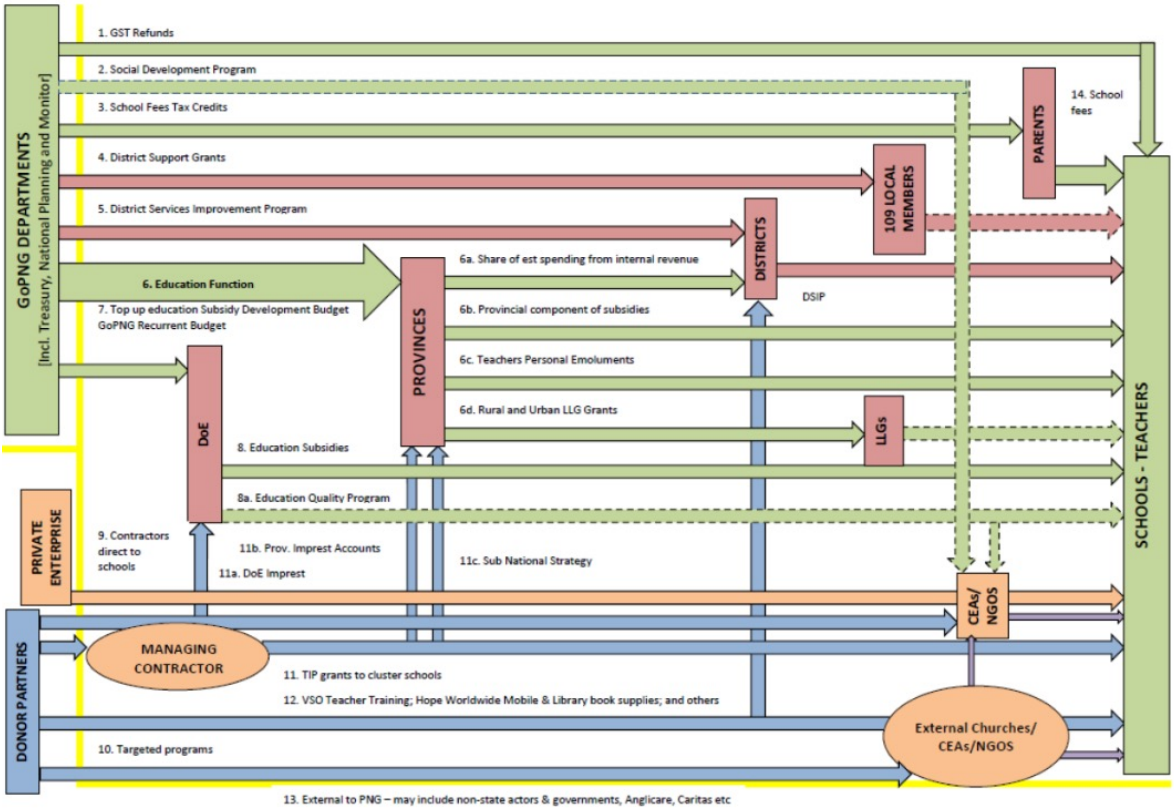
Source: DoE's 2000 and 2013 Statistical Bulletin; DoE 2018c.

229. **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. In addition to sending national education subsidies directly to schools, the central government funds teacher emoluments,[33] school operating costs, textbooks/teaching materials, and capital works for both state and church schools.[34] It also funds Standards Officers (district-level school inspectors)[35] and provides education function grants to provinces to distribute basic learning materials to schools and fund district education office operations and supervision. 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[36]). They

33. Teacher emoluments include teacher salaries and allowances (such as teacher leave fares), which are transfers from the central government to provinces.
34. Agreements with church education providers are negotiated nationally, covering staffing and salaries, infrastructure and equipment [NCEC https://pngbuzz.com/png-news/7724; Catholic https://cathnews.co.nz/2017/09/14/catholic-education-papua-new-guinea/].
35. Standards Officers are national-government staff who are responsible for the oversight and inspection of schools. They report to the central government. Specifically, they observe classes, check school records, and check national subsidy (TFF) payments.
36. Including Provincial Services Improvement Programs (PSIP), District Services Improvement Programs (DSIP) and Local Level Government Service Improvement Programs (LLGSIP) funds for development purposes.

also allocate different percentages of own-source revenue to fund education based on prioritization. Table 4.2 includes more details of regional governments' responsibilities. Donors also play an active role in the sector, providing technical assistance and funding.[37]

Figure 4.2. Flow of Resources in the Education Sector



Source: World Bank (2014).

[37] Approved donor spending that is captured in the government's expenditure management system varies considerably (in the five years to 2018, it ranged from 6 percent to 25 percent of total education budget). These proportions are likely not reflective of total donor spending, much of which occurs off-system.

Table 4.2. Assignment of Education Sector Functions, by Level of Public Administration

AREA	PROVINCIAL GOVERNMENTS	LOCAL-LEVEL GOVERNMENTS
Governance	• Provide secretariat, technical and logistical support to the Provincial Education Board. • Establish and provide logistical support to Provincial education committees, such as the Provincial In-service Committee and the Provincial Curriculum Committee. • Approve members of Boards of Management and Boards of Governors to Provincial education institutions.	• Recommend to Provincial Government membership of Boards of Management of elementary and primary schools.
Policy and Planning	• Develop and implement the Provincial Education Plan. • Develop and implement other plans such as the Provincial Education In-service Plan. • Develop and implement Provincial education policies. • Provide enrolment data to the Department of Education. • Maintain a register of member and permitted schools in the Province. • Collect, record and analyze information and data on education in the Province, such as enrolment data, number of teachers, and the number of open and closed schools. • Monitor education indicators for each District.	• Advise the Provincial Education-Board of local education priorities.
New Schools	• Approve at the Provincial level (through the Provincial Education Board) and subsequently seek approval at the National level (through the Department of Education): new schools; amalgamations of existing schools; school re-openings; changes of school names; closure of schools; transfer of schools and changes in status.	• Draw up plans for the establishment and development of new schools.
Infrastructure	• Prepare and annual maintenance plan. • Inspect the condition and maintain: Provincial Secondary schools Vocation and Trade Training Schools Teacher and education worker housing Ancillary facilities.	• Inspect the condition of and maintain elementary and primary schools, and its teacher housing and ancillary facilities..
Teachers	• Appoint, deploy and redeploy teachers to their posting in Provincial education institutions. • Procure and arrange teacher leave fares. • Repatriate and remove teacher personal effects upon retirement, death or retrenchment. • Administer the teachers' payroll, including school resumption visits, leave applications. • Coordinate in-service training at the Provincial level. • Deliver in-service training (short presentations and/or workshops at school in-service meetings or during in-service week, but not fund further study of courses) as required. • Distribute in-service materials (provided by Department of Education) to schools. • Recommend candidates (through the Provincial Education Board) to the National • Department of Education for further study and National in-service training.	• No assigned function or responsibility.
School Operations	• Purchase and distribute materials and supplies for Provincial schools where the school does not have sufficient capacity to make own purchases or source these from other donors. • Fund and distribute [2nd and 4th quarter fees] school subsidies. • Set school fees within the limits imposed by the National Education Board. • Distribute curriculum materials, National examination papers, Certificates, Diplomas and other awards to schools. • Select students for grade 9 classes. • Organise venues and fund supervisors for National Grade 8, 10 and 12 examinations. • Organise venues and fund markers for marking of National Grade 8 and 10 examinations.	• No assigned function or responsibility.

Source: GoPNG.

4.1.2. Service delivery

230. **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 (Figure 4.3).** 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 (Figure 4.4),[38] 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 older than the official age of school entry (six years old) (Johnston and others 2018). Data for 2015 also reveal that over 52 percent of boys and girls in primary schools were over-age by two years or more (DoE 2018a). Although enrollment in primary education is on par with PNG's lower-middle-income peers, participation in secondary education lags far behind.[39] 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 once they enroll.

Figure 4.3. PNG GER by Level of Education, 2009–18

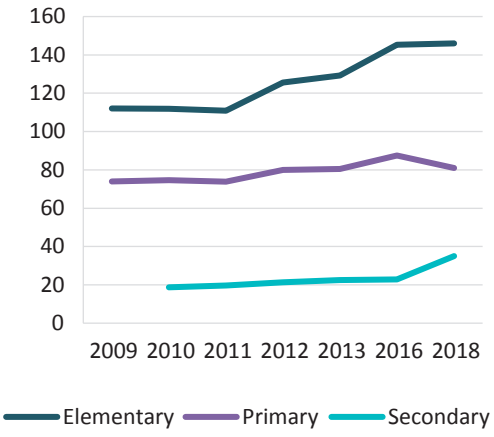
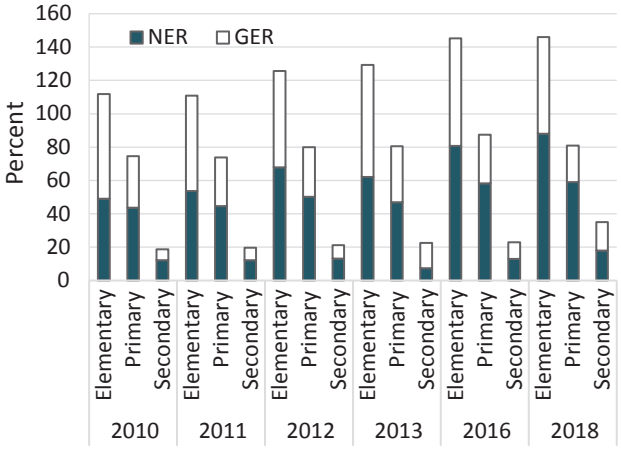


Figure 4.4. Gaps Between NER and GER by Level of Education, 2010–18

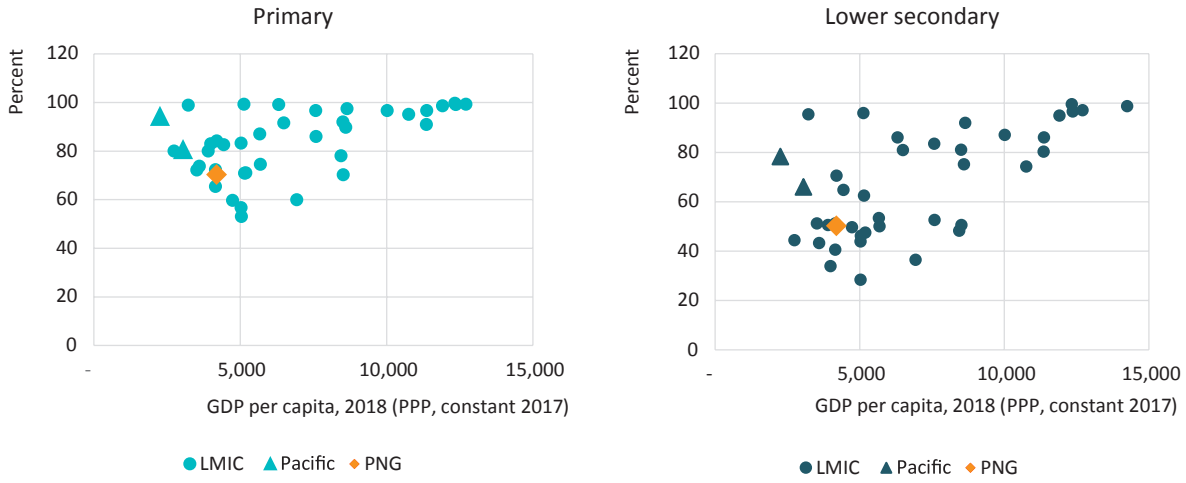


Sources: DoE 2009; DoE 2018b; DoE 2018c.

231. **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 4.5). In 2015, one in four children aged 6–18 was out of school.[40] Girls have higher dropout rates at key transition points[41] 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).

38. 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.
39. According to World Bank Edstats, the average GER in secondary education for lower middle-income countries is 67.3 in 2016.
40. See footnote 16.
41. 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.

Figure 4.5. 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.

232. **Quality of education has been a persistent challenge, accompanied by an acute learning crisis.** As per the Human Capital Index (HCI),[42] 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.[43] 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 4.6). The results of the Early Grade Reading Assessment (EGRA)[44] indicate that students' literacy skills did not meet the requirement of the PNG Grade 1 Standards-Based Curriculum (SBC).[45] 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 4.6. Gaps Between Expected Years and Learning-Adjusted Years of School, 2020

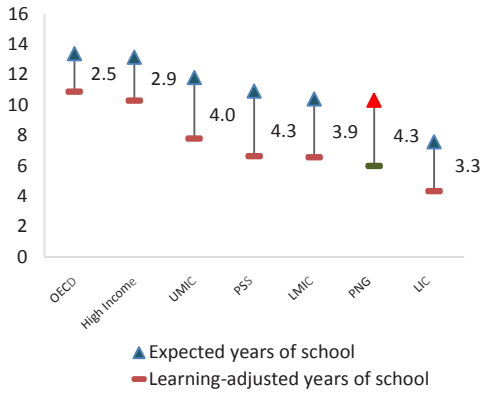
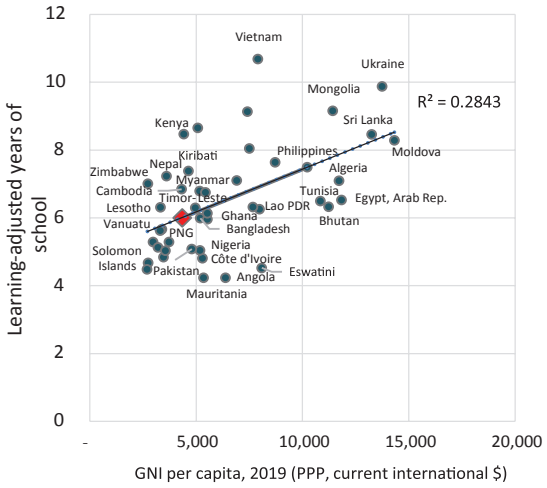


Figure 4.7. Learning-Adjusted Years of School and GNI per Capita

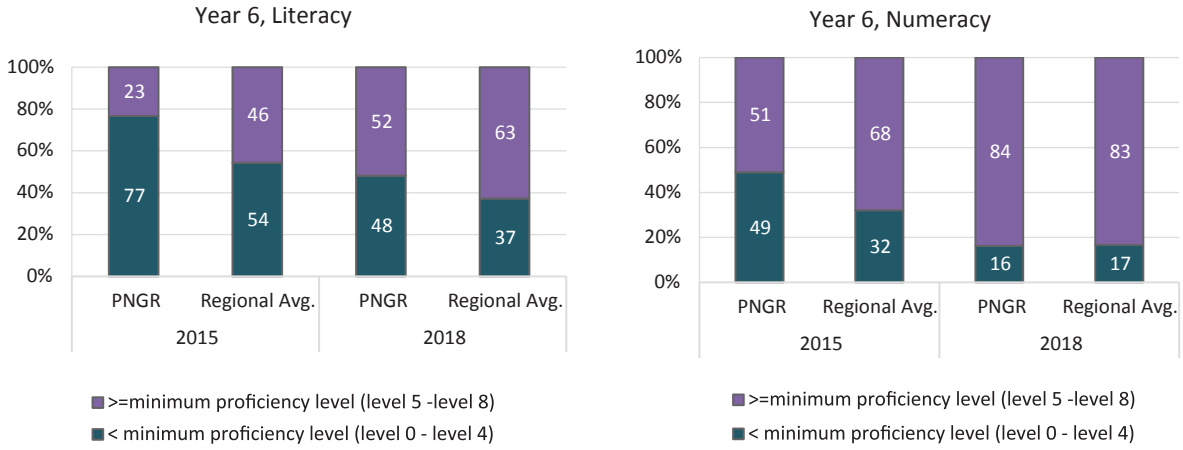


Source: World Bank WDI, HCI, accessed in January 2021. Retrieved from https://datacatalog.worldbank.org/dataset/human-capital-index

42. Retrieved from https://datacatalog.worldbank.org/dataset/human-capital-index.
43. This is lower than the average for East Asia and Pacific region and the average for lower-middle-income countries.
44. 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.
45. 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.

233. **Students in PNG generally scored below the regional average on the Pacific Islands Numeracy and Literacy Assessment (PILNA) in 2018 but showed increased proficiency in both literacy and numeracy.**[46] On average, Grade 3 students in PNG scored 16 points lower than the regional average for literacy (446 compared to 462) and 38 points lower for numeracy (446 compared to 504). There was a large increase in the proportion of Grade 5 students achieving minimum proficiency between 2015 and 2018, and the data suggests that PNG improved significantly more than the participating countries in the region, narrowing the gap in literacy and eliminating it in numeracy (Figure 4.8). In PILNA 2018, girls outperformed boys in literacy. Students from government schools outperformed their peers from nongovernment schools in literacy, while their counterparts scored higher in numeracy at Grade 5. Students from urban schools performed better in literacy but poorer in numeracy compared to their nonurban counterparts.[47]

Figure 4.8. Student Performance in PILNA 2015 and 2018



Source: PILNA 2018 datasets; Educational Quality Assessment Program (2016). 2015 PILNA Regional Report.

