

Papua New Guinea: Selected Issues Paper and Statistical Appendix

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PAPUA NEW GUINEA

Selected Issues

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I. MANAGING WINDFALL REVENUES FROM LNG PROJECTS IN PAPUA NEW GUINEA¹

A. Background

1. In Papua New Guinea, the economy has been highly exposed to commodity price fluctuations owing to the importance of minerals such as gold and oil in both export and public revenue. Mineral revenues have been an important source of government revenues amounting to over 10 percent of GDP in 2008 (about 40 percent of government revenue). Adhering to the Medium-Term Fiscal Strategy (MTFS) during the boom period of rising commodity prices resulted in the overall fiscal balance improving from below 2 percent of GDP in 2004 to nearly 9 percent in 2007 and the nonmineral fiscal deficit remaining close to its MTFS target of 8 percent of GDP.

2. While mineral revenues are projected to drop from 2009 onward, Papua New Guinea is developing another natural resource—liquefied natural gas (LNG), which could bring a substantial revenue stream in the future. In December 2009, two sizable LNG projects by an Exxon-led joint venture and by an InterOil-led joint venture, respectively, were approved by the government. The former is assumed to start construction in 2010 and production around 2014 with a project life of about 30 years. The latter is expected to start construction in 2011 and production around 2015 with a project life of at least 25 years. These new gas projects would bring challenges in managing massive revenues, which could lead to Dutch disease problems (i.e., losses in competitiveness) in the rest of the economy.²

3. Given the policy challenges facing Papua New Guinea and their interest in the operation of a sovereign wealth fund (SWF), this chapter reviews other country experiences in managing large natural resource revenues. By doing so, it draws lessons that could be relevant to Papua New Guinea with a focus on best principles for the design and operation of natural resource funds. Based on international experience, how to integrate an SWF into PNG's fiscal framework is also discussed.

B. Fiscal Institutions to Manage Natural Resource Revenue

4. Countries with sizable natural resources can benefit substantially from natural resource revenues, but some characteristics of such revenues—volatility, uncertainty, and exhaustibility, and the fact that they largely originate from abroad—have posed substantial challenges to policymakers. For instance, many natural resource-producing countries have

¹ Prepared by Keiko Takahashi (Fiscal Affairs Department).

² Compared to other natural resources, revenue from natural gas production is not as uncertain, because sales agreements with buyers are decided in advance.

found it difficult to smooth government expenditure and decouple it from the short-term volatility of natural resource revenues using standard budget processes.

5. Against this background, a number of natural resource-rich countries have established special fiscal institutions aimed at enhancing fiscal management. Special fiscal institutions include sovereign wealth funds (SWFs), fiscal rules, and fiscal responsibility legislation (FRL). Special fiscal institutions have been seen as potentially helpful instruments. The following provides a brief description of special fiscal institutions.

6. ***Sovereign Wealth Funds (SWFs)***: A general characteristic of SWFs is that they are government accounts or entities that receive inflows related to the exploitation of nonrenewable natural resources. In fact, SWFs can take various forms ranging from separate (financial) institutions with substantial discretion and autonomy to funds that in practice are little more than a government account. The general justification for such funds is that some share of government revenues derived from the exploitation of natural resources should be put aside for when these revenues decline, either because the commodity price has fallen and/or because the resource has been depleted.

7. ***Fiscal Rules and Fiscal Responsibility Legislation (FRL)***: Fiscal rules are defined, in a macroeconomic context, as institutional mechanisms that are intended to permanently shape fiscal policy design and implementation. They are often enshrined in constitutional or legal provisions, such as FRL. In oil-producing countries, fiscal rules and FRL often stipulate numerical and procedural rules to reduce pro-cyclicality of fiscal policy and/or to promote long-term savings and sustainability objectives. Fiscal rules and FRL are intended to constrain overall fiscal policy.

8. The international evidence suggests a prevalence of SWFs relative to fiscal rules or FRL in natural resource producing countries. For example, 21 out of 31 oil-producing countries examined in Ossowski and others (2008) had established oil funds up to 2005, while only a few introduced explicit fiscal rules on aggregates like fiscal balance, public debt, non-oil balance, or government expenditure.

9. As country experiences suggest, special fiscal institutions (such as SWFs) themselves are not a panacea, but need to be integrated into a sound fiscal policy framework. In fact, in some countries with special fiscal institutions, government spending followed commodity revenues without averting procyclicality of fiscal policy, and no meaningful difference has been found in the behavior of spending relative to similar countries without special fiscal institutions (Davis and others, 2001). In other countries with special fiscal institutions, government spending did not follow commodity revenues, but this was the case before and after the establishment of special fiscal institutions (Ossowski and others, 2008). Those experiences suggest that the design of appropriate institutions and fiscal frameworks is crucial to effectively manage volatile, uncertain, and exhaustible natural resource revenues.

The following section focuses on international experiences with SWFs framed around their policy objectives and operational rules.

C. Sovereign Wealth Funds (SWFs)

Policy Objectives

10. In response to the challenges to fiscal policy management brought about by natural resource revenues, SWFs have been aimed at achieving one or multiple policy objectives:

- **Macroeconomic stabilization:** to help to smooth government expenditure in view of volatile and unpredictable natural resource revenue, contributing to short-term macroeconomic stability and avoiding deterioration in the quality of public spending. This is the typical objective behind stabilization funds.
- **Avoidance of surge in domestic liquidity:** to help constrain domestic liquidity in the face of a surge in natural resource revenue and contain asset price appreciation.
- **Avoidance of Dutch disease:** to counteract upward pressure on and volatility in the real exchange rate, which affect the competitiveness of the nonresource tradable sectors.
- **Financial savings:** to build up wealth for future generations, ensuring intergenerational equity and long-term fiscal sustainability. This is the typical objective behind saving funds.
- **Asset management:** to help manage (rising) financial assets accrued from natural resource revenue.
- **Fiscal transparency:** to enhance transparency and governance and to promote public awareness of government financial constraints over the long term.

Design of SWFs

11. Given the basic characteristics of SWFs' policy objectives, the following sections review critical issues based on international experiences and their associated lessons for the design of SWFs. We focus on the following issues: deposit/withdrawal operational rules, integration with the budget process, asset management, and transparency and accountability.

1. Operational Rules

12. SWFs' activities are guided by operational rules. They typically cover specific principles for depositing revenue into the fund, withdrawing resources for direct spending or to make transfers to the budget, investing the fund's financial assets (to increase returns), and

providing information about revenue inflows and changes in financial assets. One critical caveat to be made at this point is that SWFs' operational rules should not be confused with fiscal rules, which, as was explained earlier, aim to ensure macroeconomic stability and fiscal sustainability. Therefore, SWFs and their operational rules should be seen as tools to help implement (broader) fiscal rules.

Deposit and withdrawal rules

13. SWFs' deposit and withdrawal rules typically differ depending on the type of SWF, as follows:

14. **Stabilization funds** usually have *contingent rules*, which determine the amount of resources that should be deposited in the fund or that can be withdrawn from it, depending on whether the market commodity price or revenue is higher or lower than thresholds. Such thresholds or reference values, usually preannounced, are typically based on fixed commodity prices or on formula that may be linked to past observations (such as historical moving-average prices) or forecasts of future prices.

15. On the other hand, **saving funds** have frequently relied on non-contingent rules—*revenue-share rules*—which may stipulate that revenues amounting to a fixed share of resource revenues or of total revenues be deposited in the fund independently of resource market and overall fiscal developments. Withdrawals from saving funds can be based on various schemes, including the “*bird-in-hand*” rule and the “*permanent income*” approach. The former would limit withdrawals from the fund only to the financial yield from the fund's accumulated financial assets. This is a very conservative approach in which the fund transfers a substantial share of the mineral wealth to future generations. Under the permanent income approach, based on the permanent income hypothesis developed by Friedman, government mineral or net wealth—mineral wealth plus net financial assets—is withdrawn at a gradual pace that ensures a share for each generation according to some social welfare criteria.

16. **Financing funds**, which can have both stabilization and saving objectives, imply much more flexible operational rules. In financing funds, typically little more than a government account, net inflows effectively mirror the overall budget balance. Under the rules in place, the budget is required to transfer to the fund net mineral revenues. In turn, the fund finances the budget's non-mineral deficit through a reverse transfer. The fund's net flows are linked to the overall fiscal surplus or deficit. In this way, a financing fund provides an explicit and transparent link between fiscal policy and asset accumulation. Changes in the assets held by the fund correspond to those in the overall net financial asset position of the government (see Box I.1 for examples).

BOX I.1. FINANCING FUNDS; NORWAY AND TIMOR-LESTE

Oil funds in Norway and Timor-Leste are seen to have exemplary features and operations. Both funds are financing funds.

Norway. Norway's oil fund was established in 1990 and renamed the Government Pension Fund-Global (GPF) in 2006. The GPF's objective is to support government saving and promote an intergenerational transfer of resources. All of the government's net income from oil/gas revenue is fed into the GPF, from which transfers are made to the budget to finance the non-oil fiscal deficit. The fiscal guideline, introduced in 2001, requires a non-oil structural central government deficit of around 4 percent of the assets of the GPS, which is derived from the estimated long-run real rate of return. The oil fund is formally a government account at the central bank that receives the net central government receipts from petroleum activities and transfers to the budget the amounts needed to finance the non-oil deficit. The GPF is fully integrated into the budgetary process without authority to spend, and the decisions on spending and the fiscal policy stance are made within the budget process.

Timor-Leste. The Petroleum Fund (PF) was established in 2005, based on the Norwegian model, with technical assistance provided by the IMF. It aims at limiting the risk of Dutch disease, sheltering the budget from unstable commodity prices and associated swings in government spending, and avoiding rent seeking. All Timor-Leste's revenue from petroleum operations is paid into the fund, and the fund also retains all investment income (net of management expenses). Transfers from the fund can only be made to the central government budget. To preserve the real value of the country's petroleum wealth, such withdrawals from the fund are guided by the *estimated sustainable income (ESI)*, which is calculated, every year, as 3 percent of the sum of the fund balance and the present value of expected future petroleum receipts. The operational guideline is flexible. The ESI is a benchmark to guide the level of saving rather than a legal obligation. Withdrawing more than the ESI (3 percent of the sum of the fund balance and the present value of expected future petroleum receipts) requires the government to provide parliament with a detailed explanation of why it is in the long-term interests of the country.

Rigidity versus flexibility

17. Many SWFs rely on relatively rigid operational rules for accumulation and withdrawal of resources. The main rationale of rigid operational rules is to remove high resource revenues from the budget and thereby help moderate and stabilize government expenditure, reducing policy discretion. However, this is a caveat worth taking into account: rules regarding channeling revenues out of and into the fund do not of themselves control spending or deficits at the government level. In particular, if the government is not liquidity constrained (including through arrears), it could borrow or run down assets to finance higher expenditure, as resources are fungible. Thus, if there is insufficient control of expenditures or deficits outside the fund, the advantages of operating a fund that stabilizes resource revenue

available to the budget would be limited. The achievement of actual expenditure smoothing therefore requires additional fiscal policy decisions besides the operation of a fund.

18. Aside from the liquidity constraint argument, the international evidence suggests that a number of countries have had difficulties in specifying and implementing rigid rules that are financially and politically sustainable because of difficulties in identifying permanent and temporary components of commodity price changes and also because of political economy factors. Moreover, tensions have often surfaced in the operation of funds with rigid rules, particularly in situations of significant exogenous changes, shifting policy priorities, or increased spending pressures, and conflicting asset and liability management objectives.

19. As a result, in a number of cases, rigid fund rules have been changed,³ bypassed,⁴ and suspended.⁵ In some extreme cases, funds were eliminated altogether (e.g. Chad and Ecuador) because of accumulation of arrears and/or cash management problems in the context of increased spending pressures. In the case of Papua New Guinea's former Mineral Resource Stabilization Fund (MRSF), which was established in 1974, both relaxed operational rules and poor integration with budget and fiscal policy led to large fiscal deficits and public debt. Rules on deposits and withdrawals were changed over time in the face of budgetary pressures.⁶ Moreover, the assets were used as collateral for new borrowing and to repay debt. The MRSF subsequently closed in 2001.

20. Therefore, the operational rules of SWFs need to allow them to function effectively within an appropriate overall framework for economic management. Clear and stable rules need to allow for flexibility in their operations. Flexibility would be harnessed when the SWF links its operational rules explicitly and transparently with a broader fiscal policy framework, as in financing funds.