234. **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.[48] In 2017, the country joined other Pacific nations in the Pasifika Call to Action for Early Childhood Development for Sustainable Development Goal Target 4.2 that "by 2030, all girls and boys have access to quality early childhood development, care, and pre-primary education so that they are ready for primary education." The DoE is working to formalize the ECE subsector to include it in the National Education Plan (NEP) 2020–29—accompanied by subsidies—with the aim of improving access and quality.[49]

235. **The lack of curriculum materials, shortcomings in the quality of the teaching workforce, and high rates of student absenteeism also have negative impacts on education outcomes.** The classroom environment in PNG lacks printed learning materials in general and students do not have enough SBC readers or storybooks (Johnston and others 2018), although programs such as READ PNG and Boosting Education Standards Together in PNG (BEST-PNG) have helped to address the gaps. Only three-quarters of teachers are qualified in primary schools;

[46] PILNA is a regional benchmarking tool for assessing literacy and numeracy among students in Pacific Island countries who completed Year 4 and Year 6 (equivalent of Grade 3 and Grade 5 in PNG). This tool was developed through a joint effort between UNESCO and the Secretariat for the Pacific Board of Educational Assessment—now the Educational Quality and Assessment Programme of the Pacific Community. Launched in 2012, PILNA is conducted every three years. Papua New Guinea has participated in all three rounds of PILNA since 2012.

[47] Results from the tabulation of PILNA 2018 datasets.

[48] PNG Department of Education and National Office for Child and Family Services (2020). Early Childhood Education Cost and Financing Study Report.

[49] For simplicity, the term "ECE subsector" refers to programs for four and five-year-old children. The Preparatory grade for six-year-old children is already within the NES, receives substantial government funding and has been costed and included in the NEP.

in secondary school that number is even lower (61 percent).[50] Although students are allowed to ask questions, role play, and work individually or in small groups, teachers primarily use the traditional "chalk and talk" teaching method. In addition, students rarely receive individualized support from the teacher. Formative and summative classroom assessments are rarely used to monitor students' learning progress. Many students are missing half or more of the school week, with the majority being girls. The Promoting Effective Public Expenditure (PEPE)[51] survey conducted in 2012 reported that only 71 percent of students in the Grade 5 teachers' home class were present when the survey teams arrived (Howes and others 2014). The high student absenteeism rate is mostly due to sickness, followed by domestic duties. The high teacher absenteeism rate may also negatively impact student attendance.

236. **The results of recent reforms to subsidize interest-free student loans for higher education and reintroduce school fees for general education are unclear.** In 2020, there was a 19 percent national budget cut to the TFF policy, now called the Government Tuition Fee Subsidy (GTFS).[52] With the aim of improving education quality by holding parents accountable, the new policy requires a 38 percent parental contribution for tuition fees in general and vocational education. In 2021, GoPNG allocated K 150 million to a new initiative—the Higher Education Loan Program (HELP)—that provides interest-free student loans. More than 10,000 tertiary students from the main public and private universities and other recognized small publicly- and privately-run institutions nationwide had already registered for a National Identification (NID) card to obtain the HELP loan between January and February 2020.[53] However, given GoPNG's fiscal stress due to COVID-19 and the lack of clarity surrounding the terms and conditions on which these loans are provided,[54] the effectiveness of this program remains questionable.

4.2. Education expenditure analysis

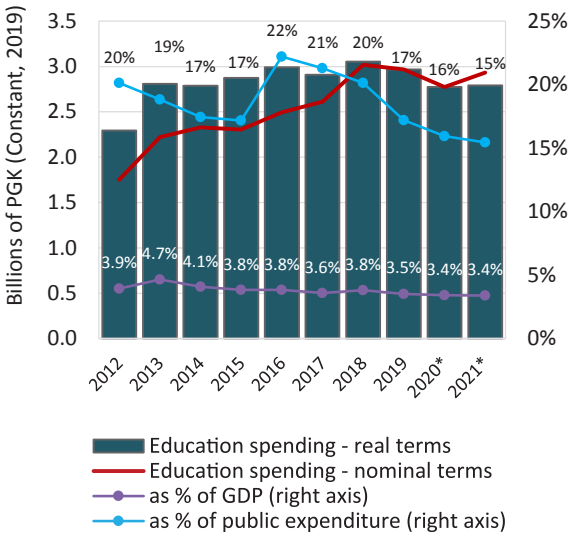
237. **GoPNG is among the biggest education spenders when spending is measured as a share of total public expenditure; as a share of GDP, it lags its peers.** The government spent about K 3.0 billion on education in 2019, constituting 17 percent of total public expenditure and 3.5 percent of GDP. GoPNG 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 4.9). The current level of spending is insufficient to improve the quality of education and access to it.[55] 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. (see Revenue Chapter for further discussion).[56]

238. **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 4.10 and Figure 4.11). 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.

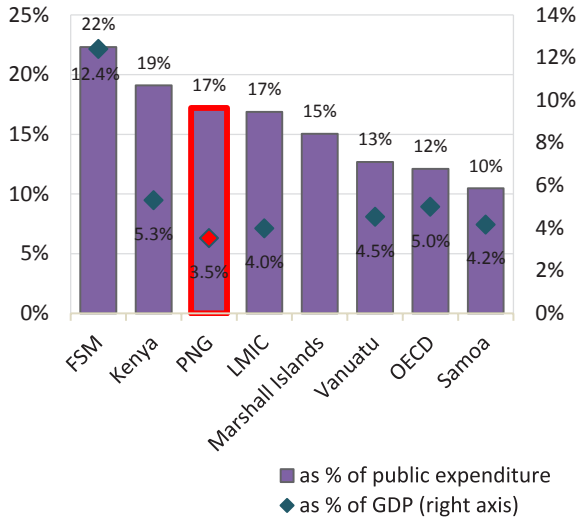
50. GPE (2019). Boosting Education Standards Together in PNG Program Document.
51. PNG's PEPE project, supported by the Australian aid program, completed extensive expenditure tracking and facility surveys across eight provinces at the end of 2012. Survey teams visited 216 primary schools and 142 health clinics from the nation's capital to some of PNG's most remote and isolated communities. Altogether, 1,276 interviews were completed, making it one of the largest and most comprehensive service delivery surveys completed in PNG.
52. The amount budgeted for TFF was K 602 million every year from 2016 to 2018, while only about K 486 million were budgeted in 2020 and 2021. MoE's ministerial policy statement 01/2021. Retrieved from http://www.education.gov.pg/documents/MPS-No-1-of-2021-GTFS-Policy.pdf
53. Reported by EMTV on February 2021, https://emtv.com.pg/nid-to-assist-with-higher-education-loan-program/.
54. Reported in the DEVPOLICYBLOG by Moses Sakai on September 2020. Retrieved from https://devpolicy.org/pngs-higher-education-loan-program-in-need-of-help-20200914/?utm_source=rss&utm_medium=rss&utm_campaign=pngs-higher-education-loan-program-in-need-of-help-20200914
55. 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).
56. Revenue mobilization in PNG is relatively low, below peer performance and insufficient to sustain core public service delivery, including education.

Figure 4.9. National Government Expenditure on Education

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



b. International Comparison, 2019 or latest available

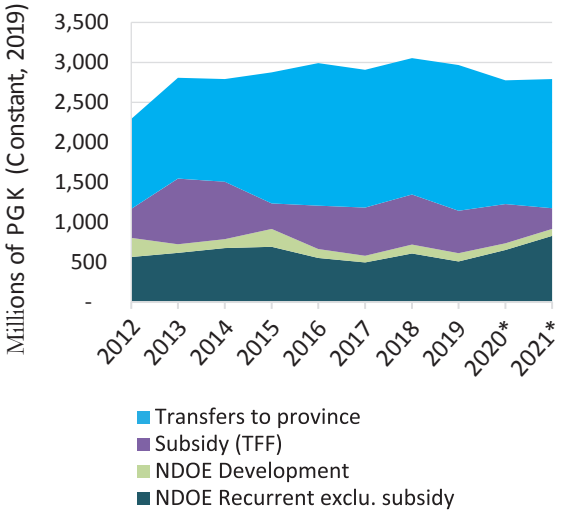


Note: *Revised budget for 2020 and approved budget for 2021.
Source: World Bank staff estimates using BOOST 2012-2021.

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

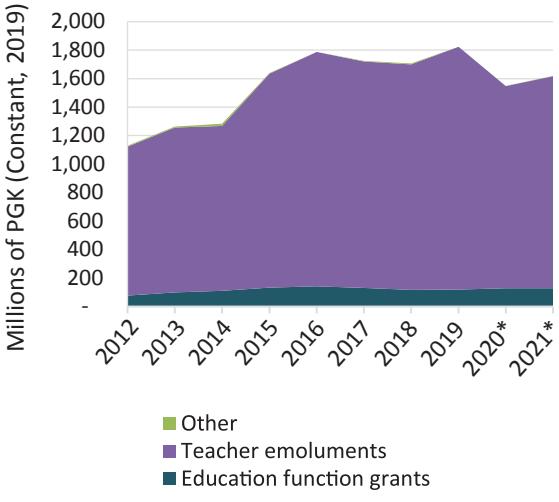
239. **Subnational spending continues to increase as transfers to province absorbed more than half of the education spending.** The central government spending declined from 51 percent of overall education outlays in 2012 to 39 percent in 2019, driven by decreases in recurrent (excluding national education 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 (Figure 4.10 and 4.11). In addition to teacher emoluments and education

Figure 4.10. National Government Expenditure on Education by Component, 2012–21



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

Figure 4.11. Transfers to Province by Component, 2012–21

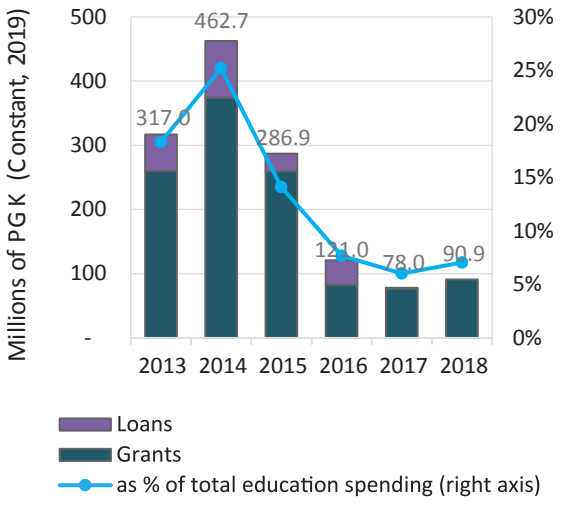


Source: World Bank staff estimates using BOOST 2012-2021.
Note: *Revised budget for 2020 and approved budget for 2021. Other include unconditional grants transferred to individual upper secondary school, technical college, teacher college and university.

function grants, the national government also allocates Services Improvement Programs funds (SIP) to provinces for development purpose in multiple sectors including education. These funds amounted to K 2.573 billion (equivalent of around US$700 million) in the 2020 budget. Although these funds play an important role in transforming rural areas and improving the livelihood of rural people through infrastructure-building, they are subject to erosion due to lack of monitoring and inspections.[57] SIP funds are not included in the analysis in this chapter as the specific amount spent on education is unclear.

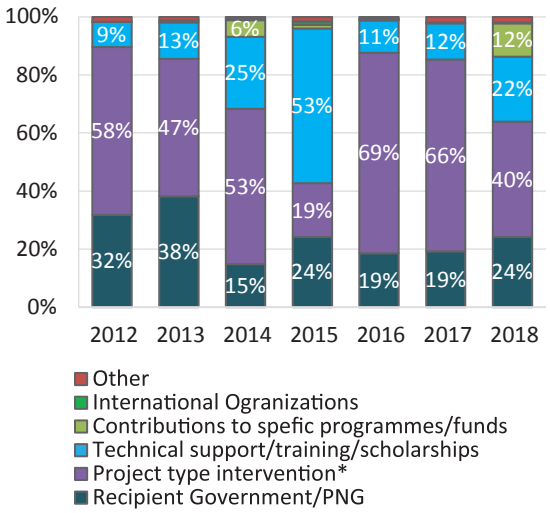
240. **Donors play an important role in financing the education sector, but their contribution has been declining in recent years.** On-budget donor-financed education expenditure decreased significantly in both real amounts and as a percentage of total education expenditure between 2014 and 2018. In 2014, donor funding 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 (Figure 4.12). Although a considerable amount of donor funding could be recorded off budget, OECD's Creditor Reporting System (CRS) database[58] indicates that the amount of donor funding in 2018 was about K 157 million.[59] More than 70 percent of donor funding came in the form of grants. In 2018, around 40 percent of donor funding were administered by donors for project interventions and a quarter of the funding were directly received and managed by GoPNG, followed by technical support, training, and scholarships (22 percent) (Figure 4.13). While PNG has grown less education aid dependent, it remains relatively privileged in this area compared with most other countries with a similar level of per capita income. To put this in perspective, the share of development assistance in total education spending is on average 29 percent in low-income countries, 3.4 percent in lower-middle-income countries and 0.4 percent in upper-middle-income countries (World Bank 2021b).[60]

Figure 4.12. Donor-financed Education Expenditure (Approved Budget), 2013–18



Source: World Bank staff estimates using BOOST 2012-2021.

Figure 4.13. Donor-financed Education Expenditure by Type (OECD CRS), 2012–18



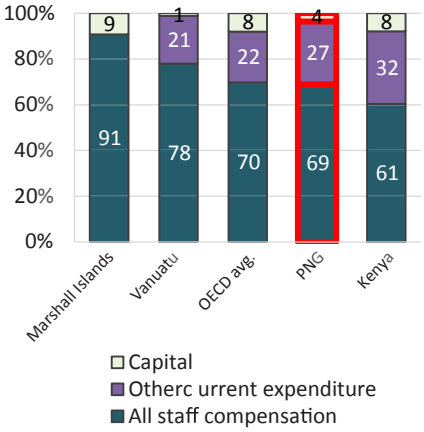
Source: OECD CRS. Retrieved from https://stats.oecd.org/ in January 2021. Note: *Excludes PNG Government as Recipient (project administrated by the donors).

57. Guande, Frederick. 2020. "Better Monitoring Needed to Transform Slush funds into Development Funds in PNG." Devpolicy (blog), September 22. https://devpolicy.org/better-monitoring-needed-to-transform-slush-funds-into-development-funds-in-png-20200922/.
58. The objective of the OECD's CRS database is to provide a set of readily available basic data that enables analysis on where aid goes; what purposes it serves and what policies it aims to implement; on a comparable basis for all Development Aid Countries (DAC) members.
59. The amount includes on- and off-budget support including educational projects implemented in the donor countries. Retrieved from https://stats.oecd.org/.
60. If the contribution of households is taken into account, the share of development assistance in total education spending increases to 18 percent in low-income countries, 2 percent in lower-middle-income countries and 0.3 percent in upper-middle-income countries.

241. **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 4.14). 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 (Figure 4.15), and partially because of the increase in salaries.[61] 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[62] (0.5 percent of total education expenditure or 0.9 percent of total education expenditure for teacher[63]) for teacher training in 2021, GoPNG has shown an effort to improve teacher quality since 2017 (Figure 4.16). However, the total amount (K 38.0 million)[64] budgeted for teacher

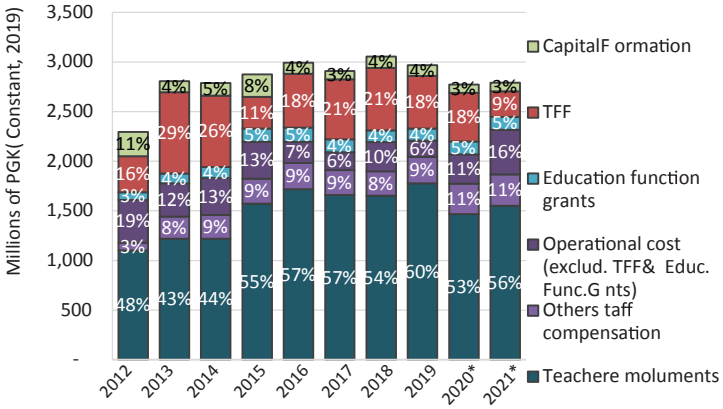
Figure 4.14. National Government Expenditure on Education

a. by Economic Classification, 2012–21



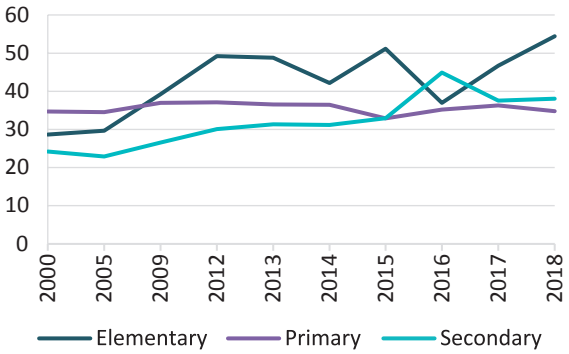
Source: World Bank staff estimates using BOOST data for 2012–21; World Bank Edstats, accessed January 2021.

b. International Comparison, 2019 or latest available



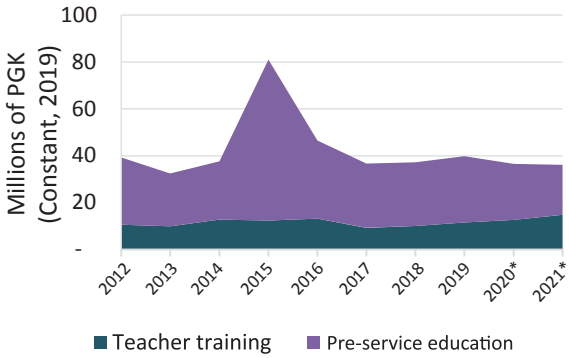
Source: World Bank staff estimates using BOOST data for 2012–21.
Note: *Revised budget for 2020 and approved budget for 2021.

Figure 4.15. Student-Teacher Ratio by Level of Education, 2000–18



Sources: DoE Statistical Bulletins from 2000–18; DoE 2018b.

Figure 4.16. National Government Expenditure on Teacher Education, 2012–21



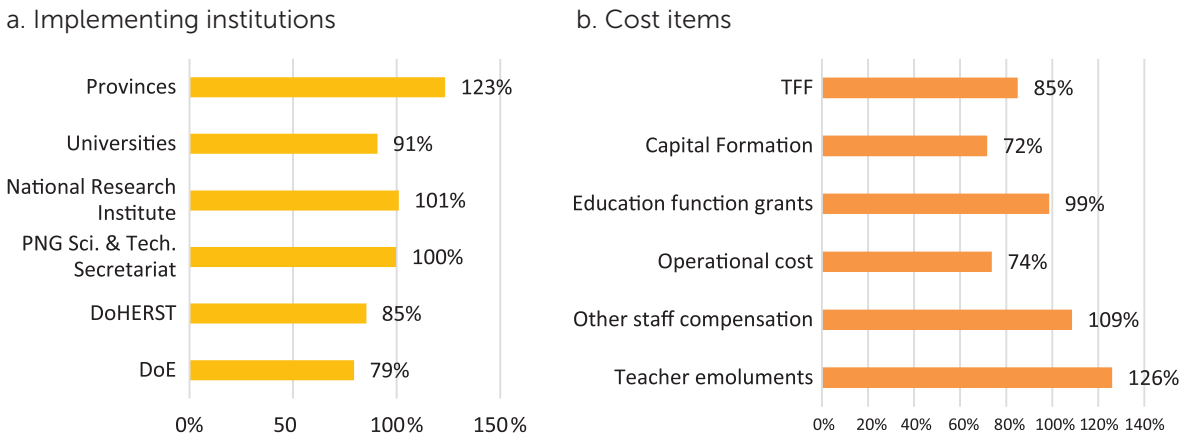
Source: BOOST 2012–21.
Note: *Revised budget for 2020 and approved budget for 2021.
Teacher training includes inclusive education.

61. 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.
62. Lower-bound estimates. This amount does not include expenditure on Teachers' Personnel Management Services.
63. Total education expenditure for teacher includes teacher emoluments.
64. 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.

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.

242. **At the aggregate level, budget execution in education has improved over time. However, performance can vary substantially between institutions and cost items.** Figure 4.17a and 4.17b illustrate average budget execution (measured as the difference between approved and actual spending on education) by implementing agencies and cost items for the 2013–19 period. Overall, the execution rate for education stood at an average of 101 percent per year during the analyzed period. Although the gap appears to be smaller in 2018, the difference for some spending items such as teacher emoluments and capital development is still above 20 percent. Teacher emoluments and education function grants tend to be protected at a higher execution rate. The execution gap for the national education subsidy is also relatively small with the exception of a higher percentage of underspending in 2015 and 2016. Per implementing agencies, the National Research Institute, PNG science and Technology Secretariat and universities fared better with higher execution rates across years. The low execution rate is mainly due to the slow release of the appropriated budget. According to the NEFC's 2018 fiscal report, rollover funds from previous years were a significant funding source in the first half of the year. With funding for the first two quarters of 2017 unavailable, the previous year's budget was used to fund sector plans as indicated in the second quarter reviews. Education is one of the service delivery sectors that has shown heavy reliance on previous years. The overall equity and equal disbursements of funding remains a concern.

Figure 4.17. Gaps Between Actual and Approved Spending, 2013–19 average



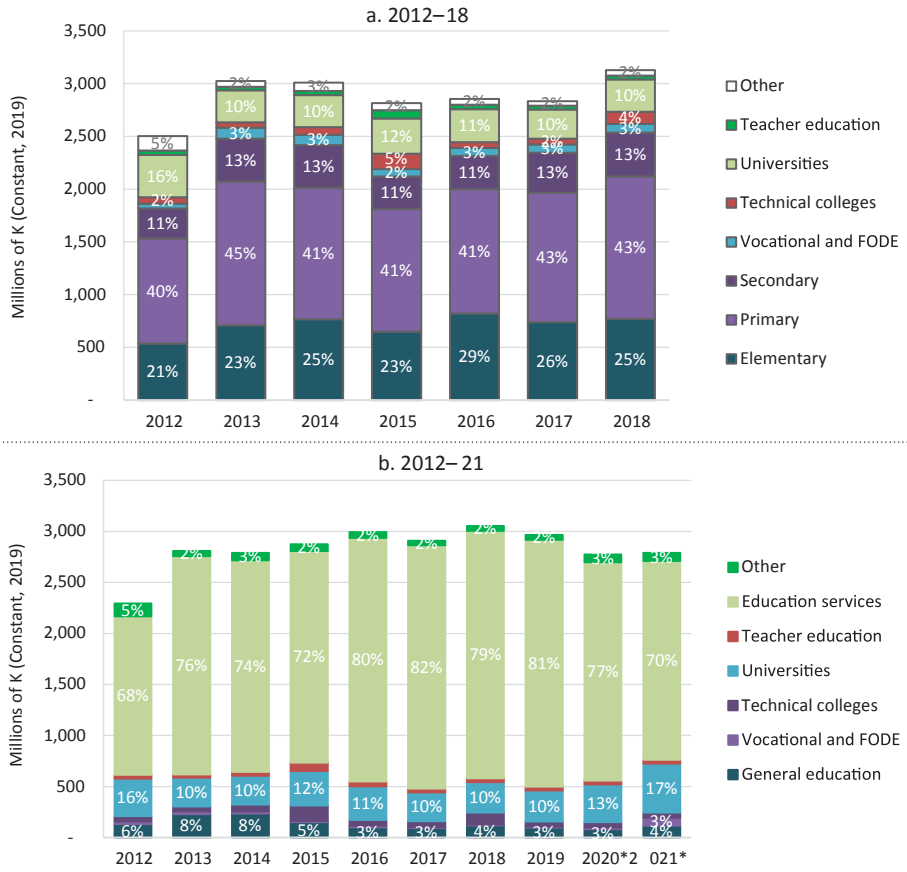
Source: World Bank staff estimates using BOOST data for 2012–21.
Note: Operational cost category comprises spending on goods and services, utilities, property costs, and transfers.

243. **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 percent),[65] and teacher education (1 percent) (see Figure 4.18a). 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.

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

244. **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 4.18b). 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 4.18. 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.

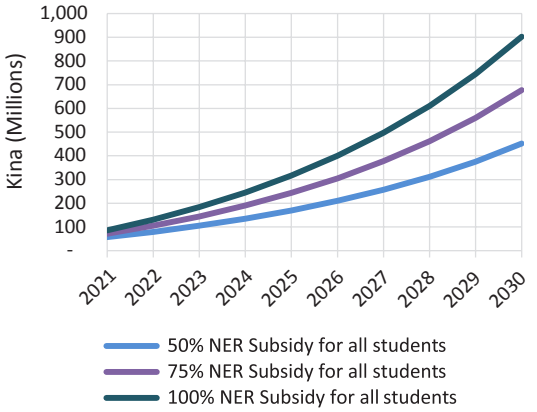
245. **Education services in universities are not reported clearly due to a lack of monitoring and publicly available data.** There are five state universities and two church-run universities in PNG.[66] In addition to funding state universities, GoPNG also provides financial support for infrastructure development in church-run universities. Although more than 10 percent of education outlays are spent on universities—with an increased amount of investment in recent years—how these funds are translated into educational inputs (enrollment and staffing), outputs (completion rates), and outcomes (employability) is unknown. Transition into tertiary education by those completing secondary school is severely constrained by the limited number of admissions available each year.[67] According to the latest available number of higher education entrants from GoPNG's National Strategic Plan Taskforce in 2011, 80,000 school leavers (about 1 percent of the population) enter the labor force each year. More than 15,000 applicants are admitted into colleges, universities, and other higher education and training institutions each year.

246. **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 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) (Figure 4.19). Figure 4.19a shows 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). Figure 4.19b shows the estimated cost when subsidizing all four and five-year-old children, those in church-run ECE centers only, and those in nonprivate ECE centers. The total cost of government subsidies for each scenario ranges from K 2.4–K 4.1 billion or between K 523 million and K 902 million per year by 2030 (13–22 percent of the projected education budget). Figure 4.19c shows the estimates when reducing the policy target to just five-year-old children, which 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).

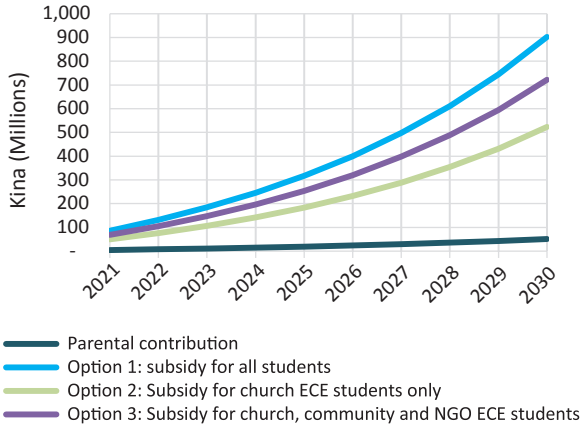
66. State-run universities are University of PNG, University of Technology, University of Goroka, University of Environment and National Resources, and Western Pacific University (which just started enrollment in 2021); Church-run universities are: Divine Word University and Pacific Adventist University.
67. World Bank. 2018. Systematic Country Diagnostic: The Independent State of Papua New Guinea.

Figure 4.19. Sensitivity Analysis of Subsidy Costs for Early Childhood Education, 2021–30

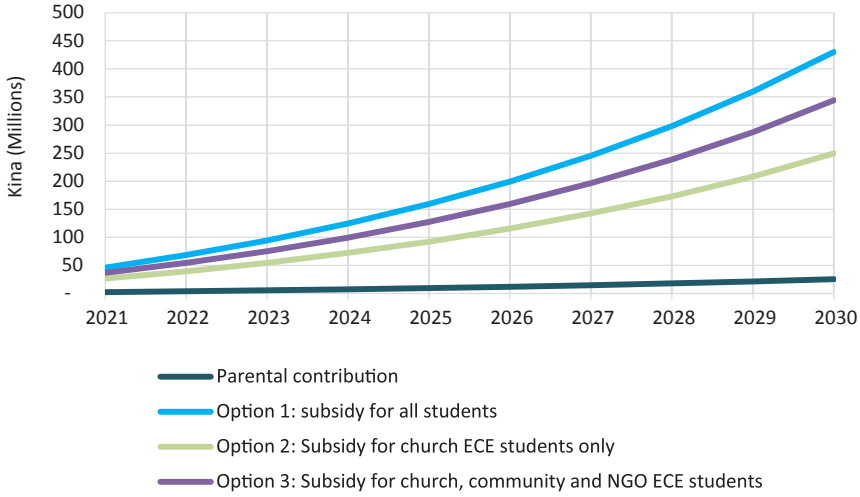
a. Access scenario costs, 4- and 5-year-olds



b. Cost for different scenarios, 4- to 5-year-olds



c. Scenario costs, 5-year-olds only

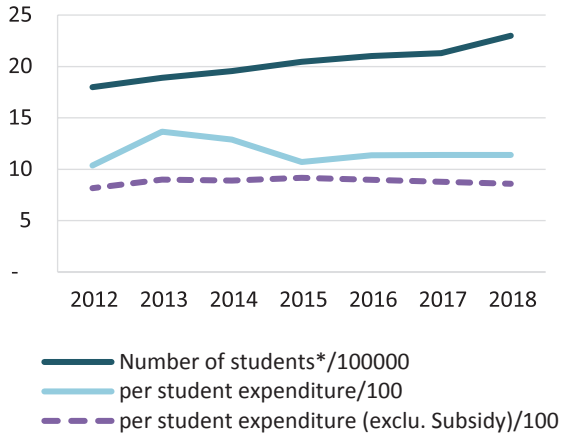


Source: PNG Department of Education and National Office for Child and Family Services (2020). Early Childhood Education Cost and Financing Study Report.

247. **Despite the rise in education spending since 2014, in per-student terms, education spending has remained almost flat and even declined for secondary education.** Figure 4.20 introduces the dynamics of aggregate student enrollment and 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 (Figure 4.21) 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).[68]

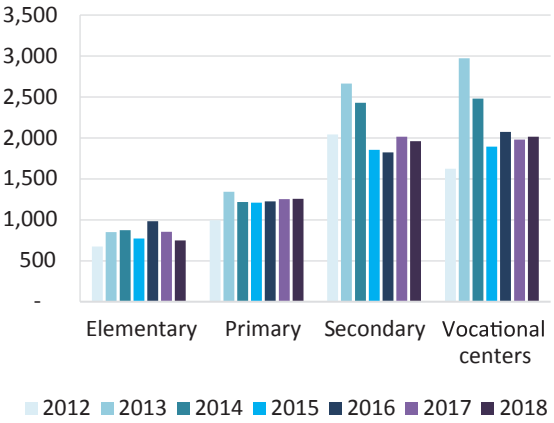
[68] World Development Indicators, World Bank.

Figure 4.20. 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 4.21. Unit Cost by Level of Education (Real Terms), 2012–18

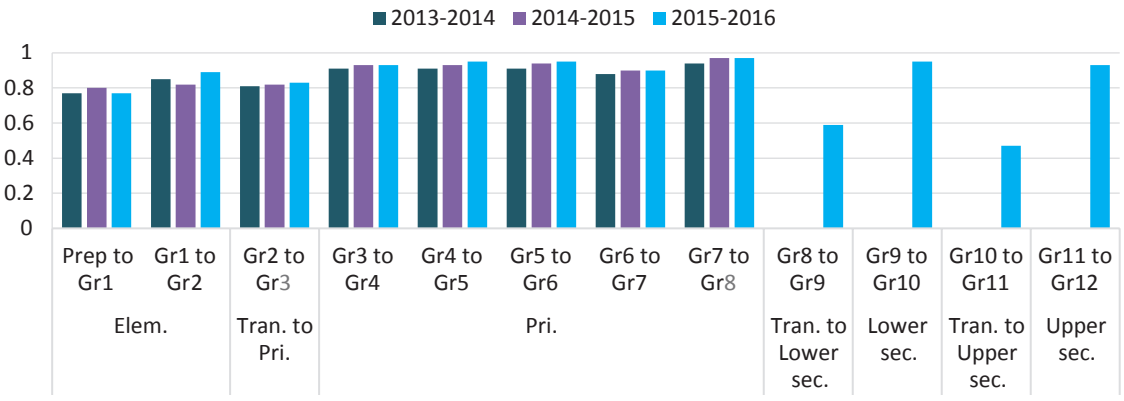


Source: World Bank staff estimates using BOOST data for 2012–18.

4.3. Efficiency of education expenditure

248. **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 preprimary to Grade 1 (Figure 4.22). 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. Retention rates are alarmingly low in PNG: 59 percent of students progress from Grade 8 to Grade 9, and just 47 percent progress to Grade 11 from Grade 10. A large number of out-of-school children are from disadvantaged households. In addition to economic barriers, major push-out factors include social and cultural barriers such as entrenched gender stereotypes, tribal conflicts, and children with disabilities. There are also political and governance barriers concerning administration and leadership deficiencies in schools and local governments and a lack of qualified and motivated teachers, negatively impacting education quality (DoE 2018a).

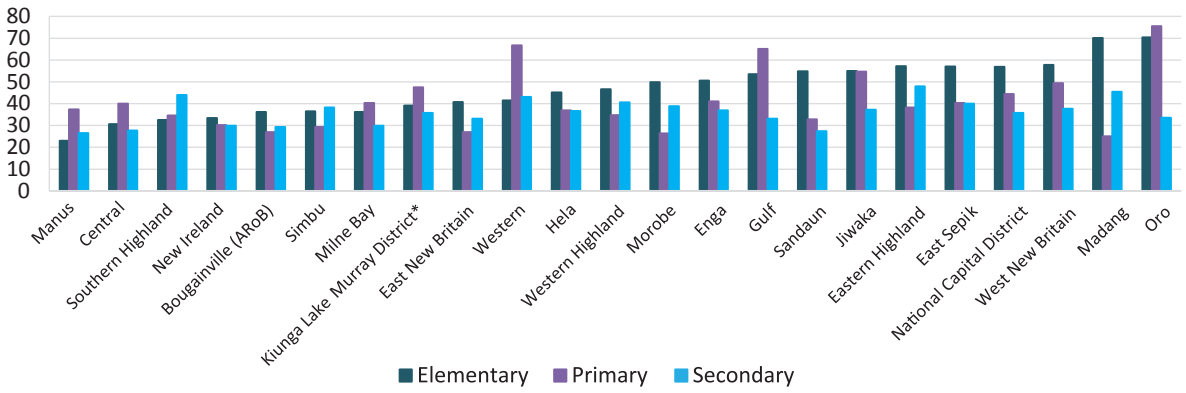
Figure 4.22. Intra-grade Retention Rate from Preprimary to Upper Secondary, 2013–16



Source: DoE 2018b.