³ For example, Kazakhstan, Russia, and Trinidad and Tobago changed the threshold values for accumulating deposits several times and even the definitions of oil revenue affected by those rules in an effort to accommodate higher spending while maintaining the relevance of their funds.

⁴ Algeria borrowed domestically to finance increased spending and passed on the liabilities to its oil fund, which was only allowed to repay debt.

⁵ Venezuela stopped the simultaneous accumulation of deposits and domestic debt.

⁶ The initial provision restricting the amount transferred to the budget in any one year to no more than 20 percent higher than the previous year was found to be unduly restrictive and relaxed in 1986. The fund does not appear to have been well integrated with overall fiscal policy or to have helped stabilize budget expenditure, which had been partly financed with debt operations outside of the MRSF (Davis and others, 2001).

2. Integration with the Budget Process

21. Another important consideration for the proper design of SWFs' operational rules in general, and withdrawal rules in particular, refers to their integration with the budget. The budget is the key instrument to provide a comprehensive picture of fiscal activities and ensure that all competing demands are taken into account in deciding government spending allocations. International experience with SWFs has brought to the fore the dangers of granting funds the capacity to spend on their own, of earmarking revenue from funds, and even of undertaking investments domestically that cannot be distinguished from budgetary operations.

Extrabudgetary spending

22. The granting of spending authority to SWFs undermines the principle of unified control over spending through off-budget expenditure. If such off-budget outlays are undertaken without parliamentary approval and adequate oversight, it could result in non-transparent off-budget practices and give rise to governance concerns in budget process. Allowing off-budget spending also undermines the stabilization objective. Therefore, it is important to ensure that all spending decisions are taken within the context of the budget, and that expenditure is included in the budget in a comprehensive way. Extrabudgetary spending practice was prevalent in the oil funds of Azerbaijan, Kazakhstan, and Libya (with some recent efforts to eradicate it).

Revenue earmarking

23. Some oil funds have had their resources earmarked for specific purposes such as poverty reduction or debt service, but earmarking tends to result in resources being allocated outside the budget process, which can reduce flexibility, complicate liquidity management, and affect the efficiency of government spending.

- **Ecuador.** Several oil-related funds with extremely complex revenue earmarking rules limited the margin for budget flexibility and led to fragmented cash management. In fact, while other public sector entities were accruing substantial deposits at the central bank since oil-related revenue transfers were in excess of their spending responsibilities, the central government had to have tight fiscal policy because it did not have sufficient resources to cover its operations while having limited access to other financing sources.
- **Alaska.** The oil fund pays annual dividends to the population, partly as a safeguard against pressures to spend the oil revenue. In practice, the dividends have come to be seen as entitlements, and the government has borrowed substantially at times to finance increased spending. This accumulation of debt runs against the intended intergenerational transfer of resources.

Financial investments by SWFs in the domestic economy

24. A few countries allow SWFs to invest domestically. However, the use of SWF resources to invest in domestic markets raises a range of economic and governance issues.

- In terms of potential macroeconomic impact, such operations may imply the injection (or monetization) of resources originally from abroad into the domestic economy, with impacts on interest rates, the real exchange rate, and asset prices. Therefore, if an SWF is created as means of limiting Dutch disease problems, allowing it to invest domestically might defeat its purpose.
- From a fiscal perspective, there is a risk that those financial investments have policy motivations and include quasi-fiscal elements (e.g., subsidies to preferred sectors) or, in more extreme cases, that they are simply off-budget government spending operations masked as financial investments. Ideally, the quasi-fiscal activities inherent in such investments should be quantified and reflected separately in budget documentation and fiscal accounts. Experiences of Iran and Venezuela can be mentioned as examples: the Iranian oil fund provides loans in foreign currency to private entrepreneurs through domestic commercial banks, leading to ineffectiveness in maintaining macroeconomic stability; in the 1970s, the Venezuelan Investment Fund diverted its resources toward equity stakes in public enterprises, which turned out to be loss makers, effectively providing off-budget subsidies.
- From a governance perspective, a critical issue is whether SWFs are able to invest purely on commercial grounds, or whether they will be much more susceptible to political pressures than when investing overseas.

25. To summarize, the above practices—extrabudgetary spending, revenue earmarking, and domestic financial investments—can be problematic and may lead to fragmentation of policymaking, reduced efficiency in resource allocation, spending rigidities, reduced fiscal transparency, and complicated cash management. Such flaws in fiscal management could undermine the macroeconomic stabilization objective of SWFs.

3. Asset Management

26. An SWF could hold an important share of the public sector's financial assets aimed at achieving critical policy objectives, like fiscal stabilization, avoidance of Dutch disease, and intergenerational equity. Therefore, the management of fund's assets should be a critical component of its operational strategy. An asset management strategy would need to be defined within the broader context of the government's overall asset and liability management strategy. Such a strategy will need to be based specifically on benchmark levels of risk and return as implied by the overall policy framework and the government preferences and, more generally, on sound asset management principles.

27. Two particular aspects, and associated practices, are worth emphasizing in this area: short-term liquidity management and the design of investment strategies.

Liquidity management

28. Governments need to have available enough resources to meet their (short-term) spending needs and plans. In the presence of an SWF as a key repository of government financial assets, there is a risk that rigid operational rules lead to a fragmentation of cash management and difficulties in financing government's day-to-day operations. One particular example in this regard is Chad, where separate cash management systems were established to support a complex arrangement of multiple budgets and an oil fund, with revenues earmarked for specific purposes. The budget execution system was not well adapted to monitor such fragmented systems and the government ended up facing liquidity shortages and a proliferation of arrears. The accumulation of arrears was a contributing factor to the elimination of the oil fund.

Investment strategies

29. The formulation of investment strategies for the accrued financial assets—the so-called strategic asset allocation—should depend on and should be consistent with SWF's operational objectives and broader macroeconomic and fiscal policy objectives.

30. The type of financial instruments and their currency, maturity, and level of riskiness should be aligned with SWF's objectives, the level of assets accrued (both in absolute and relative terms), and even the authorities' institutional capacity. Stabilization funds should be generally conservative in their strategic asset allocations (SAA), using shorter investment horizons and low risk-return profiles, or other instruments that vary inversely with the risk the fund is meant to cover. The same rationale could apply in a country that is highly dependent on the returns on SWF assets. By contrast, SWFs with long-term objectives, such as saving funds, may seek to maximize returns while also aiming to preserve a certain amount of capital, in real terms, so that the purchasing power of the funds is guaranteed. They may therefore have longer investment horizons and riskier investment strategies.

31. Some new funds (for example, Timor-Leste, Marshall Islands, and Micronesia) have adopted prudent investment strategies that are similar to those followed to manage foreign exchange reserves. A prudent approach is likely to be preferable at the early stages of SWF implementation, particularly when institutional capacity and experience are still limited. This stands in sharp contrast with the experience in some Pacific Island Countries, where weak asset management led to substantial financial losses and severely jeopardized fiscal sustainability (see Le Borgne and Medas, 2007):

- **Nauru.** The asset portfolio of the Phosphate Royalties Trust Fund (established in 1968) was mostly invested in lumpy real estate projects.

- **Tonga.** The portfolio of the Tonga Trust Fund (established in 1988) consisted entirely of investments in three U.S. companies operating in the life insurance, energy, and internet businesses.

32. While very little is publicly known about operations and management of the above funds, the undiversified investments, together with mismanagement and the use of assets as leverage for borrowing, resulted in large financial losses. These experiences show the importance of ensuring that the asset management strategy for SWFs is consistent with the underlying policy objectives and the country's capacity to manage and monitor investments.

33. As stated earlier, and because of macroeconomic and governance concerns, there is a general preference for strategic asset allocations around foreign assets, as investing abroad could avoid imparting volatility to the domestic economy and also mitigate the appreciation of the currency protecting the competitiveness of the overall tradable sector.

4. Transparency and Accountability

Disclosure and reporting

34. An SWF is first and foremost a guardian of public financial assets; it can also provide the scope and means through which fiscal action can be taken. Therefore, stringent transparency and accountability provisions are critical to enhance any SWFs' legitimacy and prevent a misuse of resources.

35. In terms of transparency, the requirements for an SWF should be similar to those of other entities that are responsible for government functions as summarized in guidelines by the IMF and OECD.⁷ Of particular relevance to SWFs are provisions dealing with holdings of government assets, the reporting of revenues and expenditures, and comprehensive disclosure of information about the size and type of financial assets and the gross flows of revenue and spending. The IMF Fiscal Transparency Code also emphasizes the need to clearly specify roles and responsibilities for the holding of financial assets, implying the need for legal frameworks and regulatory documents that include an unambiguous statement of SWF's objectives and mechanisms for ensuring accountability. In addition, disclosure requirements extend to the governance arrangements framing the SWF's relationships with other public institutions, as well as the operational rules and asset management strategies. Accessibility and timeliness of information are other important aspects of fiscal accountability; SWFs should regularly publish their audited balance sheets, operations and performance. SWF's revenue, borrowing, spending, and performance should also be provided in the government's budget documentation.

⁷ See for details on the IMF *Code of Good Practices on Fiscal Transparency* and the explanatory *Manual on Fiscal Transparency*; and for information on the OECD's *Best Practices for Budget Transparency*.

36. The evidence shows that transparency and accountability practices differ substantially across countries. In many countries, (e.g., Norway, Timor-Leste, and Tuvalu) information is made available on the operations and financial position of the SWFs, but some countries prefer not to disclose such information, for example, arguing that public disclosure of the extent of official assets might strengthen pressures to spend.⁸ However, in the absence of information, the public may just as well have exaggerated perceptions of government financial wealth. In addition, lack of information about SWF's operation hampers analysis of the fiscal stance, savings and investment balances, and public and external sustainability and vulnerability. In this context, a representative group of SWFs elaborated some generally-accepted principles and practices, called the Santiago Principles,⁹ to make their objectives, institutional and governance structures, and investment practices visible.¹⁰

Institutional framework

37. The institutional framework of an SWF has a bearing on the fund's transparency and accountability levels. A separate framework or institutional setup can potentially weaken transparency and accountability. Where funds are set up as separate public entities (e.g., Temasek in Singapore and the Kuwait Investment Authority in Kuwait), with or without authority to undertake off-budget expenditure and maintain their own sources of revenue, specific coordination mechanisms would be needed. At a broad level, the fund's legal framework and corporate governance arrangements can help to frame the institutional relationships among funds, governments, and central banks. There should be clear guidelines for any large operations of the fund involving intervention in the foreign exchange markets or domestic market operations, including coordination with the monetary authorities.

D. Key Lessons for Papua New Guinea

38. Based on the review of international experience, particularly regarding the workings of SWFs, the following lessons can be extracted for Papua New Guinea and its challenge to manage (potentially growing and large) natural resource revenue:

⁸ For example, the Kuwaiti Reserve Fund for Future Generation is prohibited by law from disclosing its assets and investment strategy, although the parliament receives some periodic information which is subsequently reported in the media.

⁹ "Sovereign Wealth Funds—Generally Accepted Principles and Practices—Santiago Principles," International Working Group of Sovereign Wealth Funds, October 2008.

¹⁰ Those principles fall short of internationally accepted principles of transparency and financial disclosure that should apply to public sector entities, but are nonetheless a reference point for some SWFs.

Integrating an SWF into the Macro Framework

39. **Given potentially large future revenue from LNG projects, the fiscal policy framework (including the current Medium-Term Fiscal Strategy) might need to be modified.** The fiscal policy framework should be the critical anchor for the formulation of medium-term plans and annual budgets, as well as for the design and operation of special fiscal institutions like SWFs. The fiscal policy framework should be aimed at delinking government spending from volatile revenue originating from abroad in line with the economy's absorptive capacity and the government ability to spend well in the short term, and taking into account long-term exhaustibility of resources. The relative priority given to those various policy dimensions (i.e., basically the decision about how much to consume now out of mineral resources) would need to be carefully considered; since this is not obvious, some flexibility in the framework will be required.