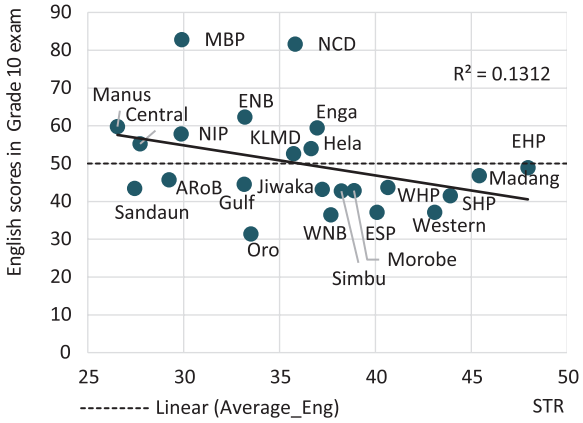
249. **Large variations across provinces in student-teacher ratios (STRs) at the elementary and primary level also indicate inefficiency and inequitable allocation of resources.** STRs range from a low of 23 in elementary schools in Manus to 70 in Madang and Oro. Likewise, the gap between the lowest and highest primary STRs is about 50; the variation is significantly less (21) at the secondary level (Figure 23). Although low STRs do not necessarily translate into good learning outcomes, high STRs appear to have a negative impact on education quality (Figure 4.24 and Figure 4.25). Figure 4.24 shows that all provinces that had above-average English scores in the Grade 10 exam kept STRs below a rate of 37 in secondary schools. Students in provinces with the highest primary-level STRs (above 45) scored below the national average on PILNA (485) in 2015. The four top-performing provinces on PILNA in 2015 (Simbu, Southern Highlands, Manus, and Milne Bay) had a primary STR below 40 (Figure 4.25). Madang, South Highland, East Sepik, and Simbu had above-average scores on PILNA in 2015 with primary STRs below 40 but dropped under the national average score line when STRs in secondary schools neared or exceeded 40.

Figure 4.23. Student-Teacher Ratio by Level of Education and Province, 2017



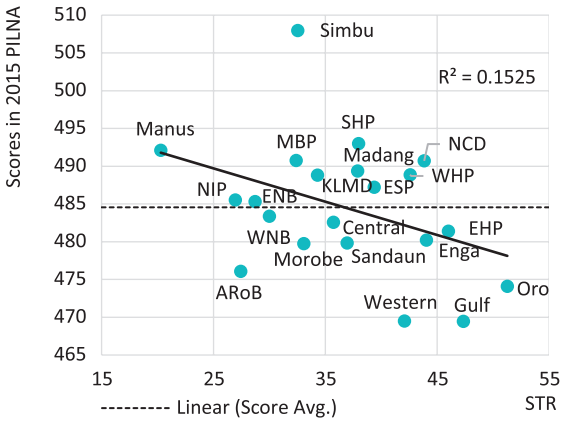
Source: DoE 2017.
Note: *The Kiunga Lake Murray District is located in the Western Province.

Figure 4.24. Secondary STR vs. English Scores in Grade 10 Exam, 2017



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

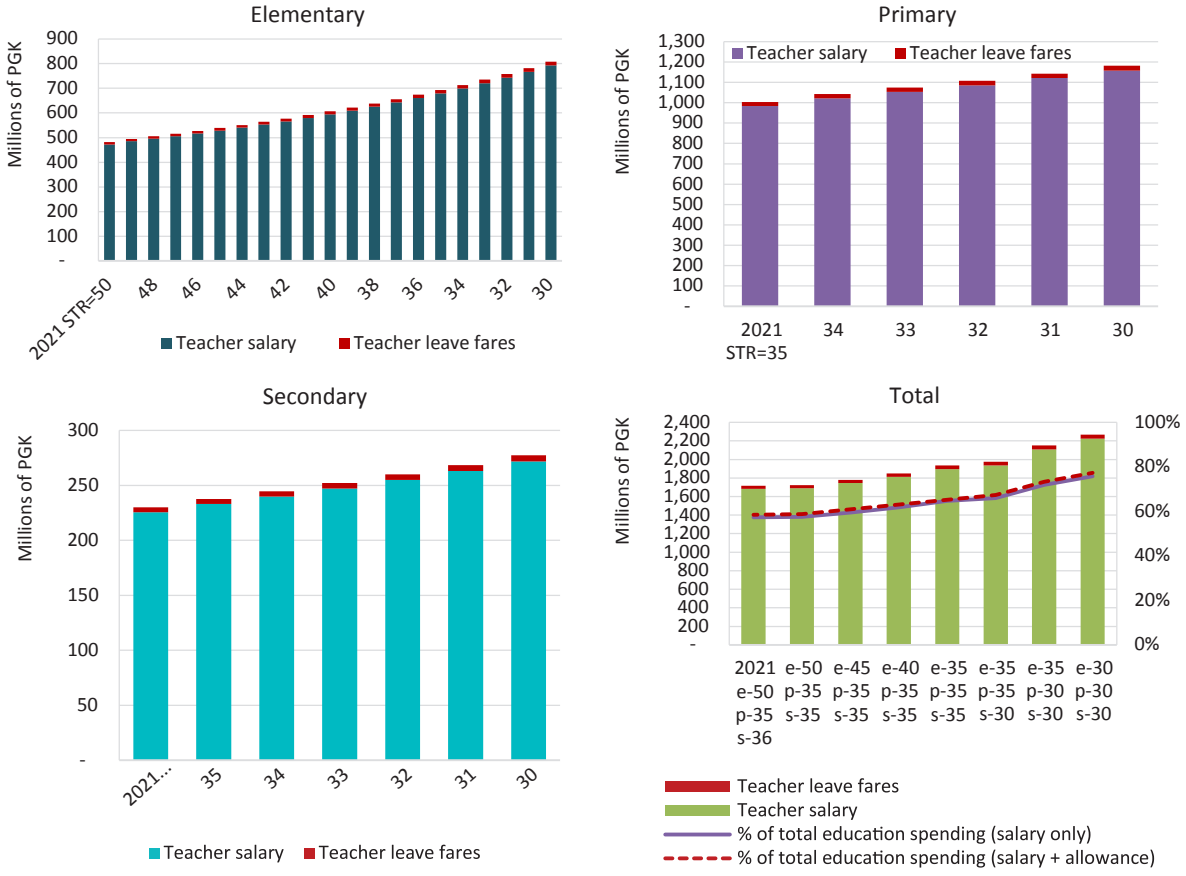
Figure 4.25. Primary STR (2013) vs. PILNA 2015 Scores (Gr5)



Sources: DoE 2018b; DoE 2013.
Note: The PILNA 2015 score is an average of scores in literacy and numeracy. KLMD is located in the Western Province.

250. **GoPNG would need to increase expenditure on teacher emoluments[69] by at least 9 percent in order to reduce STRs to a more reasonable level.** Using information on average teacher salaries in 2017[70] and projected enrollments in elementary, primary, and secondary schools in 2021,[71] it is possible to estimate teacher emoluments for different STRs at different levels of education. Holding the number of students and the average teacher salary constant, Figure 4.26 shows the incremental investment GoPNG would need to make in order to bring down STRs to the optimum in elementary, primary, and secondary schools. To reach the target STRs of elementary: 45, primary: 35, secondary: 35, expenditures on teacher emoluments would have to rise by at least 9 percent of current appropriated amount (K1.6 billion), constituting 61 percent of total education budget in 2021 as a result. To reach a ratio of 30 for all three levels of education, GoPNG would need to spend around K2.3 billion on teacher emoluments, a rise by at least 39 percent of current budget and constituting 77 percent of total education budget in 2021. Although the target STR in NEP (2020–29) is 35 for elementary and primary and 30 for secondary, it is hard to ensure it as the optimal STR for all three levels of education given the opportunity costs and the high volume of investment needed to reduce the STR in elementary schools in particular.

Figure 4.26. Sensitivity Analysis of Government Spending on Teacher Emoluments based on STRs

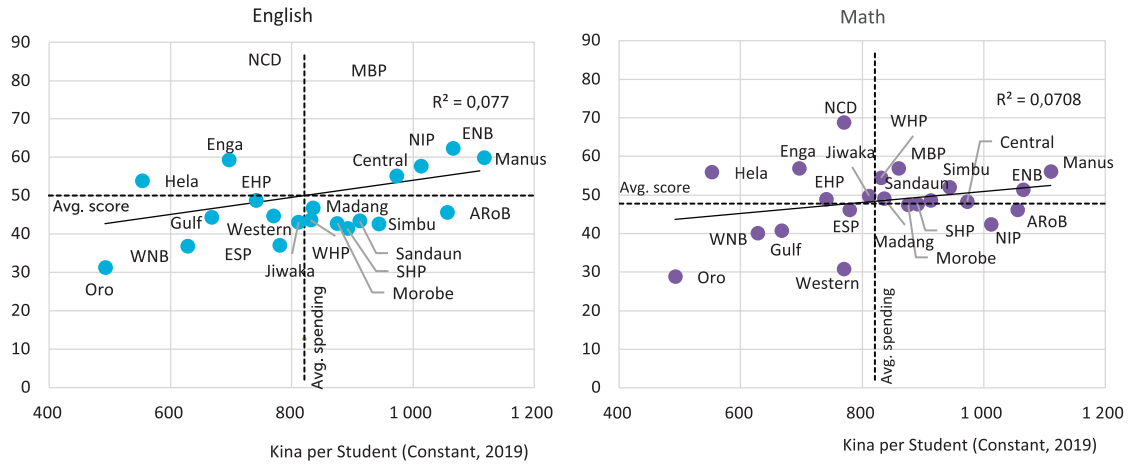


Sources: World Bank staff estimates using BOOST data for 2012–21; DoE 2017.

69. Includes teacher salaries and teacher leave fares (generally about 2 percent of teacher salaries).
70. According to PNG's NEP (2020–29), the average teacher salary rises by about 12 percent as a result of the upgrading of elementary and primary teachers to primary and secondary, respectively. Hence, we assume that the average primary teacher's salary is 12 percent more than the average elementary teacher; the same assumption is made for secondary teachers compared to primary teachers. We also assume that teachers in vocational centers have the same salary level as secondary teachers. This study uses the total amount of teacher salaries from BOOST and total number of teachers by level of education in 2017 to estimate average teacher salaries for different levels of education. These estimates are the following: K 25,114 for elementary school teachers; K 28,128 for primary school teachers; K 31,503 for secondary school teachers.
71. Data on projected enrollment are from NEP (2020¬–29). Considering the increase in enrollments from 2017 to 2021, this study uses projected enrollments in 2021 (for when actual numbers are unavailable) as the base number for estimations in order to reflect the real volume of investment.

251. **Provincial education spending is mainly comprised of teacher salaries, which is weakly correlated with student learning outcomes.** As mentioned in the previous section, education quality is a persistent challenge in PNG. Students in PNG scored lower than the regional average on PILNA in 2015 and 2018 despite increased proficiency levels in literacy and numeracy in 2018. Figure 4.27 shows the weak correlation between provincial education spending per student and Grade 10 exam scores. Some provinces (Hela, Enga, and National Capital District) spent less than the national average but had above-average scores in both English and math, while students in other provinces (Bougainville, Morobe, and South Highland) scored below the national average but spent much more per student. The share of teacher emoluments varies from 83 percent to 100 percent depending on different provinces. Accordingly, the share of education function grants varies from 0 percent to 17 percent.

Figure 4.27. Provincial Education Spending per Student vs. Scores in Grade 10 Exam, 2017



Note: Provincial education spending include teacher emoluments and education function grants. The share of teacher emoluments varies from 83 percent to 100 percent depending on different provinces. Accordingly, the share of education function grants varies from 0 percent to 17 percent.
Source: BOOST data for 2012–18; DoE 2018b.

Box 4.1. - Benchmarking Provincial Education Spending Performance

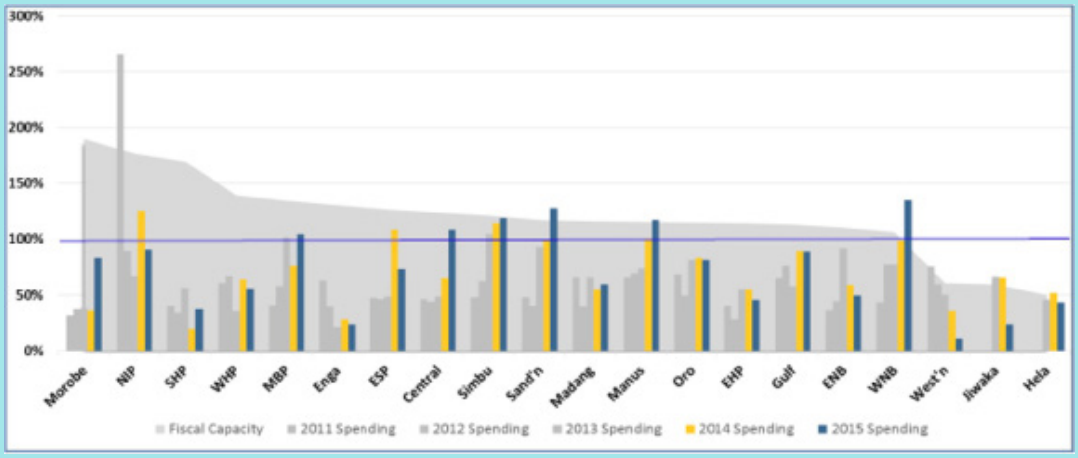
The National Economic and Fiscal Commission, an independent constitutional advisory body, was established by the Organic Law on Provincial Governments and Local Level Governments (OLGPLLG). NEFC publishes annual provincial expenditure reviews (PERs) that track provinces' fiscal performance resourcing key service delivery. These reviews include the sectors identified in MTDP III and Vision 2050, focusing on spending on the 11 MPAs for which the provinces are responsible.

The PERs compare each province's actual spending on the MPAs against NEFC's estimated cost of the activities and that province's fiscal capacity. Fiscal capacity is measured by dividing the revenue available in the province to meet recurrent goods and services costs (internal revenue and revenue from national grants) by the estimated cost of providing core services in the province. A province has a fiscal capacity of 100 percent if it has sufficient revenue to meet the estimated costs of delivering all core services to a minimum standard. Out of the 11 MPAs, three are related to education and must be supported with operational

funding. These include: (i) provision of school materials (costs excluding procurement of textbooks and other curriculum materials which are funded by DoE; (ii) supervision by district and provincial officers (costs including travel allowance and accommodation); and (iii) operation of district education offices (costs including utilities, office equipment, and payroll management).

According to NEFC's latest PER, only several provinces spent sufficiently to deliver basic education services in 2015 (Figure B4.1.1). The spending performance of wealthier provinces was more volatile when compared to less wealthy provinces. Only nine out of 20 provinces showed an upward spending trend between 2011 and 2015. Of those nine provinces, spending in only six (West New Britain, Manus, Sandaun, Simbu, Central, and Milne Bay) was above the cost of services line. In other words, only six provinces spent adequate money to cover the delivery of basic education services. In 2015, only 11 out of the 20 provinces allocated some portion of their internal revenue to education services—a total of K 27 million, accounting for one-quarter of education function grants and 4 percent of the national subsidy budgeted. As a group, provinces spent about 74 percent of what is necessary to fund education services.

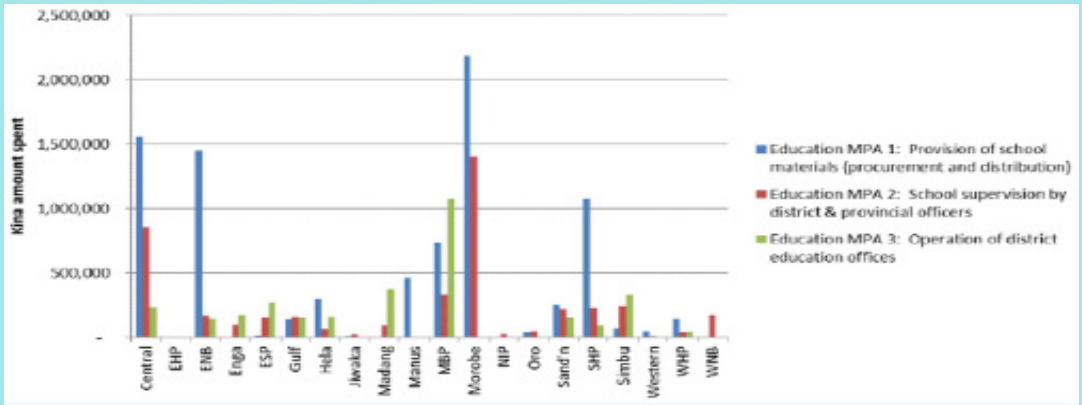
Figure B4.1.1 Provincial Education Spending Performance, 2011–15 (Recurrent Costs)



Source: NEFC 2015.