40. **The current Medium-Term Fiscal Strategy (MTFS) provides a useful starting point for integrating an SWF into the macro framework.** The MTFS, which was approved in July 2008, is designed to reduce the impact of volatile mineral revenues on government spending and the economy as a whole with a rule constraining the non-mineral fiscal deficit to be no more than 8 percent of GDP. Under the MTFS, "normal revenues" are defined as the sum of non-mineral revenues and "normal" mineral revenues—the mineral revenues that would be expected without a commodity-price boom or about 4 percent of GDP. "Ongoing spending," which includes recurrent and development spending, should be kept in line with "normal revenues." Mineral revenues above 4 percent of GDP should be used for one-off transactions: debt reduction (30 percent) and additional public investment (70 percent). Amounts not used for debt reduction would accumulate in trust accounts, which the government holds largely in private banks, to be drawn over time for development needs. Although the MTFS has yielded substantial benefits, there is no mechanism to ensure that annual level of the non-mineral deficit is consistent with the cyclical position of the economy and thus fiscal policy can still be procyclical. In addition, the horizon over which normal mineral revenue is determined does not account for resource depletion and therefore does not ensure the long-term sustainability of recurrent spending.

41. **The modifications to the current fiscal framework (how much to spend) should take several dimensions into account, such as:**

- long-term fiscal sustainability, which is particularly critical under a limited horizon for natural resource reserves;
- the institutional capacity to spend and the quality of spending;
- the impact on domestic demand, and eventual pressures on inflation, real exchange rates, international competitiveness, and banking credit to the private sector; and

- the degree of uncertainty about future natural resource revenue, with a higher degree of uncertainty forcing the accumulation of more precautionary savings and thus a more conservative fiscal policy.

42. **Some specific features derived from other natural resource-dependent countries' fiscal frameworks could be useful for PNG.** In Timor-Leste, the fiscal framework focuses on intergenerational equity by using only the permanent income (the estimated sustainable income) from the oil/gas wealth to finance the non-oil fiscal deficit. In Norway, fiscal policy is based on a fiscal guideline—over the cycle, the non-oil deficit should average 4 percent of the financial wealth accumulated in the oil fund (approximately equal to the average real rate of return on financial investments), implying limited use of oil wealth in the short term but increasing over time. By contrast, in Chile, the focus is on short-term demand management and spending smoothing through the implementation of the structural balance rule that adjusts the fiscal balance both from short-term fluctuations in copper prices (structural copper revenue) through long-term copper prices and from cyclical changes in economic activity. Many of these features should be considered in designing a new PNG fiscal framework, based on the relative importance between short-term demand management and long-term intergenerational equity.

43. **As in Timor-Leste, spending from the fund in PNG should guarantee intergenerational equity.** To ensure that funds remain available to finance a portion of public spending long after LNG reserves has been depleted, the pace of spending from the fund should be based in part on the *permanent income* approach. The magnitude of the trend non-mineral deficit embedded in the framework will need to reflect this. In determining the trend non-mineral deficit, it will also be important to account for uncertainty about future mineral revenues. Further, with public spending falling primarily on the non-mineral sector, the trend non-mineral deficit should be consistent with the sustainable or trend growth in this sector. This will also help ensure that spending grows in line with the institutional capacity to spend effectively.

44. **Like the funds in Norway and Chile, the cyclical position of the economy will need to determine the level of the non-mineral deficit relative to its trend each year.** To maintain macroeconomic stability, it will be essential that public spending from mineral resource wealth does not result in domestic demand exceeding the economy's supply capacity. The available capacity in the economy to absorb public spending will vary from year to year. Thus the framework will need to incorporate a process for determining the annual level of the non-mineral deficit, relative to its trend, consistent with the expected spare capacity in the economy in the coming year.

The Design of an SWF

45. **A financing fund is recommended and should be integrated into the fiscal policy framework.** An SWF, if created, should function effectively within the fiscal policy

framework and should be linked explicitly and transparently to the budget. A financing fund is to be preferred since it provides an explicit and transparent link between fiscal policy and asset accumulation. Financing funds, in addition to avoiding rigid operational rules for deposit and withdrawal of resources that have characterized other types of funds, have also the advantage of operating either as a stabilization fund, a saving fund, or both. This could be useful because the pace of accumulation of financial assets will depend on mineral revenue developments together with the evolution of the non-mineral deficit. All spending decisions should take place within the budget process, avoiding the use of SWF assets directly for one-off or extrabudgetary spending. The fiscal policy framework (and not SWF's withdrawal rules) should deal with potential deviations from original fiscal plans: justification for ad-hoc operations involving use of SWF resources would have to be subject to parliament scrutiny.

46. Stringent transparency and accountability provisions are critical to enhance any SWFs' legitimacy and prevent a misuse of resources. Rules and operations of an SWF should be transparent and free from political interference. Clear and publicly accessible corporate governance arrangements that frame the SWF's relationship with other public institutions should be prepared. In terms of transparency, the requirements for an SWF should be similar to those of other entities that are responsible for government functions as summarized in guidelines by the IMF and OECD: SWFs should disclose the size and type of financial assets and the gross flows of revenue and spending; audited balance sheets, operations and performance, should be regularly published. Investment strategies should be consistent with the government risk tolerance and risk management capacity. It would be prudent to start from conservative investment strategies at an early stage. To ensure transparency, reports on its performance should be published.

47. There are strong cases for investing the SWF's accumulated resources abroad. Such a policy would help protect the competitiveness of the non-resource sector by sterilizing government savings (out of mineral resource revenue originating from abroad). The main transmission channel for natural resource revenues to the economy is fiscal policy, for example, through government spending. However, SWFs (financial) investment policies can be of relevance from a macroeconomic perspective. This is currently the case in Papua New Guinea, where accumulated mineral revenues are being held in government's "trust fund accounts" in private banks: allowing additional liquidity to be immediately deposited in private banks accelerates private sector credit and complicates the conduct of monetary policy by creating pressures on inflation (and potentially leading to real exchange rate appreciations and reduced competitiveness in the tradable sector) and/or by increasing central bank's quasi-fiscal losses derived from mopping up "excess" liquidity. In addition, investing abroad would help avoid potential governance problems that could arise from a mandate to invest in domestic markets.

APPENDIX I.1. OBJECTIVES AND DESIGN FEATURES OF SOVEREIGN WEALTH FUNDS (SELECTED COUNTRIES)

Country or State Name/Date Established	Stated Objective(s) Main Features	Integration in the Overall Fiscal Framework and Budget	Modification or Suspension Flexibility in the framework
<p>Norway Government Petroleum Fund, 1990. From 2006, Government Pension Fund-Global (GPF-G).</p>	<p>Stabilization and saving</p> <p>Financing fund; a government account at the central bank</p>	<p>The fund is fully integrated with the budget. Net central government cash flows from petroleum activities and the return on fund investments are deposited into the fund. Transfers to the budget are made to finance the non-oil deficit (approved by parliament). Fiscal policy, which regulates the flows to/from the Fund, is anchored in fiscal guidelines (effective from the 2002 budget) that state that the structural non-oil budget deficit shall correspond to 4 percent (the expected long-run rate of return in real terms) of the GPF-G assets.</p>	<p>The Petroleum Fund was renamed as the GPF-G in 2006 as part of a broader pension reform highlighting its role in meeting the rapid rise in public pension expenditures in future years (but not earmarking its resources for those or any other purposes). Core elements of the fiscal guidelines are relatively simple and allow flexibility in fiscal policy since the non-oil budget deficit can temporarily deviate from the 4-percent rule over the business cycle or in the event of extraordinary changes in the value of the GPF-G.</p>
<p>Timor-Leste Petroleum Fund, 2005.</p>	<p>Stabilization and saving</p> <p>Financing fund</p>	<p>The fund is fully integrated with the budget. All government oil/gas revenue and the return on fund investments are deposited into the fund. Transfers to the budget are made to finance the non-oil deficit (approved by parliament) to the extent to which the transfer does not exceed the estimated sustainable income (ESI), which is calculated as defined in the law.</p>	<p>The framework of the Petroleum Fund Law is flexible to allow withdrawals exceeding the ESI as long as a justification is presented to parliament with a detailed explanation of why it is in the long-term interests of the country.</p>
<p>Alaska Alaska Permanent Fund, 1976</p>	<p>Saving</p>	<p>50 percent of mineral revenues (increased from 25 percent in 1980) are deposited in the fund. It pays annual dividend to the population based on a fraction of the fund's realized earnings.</p>	
<p>Algeria Revenue Regulation Fund (RRF), 2000.</p>	<p>Stabilization</p> <p>A government account in local currency at the central bank</p>	<p>The fund receives residual oil revenue after budget allocation based on benchmark price as well as exceptional advances by the central bank for debt amortization. Resources can be used to finance the budget if hydrocarbon revenue outcome is less than budgeted or to reduce national debt. No withdrawals allowed if assets fall below US\$10 billion.</p>	
<p>Azerbaijan State Oil Fund of the Republic of Azerbaijan (SOFAZ), 1999.</p>	<p>Stabilization and saving</p>	<p>The fund receives only the part of oil revenue that is associated with the post-Soviet oil and gas production fields. SOFAZ finances projects included in the Public Investment Programme, which is submitted to Parliament together with annual consolidated budget (state budget plus SOFAZ's budget).</p>	

Country Name/Date Established	Stated Objective(s) Main Features	Integration in the Overall Fiscal Framework and Budget	Modification or Suspension Flexibility in the framework
Chad Fund for Future Generations (FFG), 1999.	Saving	10 percent of royalties and dividends after debt service related to pipeline borrowing were to be deposited in the fund. When total oil revenue lower or equal to 10 percent of previous year tax and nontax revenue, withdrawals were made but could not exceed revenue accrued in previous year.	The FFG was abolished in 2006 to streamline the fiscal policy framework and to increase flexibility in the government's liquidity management.
Ecuador Savings and Contingency Fund (FAC), 2005.	Stabilization	Inflows are mainly 20 percent of revenue from heavy crude oil exports. Resources are to be used if (1) actual oil revenue is below budgeted level or (2) a national emergency is declared.	Abolished in 2005.
Stabilization Fund for Investment and Debt Reduction (FEIREP), 2002.	Stabilization and saving	The fund receives revenue from heavy crude oil and 45 percent of light crude revenue in excess of budgeted amount. FEIREP funds were used as follows: (i) 70 percent to repay debt; (ii) 20 percent for stabilization purposes; (iii) 10 percent to finance budgeted health and education spending.	
Iran, Islamic Rep. Oil Stabilization Fund (OSF), 2000.	Stabilization and to finance on lending by commercial banks.	Residual oil revenue after budget allocation based on benchmark price up to a certain limit is deposited in the fund. Transfers to budget are made if oil revenue outcome is less than budgeted. Up to half of the fund's assets can be used for lending foreign exchange to domestic private entrepreneurs in priority sectors via commercial banks, and to state-owned companies, given limited their access to foreign borrowing.	In 2007/08, the government converted some of the OSF deposits at selected state-owned commercial banks into equity to strengthen their capital.
Kuwait General Reserve Fund (GRF), 1960.	Stabilization and saving	The GRF receives all revenues including all oil revenues, from which all budgetary expenditures are paid.	
Reserve Fund for Future Generations (RFFG), 1976.	Saving	10 percent of total government revenue including revenue of the GRF is transferred to the RFFG, which also retains its investment income. Discretionary transfers to the budget, with parliament approval, are repaid along with accrued interests.	