Overall, provinces demonstrated inconsistency and imbalance in funding the three MPAs in 2015 (Figure B4.1.2). Some provinces (Jiwaka and New Ireland) only funded one MPA over the others. Others (South Highland and Milne Bay) invested in all MPAs, but with imbalanced amounts.

Figure B4.1.2 Expenditure on Education MPAs by Province, 2015

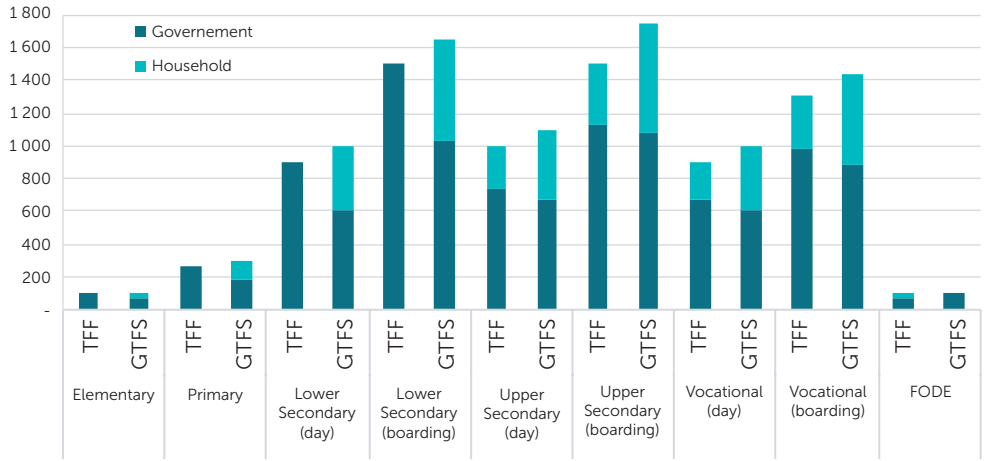


Source: NEFC 2015.

4.4. Equity of education spending

252. **The reintroduction of user fees is likely to affect access to education for disadvantaged households.** It may undermine school quality when students are allowed to stay in school regardless of their ability to pay. 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 (Figure 4.28). 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. On the other hand, in some cases students were accepted into schools regardless of their abilities to pay even before the introduction of the TFF. Students are seldom asked to leave school or retained at the same grade when they cannot to pay school fees; instead, they are exempted or allowed to pay according to ability (Howes and others 2014). With limited budgets, schools may maintain enrollment at the expense of quality of education. Because national subsidies are the main source of school funding (World Bank 2014), this policy shift requires schools to resort to alternative funding sources such as provincial subsidies, provincial/local government grants, school fundraising, and other channels. Schools in regions with lower fiscal capacity are more vulnerable to hardship as a result. 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. While the policy is yet to be made official, it would have significant education system and financial implications.

Figure 4.28. Tuition Fees under TFF (2012–19) and GTFS (2020 onward)
(Kina per student)



Sources: Howes and others 2014; DoE's ministerial policy statement 01/2021 (http://www.education.gov.pg/documents/MPS-No-1-of-2021-GTFS-Policy.pdf).

253. **The 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.[72] According to the second round of High-Frequency Phone Surveys (HFPS) conducted by the World Bank in early 2021,[73] 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.

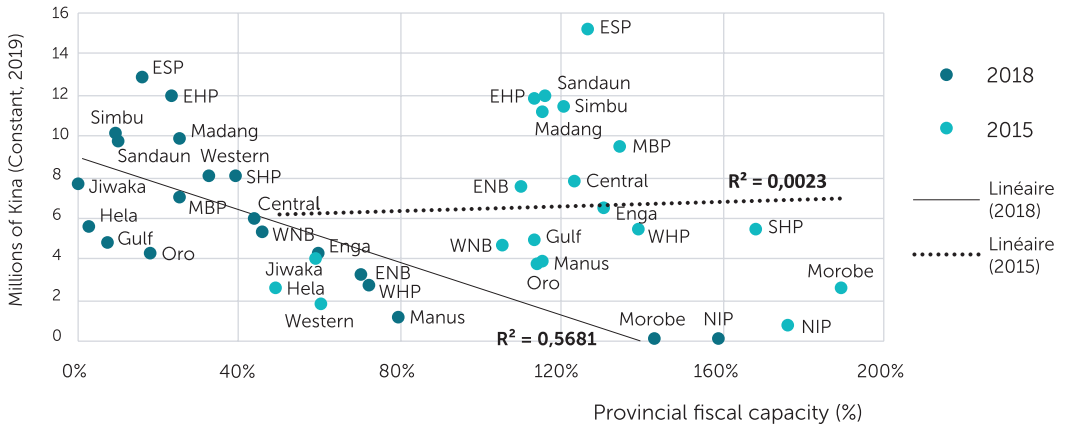
254. **Remedial measures were taken by DoE to ensure learning continuity during and after the COVID-19 pandemic with international support.** In April 2020, DoE took the lead to conduct a rapid needs assessment of the COVID-19 impact on the education system in more than 400 schools to inform medium- 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 10 million from the Government of Australia, to support distance learning and school reopening while building a more resilient education system.[74] For example, under the program, learning kits will be distributed to students living in the most remote areas; teachers will be trained on delivering remote lessons and conducting psychosocial well-being assessments with students; handwashing stations will be installed along with the distribution of hygiene kits in selected areas.[75]

255. **Despite concurred donor support in improving the sanitation condition in PNG, many schools in the country still face challenges of accessing clean water and sanitation facilities**. Amid the COVID-19 crisis, the Government of Australia committed K 10 million to support Water, Sanitation and Hygiene (WASH) in schools, as well as remedial programs for secondary schools.[76] With the aid of the Government of Japan, UNICEF is establishing handwashing points in 44 National Capital Schools.[77] However, there is still much work to be done given that the country ranks currently at the bottom of all Pacific countries for all WASH related health statistics. According to PNG's WASH in Schools (WinS) Policy 2018-2023, 51 percent of schools in the country have access to water while only 28 percent have access to sanitation. Most schools do not have access to piped water systems and depend heavily on rainwater to meet the drinking and hygiene needs of students. Only 10 percent of schools promote handwashing with soap.[78]

72. 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.
73. 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.
74. https://www.unicef.org/png/press-releases/papua-new-guinea-launches-its-covid-19-education-emergencies-response-and-recovery
75. Global Partnership for Education: https://www.globalpartnership.org/blog/papua-new-guinea-reinventing-learning-time-coronavirus
76. https://www.unicef.org/png/press-releases/papua-new-guinea-launches-its-covid-19-education-emergencies-response-and-recovery
77. https://aa9276f9-f487-45a2-a3e7-8f4a61a0745d.usrfiles.com/ugd/aa9276_8631bf3ba1764ef7bba34c3a6ea79180.pdf
78. https://www.unicef.org/png/what-we-do/water-sanitation-and-hygiene

256. **Provinces with lower fiscal capacity receive more education function grants from the central government to cover operational costs of pre-tertiary education.** Figure 4.29 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).

Figure 4.29. 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.

257. **Gender parity is mostly achieved in elementary and primary education but lags in secondary education.** The number of female students enrolled in elementary and primary schools increased between from 2009 and 2016, rendering a gender parity index (GPI) close to 100 percent (Figure 4.20). Gaps in GPI across provinces in elementary and primary education are also relatively small, with the largest gap of 0.3 percent in primary education between the Hela Province (0.8), Sandaun Province (0.8), and the Milne Bay Province (1.2) (Figure 4.31). In contrast, gender parity in secondary education deteriorated over the same period, exhibiting large variations across provinces. In the Hela Province, only one in three adolescents enrolled in secondary schools is female; in Milne Bay Province, 0.3 more girls than boys are enrolled. One plausible explanation for the low gender parity in secondary education is that female students are much less likely to transition to secondary or upper secondary schools (GPE 2019; PNG CSOs 2015). Regression analysis suggests that school remoteness is not a direct contributor. Still, other factors like safety on the way to school and cultural traditions[79] may play a role in preventing girls from attending school. In general, provinces like Manus, East New Britain, New Ireland, Autonomous Region of Bougainville, Milne Bay, and the National Capital District fare better as gender parity is achieved or almost achieved in general education.

[79] Such as keeping girls at home to help with domestic duties, early marriage, and so on.

Figure 4.30. GPI in Enrollment by Level of Education, 2009–16

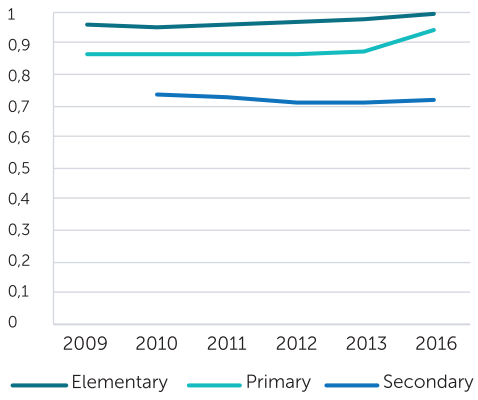
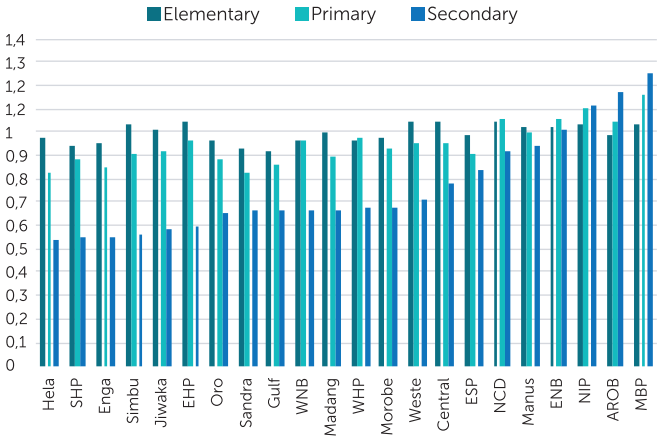


Figure 4.31. GPI in Enrollment by Level of Education and Province, 2016



Sources: DoE 2009; DoE 2018b; DoE 2018c.

4.5. Recommendations

258. **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 Chapter 2 above: without more revenue PNG cannot afford the significant improvements that are urgently needed in education (as well as other sectors).

259. **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

260. **Spending on ECE in PNG currently represents a negligible share of central government spending[80] 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.

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

261. **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 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. Table 4.3 includes projections on detailed finance and costing with various scenarios in the short-, medium- and long-term.

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

262. **The education sector should prioritize expanding and improving in-service teacher training to equip them with ability to identify and take actions to support low performing students.** 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,[81] 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 low performing students, 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.

263. **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

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

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. 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.

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

264. **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 school, teacher, 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 lowest performing schools and ensuring these schools have minimum school resources, including learning resources, infrastructure, and sufficient discretionary funds.

265. **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 more effectively monitor performance. Reportedly, these are problems of underinvestment. However, it seems contradictory to invest such a large volume of public resources in the education sector and not in better use of data. Indeed, 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 such incentives are probably required, as are changes to lower the administrative burden of reporting on schools.

266. **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.

267. **And 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

268. **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).

269. **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 – Australia 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 4.3. 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.

270. **In conclusion, along with health, education 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.** 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 successful pursuit of greater access must now be matched by the equally important pursuit of better quality. There is a need for consolidation and increased emphasis on quality of spending to improve the quality of education while also supporting equity. There is also the need to expand ECE in ways that in the short-term can target the most disadvantaged and while building partnerships and establishing foundations for full coverage in the long-term. All must be pursued in the context of affordability given the financial shortfalls of the overall government budget, with prioritization and careful planning for the short-, medium- and long term.

Annexes

Annex 1. Selected Economic and Social Indicators

	2016	2017	2018	2019	2020	2021	2022	2023
						Projections		
National income and prices	*(In percent, unless otherwise indicated)*							
Nominal GDP (US$ billions)	20.8	22.7	24.1	24.8	23.6	25.4	27.3	28.1
Real GDP growth	5.5	3.5	-0.3	5.9	-3.9	3.5	4.2	2.4
Resource sector	10.8	4.5	-3.7	9.3	-5.8	4.3	5.6	1.4
Non-resource economy	2.3	1.5	2.7	2.4	-0.2	1.1	2.0	2.5
Consumer price inflation, period average	6.7	5.4	4.6	3.7	5.3	5.0	5.0	5.0
GDP deflator	2.5	7.7	9.8	0.0	0.9	6.9	5.6	3.1
Real exchange rate change, US$/PGK*	-6.9	1.4	-1.1	-1.0	1.7	0.7	0.4	0.4
Fiscal accounts	*(In percent of GDP, unless otherwise indicated)*							
Revenue and grants	16.1	15.9	17.7	16.3	14.9	15.2	16.0	17.0
Non-resource tax revenue	12.8	12.4	12.2	12.1	11.6	12.0	12.2	13.3
Resource revenue	0.6	0.9	1.8	1.4	0.6	0.9	1.0	1.0
Grants and other revenue	2.7	2.5	3.7	2.8	2.7	2.4	2.8	2.7
Expenditure and net lending	20.9	18.4	20.3	21.2	23.0	22.6	21.3	20.1
Primary expenditure	18.9	16.1	17.9	18.7	20.5	20.1	19.1	17.7
Interest payments	1.9	2.3	2.4	2.6	2.6	2.5	2.2	2.4
Overall fiscal balance	-4.7	-2.5	-2.6	-5.0	-8.1	-7.3	-5.3	-3.2
Non-resource primary balance (% non-extractive GDP)	-4.5	-1.6	-2.7	-5.2	-8.0	-7.6	-5.5	-2.3
Net public debt	34.6	35.9	36.6	39.5	49.0	52.2	53.3	54.3
Gross government debt and guarantees	34.6	35.9	38.2	40.0	49.0	52.2	53.3	54.3
Gross government savings	0.0	0.0	1.5	0.5	0.0	0.0	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	9,825	10,358	10,885	11,139
Extractive sector	6,730	8,335	8,862	9,965	8,481	8,936	9,404	9,627
Imports, c.i.f.	2,077	3,066	3,519	4,012	3,008	3,672	4,015	4,743
Current account	5,286	5,402	5,676	5,520	5,608	3,683	2,526	1,053
(in percent of GDP)	25.5	23.8	23.5	22.2	23.8	14.5	9.3	3.8
Overall balance of payments	-184	36	517	101	366	264	85	165
Gross official reserves	1,681	1,717	2,235	2,335	2,701	2,965	3,051	3,216
(in months of goods and services imports)	4.3	4.0	4.8	6.6	4.9	4.3	3.8	3.8
(in months of non-extractive imports)	12.0	8.6	9.5	15.5	14.2	14.7	14.3	11.4
Money and credit	*(In percent, unless otherwise indicated)*							
Broad money growth	10.9	-0.9	-3.8	9.6	0.6	8.0	9.2	9.2
Domestic credit growth	24.6	-0.1	-7.9	12.7	6.3	6.2	6.9	6.9
Growth of credit to the private sector	7.2	-3.8	7.4	10.5	2.9	3.2	6.0	8.4
Interest rate of 182-day T-bills, period average	7.4	7.1	7.0	6.5	4.8	4.5	5.7	6.1
Social indicators	*(In percent, unless otherwise indicated)*							
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	..	..	..	..

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

Annex 2. Review of International Taxation Aspects of Income Tax Act 1959

(consolidated to no 35 of 2015)

Introduction

This note provides a high-level review of Papua New Guinea's Income Tax Act 1959 (Consolidated to No 35 Of 2015) (ITA). It focuses on those parts of the legislation concerned with the taxation of multinational enterprises (MNEs) subject to taxation in Papua New Guinea (PNG).

The note is organized as follows:

A. An overview of key conclusions and recommendations.

B. An analysis of primary taxing rights established in ITA, including analyses of the rules in ITA on PNG source taxation, residence permanent establishments.

C. An assessment of the transfer pricing rules in ITA. (A review of the IRC Circular on transfer pricing (No. 2011/2) is contained in a separate note).

D. A discussion on anti-avoidance and simplification rules contained in ITA, including: general anti-avoidance rules; interest deductibility provisions and rules to limit deductions for management fees.

E. Country by Country Reporting.

F. A discussion on international aspects of the ITA rules on capital gains.

The note does not discuss the provisions in the ITA applicable only to specific sectors such as petroleum, minerals, forestry or gas.

A. Overview and key recommendations

1. Many key international tax provisions of ITA are dated and require upgrading.

2. The sections concerning residence, permanent establishments and transfer pricing contain significant flaws that are likely to reduce their effectiveness. We recommend that PNG gives some priority to addressing these issues.

3. The anti-avoidance rules regarding interest payments and management fees, and the general anti-avoidance rules, have the potential to be very useful.

4. PNG may wish to consider measures designed to simplify the enforcement of, and taxpayer compliance with, international tax rules. Such measures may be especially relevant while PNG has relatively low administrative capacity and restricted access to information and data. In this context, we welcome the positive comments (in PNG's transfer pricing circular) concerning transfer pricing 'advance pricing agreements' and suggest that PNG revisit the conclusions (also in the transfer pricing circular) concerning safe harbors.