Country Name/Date Established	Stated Objective(s) Main Features	Integration in the Overall Fiscal Framework and Budget	Modification or Suspension Flexibility in the framework
Libya Oil Reserve Fund (ORF), 1995.	Stabilization and saving	Oil revenues exceeding those corresponding to the reference oil price in budget law is deposited to the ORF. Discretionary transfers are made both to the budget and to finance extrabudgetary spending.	The Libyan Investment Authority was established in 2006 (started operations in June 2007) to manage the government's financial assets, including the ORF.
Russian Federation Reserve Fund (RF) and National Wealth Fund (NWF), 2008	RF; Stabilization NWF; Saving to finance the deficits of the Pension Fund	Oil and gas revenues in excess of budget allocation are deposited in the RF until the RF's balance reaches 10 percent of GDP. Excess resources will then be transferred to the NWF. RF assets can be withdrawn to cover financing needs in case the amount of oil and gas revenues is not sufficient for the budget purposes. The RF assets could also be withdrawn for early debt repayment. Until 2013, withdrawals from the RF should be approved by the federal budget law for the corresponding fiscal year and planning period. From 2013, the current Budget Code imposes a limit on the non-oil/gas deficit of the federal government equivalent to 4.7 percent of GDP. (However, the government is discussing shifting the deadline for imposing this limit to 2015)	The former oil stabilization fund (established in 2004 as a stabilization fund) was redesigned into the Reserve Fund (RF) and the National Welfare Fund (NWF) in January 2008. The fund rules have been temporarily suspended until 2013, to directly finance fiscal deficits using oil revenue after the global crisis.
Tuvalu Tuvalu Trust Fund, 1987, and later the Consolidated Investment Fund (CIF) and the Tuvalu Trust Fund (TTF).	CIF; Stabilization TTF; Saving Government accounts	Windfall revenue and ad-hoc donor assistance are deposited in the TTF, from which transfers are made to the CIF when the market value of the fund exceeds the maintained value, being the real value as measured by the Australian CPI. Withdrawals from the CIF are at discretion of the Ministry of Finance, although there is a target minimum balance (by a guideline) of 16 percent of the TTF's maintained value.	The fund was initially designed for long-term fiscal sustainability. As stabilization needs also became more pressing, in 1993, a stabilization account (later transformed into the Consolidated Investment Fund) was added to the saving account (later called Tuvalu Trust Fund).

References

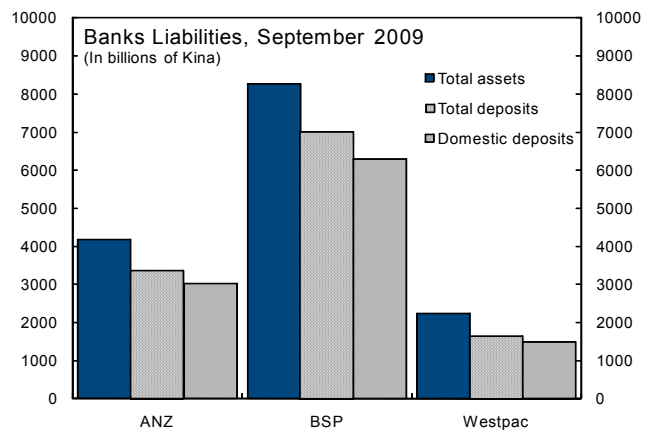
- Davis, J., Ossowski, R., Daniel, J., and Barnett, S., 2001, “Stabilization and Savings Funds for Nonrenewable Resources,” Occasional Paper 205 (International Monetary Fund).
- International Monetary Fund, 2007a, “Code of Good Practices on Fiscal Transparency”, <http://www.imf.org/external/np/fad/trans/>.
- International Monetary Fund, 2007b, “Manual on Fiscal Transparency,” Fiscal Affairs Department.
- International Working Group of Sovereign Wealth Funds (2008), “Sovereign Wealth Funds—Generally Accepted Principles and Practices—Santiago Principles.”
- Le Borgne, E. and Medas, P., 2007, “Sovereign Wealth Funds in the Pacific Island Countries: Marco-Fiscal Linkages,” IMF Working Paper (International Monetary Fund).
- OECD, 2002, “Best Practices for Budget Transparency,” http://www.oecd.org/LongAbstract/0,3425,en_2649_34119_1905251_1_1_1_1,00.html
- Ossowski, R., Villafuerte, M., Medas, P., and Thomas, T. (2008), “Managing the Oil Revenue Boom: the Role of Fiscal Institutions,” Occasional Paper 260, (International Monetary Fund).
- Shields, J. and Villafuerte, M., “Sovereign Wealth Funds and Economic Policy at Home,” (forthcoming).

II. THE IMPACT OF THE FINANCIAL CRISIS RELATIVE TO OTHER PACIFIC ISLAND COUNTRIES¹¹

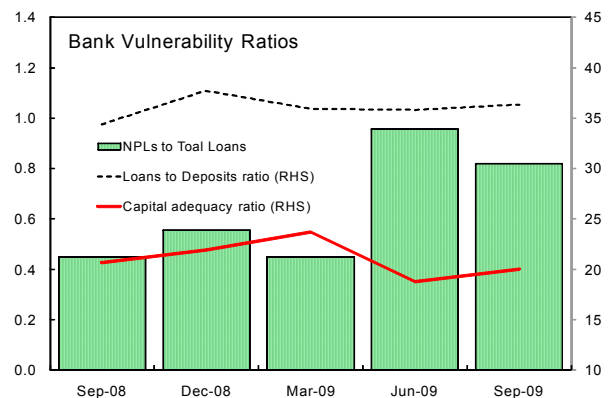
48. **In contrast to other pacific island countries (PICs), growth in Papua New Guinea (PNG) held up well during the global downturn.** This was partly due to the fact that the financial sector was insulated from global capital markets and thus avoided and direct impact from the turmoil. Also, the prudent fiscal policy implemented during the commodity price boom left the government in a position to notably increase public spending to help sustain growth. Heavy reliance on remittances and tourism income, which were adversely affected by the crisis, were the main factors that deteriorated the economic performance of other PICs. However, PNG did not escape unfazed, as the indirect impact from the decline in commodity prices took its toll on the external and fiscal positions of the resource rich economy.

49. **Banks in PNG are funded primarily by deposits and have been unaffected by tight global capital markets.** PNG's banking system does not depend on international capital markets for funding with deposits accounting for more than 80 percent of liabilities.

The three biggest banks rely primarily on domestic funding, with local currency deposits representing about 90 percent of total deposits. In addition, more than 60 percent of total assets were liquid, while in other pacific island countries (PICs) this ratio was 5 to 6 times lower, as of September 2009. In the second largest economy in the pacific, Fiji, 21 percent of its banking sector assets were liquid.



50. **To date, the only negative development in PNG's banking sector has been a minor increase in non-performing loans.** The ratio of non-performing loans (NPLs) to total assets had been decreasing since 2000. However, with the impact of the global crisis on commodity prices and, consequently, on business incomes, this ratio rebounded back to its 2005 level. The ratio of NPLs to total assets rose from 0.4 percent in

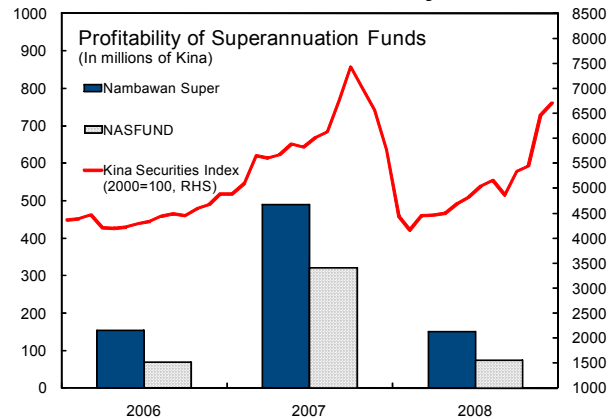


¹¹ Prepared by Erdembileg Ochirkhuu (APD).

September 2008 to 0.8 percent in September 2009. While in most of the other PICs, the ratio of NPLs to total assets more than tripled and in some countries even quadrupled, reaching as high as 15 percent. But overall, the capital asset ratios (CAR) of banks in PICs, and particularly in PNG, suggest that capital buffers are large enough to absorb potential losses. Since 2001, the CAR in PNG has been well above the regulatory minimum and stable at about 25 percent on average.

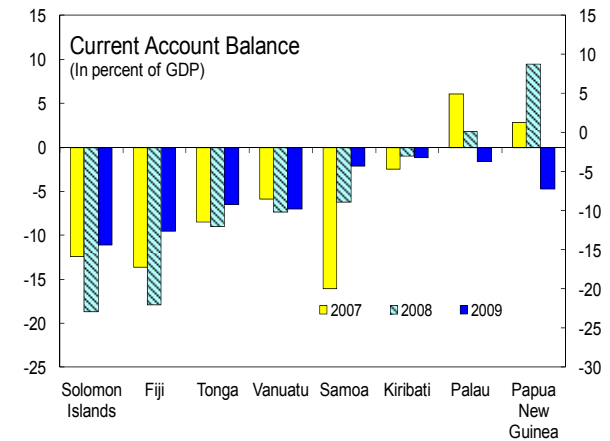
51. So far, the largest impact that the global markets turmoil has had on Papua New Guinea’s financial sector has been on superannuation funds. For the two major funds,

investment in equities was the largest exposure in their investment portfolios (about 55 and 60 percent) and accounted for the bulk of their returns in 2007. Mining, oil, and gas industries dominated among the domestic and internationally listed equities. Despite the impact of the crisis on their equity portfolios, the returns of these two funds remained positive in 2008, albeit 70–75 percent lower than in 2007.

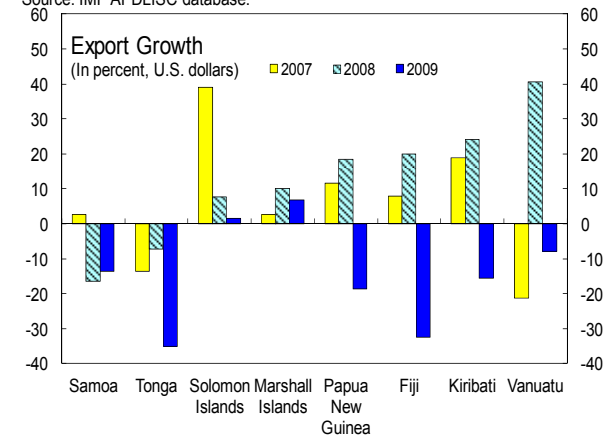


52. Compare to the improvements in the current account balance of commodity importing PICs, PNGs current account shifted into a deficit for the first time since 2002. The current account deficit was about K540 million (about 7 percent of GDP) as of end-2009.

This was largely due to a lower trade surplus, owing to the decline in export receipts given lower commodity prices in the first half of the year. However, due to the surplus in PNG’s capital and financial accounts, the balance of payments data show a surplus of about K600 million as of end-2009. While lower commodity import prices helped improve current account balances in most PICs, an offsetting factor for some, particularly for Fiji, was the impact of the global slowdown on the tourism sector, the largest export revenue generator. For the Solomon Islands, besides the impact from the declining commodity prices, the observed sharp decline in export growth was mirroring



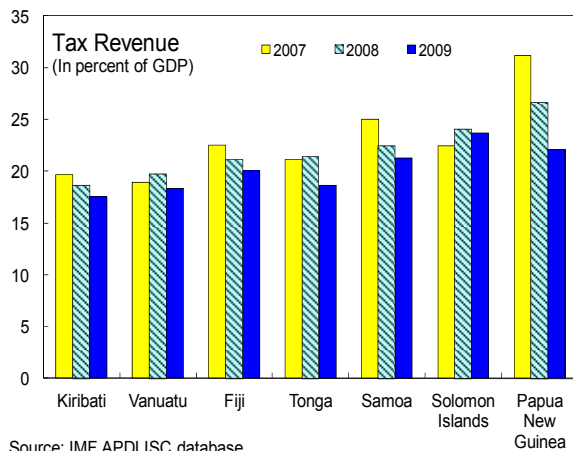
Source: IMF APDLISC database.



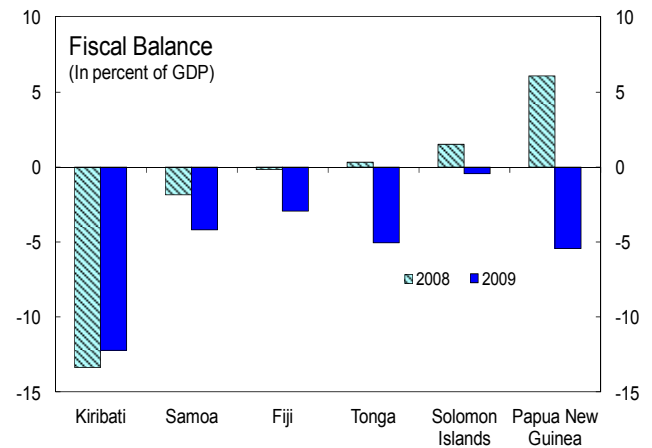
Source: IMF APDLISC database.

the exhaustion in forest resources and hence the sharp decrease in logging exports.

53. **The PNG government's preliminary budget estimates for 2009 show a deficit of about K86 million (about 0.4 percent of GDP).** The government's presentation treats the transfer from the gas commercialization trust account (K423 million) as revenue and ignores spending from other trust accounts. So, consistent with the Fund's GFS manual, when this revenue is treated as funding and spending from the trust accounts is included, the 2009 fiscal balance estimate becomes a deficit of more than K1.7 billion (about 8 percent of GDP). This deterioration in the fiscal outcome is larger than expected and also larger than in most other PICs. Both revenue and expenditure factors contributed, with lower than forecasted mineral tax revenues, and higher than expected spending from trust accounts (higher also than specified by Medium-Term Fiscal Strategy). On the revenue side, in addition to the declining prices, maintenance work on one of the biggest copper processing plants, delays in shipments, and the declining reserves of copper and oil added to the lower than forecasted mineral revenue outturn. In addition to the impact from the low commodity prices, declines in services sector tax revenues impacted fiscal positions of other PICs.



Source: IMF APDLISC database.



Source: IMF APDLISC database.

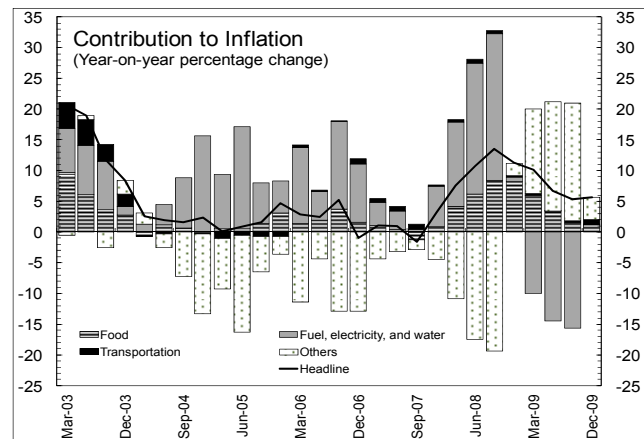
III. INFLATION IN PAPUA NEW GUINEA: THE INCREASING ROLE OF DOMESTIC DEMAND¹²

A. Introduction

54. **This chapter contains an empirical examination of the inflation process in Papua New Guinea.** Historically, the exchange rate has been one of the key drivers of inflation. But the recent escalation of business activities associated with liquefied natural gas projects and its spill-over effects could add significant pressure on inflation. To evaluate this risk we investigate the possibility that domestic demand pressures have become more important in the inflation process. The empirical results suggest that the exchange rate is still the key driver of inflation, despite a slightly growing impact of domestic demand.

B. Current Developments in Inflation

55. **Inflation has started to abate gradually in line with the decline in international oil and food prices.** Since December 2003, inflation in Papua New Guinea has moved to the lower single digit range, twice falling below zero. But in 2008, inflation intensified owing mainly to the increase in oil and food prices, reaching a peak of 13.5 percent in September 2008. Since then, it has gradually declined (to 5.3 percent in September 2009), again owing to the movements in oil and food prices and a lagged pass-through from the appreciation of the kina.



C. Empirical Analysis

56. **This section examines the drivers of inflation, including the increasing role of domestic demand on inflation using an augmented traditional Phillips curve model (TPCM).** The TPCM with the adaptive inflation expectations assumption is used to assess the main drivers of inflation in Papua New Guinea. This note considers the exchange rate, output gap, inflation in the major trading partner Australia as the factors driving inflation in Papua New Guinea over the period 1980Q1–2009Q3.

¹² Prepared by Erdembileg Ochirkhuu (APD).

The TPCM model is
$$\Delta p_t = a_1 E_t \Delta p_t + a_{it} X_{it} + e_t \quad (1)$$

and assuming the adaptive inflation expectations

$$\Delta p_t = a_1 \Delta p_{t-1} + a_{it} X_{it} + e_t \quad (2)$$

by decomposing the independent factor inputs from equation (2) we will get the following model:

$$\Delta p_t = a_1 \Delta p_{t-1} + a_{2t} \Delta er_{it} + a_{2t} \Delta og_{it} + a_{2t} \Delta pf_{it} + a_{2t} \Delta poil_{it} + e_t \quad (3)$$

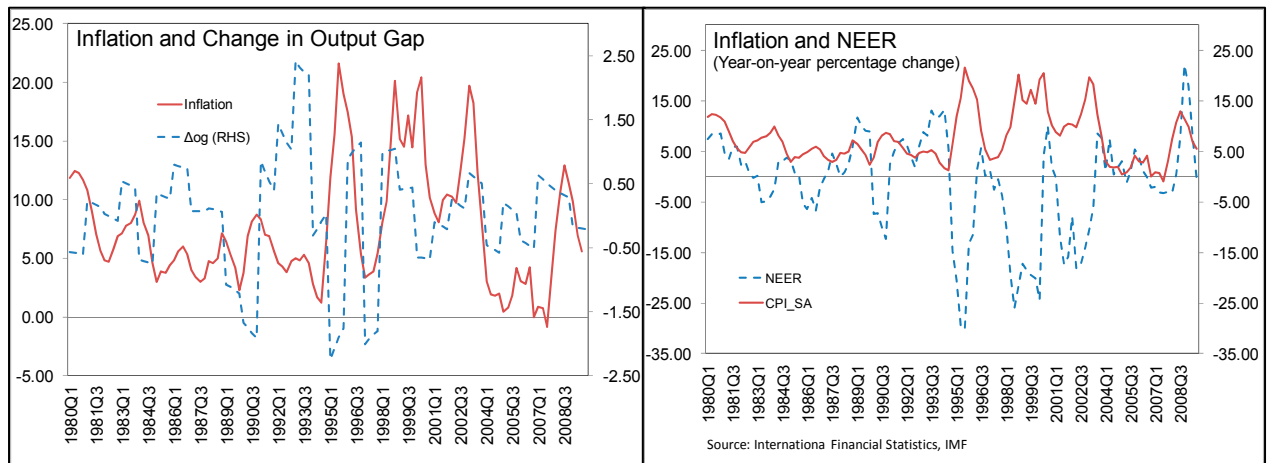
This is the model estimated in this paper. The estimation takes into account the quarterly data set over the period 1980–2009. Details on the variables used in the regressions are as follows:

Output gap (Δog): Change in output gap is used as a proxy to capture the domestic demand pressure on inflation. The quarterly output gap has been generated using the interpolated data on the annual GDP and Hodrick-Prescott filter. The chart below graphs the changes in domestic demand and inflation in PNG.

Exchange rate (Δer): The NEER has been extracted from the INS database. The chart below suggests strong correlation between the exchange rate and inflation.

Foreign inflation (Δpf): Foreign inflation is proxied by inflation in Australia, as Australia is the largest trading partner for Papua New Guinea. Australian inflation data has been extracted from the INS database. The chart shows some positive correlation between inflation in PNG and Australia.

Oil prices ($\Delta poil$): In Papua New Guinea, changes in world crude oil prices are mostly incorporated and passed through to the final pump price one month after. Hence, the lagged oil prices have been used in the estimation as one of the drivers of inflation in PNG.



57. **Estimation results show that the exchange rate and the inflation in the largest trading partner Australia are the key drivers of inflation in PNG.** The results from the two longest sample periods suggest that the factors determining current inflation are past inflation, inflation in the largest trading partner, and the exchange rate, all of which are significant at the one percent level. As the sample gets shorter, the importance of domestic demand increases. The change in output gap enters with the expected sign and the p-value decreases as the sample gets shorter indicating a growing impact of domestic demand. However, the estimation results suggest that the domestic demand pressure is statistically significant at 20 percent level.

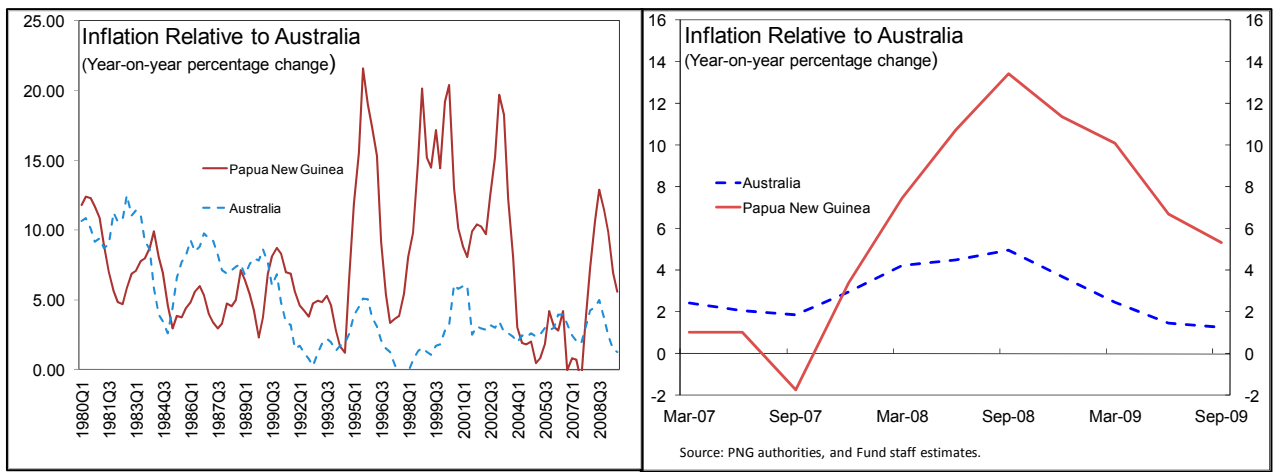


Table 1. Estimation Results

	$\Delta P(T-1)$		ΔOG		ΔER		ΔPF		$\Delta POIL$		Obs.	R^2
	coef.	p-value	coef.	p-value	coef.	p-value	coef.	p-value	coef.	p-value		
1980-2009	0.6621 (0.617)	0.000	0.1434 (0.1328)	0.283	-0.0999 (0.0256)	0.000	0.3303 (0.1023)	0.002	0.0107 (0.0080)	0.187	118	0.70
1990-2009	0.6059 (0.0826)	0.000	0.1936 (0.1690)	0.256	-0.0971 (0.0321)	0.003	0.6844 (0.2582)	0.010	0.0107 (0.0111)	0.335	78	0.69
2000-2009	0.5552 (0.1287)	0.000	0.8207 (0.5780)	0.165	0.0005 (0.0430)	0.990	0.6608 (0.3106)	0.041	0.0072 (0.0143)	0.618	38	0.65

1/ Standard errors are in parentheses.

D. Conclusions and Implications

58. **The results suggest that for an import dependent small open economy like PNG, inflation in the largest trading partner and the exchange rate are still the main drivers of inflation.** Even though the findings suggest only a limited role for domestic demand, the current developments in the economy could be changing that characteristic. And with the current pace of activities in the business environment, in association with the LNG projects, domestic demand conditions should play an increasing role in setting monetary and fiscal policy.

References

Bank of Papua New Guinea (2009), *Quarterly Economic Bulletin, September Quarter 2009*. Available via the Internet: <http://www.bankpng.gov.pg/publications-mainmenu-159.html>

Department of Treasury (2010), 2010 National Budget, December 2010.

National Statistical Office (2009), *Consumer Price Index, December Quarter 2009* (Port Moresby, Papua New Guinea).

Nindim, Williamina (2006), "Measuring Underlying Inflation in Papua New Guinea," Working Paper No. 2006/03, Bank of Papua New Guinea.