5. The transfer pricing rules are very complex in comparison to that of most countries. We recommend that PNG consider simplifying and upgrading these rules to ensure their effectiveness.

6. A key issue with the transfer pricing rules is that they apply only if and when the 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 is likely to impact taxpayer compliance and create uncertainty for taxpayers. It also impacts on the ability of the tax administration to require or enforce transfer pricing documentation or enforce some penalties. We recommend that PNG considers revisiting this aspect of the rules.

7. The transfer pricing guidance in No. 2011/2 (Commissioner General's Interpretation and Application of The Taxation Laws) can be expected to provide helpful clarification of how PNG interprets the transfer pricing rules and improve the predictability of their application. We provide detailed comments and recommendations on this document in a separate note.

8. The rules on transfer pricing and permanent establishment do not incorporate the enhancements contained in the G20/OECD BEPS initiative, although we note that rules to introduce country by country reporting have been introduced into the ITA, and that the Income Tax (International Agreements) Act 1987 has been modified to encompass the Multilateral Convention on Tax Treaty Related Matters (MLI) and the Convention on Mutual Administrative Assistance (MACC). We suggest that, as the relevant law on transfer pricing and permanent establishment is addressed, the opportunity to incorporate BEPS recommendations is taken, in order to strengthen the effectiveness of PNG's rules to counter profit shifting, and to ensure consistency with revised treaties and best international practice.

9. There do not appear to be current rules in the ITA on capital gains.

10. As a member of the Inclusive Framework, we recommend that PNG monitors developments on MNE taxation taking place within the Digital Economy workstream. The outcome of that work is likely to affect PNG's tax base and provide a framework for simplifying the taxation of MNEs in PNG.

B. Assessment of rules – primary taxation rights.

1. Section 46 ITA, states that assessable income of a taxpayer includes:

(a) where the taxpayer is a resident—the gross income derived directly or indirectly from all sources whether in or out of Papua New Guinea; and

(b) where the taxpayer is a non-resident—the gross income derived directly or indirectly from all sources in Papua New Guinea, but shall not include exempt income.

Comments and observations.

(i) In relation to MNEs, this Section establishes a PNG taxing right over PNG resident companies and non-resident persons with a PNG source of income (presumably including income generated by a permanent establishment but that is not absolutely clear). This accords with international norms.

(ii) The Section refers to 'gross income' derived from PNG sources. This is appropriate, for example, for the taxation of PNG source income derived from interest, royalties or dividends. On the other hand, it is not appropriate where the PNG source is a business operating in PNG through a permanent establishment or a capital gain relating to an asset located (or deemed to be located) in PNG. In the latter cases, reference to a measure of 'profit' or 'income' would be more appropriate.

2. The definition of 'resident'

Section 4 ITA (Interpretations) defines a resident, in relation to a company as:

a company which is incorporated in Papua New Guinea, or which, not being incorporated in Papua New Guinea, carries on business in Papua New Guinea, and has either its central management and control in Papua New Guinea, or its voting power controlled by shareholders who are residents of Papua New Guinea.

Comment and observations.

(i) the deeming of a company incorporated in PNG as PNG tax resident is in accordance with international practice.

(ii) a company not incorporated in PNG is deemed a resident if it 'carries on business in PNG' and either is centrally managed and controlled in PNG or PNG residents control its voting power. This wording would exclude from residence a non-PNG incorporated company centrally managed and controlled in PNG, but not carrying on business in PNG. Applying the ordinary meaning of the phrase 'carrying on business', this significantly restricts the ability of PNG to establish residency of a company incorporated in another jurisdiction, and significantly departs from international practice.

This definition is in line with that adopted by Australia, but the ATO guidance, following caselaw, in effect establishes residence on the basis of central management and control alone.[82] Removing the reference to "doing business" from the definition altogether avoids any doubts about the true meaning of the phrase.

(iii) there are concerns with defining PNG residence in terms of 'voting power controlled by shareholders who are residents of Papua New Guinea.' International taxation practices and norms do not employ the location of shareholders as a criterion to establish residence of a company and there is a risk that residence could be established by means of shareholding only.

(iv) there are also concerns with employing 'carrying on business in PNG' as a criterion to establish residence. In principle, the notion of carrying on business in a country is relevant to establishing the existence of a permanent establishment, but not establishing residence.

(v) the stipulation of 'centrally managed and controlled' to establish tax-residence is employed by other jurisdictions and is in line with internationally accepted norms. The term, however, is often construed as referring to the highest level of management of a company, including the location of meetings of the board of directors. Where this is the case, there is a potential for abuse through, for example, holding board meetings in a low tax jurisdiction and claiming residence there. It is important to be clear that the test is applied on the basis of where actual central management and control is exercised and not just where the formalities of Board meetings take place.

A possible alternative wording, and example of a simpler definition, more closely in line with international practice, is provided in the box below.

An alternative wording might be:

b) in relation to a company other than a superannuation fund, [resident] means:

- *a company which is incorporated in Papua New Guinea,*
- *or a company which has its central management and control in Papua New Guinea.*

For information, the equivalent Saudi Arabia rule simply states:

A company is considered resident in the Kingdom during the taxable year if it meets any of the following conditions: (1) It is formed in accordance with the Companies Law. (2) Its central management is located in the Kingdom.

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[82] Malayan Shipping Co Ltd v. Federal Commissioner of Taxation (1946) 71 CLR 156 (Malayan Shipping) at 159-160 where in applying the central management and control test of residency Williams J stated: 'But if the business of the company carried on in Australia consists of or includes its central management and control, then the company is carrying on business in Australia and its central management and control is in Australia'; www.ato.gov.au/law/view/document?docid=TXR/TR20185/NAT/ATO/00001#fp4

3. Definition of a permanent establishment

The ITA provisions defining a permanent establishment are summarized in the box below.

Section 4 ITA (Interpretations) defines a permanent establishment, in relation to a person (including the State or an authority of the State), as:

> *.. a place at or through which the person carries on any business and, without limiting the generality of the foregoing, includes—*
>
> *(a) a place where the person is carrying on business through an agent; and*
>
> *(b) a place where the person has, is using or is installing, substantial machinery or substantial equipment; and*
>
> *(c) a place where the person is engaged in a construction project; and*
>
> *(d) where the person is engaged in selling goods manufactured, assembled, processed, packed or distributed by another person for, or at or to the order of, the first-mentioned person and either of those persons participates in the management, control or capital of the other person or another person participates in the management, control or capital of both of those persons—the place where the goods are manufactured, assembled, processed, packed or distributed,*

but does not include—

> *(e) a place where the person is engaged in business dealings through a bona fide commission agent or broker who, in relation to those dealings, acts in the ordinary course of his business as a commission agent or broker and does not receive remuneration otherwise than at a rate customary in relation to dealings of that kind, not being a place where the person otherwise carries on business; or*
>
> *(f) a place where the person is carrying on business through an agent who does not have or does not habitually exercise, a general authority to negotiate and conclude contracts on be half of the person;*

197 A (Agreements and Determination of Source of Certain Income) defines a PE as follows.

> *permanent establishment", in relation to a taxpayer, means—*
>
> *(a) a place that is a permanent establishment of the taxpayer by virtue of the definition "permanent establishment" in Section 4; or*
>
> *(b) a place at which any property of the taxpayer is manufactured or processed for the taxpayer, whether by the taxpayer or another person;*

Comments and observations

11. Overall, the ITA definition of a permanent establishment departs from international practice and is unlikely to be fully effective. The internationally accepted approach to permanent establishments uses two main concepts: a fixed place of business PE and an independent agent PE. The former concept is introduced only partly by the ITA rules, and the second concept only marginally so. PNG should consider fundamentally redrafting or replacing these rules.

12. The ITA definition of a permanent establishment does not include a reference to 'fixed'. The relevance of this term denotes a requirement for there the place to have a degree of permanence and to be located in a distinction location.

13. It is not clear why separate definitions of a PE (in Sections 4 and 197 A) are required, or, if they are required, why they differ.

14. The Section 197 A definition of a permanent establishment includes a 'place at which any property of the taxpayer is manufactured or processed' by the taxpayer or another person. This is a wider definition than that employed by most jurisdictions, and open to challenge by treaty partners. Would it would mean, for example, that if the other person is a PNG resident company that carries on, for example, manufacturing of goods on a toll manufacturing basis for a non-PNG resident, then a PNG permanent establishment of the non-resident person would be created? If so, is this the intention? It is noted, however, that a number of PNG's treaties adopt wording similar to this.

15. The specification of a 'place' with regards to an agent will limit the scope of the PE definition. An agency PE is determined according to an activity in the country and does not require a 'place' in the source country. The word 'place' in sub-paragraph (a) of the definition should be deleted.

16. The definition in Section 4 (b) has no parallel in international standards. If the intention is to include in the definition factories, workshops, mines, etc. it would be best to do so explicitly as the PE articles in the UN and OECD model conventions do.

17. The purpose of the Section 4 (d) definition of a permanent establishment is not clear. In a situation where, for example, the non-resident person sells goods which are manufactured by an associate in PNG, the place of manufacture would be deemed to constitute a permanent establishment in PNG of the non-resident person. If this is the case, it significantly departs from international norms, and it is not clear what purpose it would achieve or how profits would be attributed to that place. Moreover, the profits attributable to the manufacture would already be taxable in the hands of the person undertaking that activity, as they would clearly be carrying on a business in PNG.

18. Section 4 (d) has some parallels with UN (Article 5 (5) (b)), which deems a permanent establishment in a state where a person 'habitually maintains in that State a stock of goods or merchandise from which that person regularly delivers goods or merchandise on behalf of the enterprise'. This is fundamentally different from the PNG rule, which requires only that the goods sold in PNG are manufactured by an associate. The UN rule does not distinguish between associated and non-associated enterprises and requires that the goods sold in PNG would be owned by the non-resident.

19. The condition in the Section 4 (d) definition of a permanent establishment that the resident and non-resident parties are associated is not found in international norms. Those norms do not distinguish between association or non-association in determining whether one enterprise hosts a permanent establishment of another.

20. Treaty rules typically include a list of activities that are considered not to constitute a permanent establishment. These are often mirrored in domestic law. PNG might consider whether to adopt such a provision into law.

21. If PNG chooses to revisit the permanent establishment rules, the opportunity should be taken to adopt in PNG law the outcomes of Action 7 of the G20/OECD BEPS initiative. These outcomes are intended to strengthen the operation of permanent establishment rules contained in domestic and treaty rules. In particular, they counter measures taxpayers may take to avoid permanent establishment status.

22. If PNG follows the advice in the previous paragraph to set out explicit exclusions from the definition of a PE, it should include the wording developed by Action 7 that prevents exploitation of these exclusions (typically by fragmenting activity between different entities so they qualify for the exclusion but would not if the activities are viewed as a whole).

4. Definition of agent

Section 4 ITA (Interpretations) defines an agent as follows.

"agent" includes—

(a) a person who in Papua New Guinea, for or on behalf of any person out of Papua New Guinea, holds or has the control, receipt or disposal of any money belonging to that person; and

(b) a person declared by the Commissioner General to be an agent or the sole agent of a person for any of the purposes of this Act;

Comment and observation

The definition of an agent above appears not to match the meaning envisaged in the Section 4 ITA definition of a permanent establishment. We assume that the latter envisages a commission agent or similar who, in treaty terms, habitually exercises an authority to negotiate and conclude contracts on behalf of a person. The definition of an agent above does not correspond with this. The relationship between this definition and the definition of a PE should be clarified, so that it is clear that the PE definition is free-standing and not limited by this wording, especially if PNG adopts the updated rules for dependent agents introduced by Action 7.

5. Profit attributable to PE

Section 197 E (7) ITA contains a provision to determine the amount of profit that can be attributed to a permanent establishment:

In the application of the preceding provisions of this section in determining the source or sources of any income derived by a taxpayer or the extent to which expenditure incurred by the taxpayer was incurred in deriving income from a particular source or sources, the Commissioner General shall have regard to—

(a) the nature and extent to any relevant business carried on by the taxpayer and the place or places at which the business is carried on; and

(b) if any relevant business carried on by the taxpayer is carried on at or through a permanent establishment—the circumstances that would have, or might reasonably be expected to have, existed if the permanent establishment were a distinct and separate entity dealing at arm's length with the taxpayer and other persons; and

(c) such other matters as the Commissioner General considers relevant.

Comments and observations

- The wording at (b) above applies the arm's length principle to the determination of the profit attributed to a permanent establishment. It does so by deeming the permanent establishment and other parts of the same legal person to be separate enterprises that deal with each other and then applies the arm's length principle (and therefore transfer pricing approaches) to those dealings. This approach aligns with international practice developed by the OECD and introduced into the OECD Model Tax Convention in 2010. Such an approach can be very complex, however, when it comes to determining the expenses attributable to the permanent establishment, and is unlikely to be advantageous to capital-importing jurisdictions. The United Nations Model Convention follows the same overall principle (that the permanent establishment's profits are those which it might be expected to make if it were a distinct and separate enterprise) but adopts a simpler approach to the determination of the costs of earning those profits based on an apportionment of actual expenses. PNG could consider adopting such an approach into law and treaties. The relevant wording in the United Nations Model Convention is reproduced in the box below.

Extract from Article 7 (3) UN Model Tax Convention

In the determination of the profits of a permanent establishment, there shall be allowed as deductions expenses which are incurred for the purposes of the business of the permanent establishment including executive and general administrative expenses so incurred, whether in the State in which the permanent establishment is situated or elsewhere. However, no such deduction shall be allowed in respect of amounts, if any, paid (otherwise than towards reimbursement of actual expenses) by the permanent establishment to the head office of the enterprise or any of its other offices, by way of royalties, fees or other similar payments in return for the use of patents or other rights, or by way of commission, for specific services performed or for management, or, except in the case of a banking enterprise, by way of interest on moneys lent to the permanent establishment.

6. Other primary taxation rights.

A number of Sections of the ITA specify certain types of receipts to constitute PNG sourced income subject to withholding taxes. These are:

- Section 4C, which deems royalty receipts to be PNG source income
- Section 186, which establishes a liability to withholding tax on interest payments and applies where interest is paid or credited to a non-resident
- Section 189 B, which imposes withholding taxes on payments of dividends
- Section 196 A, which imposes withholding taxes on payments to overseas contractors on a variety of payments, including for professional services and other services.
- Section 196 P, which imposes withholding taxes on management fees paid to a non-resident
- Section 357, which imposes withholding taxes on payments of royalties. The rate of tax is 30% when paid to an associate, and 10% when paid to a non-associate.

Such withholding taxes are compatible with international practices. It will be important to ensure that tax treaties reflect PNG policies on these withholding taxes.

C. Assessment of Rules: Transfer Pricing

The transfer pricing rules apply if there is in place an 'international agreement', defined in Section 197 C ITA as:

a) a non-resident supplied or acquired property under the agreement other than through a PE in PNG or

b) a PNG resident carrying on a business outside Papua New Guinea supplied or acquired property under the agreement, being property supplied or acquired in connection with that business.

For these purposes, 'property' is defined in Section 197 A to include: any estate, interest, right or power, whether at law or in equity, in or over property; any right to receive income and services.

The term 'services' is further defined in Section 197 A to include includes any rights, benefits, privileges or facilities provided under a specified list of agreements.

The term agreement is defined to include: any agreement, arrangement, transaction, understanding or scheme, whether formal or informal, whether express or implied and whether or not enforceable, or intended to be enforceable, by legal proceeding.

Comments and recommendations on Section 197 C ITA.

(i) The purpose of condition in (b), in the definition of an 'international agreement' (as defined) is not clear, although we assume it is intended to apply to a transaction between a permanent establishment of a PNG resident and person related to that PNG resident.

(ii) If we take the instance of a non-PNG resident conducting a business in PNG through a permanent establishment, the conditions at both a) and b) above mean that any transaction with a non-resident associate company allocable to the permanent establishment will fall outside the transfer pricing rules. The purpose of excluding from scope a non-resident carrying on a business through a PE in PNG is not clear. There is a clear transfer pricing risk arising from any transactions between a non-resident carrying on a business through a permanent establishment in PNG and a related person of the non-resident.

(iii) if we have understood the purpose of (b) correctly, we suggest that the term 'carrying on business' is replaced by 'carrying on business through a permanent establishment'.

(iii) The list of examples of 'services' appears arbitrary and includes, for example, an agreement relating to 'the provision of, or the use or enjoyment of facilities for amusement, entertainment, recreation or instruction'. It is not clear what the list of agreements add, and we suggest that PNG considers removing this list.

(iv) Generally, the condition for the application of the transfer pricing rules relating to an 'international agreement', appear unnecessary and potentially harmful. Most country transfer pricing rules achieve the desired affect by referring simply to a transaction between a resident person, (or a non-resident person carrying on a business through a permanent establishment), and a non-resident associated enterprise.

Overall, the use of the concept of 'international agreement' to define the scope of the transfer pricing rules appears complex and unnecessary. We recommend that this approach is replaced by a clearer and more compact approach that is based on a simple requirement that the arm's length principle applies to transactions between associated persons, as defined in Section 4.