INTERNATIONAL MONETARY FUND

PAPUA NEW GUINEA

Statistical Appendix

Prepared by Erdembileg Ochirkhuu

Approved by the Asia and Pacific Department

May 4, 2010

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Table 1. Papua New Guinea: GDP by Sector at Current Market Prices, 2005–08

	2005	2006	2007	2008
(In millions of kina)				
Nominal GDP 1/	15,094	16,897	18,798	21,626
Mineral	4,062	5,043	5,441	5,927
Non-mineral	11,032	11,854	13,358	15,699
Of which: Non-agricultural	6,013	6,527	7,456	8,790
Agriculture, forestry and fishing	5,020	5,327	5,902	6,909
Mining, quarrying, and petroleum	4,062	5,043	5,441	5,927
Manufacturing	928	975	1,064	1,248
Electricity, gas and water	301	338	362	404
Construction	1,246	1,437	1,750	2,226
Wholesale and retail trade	943	1,039	1,177	1,393
Transport, storage and communication	317	326	364	440
Financing, insurance, real estate and business services	489	579	639	760
Less: Imputed bank service charge	316	391	240	240
Community, social and personal services	1,447	1,527	1,635	1,819
Import duties	661	700	707	742
Less: Subsidies	4	4	3	3
(In percent of GDP)				
Memorandum items:				
Nominal GDP	100.0	100.0	100.0	100.0
Mineral	26.9	29.8	28.9	27.4
Non-mineral	73.1	70.2	71.1	72.6
Of which: Non-agricultural	39.8	38.6	39.7	40.6
Agriculture, forestry and fishing	33.3	31.5	31.4	31.9
Mining, quarrying, and petroleum	26.9	29.8	28.9	27.4
Manufacturing	6.1	5.8	5.7	5.8
Electricity, gas and water	2.0	2.0	1.9	1.9
Construction	8.3	8.5	9.3	10.3
Wholesale and retail trade	6.2	6.1	6.3	6.4
Transport, storage and communication	2.1	1.9	1.9	2.0
Financing, insurance, real estate and business services	3.2	3.4	3.4	3.5
Less: Imputed bank service charge	2.1	2.3	1.3	1.1
Community, social and personal services	9.6	9.0	8.7	8.4
Import duties	4.4	4.1	3.8	3.4
Less: Subsidies	0.0	0.0	0.0	0.0

Sources: Treasury Department estimates for 2005 through 2008.

1/ Sum of industries less imputed bank service charge, plus import duties less subsidies.

Table 2. Papua New Guinea: GDP by Sector at 1998 Constant Prices, 2005–08

	2005	2006	2007	2008
	(In millions of 1998 kina)			
Real GDP 1/	8,625	8,823	9,454	10,083
Mineral	1,126	1,030	1,030	1,019
Non-mineral	7,499	7,793	8,424	9,064
Of which: Non-agricultural	4,215	4,474	4,966	5,456
Agriculture, forestry and fishing	3,284	3,318	3,458	3,608
Mining, quarrying, and petroleum	1,126	1,030	1,030	1,019
Manufacturing	650	676	717	760
Electricity, gas and water	134	135	141	150
Construction	918	1,028	1,192	1,371
Wholesale and retail trade	576	624	687	735
Transport, storage and communication	222	233	329	460
Financing, insurance, real estate and business services	333	366	384	407
Less: Imputed bank service charge	212	238	176	176
Community, social and personal services	1,127	1,161	1,207	1,243
Import duties	470	492	487	508
Less: Subsidies	3	3	2	2
	(Annual percentage change)			
Memorandum items:				
Real GDP	3.9	2.3	7.2	6.7
Mineral	1.2	-8.5	-0.1	-1.0
Non-mineral	4.3	3.9	8.1	7.6
Of which: Non-agricultural	3.4	6.1	11.0	
Agriculture, forestry and fishing	5.6	1.0	4.2	4.3
Mining, quarrying, and petroleum	1.2	-8.5	-0.1	-1.0
Manufacturing	8.3	4.0	6.0	6.0
Electricity, gas and water	5.1	1.3	4.0	6.8
Construction	4.8	12.0	16.0	15.0
Wholesale and retail trade	3.5	8.4	10.0	7.0
Transport, storage and communication	3.0	5.0	41.3	39.8
Financing, insurance, real estate and business services	10.2	9.7	5.0	6.0
Less: Imputed bank service charge	21.7	12.4	-26.1	0.1
Community, social and personal services	2.0	3.0	4.0	3.0
Import duties	-0.2	4.7	-1.0	4.2
Less: Subsidies	19.0	8.0	-22.2	0.0

Sources: Treasury Department estimates for 2005 through 2008.

1/ Sum of industries less imputed bank service charge, plus import duties less subsidies.

Table 3. Papua New Guinea: Production of Major Commodities, 2004–08

	2004	2005	2006	2007	2008
Production volumes					
Crude oil (millions of barrels)	12.6	13.3	14.5	13.8	12.2
Copper (thousands of tonnes)	173.9	226.1	216.7	199.4	185.7
Gold (tonnes)	67.3	70.5	56.7	57.5	63.3
Cocoa (thousands of tonnes)	41.5	44.2	44.0	47.8	53.3
Coffee (thousands of tonnes)	63.0	72.1	52.3	54.6	67.0
Tea (thousands of tonnes)	8.1	6.9	6.6	6.4	5.4
Copra (thousands of tonnes)	19.2	22.3	12.7	12.6	32.6
Copra oil (thousands of tonnes)	45.1	54.4	41.5	51.3	62.0
Palm oil (thousands of tonnes)	339.0	345.6	362.3	368.3	446.0
Rubber (thousands of tonnes)	3.8	4.8	4.4	4.1	4.9
Logs (millions of cubic meters)	2.0	2.3	2.7	2.8	2.5
(In millions of U.S. dollars)					
Production values					
Crude oil	513	710	933	982	1,182
Copper	479	831	1,459	1,424	1,293
Gold	862	1,008	1,102	1,254	1,774
Cocoa	68	64	66	88	129
Coffee	88	152	145	190	281
Tea	7	7	7	6	6
Copra	5	6	3	4	15
Copra oil	25	30	23	28	34
Palm oil	136	126	150	263	382
Rubber	4	6	8	8	11
Logs	110	131	180	215	208

Sources: Data provided by the Papua New Guinea authorities.

Table 4. Papua New Guinea: Employment by Sector, 2004–09

	2004	2006	2007	2008	2009 Sep.
(March 2002=100, annual average)					
Total	109.2	119.1	131.2	141.9	148
Retail	93.1	97.8	115.1	123.6	124.7
Wholesale	123.8	145.7	158.0	160.9	166.4
Manufacturing	117.7	132.7	142.4	156.6	164.4
Building and construction	107.9	119.2	135.4	163.2	171.2
Transportation	106.8	108.2	115.2	125.2	127.6
Agriculture, forestry, and fisheries	112.9	123.3	139.1	147.3	152.8
Financial and business services	104.7	112.5	114.4	122.7	133.3
Mineral 1/	95.6	111.1	128.5	137.8	141.6
(Change from corresponding period of previous year, in percent)					
Total	0.6	7.3	10.2	8.2	4.3
Retail	-3.9	4.4	17.7	7.4	0.9
Wholesale	9.3	11.5	8.4	1.8	3.4
Manufacturing	6.1	4.1	7.3	10.0	5.0
Building and construction	-13.1	21.1	13.6	20.5	4.9
Transportation	0.7	2.0	6.5	8.7	1.9
Agriculture, forestry, and fisheries	-1.1	9.2	12.8	5.9	3.7
Financial and business services	3.9	6.4	1.7	7.3	8.6
Mineral 1/	-2.0	9.5	15.7	7.2	2.8

Source: Bank of Papua New Guinea, Quarterly Economic Bulletin.

1/ Not included in overall index; excludes subcontractors; includes both mining and petroleum.

Table 5 . Papua New Guinea: Consumer Price Index by Expenditure Group, 2003–December 2009

	All Groups Total	Food	Drinks, Tobacco, and Betelnut	Clothing and Footwear	Rents, Fuel, and Power	Household Equipment and Operations	Transportation and Communication	Miscellaneous
(Percentage change from corresponding quarter of previous year)								
2003								
March	20.7	23.7	22.2	5.1	7.1	19.3	33.4	17.6
June	19.0	14.9	20.0	4.6	7.9	16.3	32.9	16.2
September	11.8	8.9	10.2	4.9	7.9	12.6	21.6	13.0
December	8.4	6.9	5.9	4.1	1.4	9.0	15.9	12.0
2004								
March	2.5	-1.4	1.1	3.9	1.3	0.2	-0.1	16.5
June	1.9	2.8	0.7	4.1	3.3	0.9	-1.9	16.4
September	1.6	1.6	-0.1	1.5	8.2	-0.8	0.0	16.5
December	2.4	-0.6	6.7	0.7	15.7	-1.7	-0.3	15.4
2005								
March	0.1	1.4	2.5	-1.4	8.8	-3.5	-8.3	4.4
June	0.8	1.4	2.4	-2.1	16.6	0.9	-3.9	2.3
September	1.6	3.4	5.4	-2.6	6.7	-2.3	-5.7	2.0
December	4.7	7.6	11.2	-2.0	5.2	-3.7	-5.6	2.2
2006								
March	2.8	3.5	1.8	1.4	12.3	-3.6	3.9	-1.2
June	2.5	4.7	1.0	1.8	4.7	-6.8	1.4	0.8
September	5.3	9.2	4.6	-0.4	14.2	-3.1	1.0	-1.0
December	-0.9	4.0	-14.6	-2.6	9.5	-2.1	6.1	2.5
2007								
March	1.1	2.6	-5.6	3.8	3.7	-5.7	5.0	7.5
June	1.0	1.1	-4.1	3.4	3.0	-7.6	5.5	10.3
September	-1.6	-3.1	-8.6	8.6	0.5	-6.3	5.9	12.9
December	3.2	2.2	3.9	12.3	6.6	-3.7	2.2	9.8
2008								
March	7.5	10.1	6.8	6.0	13.7	4.9	3.6	4.7
June	10.7	15.2	10.8	0.3	21.3	6.3	4.9	1.6
September	13.5	20.8	13.7	0.3	23.8	6.1	3.7	1.0
December	11.2	20.2	10.2	2.4	0.8	3.7	1.3	0.9
2009								
March	10.2	14.7	13.2	-0.6	-9.9	4.6	1.9	14.9
June	6.7	8.4	11.6	2.4	-14.5	2.9	0.4	14.9
September	5.3	3.7	12.8	2.1	-15.6	3.3	2.5	14.9
December	5.7	2.9	11.1	0.4	0.1	2.9	5.7	14.6
Memorandum item:								
Weights in total basket (percent) 1/	100.0	40.9	20.0	6.2	7.2	5.3	13.0	7.5

Sources: *Consumer Price Index*, National Statistical Office; and Bank of Papua New Guinea's *Quarterly Economic Bulletin*.

1/ Weights are based on the 1977 expenditure survey.

Table 6a. Papua New Guinea: Central Government Budget 2006–09
(In millions of Kina)

	2006	2007	2008	2009 Est.
Revenue and grants	6,288	7,008	7,041	6,119
Tax	4,945	5,854	5,756	4,885
Mineral taxes	2,003	2,391	1,973	710
Non-mineral taxes	2,942	3,464	3,783	4,175
Nontax	429	433	283	232
Of which: mineral nontax revenue	271	226	163	106
Grants	915	721	1,002	1,002
Project Grants	915	721	1,002	1,002
Expenditure	5,184	5,325	6,498	7,787
Recurrent	3,019	3,502	3,769	4,099
Noninterest recurrent expenditures	2,712	3,132	3,388	3,690
National departments	1,666	2,098	2,276	2,477
Salaries and wages	698	835	920	997
Arrears payments	109	57	71	76
Education funding	42	149	143	143
Goods and services	787	1,051	1,134	1,252
Structural adjustment payments	30	7	9	9
Other	0	0	0	0
Provinces	812	795	855	959
Salaries and wages	663	622	668	722
Goods and services	65	65	71	98
Conditional grants	84	108	115	139
Other	0	0	0	0
Statutory authorities	234	239	257	254
Interest	307	370	381	409
Domestic	187	252	292	287
Foreign	120	118	89	122
Development budget and net lending	2,165	1,823	2,729	3,688
Development budget	2,169	1,827	2,732	3,692
Project grants	915	721	1,002	1,002
Concessional Loans	145	102	84	220
Nonconcessional loans	0	1	0	0
Domestic Funds	1,110	1,003	511	840
o/w "Additional Priority Expenditures"	639	520	1,134	1,630
Net lending	-4	-4	-2	-4
Overall balance (from above the line)	1,104	1,683	543	-1,668
Errors, omissions, and discrepancy	-145	-465	-1	0
Overall balance (from below the line)	959	1,218	541	-1,668
Financing	-959	-1,218	-541	1,668
Foreign financing (net)	-219	-398	-372	22
Domestic financing (net)	-740	-820	-169	1,646
Float	0	0	0	0
Asset sales	0	0	0	0
Memorandum item:				
Nominal GDP (in millions of kina)	16,897	18,798	21,626	21,784

Sources: Data provided by the Papua New Guinea authorities; and Fund staff estimates.

Table 6b. Papua New Guinea: Central Government Budget 2006–09
(In percent of GDP)

	2006	2007	2008	2009 Est.
Revenue and grants	37.2	37.3	32.3	28.1
Tax	29.3	31.1	28.4	22.4
Mineral taxes	11.9	12.7	10.7	3.3
Non-mineral taxes	17.4	18.4	17.8	19.2
Nontax	2.5	2.3	2.2	1.1
<i>Of which: Mineral nontax revenue</i>	1.6	1.2	1.0	0.5
Grants	5.4	3.8	1.6	4.6
Project Grants	5.4	3.8	1.6	4.6
Expenditure	30.7	28.3	27.0	35.7
Recurrent	17.9	18.6	18.8	18.8
Noninterest recurrent expenditures	16.0	16.7	17.0	16.9
National departments	9.9	11.2	11.6	11.4
Salaries and wages	4.1	4.4	4.3	4.6
Arrears payments	0.6	0.3	0.3	0.3
Education funding	0.3	0.8	0.7	0.7
Goods and services	4.7	5.6	6.0	5.7
Structural adjustment payments	0.2	0.0	0.3	0.0
Provinces	4.8	4.2	4.1	4.4
Salaries and wages	3.9	3.3	3.2	3.3
Goods and services	0.4	0.3	0.3	0.5
Conditional Grants	0.5	0.6	0.6	0.6
Statutory authorities	1.4	1.3	1.3	1.2
Interest	1.8	2.0	1.8	1.9
Domestic	1.1	1.3	1.3	1.3
Foreign	0.7	0.6	0.5	0.6
Development budget and net lending	12.8	9.7	4.2	9.5
Development budget	12.8	9.7	4.2	9.5
Project grants	5.4	3.8	1.6	4.6
Project concessional Loans	0.9	0.5	0.2	1.0
Nonconcessional loans	0.0	0.0	0.0	0.0
Domestic Funds	6.6	5.3	2.4	3.9
o/w "Additional Priority Expenditures"	3.8	2.8	4.0	7.5
Overall balance (from above the line)	6.5	9.0	5.3	-7.7
Errors, omissions, and discrepancy	-0.9	-2.5	-1.6	0.0
Overall balance (from below the line)	5.7	6.5	3.6	-7.7
Financing	-5.7	-6.5	-3.6	7.7
Foreign financing (net)	-1.3	-2.1	-1.9	0.1
Domestic financing	-4.4	-4.4	-1.7	7.6
Memorandum items:				
Nominal GDP (in millions of kina)	16,897	18,798.4	21,625.7	21,783.7
Nonmineral fiscal balance	-7.8	-7.4	-8.0	-11.4

Sources: Data provided by the Papua New Guinea authorities; and Fund staff estimates.

Table 7. Papua New Guinea: Central Government Revenue and Grants 2006–09
(In millions of kina)

	2006	2007	2008	2009 Est.
Total revenue and grants	6,288	7,008	7,041	6,119
Tax revenue	4,945	5,854	5,756	4,885
Taxes on income and profit	3,824	4,491	4,353	3,346
Personal tax	907	1,007	1,109	1,263
Company tax	551	724	888	992
Dividend withholding tax	201	199	190	169
Mineral and petroleum taxes	1,947	2,334	1,962	710
Other direct	92	111	99	99
Interest withholding tax	22	19	23	20
Gaming tax	104	97	82	94
Indirect taxes	1,121	1,363	1,456	1,539
Excise tax	324	342	366	377
VAT plus mining levy	457	614	622	731
VAT	401	558	611	731
Mining levy	56	57	11	0
Other indirect	3	2	5	5
Taxes on international trade	337	404	411	426
Import duties	90	136	158	187
Export duties (logs)	163	155	127	89
Import excises	84	113	126	149
Nontax revenue	429	433	283	288
Property income	339	313	188	189
Dividends	68	87	26	27
Mining and petroleum	271	226	163	163
Other	89	120	93	98
Infrastructure tax credit	23	21	33	40
Foreign grants	915	721	1,002	1,002
Memoranda items:				
Revenue, excluding grants	5,374	6,287	6,039	5,117

Sources: Data provided by the Papua New Guinea authorities; and Fund staff estimates.

Table 8. Papua New Guinea: Central Government Domestic Debt, 2004–09
(In millions of kina; end of period)

	2004	2005	2006	2007	2008	2009
Central government domestic debt: by creditor						
Bank of Papua New Guinea						
Net credit to central government	-26	-538	-659	-1,134	-1,742	-283
Securities	76	106	143	203	195	333
Treasury bills 1/	0	0	0	0	0	0
Inscribed stock 2/	76	106	143	203	195	333
Less: Deposits	105	646	803	1,337	1,937	616
Other Depository Corporations						
Net credit to central government	1,320	1,652	1,625	1,305	1,660	890
Securities	1,593	2,013	2,241	2,324	3,060	2,787
Treasury bills 1/	1,157	1,118	1,012	907	1,504	1,430
Inscribed stock 2/	436	895	1,229	1,417	1,556	1,357
Less: Deposits	275	361	627	1,019	1,402	1,897
Nonbanks						
Net credit to central government	1,511	1,275	684	658	742	1,061
Securities	1,465	1,246	654	628	712	1,032
Treasury bills 2/	1,079	679	139	74	131	337
Inscribed stock 2/	386	567	515	555	581	695
Loans	46	30	30	30	30	30
Central government net domestic debt: total	2,804	2,390	1,649	829	660	1,668
Total gross domestic debt						
Securities	3,184	3,397	3,080	3,185	3,999	4,181
Total treasury bills	3,134	3,364	3,038	3,155	3,967	4,151
Total inscribed stock 2/	2,236	1,797	1,151	980	1,635	1,766
Loans	898	1,568	1,887	2,175	2,333	2,385
Less: Central government deposits	49	33	42	30	32	30
	380	1,008	1,430	2,355	3,339	2,513

Sources: Data provided by the Bank of Papua New Guinea; and Department of Treasury.

1/ Discount value.

2/ Face value.

Table 9. Papua New Guinea: Depository Corporations Survey, 2006–09

(In millions of kina; end of period)

	2006	2007	2008	2009
Net foreign assets	4,606	7,032	6,164	7,630
Bank of Papua New Guinea	4,277	5,867	5,278	6,513
Foreign assets	4,326	5,919	5,320	7,046
Less: Foreign liabilities	49	53	43	533
Other Depository Corporations	329	1,165	887	1,117
Net domestic assets	2,435	1,963	3,837	4,301
Domestic credit	3,975	4,194	5,508	7,169
Net credit to central government	966	171	-82	607
Bank of Papua New Guinea	-659	-1,134	-1,742	-283
Claims on central government	144	203	196	333
Less: Central government deposits	803	1,337	1,937	616
Other Depository Corporations	1,625	1,305	1,660	890
Claims on central government	2,252	2,324	3,062	2,787
Securities	2,241	2,324	3,060	2,787
Less: Central government deposits	627	1,019	1,402	1,897
Claims on other sectors	3,009	4,023	5,590	6,562
Claims on the private sector	2,947	3,961	5,523	6,478
Claims on official entities	60	61	66	84
Other items, net	-1,540	-2,231	-1,671	-2,868
Broad money	7,041	8,995	10,001	11,932
Narrow money	3,792	4,923	5,511	5,944
Currency outside other depository corporations	520	608	600	741
Demand deposits	3,272	4,316	4,911	5,203
Quasi money	3,249	4,072	4,490	5,988
Memorandum items:				
Narrow money growth rate 1/	25.7	29.8	11.9	7.9
Broad money growth rate 1/	38.9	27.8	11.2	19.3
Private sector credit growth rate 1/ <i>Authorities private sector credit growth target</i>	38.2	34.4	39.4	17.3
Nominal GDP (in millions of kina)	16,897	18,798	10,730	12,990
Nominal non-mineral GDP/broad money	1.7	1.5	1.6	1.5

Sources: Data provided by the Papua New Guinea authorities; and Fund staff estimates.

1/ Year-on-year percentage change.

Table 10. Papua New Guinea: Balance Sheet of the Central Bank, 2006–09

(In millions of kina; end of period)

	2006	2007	2008	2009
Net foreign assets	4,277	5,867	5,278	6,513
Foreign assets	4,326	5,919	5,320	7,046
Less: Foreign liabilities	49	53	43	533
<i>Of which: Non-IMF liabilities</i>	6	11	4	1
Net domestic assets	-3,139	-4,025	-3,657	-4,700
Domestic credit	-601	-1,103	-1,711	-244
Net credit to government	-659	-1,134	-1,742	-283
Securities	143	203	195	333
Treasury bills	0	0	0	0
Inscribed stock	143	203	195	333
Advances	1	0	0	0
Less: Central government deposits	803	1,337	1,937	616
Credit to other sectors	58	32	31	39
Claims on the private sector	32	7	7	11
Claims on other depository corporations	26	24	24	27
Claims on other financial corporations	1	1	0	0
Other items net	-2,538	-2,922	-1,947	-4,456
Reserve money	1,138	1,842	1,621	1,814
Currency in circulation	693	823	851	1,002
Deposits of other depository corporations	442	1,016	767	808
ESA deposits	246	754	464	440
CRR deposits	196	262	303	369
Other deposits	3	3	3	3
Memorandum items:				
Reserve money growth 1/	21.7	61.8	-12.0	11.9
Use of fund credit (millions of U.S. dollars)	0.0	0.0	0.0	0.0
Gross international reserves (millions of U.S. dollars)	1,427.5	2,086.6	1,987.1	2,607.1

Sources: Data provided by Papua New Guinea authorities; and Fund staff estimates.

1/ Year-on-year percentage change.

Table 11. Papua New Guinea: Consolidated Balance Sheet of Other Depository Corporations, 2006–09

(In millions of kina; end of period)

	2006	2007	2008	2009
Net foreign assets	329	1,165	887	1,117
Foreign assets	430	1,301	1,003	1,309
Foreign liabilities	101	136	116	192
Reserves	442	1,016	767	808
CRR accounts	196	262	303	369
ESA accounts	246	754	464	440
Currency	173	215	251	262
Domestic credit	7,038	8,727	10,480	12,605
Net credit to central government	1,625	1,305	1,660	890
Claims on central government	2,252	2,324	3,062	2,787
Securities	2,241	2,324	3,060	2,787
Treasury bills	1,012	907	1,504	1,430
Inscribed stock	1,229	1,417	1,556	1,357
Inscribed stock of maturity < 3 years	785	905	994	867
Inscribed stock of maturity > 3 years	444	512	562	490
Loans	11	0	2	0
Less: Central government deposits	627	1,019	1,402	1,897
Claims on other sectors	5,413	7,422	8,820	11,715
Claims on BPNG	2,437	3,406	3,238	5,165
Claims on the private sector	2,916	3,954	5,516	6,466
Claims on official entities	60	61	66	84
Claims on NFPE's	57	60	63	80
Claims on provincial governments	3	1	4	4
Claims on other financial corporations	0	0	0	0
Other items, net	-1,443	-2,718	-2,967	-3,584
Deposits	6,516	8,382	9,395	11,184
Demand	3,224	4,176	4,772	4,917
Term	3,292	4,205	4,623	6,267
Central bank credit	24	24	24	24
Memoranda items:				
Deposits subject to reserve requirements	7,115	9,335	10,730	12,990
Implied cash reserve ratio (percent)	3	3	3	3
Kina facility borrowings (-deposits)	0	0	0	0
Liquid assets	2,216	2,781	3,213	2,998
Excess ESA balances	246	754	464	440
Total ODC assets	8,872	11,821	13,962	16,675
Claims on central government/total assets (percent)	25	20	22	17

Sources: Data provided by Papua New Guinea authorities; and Fund staff estimates.