S 197 D contains a number of very similar paragraphs (an example of which is contained in the box below) that apply to situations in which the taxpayer a) supplies property for less than the arm's length price, b) supplies property for zero consideration; c) acquires property for more than the arm's length price.

In each of these situations, an arm's length consideration is deemed to be received or paid for 'all purposes of the Act', provided that the Commissioner General is satisfied that the parties to the agreement were not dealing at arm's length and that the Commissioner General determines that the Sub-section applies.

S !97 D (1)

Where—

(a) a taxpayer has supplied property under an international agreement; and

(b) the Commissioner General, having regard to any connection between any two or more of the parties to the agreement or to any other relevant circumstances, is satisfied that the parties to the agreement, or any two or more of those parties, were not dealing at arm's length with each other in relation to the supply; and

(c) consideration was received or receivable by the taxpayer in respect of the supply but the amount of that consideration was less than arm's length consideration in respect of the supply; and

(d) the Commissioner General determines that this subsection should apply in relation to the taxpayer in relation to the supply,

then, for all purposes of the application of this Act in relation to the taxpayer, consideration equal to the arm's length consideration in respect of the supply shall be deemed to be the consideration received or receivable by the taxpayer in respect of the supply.

Comments and observations

- Generally, the rules in S 197 D appear overengineered and duplicative. For example, separate, but very similar paragraphs apply to situations in which the taxpayer a) supplies property for less than the arm's length price, b) supplies property for zero consideration; c) acquires property for more than the arm's length price.
- A key issue is that the application of the rules depends on the Commissioner General determining that the parties to a transaction are associated, and a general determination by the Commissioner General whether the transfer pricing rules apply. This has a number of implications, discussed below, and could create significant uncertainty as to whether or how the rules would apply to a transaction. The rules should therefore be revisited or replaced.
- The rules apply only if the Commissioner General is satisfied that the parties to the agreement, or any two or more of those parties, were not dealing at arm's length with each other 'having regard to any connection between any two or more of the parties to the agreement or to any other relevant circumstances'. This suggests that the rules are intended to apply if parties are related or associated with each other, although this is not clear. It seems, however, that no definition of such association is provided. The rules should apply the definition of 'associate' found in Section 4 ITA (Interpretations). With respect to companies, that definition appears adequate and in accordance with internationally agreed principles.
- Furthermore, the Commissioner General is required to consider 'any other relevant circumstances'. The rules, or the Circular, needs to clarify this term, perhaps with examples, or it could be removed altogether. If the parties are associated, then the TP rules should apply. Relevant circumstances can then be taken into account when considering whether the transactions have been undertaken on an arm's length basis and, if not, what adjustment to profit needs to be made.
- The rules apply only to remuneration, but it is not clear they allow for recharacterization or non-recognition of transactions. They should be reviewed and, if needed, revised to make it clearer.

- The transfer pricing rules apply only if the Commissioner General determines that 'this subsection should apply in relation to the taxpayer in relation to the [supply]'. This gives the Commissioner General the right to make adjustments. But is there no requirement on the taxpayer to comply with the rules, either at the time of the transaction or the time of making a tax return. That is, in relation to each transaction, the rules apply only from the time the Commissioner General determines them to do so. This is likely to mean that no penalty for declaring an incorrect measure of taxable profit in a tax return would be possible. It may also imply, in the absence of specific legislation, that the taxpayer has no obligation to document or record its related-party transactions or how the terms of such transactions meet the arm's length standard. While it was not uncommon for transfer pricing rules to be applied in this way when countries were first developing their transfer pricing regimes, it is now accepted practice internationally to oblige MNEs to report their profits having applied the arm's length standard and to support that with appropriate documentation.
- S 197 E appears to give the CG powers to determine questions that arise following TP adjustment on the source of the adjusted income. The purpose of this sub-section is not clear. Would not the source of the adjusted income be the business or trade conducted by the taxpayer though a company (in the case of a PNG corporate taxpayer) or a permanent establishment (in the case of a non-resident carrying on a business through the permanent establishment)?
- The application of the transfer pricing rules to transactions under 'international agreements' limits them to cross-border transactions. PNG may wish to consider whether to extent them to purely domestic transactions between PNG resident persons, in order to prevent profit-shifting from a normally taxed entity to a lower-taxed entity. This appears to be a significant risk, given that many exemptions and incentives are in place.

Overall, we recommend that PNG considers revisiting these rules and replacing them with clearer and less complex legislation. The box below contains an illustration of a legislative approach more commonly used in country domestic rules.

Domestic transfer pricing rules – illustration.

where

(i) a person resident in [Country] engages directly or indirectly in one or more transaction, arrangement, or scheme, in this section referred to as a "transaction", with a connected person or

(ii) a person not resident in [Country] engages directly or indirectly in one or more transactions with a connected person not resident in [Country] where the transaction is in relation to a permanent establishment in [Country] of one of the two connected persons,

the amount of each person's taxable income shall be determined in a manner that is consistent with the arm's length principle. The amount of such taxable income shall be consistent with the arm's length principle if the conditions of those transactions do not differ from the conditions that would have applied between independent persons in comparable transactions carried out under comparable circumstances.

2. Where the conditions of a transaction between connected persons ("a controlled transaction") to which paragraph 1 applies are not consistent with the arm's length principle, and the effect of that inconsistency is reducing or postponing the liability to tax of any person for any tax year, then the taxable income of that person shall be computed as though the conditions of the transaction are consistent with the arm's length principle.

Section 197F ITA, reproduced in the box below, appears to allow a taxpayer to request that the Commissioner General reverses an adjustment to profit arising from the application of the transfer pricing rules in Section 197D above, and, if appropriate, refund any tax paid relating to the amount of the adjustment subject to the reversal. In doing so, the Commissioner Taxpayer is required to apply a 'fair and reasonable' test.

The Section also appears to allow a taxpayer to claim that, if the application of the arm's length principle suggests that an amount would have been allowed or would be allowable to the relevant taxpayer as a deduction, the Commissioner General may apply the 'fair and reasonable' test to allow that deduction.

Comments and recommendations

1 Section 197F allows a full or part reversal of a transfer pricing adjustment, and a refund of tax if appropriate, on the basis of a 'fair and reasonable' test. This provision seems to allow for an internal administrative appeal. If this is the case, it is not clear why any such appeal is considered according to a 'fair and reasonable' in addition to the 'arm's length principle' required in the law.

2. Furthermore, the Section appears to allow PNG to make a unilateral downwards adjustment to profit e.g. allow a deduction in excess of that contained in the taxpayer's financial accounts. The ability to give such an adjustment can give rise to tax avoidance schemes resulting in the double non-taxation of some income. It is unusual for tax jurisdictions to provide for such downwards adjustments to profit.

3. If Section 197F is intended to provide the basis of an internal administrative appeals process, it is recommended that any such appeal is considered on the basis of the arm's length principle alone and cannot allow for the granting of a unilateral downwards adjustment i.e. an adjustment, outside of a treaty 'corresponding adjustment', that applies the arm's length principle to reduce taxable profit.

197F. Consequential adjustments to assessable income and allowable deductions.

(1) Where, by reason of the application of Section 197D in relation to the supply or acquisition of property by a taxpayer, an amount is included in the assessable income of the taxpayer of a year of income or a deduction is not allowable or is not, in part, allowable, to the taxpayer in respect of a year of income, the Commissioner General may, in relation to any taxpayer (in this subsection referred to as the "relevant taxpayer")—

(a) if, in the opinion of the Commissioner General—

(i) there has been included, or would but for this subsection be included in the assessable income of the relevant taxpayer of a year of income an amount that would not have been included or would not be included, as the case may be, in the assessable income of the relevant taxpayer of that year of income if the property had been supplied or acquired, as the case may be, under an agreement between independent parties dealing at arm's length with each other in relation to the supply or acquisition; and

(ii) it is fair and reasonable that that amount or a part of that amount should not be included in the assessable income of the relevant taxpayer of that year of income,

determine that that amount or that part of that amount, as the case may be should not have been included or shall not be included, as the case may be, in the assessable income of the relevant taxpayer of that year of income; and

(b) if, in the opinion of the Commissioner General—

(i) an amount would have been allowed or would be allowable to the relevant taxpayer as a deduction in relation to a year of income if the property had been supplied or acquired, as the case may be, under an agreement between independent parties dealing at arm's length with each other in relation to the supply or acquisition, being an amount that was not allowed or would not, but for this subsection, be allowable, as the case may be, as a deduction to the relevant taxpayer in relation to that year of income; and

(ii) it is fair and reasonable that that amount or a part of that amount should be allowable as a deduction to the relevant taxpayer in relation to that year of income,

determine that that amount or that part of that amount, as the case may be, should have been allowed or shall be allowable, as the case may be, as a deduction to the relevant taxpayer in relation to that year of income,

and the Commissioner General shall take such action as he considers necessary to give effect to any such determination.

(2) Where the Commissioner General makes a determination under Subsection (1) by virtue of which an amount is allowed as a deduction to a taxpayer in relation to a year of income, that amount shall be deemed to be so allowed as a deduction by virtue of such provision of this Act as the Commissioner General determines.

(3) Where—

(a) by reason of the application of Section 197D in relation to the supply or acquisition of property by a taxpayer, an amount is included in the assessable income of the taxpayer of a year of income or a deduction is not allowable or is not, in part, allowable, to the taxpayer in respect of a year of income; and

(b) in the opinion of the Commissioner General, an amount of tax has become payable and has been paid in respect of interest paid to a taxpayer (in this subsection referred to as the "relevant taxpayer"), being tax that would not have become payable if the property had been supplied or acquired by the first-mentioned taxpayer under an agreement between independent parties dealing at arm's length with each other in relation to the supply or acquisition; and

(c) in the opinion of the Commissioner General, it is fair and reasonable that that amount of tax or part of that amount of tax should not have become payable by the relevant taxpayer,

the Commissioner General may determine that that amount of tax or that part of that amount of tax, as the case may be, should not have become payable by the relevant taxpayer and the Commissioner General shall take such action as he considers necessary to give effect to any such determination.

(4) Where, at any time, a taxpayer considers that the Commissioner General ought to make a determination under Subsection (1) or (3) in relation to the taxpayer, the taxpayer may post to or lodge with the Commissioner General a request in writing for the making by the Commissioner General of a determination under the subsection concerned.

(5) The Commissioner General shall consider the request and serve on the taxpayer, by post or otherwise, a written notice of his decision on request.

(6) If the taxpayer is dissatisfied with the Commissioner General's decision on the request, the taxpayer may, within 60 days after the service on the taxpayer of notice of the decision of the Commissioner General, post to or lodge with the Commissioner General an objection in writing against the decision stating fully and in detail the grounds on which the taxpayer relies.

(7) The provisions of Part V.2 (other than Section 245) apply in relation to an objection made under Subsection (6) in like manner as those provisions apply in relation to an objection against an assessment.

197G. Modified application of Part III.2.C.

Where—

(a) by the application of Section 197D in relation to a taxpayer, the arm's length consideration in respect of the supply or acquisition of property by the taxpayer is deemed to have been received or receivable or received and receivable, or to have been given or agreed to be given, as the case may be; or

(b) Section 197E has been applied in relation to any income derived by a taxpayer or any expenditure incurred by a taxpayer,

that consideration, income or expenditure, as the case may be, shall not be taken into account in the application of Part III.2.C in relation to the taxpayer or, where the taxpayer is a partnership or the trustee of a trust estate, in relation to a partner in the partnership or a beneficiary of the trust estate, as the case may be.

Section 9A ITA (reproduced in the box below) appears to apply to cases where the Commissioner General has concluded, on the basis of information received in relation to Income Taxes, that there has been 'transfer pricing manipulation'. In such cases, the Section appears to provide the Commissioner General with the authority to share that information with officers responsible for the administration of other Acts. The section seems referring to the 'practice of directly or indirectly obscuring the actual value of any transaction'. This section intended to apply to 'trade mispricing' which is the term normally applied to the fraudulent evasion of customs duties by, for example, false invoicing. If this is the case, it is recommended that this part of the law refers to 'trade mispricing' or similar, rather than to transfer pricing, which in international practice is a different concept.

9A. Communication of information where taxpayer has engaged in transfer pricing manipulation.

(1) In this section," transfer pricing manipulation "includes the practice of directly or indirectly obscuring the actual value of any transaction whether it relates to goods, services or otherwise.

(2) Notwithstanding any other provision in this Act, where the Commissioner General has reasonable grounds to believe that a taxpayer has deliberately engaged in transfer pricing manipulation, which has or is likely to have the effect of evading liability for taxation under this Act, he may, at his absolute discretion, make a record of, or divulge or communicate only such information acquired or obtained under the provisions of this Act as the Commissioner General is satisfied is necessary to enable any officer, who has responsibility for the administration of any other Act that has application to the taxpayer, to take any action that is required to be taken against the taxpayer under such other Act.

(3) Whenever it is practical to do so, the communication of such information under Subsection (2) shall be made only to the Departmental Head of the relevant Department.

(4) The provision of Section 9 shall have no application to any recipient of information under Subsection (2).

(5) If no action is taken under any other Act, the recipient of information under Subsection (2) shall take all reasonable precautions to ensure such information received from the Commissioner General remains confidential.

Sections 60 to 65 ITA ('Business Carried on Partly in and Partly out of Papua New Guinea') contain rules that determine the amount of profit arising from a transaction involving the importation of goods for sale or resale in PNG. Our understanding of the rules is that they apply to:

- the importation (by a manufacturer) of goods manufactured outside PNG, in which the case the profit on sale in PNG is deemed to be the wholesale price in the country of manufacturer, less the cost of transport/sales. The rules apply no matter the tax residence of the manufacturer or, in the case of sales in PNG by the manufacturer, whether the manufacturer has a permanent establishment in PNG.
- the importation of goods into PNG for resale by a merchant, in which case the profit is deemed to be the PNG sale price, less purchase price, less transportation/sales costs. It applies no matter whether the merchant and foreign manufacturer are related persons.

The purpose of these rules is not clear, and they appear to conflict with the permanent establishment profit allocation rules (where a non-PNG resident manufacturer has a permanent establishment in PNG) and the transfer pricing rules (in situations where the PNG merchant purchases goods from a related person). The rules appear to be concerned only with the computation of profit, and not with the creation of a taxable source in PNG. They appear also to be vulnerable to avoidance.

It is recommended the purpose and scope of these rules are reviewed, and their interaction with transfer pricing and permanent establishment profit allocation rules clarified.

D. Assessment of rules: anti-avoidance and simplification rules

This Section considers the Sections in ITA that cover anti-avoidance or simplification rules.

1. Restrictions on deductions for interest payments.

Section 68AF ITA contains rules designed to deny a deduction for interest payments arising from excessive debt. The Section:

- applies a 'market' rate to interest and fees paid to an associate, and denies a deduction for sums paid in excess of that rate;
- a 2:1 debt/equity ratio to all debt, whether or not from an associate. A deduction for interest on excessive debt is disallowed to the extent that is paid to a non-resident. The terms 'debt' and 'equity' are defined in the section.

Comments and observations

- The rules, which appear comprehensive and effective, apply a debt/equity approach to interest deductibility. This is an approach used by many tax other jurisdictions, often very effectively.
- Action 4 of the G20/OECD BEPS initiative proposed rules designed to restrict interest deductions to a percentage of income (expressed as EBITDA). This approach has been adopted by only a few countries in the South East Asia region (including Vietnam and Malaysia).
- PNG may wish to consider adoption of the BEPS Action 4 approach, but this may not be a priority area for PNG.
- Well-designed transfer pricing rules can also be effective in countering excessive interest deductibility. In addition to addressing whether the rate of interest on a loan meets the arm's length principle, transfer pricing rules can also act to consider whether a loan would have occurred at all between arm's length parties, or whether it would be structured in a different way, or whether in substance a loan is actually equity. PNG's current transfer pricing rules do not allow for recharacterizing or disregarding a transaction. It is recommended that any update of the rules incorporate these features.

Section 155H ITA (Restriction on interest deduction in relation to mining, petroleum and designated gas projects) applies similar rules to taxpayers carrying out a resource project in PNG. In this case, the maximum debt/equity ratio is specified to be 3:1. The comments above will apply also to Section 155H ITA. The appropriateness of a 3:1 ratio to the funding of resource projects is beyond the scope of this note.

2. Restrictions on deductions for the payment of management fees.

Section 68AD ITA[83] introduces a cap on the allowability of management fees paid to associates. The cap is the greater of—

(a) 2% of the assessable income derived from Papua New Guinea sources by the taxpayer; or

(b) 2% of the total allowable deductions, excluding management fees, incurred by the taxpayer in Papua New Guinea.

Comments and recommendations.

the cap on management fees has the potential to be a useful tool to address base erosion payments, but the exceptions in the rules are likely to undermine its effectiveness.

- Subsection 2 (b) (i) removes from scope payments to associates in cases where the Commissioner General is satisfied that they did not have the purpose or effect of avoiding tax or altering the total tax otherwise payable. It is often very difficult to demonstrate that the purpose of making a payment includes tax considerations. For this reason, PNG could considers applying clearer and more objective criteria. For example: 'the payment did not have the purpose or effect of avoiding tax or of altering the total tax which would otherwise by payable in Papua New Guinea by the two parties concerned'.
- Subsection 2 (b) (iii) provides a further exception to the rule, which applies a 'benefit' criterion. (The 'benefit test' is not available to costs that have been allocated or apportioned to the taxpayer). The term 'benefit' could usefully be defined with reference to the transfer pricing rules (noting that the 2011 guidance includes specific guidance on the transfer pricing of services). Such a test can be applied to payments regardless of whether they have been 'allocated' or 'apportioned'.
- If PNG wishes to maintain a 'let-out', and in order to clarify and improve the effectiveness of the rule, PNG may wish to reformulate it as a mandatory but rebuttable safe harbor which refers to the transfer pricing rules and applies the cap in all cases unless the taxpayer can demonstrate to the Commissioner General's satisfaction that the payment meets the conditions specified in PNG's transfer pricing rules.

3. General Anti-avoidance rules

Section 361 ITA introduces a general anti-avoidance provision which renders, for tax purposes, any 'arrangement' to be void if its purpose or effect is tax avoidance.

Comments and recommendations.

Section 361 includes comprehensive and detailed definitions of the terms 'arrangement' and 'tax avoidance'. It is likely to be a useful and effective in respect of countering MNE tax avoidance.

[83] A similar rule, applying to resource projects, can be found in Section 155M.

E. International Exchange of Information, including country by country reporting

Section 198 ITA introduces legislation that provides a framework for implementing 'country by country reporting' (CbCR). It requires any large MNEs with the ultimate parent company in PNG to file CbCRs with the PNG tax administration and provides a legal platform for the international exchange of CbCRs.

Comments and Recommendations

- The CbCR rules in Section 198 ITA are very closely aligned to those published by the OECD in the 2015 Final Report on Action 13. This makes sense because the CbCR implementation is one of BEPS minimum standards, and, as a member of the OECD's Inclusive Framework, Papua New Guinea is committed to implement these standards.
- Section 198 does not specify a penalty in respect of a failure to submit a CbCR by a PNG ultimate parent entity, nor in respect of an incorrect or incomplete return. PNG may wish to ensure that existing penalty provisions apply.
- To benefit from CbCR, PNG requires an effective international exchange framework to be in place. At the date of drafting this review, Papua New Guinea is not a signatory of the Convention for Mutual Administrative Assistance in Tax Matters and has not entered into multilateral or bilateral 'competent authority agreements' with treaty partners to allow the automatic exchange of CbCRs.
- It should be noted that BEPS Action stipulates strict conditions regarding, confidentiality of CbCRs and consistency of implementation, which are subject to peer review. In practice, it is very difficult for low-capacity countries to comply with these conditions. The Global Forum peer review of PNG is still at an early stage, and that treaty partners are unlikely to exchange CbCRs until a positive rating is achieved.
- It is unlikely that PNG will be able to benefit from CbCR until exchange instruments are in place and the Action 13 conditions are fulfilled, even though the legislative framework (in Sections 198 ITA and 10K ITA) is in place. Further guidance on this issue can be found Section 3.4 of a recent consultative publication: 'Practical Toolkit to Support the Successful Implementation by Developing Countries of Effective Transfer Pricing Documentation Requirements'[84].

F. Capital Gains

ITA appears not to include specific rules on capital gains. Division 14B of ITA includes rules relating to gains on the disposal of shares, but that this Division was repealed by Section 196 GA with effect from disposals on or after 16th November 1993. The current understanding of the transfer pricing rules is that they would not to apply to a capital gain arising to a non-resident in connection with the disposal of an asset located in PNG.

PNG should review the policy and legislation referring to capital gains and considers introducing rules to allow the taxation of a non-resident in respect of a gain on the disposal of:

- immovable assets situated in PNG, whether the disposal is made directly or indirectly
- movable assets forming part of business assets of a permanent establishment in PNG
- shares deriving a significant part of their value from immovable property located in PNG.

Such provisions would accord with international practice, as described in Article 13 of the OECD Model Convention.

[84] Platform for Tax Collaboration (IMF, OECD, UN, WBG) http://www.oecd.org/tax/beps/draft-toolkit-transfer-pricing-documentation-platform-for-collaboration-on-tax.pdf

Annex 3. Papua New Guinea Goods and Services Tax Estimation Methodology

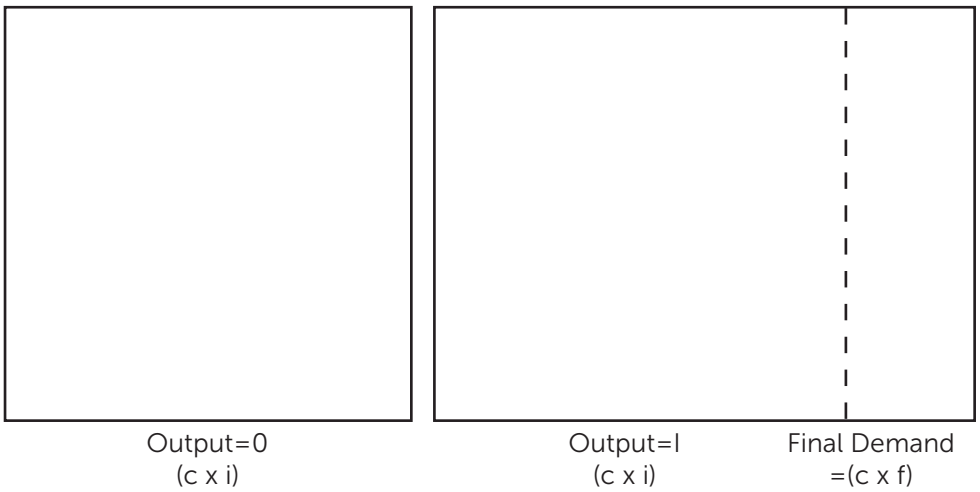
Modelling value-added taxes/goods and services taxes (VAT/GST) is a complex exercise due to the existence of exempt commodities, which create a situation where tax becomes embedded in their price as well as the price of other commodities further down the supply chain. VAT/GSTs are generally designed with efficiency in mind. In a VAT/GST system with input tax credits (ITCs) for businesses, zero-rated imports, zero-rated commodities where relief has to be provided, and no exempt commodities, distortions are minimized. Businesses and consumers choosing between competing commodities are not incentivized to choose one over the other as a result of differences in the average effective tax rate. In such an environment, businesses face an average effective tax rate on their inputs of 0%, and consumers face only two average effective tax rates: 0% on zero-rated commodities and the policy rate on taxable commodities.

However, the reality is quite different because of exempt commodities, even in countries with relatively efficient VAT/GST systems. As a result, the average effective tax rates faced by businesses and consumers often diverge quite significantly from their policy rate and can even, in some cases, exceed the policy rate (when exempt commodities are used in the production of taxable goods). Therefore, estimating VAT/GST expenditures requires that the model properly accounts for the flow of embedded tax (as a result of exempt commodities) across industries. This requires the use of Input-Output (IO) tables, which are also called Supply-Use Tables (SUTs).

IO tables summarize the flow of intermediate inputs across industries and final commodities from industries to final consumers (households, government, capital expenditures, and international trade). Figure 4.3.1 illustrates the three matrices that form the IO tables:

- O: output of the c commodities by the i industries
- I: input of the c commodities by the i industries
- FD: final demand of the c commodities by the f final consumers

Figure A3.1. Illustrative Input-Output Tables



Since there are no recent IO tables (or SUTs) produced for Papua New Guinea, it is necessary to find an alternative estimation methodology or construct pseudo-IO tables that are of high enough quality to obtain sensible estimates. No other alternative estimation methodology has been found to properly account for the interaction effects between exempt commodities and the flow of intermediate inputs in the economy, and so constructing pseudo-IO tables is the best approach given the data limitations.

Pseudo-IO Tables for Papua New Guinea

The data produced by Papua New Guinea's National Statistical Office (NSO) provides many of the inputs necessary to construct pseudo-IO tables, including output by industry and exports by commodity. They key missing ingredients are the production functions — i.e. the share of each commodity's output that is spent on each intermediate commodity. The production functions for each industry are generally similar across countries with similar technologies, as the same underlying industrial processes are generally used to produce the same commodities. The pseudo-IO tables are hence constructed using the production functions from Indonesia's IO tables published by the Asian Development Bank. While Indonesia is different from Papua New Guinea in many ways, the underlying production functions for each industry are not expected to vary significantly between the two countries. Here are the steps used for constructing the pseudo-input matrix:

- Derive production functions: the production functions are derived by dividing the intermediate inputs of each commodity by the output for each sector using Indonesia's IO tables, which yields a matrix of intermediate input shares for each sector.
- Multiply production functions by sectoral output: the matrix of intermediate input shares is multiplied by Papua New Guinea's sectoral output, which yields a pseudo-input matrix.

Another missing data point is final consumption expenditure disaggregated across commodities. NSO only publishes the aggregate value of final consumption expenditure for Papua New Guinea with no commodity-level detail. The vector of final consumption expenditure disaggregated across commodities is estimated by using the vector of final consumption expenditure in Indonesia's IO tables as the distribution across commodities and scaling it according to Papua New Guinea overall final consumption expenditure. Here are the steps for constructing the final consumption expenditure vector:

- Derive final consumption expenditure commodity distribution: divide final consumption expenditure for households and government by total final consumption expenditure in Indonesia's IO tables.
- Multiply final consumption expenditure commodity distribution by aggregate final consumption expenditure: multiply the final consumption expenditure commodity distribution by Papua New Guinea's overall final consumption expenditure.

Export Gross Down

Exports are generally zero-rated, and this feature of the VAT/GST is part of the benchmark tax system. It is important not to include the inputs used in the production of exported goods when calculating the revenues from tax embedded in exempt commodities. To do so requires isolating the share of the intermediate use matrix that applies to commodities that are not exported and therefore not zero-rated by design. The pseudo-input matrix is therefore grossed down by the share of each sector's output that is exported. Data on exports by commodity from NSO is used to determine the share of each sector's output that is exported. Since NSO's export data is in a different commodity-space as the pseudo-IO tables, a concordance is constructed to construct a vector of exports. For example, exports of "Live animals: animal products" and "Vegetable products" are both assumed to be produced by the "Agriculture, Hunting, Forestry, and Fishing" sector. In some instances, ex-

ported commodities are too aggregated and cover commodities produced by more than one sector. In those instances, the exports are allocated to the sectors based on the relative distribution of the target sectors output.

The export gross down approach is used to keep the model tractable, but it also means that exports are not modeled within this VAT/GST tax expenditures model. This is standard practice in VAT/GST tax expenditure modeling around the world. Modeling exports is generally unnecessary because most countries zero-rate exports in line with the definition of the benchmark tax system. Papua New Guinea's policy on the zero-rating of exports is consistent with international best practices and with this methodology.

Model Core Engine

VAT/GST on Final Demand

The VAT/GST on final demand is calculated by multiplying final consumption expenditure by households and government by the share of each commodity that is taxable and by the tax rate. In the benchmark, all commodities are fully taxable and the benchmark GST rate is 10% such that benchmark GST revenues are equal to 10% of final consumption expenditures.

VAT/GST on Intermediate Inputs

VAT/GST is incurred on intermediate inputs when a firm produces an exempt commodity. The steps to calculate VAT/GST on intermediate inputs are the following:

- Compute exempt output by sector: the share of each commodity produced by a sector that is exempt is weighted using that sector's output of each of those commodities to derive the overall share of each sector's output that is exempt.
- Derive the average effective tax rate (AETR) on intermediate inputs: multiply the share of each sector's output that is exempt by the share of each intermediate input that is taxable and the tax rate for that commodity; this yields the average effective tax rate of each intermediate input in each sector.
- Multiply the AETR by the input matrix: this yields the matrix of unrecoverable VAT/GST because of the production of exempt commodities.

In the benchmark, there are no exempt commodities and so the exempt output by sector is zero, which yields VAT/GST on intermediate inputs of zero. As commodities are exempted, the revenues foregone in the VAT/GST on final demand will be partially recovered as unrecoverable VAT/GST on intermediate inputs.

Calibration

Calibration involves two steps:

- Determining the policy: the shares of each commodity sold domestically that are zero-rated and exempt need to be determined to calculate revenues with the relief provided by the tax expenditures.
- Solving for the calibration factor: the calibration factor is the multiplier needed to reconcile the modeled revenues that include the policies with the actual observed revenues.

A number of toggles are included in the model to facilitate the calibration process.

Annex 4. Budget Funding in the Health Sector

HEALTH		
AREA	**PROVINCIAL GOVERNMENTS**	**LOCAL-LEVEL GOVTS**
Governance	• Provide secretariat, logistical and technical support to the Provincial Health Board, District Health Management Committees and the Provincial Water Supply and Sanitation Committee if they are operating in the Province.	• Provide logistical support to Aid Post Committees where they are operating in the local area.
Policy and Planning	• Develop Provincial Health Implementation Plans. [jointly with PHB] • Coordinate and monitor the implementation of the National Health plan, National Health Standards and the Provincial Implementation Plan in the Province. [jointly with PHB] • Develop and implement provincial policies such as a rural health user fee policy. [jointly with PHB] • Collect, record and analyse information and data on health in the Province.	• No assigned function or responsibility.
Infrastructure	• Maintain health centres, rural hospitals, staff housing and ancillary facilities where the health facility hasn't the capacity to undertake the work from internal revenue.	• Maintain aid posts and health worker housing.
Medical Equipment	• Maintain and arrange for the repair of rural health facility (not aid posts) medical equipment including cold chain equipment. • Maintain adequate stocks of consumables, spare parts and accessories for equipment. [in rural health facilities] • Pay for transport to and from the place of repair for equipment [in rural health facilities] that must be repaired away from the Province. • Distribute equipment purchased and provided by the National Government and/or donors to rural health facilities, including aid posts. • Fund the cost of health radio repairs. • Pay radio license fees. • Identify radios that aren't working and transport to and from Port Moresby for repairs.	• Maintain aid post medical equipment.
Essential Drugs, Vaccines and Supplies	• Order and distribute drugs, vaccines and other medical supplies to rural health facilities. • Properly store drugs, vaccines and other medical supplies at rural health facilities to prevent premature expiry. • Distribute aid post kits to aid posts.·	• Purchase non-medical supplies for the Aid Post (eg. soap, bleach, cleaning
Family health services	• Distribute of vaccines to aid posts and clinic points. • Distribute of Village birth attendant kits. • Undertake data collection in rural health facilities as per Family and Sexual Violence Strategy.	• No assigned function or responsibility.
Health facility operations and outreach	• Operate rural health facilities. • Inspect government and non government health facilities to ensure they meet minimum standards. • Undertake patrols to aid posts, clinic points and schools. • Transfer patients between one rural health facility to another and/or from a rural health facility to Provincial or higher level hospital.	• No assigned function or responsibility.
Disease control	• Maintain laboratories at District health centres. • Fund travel for hospital technicians to monitor provincial facilities. • Deliver clinical care, follow-up care, intervention and testing programs. • Distribute bed nets and other materials for malaria control intervention. • Investigate disease outbreaks, report and monitor in accordance with public health manual and coordinate emergency programs. • Transport extra vaccines and medicines to the outbreak area.	• Disseminate information on disease control to the local community.
Health Promotion	• Coordinate the implementation of health promotion campaigns and activities in the Province. • Deliver health promotion activities. • Maintain adequate stocks and distribution of health education and promotion materials.	• Disseminate information on health issues to the local community.

AREA	PROVINCIAL GOVERNMENTS	LOCAL-LEVEL GOVTS
Environment Health	• Monitor water quality and undertake surveillance of water supply, sanitation and waste disposal facilities to ensure that they meet minimum standards. • Deliver public awareness and education activities on environmental health. • Coordinate the preparation of environmental health impact assessments for development and infrastructure projects.	• Regulate dumping in public places. • Maintain public hygiene, sanitation and waste disposal facilities such as dumps (Urban LLGs only).
Monitoring	• Monitor the Province's performance against provincial health indicators. • Investigate health services to ensure compliance with National Health Plan and National Health Standards.	• Monitor the operation of aid posts and report to Districts.
Training	• Induct new health workers. • Deliver in-service training for health care workers. • Deliver training for village birth attendants.	• No assigned function or responsibility.

Notes on the Matrix

- PHB means the Provincial Health Board.
- Rural Health Facilities means District Health Centres, District Hospitals, Rural Hospitals, Health Centres, Urban Clinics and Aid Posts.
- Rural Health Facilities are sometimes referred to as District Health Facilities
- Provincial Government are responsible for government-run rural health facilities, not church run ones.
- Church-run rural health facilities are funded directly from the National Government through grants to church health agencies.
- Creating a Provincial Health Authority means the Provincial Government and the National Government form a partnership to deliver health services in the Province – covering both the Provincial Public Hospital and Rural Health Facilities. Under this partnership, both the Provincial Government and the National Government jointly fund the Authority to deliver public health services and curative services and manage all health workers in the Province.
  - Provincial Governments remain responsible for ensuring that provincial health authorities carry out rural health functions.
  - Creating a Provincial Health Authority means that the operation of a Provincial Health Board in the Province ceases.
  - If a Provincial Health Authority is established, the Provincial Government passes on the Health Function Grant funding it receives in the National Budget to the Provincial Health Authority.

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