Table 12. Papua New Guinea: Commercial Bank Loans by Sector, 2005–09

	2005	2006	2007	2008	2009 Sept.	2005	2006	2007	2008	2009 Sept.
	(In millions of kina; end of period)					(In percent of total credit; end-period)				
Total	1,797	2,515	3,253	4,601	5,240	100.0	100.0	100.0	100.0	100.0
Business	1,548	2,185	2,661	3,982	4,600	86.2	86.9	81.8	86.5	87.8
Agriculture, forestry, and fishing	74	141	121	185	168	4.1	5.6	3.7	4.0	3.2
Coffee	2	6	3	4	4	0.1	0.3	0.1	0.1	0.1
Cocoa	10	10	5	6	2	0.5	0.4	0.2	0.1	0.0
Coconut products	0	0	0	3	0	0.0	0.0	0.0	0.1	0.0
Palm oil	2	2	24	4	0	0.1	0.1	0.7	0.1	0.0
Fisheries	22	23	3	4	5	1.2	0.9	0.1	0.1	0.1
Forestry	18	37	27	27	36	1.0	1.5	0.8	0.6	0.7
Other 1/	21	63	59	137	122	1.1	2.5	1.8	3.0	2.3
Manufacturing	114	124	275	359	425	6.4	4.9	8.5	7.8	8.1
Engineering and metal processing	25	28	24	26	17	1.4	1.1	0.7	0.6	0.3
Food, drink, and tobacco processing	45	53	171	255	324	2.5	2.1	5.3	5.5	6.2
Textile, leather, and wood products	5	10	15	11	13	0.3	0.4	0.5	0.2	0.2
Chemicals, paints, and gases	4	12	9	5	6	0.2	0.5	0.3	0.1	0.1
Other 2/	36	21	57	63	66	2.0	0.8	1.7	1.4	1.3
Transport and communication	123	202	251	382	486	6.8	8.0	7.7	8.3	9.3
Finance	28	60	17	19	15	1.6	2.4	0.5	0.4	0.3
Commerce	438	479	770	1,150	1,170	24.4	19.0	23.7	25.0	22.3
Retail trade	280	134	498	757	772	15.6	5.3	15.3	16.4	14.7
Buyers, processors, and exporters	113	42	133	175	180	6.3	1.7	4.1	3.8	3.4
Wholesale trade	45	303	139	219	217	2.5	12.1	4.3	4.8	4.1
Building and construction	106	125	207	302	463	5.9	5.0	6.4	6.6	8.8
Mining and quarrying	14	144	50	101	167	0.8	5.7	1.5	2.2	3.2
Metals and other mining	14	141	49	100	165	0.8	5.6	1.5	2.2	3.1
Petroleum and natural gas	0	4	1	1	2	0.0	0.1	0.0	0.0	0.0
Other business 3/	652	911	972	1484	1706	36.3	36.2	29.9	32.3	32.6
Government	3	15	8	6	2	0.2	0.6	0.2	0.1	0.0
Central government 4/	1	11	0	2	0	0.1	0.5	0.0	0.1	0.0
Provincial government	1	3	3	3	2	0.1	0.1	0.1	0.1	0.0
Local government	1	1	5	0	0	0.1	0.0	0.2	0.0	0.0
Persons	246	315	583	613	638	13.7	12.5	17.9	13.3	12.2
Advances for housing	145	176	199	325	171	8.1	7.0	6.1	7.1	3.3
Other personal loans	101	140	385	288	467	5.6	5.5	11.8	6.3	8.9

Source: Bank of Papua New Guinea, Quarterly Economic Bulletin.

1/ Includes rubber, tea, and cattle.

2/ Includes printing and packaging.

3/ Includes hotels and restaurants, real estate, renting and business services, electricity, and gas and water supply.

4/ Excludes short-term government debt instruments and other deposits.

Table 13. Papua New Guinea: Reserve Requirements, March 1997–April 2010

(In percent)

Period	Cash reserve requirement	Minimum liquid assets ratio	Total requirement
March 1997–July 1998	0	20	20
August 1998–November 1998	0	20	20
December 1998–January 12, 1999	0	0	0
January 15, 1999–February 1999	10	0	10
March 1999–May 1999	5	15	20
June 1999–August 1999 1/	5	20	25
September 1999–December 2002	5	25	30
October 2003–April 2010	3	25	28

Source: Bank of Papua New Guinea.

1/ From June 1999, CRR deposits at the central bank were excluded from the definition of liquid assets.

Table 14. Papua New Guinea: Interest Rates, 2004–09 1/

	Kina Facility Rate	Commercial Banks														
		Weighted Average Auction Yield							Weighted Average Deposit Rate	Weighted Average Lending Rate	Indicative Overdraft Rate	Passbook Accounts	Term Deposits (less than K50,000)			
		Central Bank Bills			Treasury Bills								3–6 Months	6–12 Months	12–24 Months	
		28-day	63-day	91-day	28-day	63-day	91-day	182-day	365-day							
2004 December	7.00	-	-	-	3.14	3.44	3.70	4.57	-	1.1	12.1	8.00	1.75-2.00	0.65-8.00	0.65-4.85	1.00-9.00
2005 December	6.00	2.99	-	-	-	-	3.84	4.91	5.69	0.8	10.7	7.20	1.50-2.00	0.35-2.85	0.50-1.55	0.75-1.25
2006 December	6.00	4.02	4.04	-	-	-	-	3.30	4.49	1.0	10.2	6.70	0.50-1.50	0.35-1.25	0.50-1.50	0.75-1.75
2007 December	6.00	4.69	4.69	-	-	-	-	5.00	-	1.6	9.3	6.95	0.15-1.50	0.25-0.75	0.50-0.75	0.50-1.00
2008																
January	6.00	5.21	5.23	-	-	-	-	-	-	1.3	8.9	6.95	0.15-1.50	0.35-0.75	0.50-0.75	0.50-1.00
February	6.00	5.30	5.00	-	-	-	-	4.88	-	1.1	9.3	6.95	0.15-1.51	0.35-0.75	0.35-0.75	0.50-1.00
March	6.00	5.49	5.44	-	-	-	-	5.28	-	1.1	9.3	6.95	0.15-1.50	0.35-0.75	0.35-0.75	0.50-1.00
April	6.00	5.32	5.12	-	-	-	-	-	-	1.1	9.3	6.95	0.15-1.50	0.35-0.75	0.35-0.75	0.50-1.00
May	6.00	5.30	5.24	5.24	-	-	-	-	-	1.2	9.3	6.95	0.15-1.50	0.35-0.75	0.25-0.75	0.50-1.00
June	6.25	5.45	5.49	5.24	-	-	-	-	-	1.2	9.2	6.00	0.15-1.50	0.35-0.75	0.50-0.75	0.50-1.00
July	6.25	5.43	5.50	5.60	-	-	-	-	-	1.3	9.3	6.00	0.15-1.50	0.35-0.75	0.50-0.75	0.35-1.00
August	6.50	5.58	5.74	5.82	-	-	-	-	-	1.4	9.2	6.00	0.15-1.50	0.27-0.65	0.35-0.65	0.75-1.00
September	7.00	6.13	6.00	6.35	-	-	-	-	-	1.4	9.3	6.00	0.15-1.50	0.35-0.75	0.50-0.75	0.75-1.00
October	7.00	6.21	6.32	6.39	-	-	-	-	-	1.40	9.30	6.00	0.15-1.50	0.35-0.76	0.35-0.75	0.75-1.00
November	7.00	6.31	5.86	5.75	-	-	-	7.49	7.62	1.40	8.90	6.00	0.15-1.50	0.25-0.75	0.35-0.75	0.75-1.00
December	8.00	5.94	7.07	7.35	-	-	6.45	7.40	8.16	1.60	8.80	6.00	0.15-1.50	0.35-1.75	0.35-0.75	0.75-3.5
2009																
January	8.00	6.30	6.94	7.23	-	-	-	-	-	1.80	9.60	6.00	0.15-1.50	0.35-3.35	0.5-6.70	0.75-5.00
February	8.00	6.64	7.00	7.75	-	-	-	7.27	7.72	1.90	9.70	6.00	0.15-1.50	0.25-6.70	0.5-7.70	0.75-5.50
March	8.00	6.21	6.24	-	-	-	7.00	7.63	8.00	2.30	9.91	6.00	0.15-1.50	0.25-7.25	0.5-7.75	0.75-9.00
April	8.00	6.98	7.15	-	-	-	-	-	-	2.40	10.10	6.00	0.15-1.51	0.35-6.00	0.5-7.75	0.75-9.00
May	8.00	7.00	6.74	6.85	-	-	-	-	-	2.60	10.20	6.00	0.15-1.52	0.35-6.00	0.5-9.90	0.75-9.00
June	8.00	6.47	6.80	-	-	-	-	7.50	7.96	2.50	10.10	6.00	0.15-1.53	0.35-6.00	0.5-9.90	0.75-9.00
July	8.00									2.50	10.30	6.00	0.15-1.54	0.35-6.00	0.5-9.90	0.75-9.00
August	8.00									2.50	10.40	6.00	0.15-1.55	0.35-7.75	0.5-9.90	0.75-9.00
September	8.00									2.60	10.50	6.00	0.15-1.50	0.35-7.75	0.5-9.90	0.75-9.00

Source: Bank of Papua New Guinea, Quarterly Economic Bulletin.

1/ • Prior to February 2001, the kina deposit rate was determined by a weekly auction for deposits conducted by the central bank. Since then the Bank of Papua New Guinea has announced a Kina Facility rate, and the deposit rate was set 125 basis points below this rate until July 2000, when the margin was reduced to 75 basis points. The facility was abolished in April 2003.

- The Government started issuing 364 day Treasury bills on 22nd June 2005.
- Beginning 7th September 2005, the Bank started issuing the 28 days Central Bank Bills (CBB).
- The Central Bank began issuing 63 days CBB on 10th May 2006.
- The Central Bank began issuing 91 days CBB on 14th May 2008.

Table 15. Papua New Guinea: Balance of Payments, 2005–08
(In millions of U.S. dollars)

	2005	2006	2007	2008
Current account balance	296	442	208	805
Mineral	1,161	1,322	1,101	1,724
Non-mineral	-865	-880	-892	-919
Trade balance	913	2,333	2,192	2,675
Exports (f.o.b.)	3,375	4,324	4,822	5,823
Mineral	2,562	3,506	3,673	4,262
Non-mineral	813	818	1,149	1,561
Imports (c.i.f.)	-2,462	-1,991	-2,629	-3,148
Mineral	-664	-512	-782	-936
Non-mineral	-1,798	-1,478	-1,848	-2,212
Services	-681	-1,306	-1,731	-1,390
Income	-371	-781	-601	-644
Current Transfers	434	196	347	163
Capital and financial account balance	156	211	292	-923
Direct investment	68	193	462	-31
Other investment	88	18	-170	-892
Medium- and long-term loan disbursements	-19	135	-217	-126
Commercial banks	-87	77	-273	-110
Other	194	-194	320	-657
Net errors and omissions	-46	29	135	20
Overall balance	406	682	636	-99
Financing	-161	-682	-636	96
Reserve assets	-102	-684	-638	99
Use of IMF credit	-59	0	0	0
Purchases	0	0	0	0
Repurchases	-59	0	0	0
Other foreign liabilities	0	2	2	-2
Memorandum items:				
Current account (in percent of GDP)	6.1	8.0	3.3	10.0
Mineral	23.8	23.9	17.4	21.5
Non-mineral	-17.8	-15.9	-14.1	-11.5
Net international reserves (end-year)				
In millions of U.S. dollars	765	1,447	2,083	1,986
Gross official reserves (end-year)				
In millions of U.S. dollars	765	1,449	2,087	1,988
In months of non-mineral imports	5.1	11.8	13.6	10.8
In months of imports of goods and nonfactor services	2.4	3.6	4.2	4.4
Public external debt-service-exports ratio (in percent)	7.5	3.4	4.1	3.3
Public external debt-GDP ratio (in percent) 1/	25.5	21.4	16.6	13.2
Oil Price (average of 3 spot prices; US\$/BBL)	53.4	64.3	71.1	97.0
Copper Price (grade A, LME spot price, US\$/MT)	3,676.5	6,731.4	7,131.6	6,963.5
Gold Price (London 3 PM fixed price, US\$/troy ounce)	444.9	604.3	696.7	871.7

Sources: Data provided by the Papua New Guinea authorities; and Fund staff estimates.

1/ Public external debt includes central government, central bank external debt, and statutory authorities.

Table 16. Papua New Guinea: Exports of Major Commodities, 2005–08

	2005	2006	2007	2008
Copper				
Value (in millions of U.S. dollars)	831.3	1,458.7	1,424.1	1,293.1
Volume (thousands of tons)	226.1	216.7	199.4	185.7
Unit value (U.S. dollars per ton)	3,676	6,731	7,132	6,963
Gold				
Value (in millions of U.S. dollars)	1,008.4	1,101.7	1,254.1	1,774.1
Volume (tons)	70.5	56.7	57.5	63.3
Unit value (U.S. dollars per ounce)	445	604	697	872
Petroleum				
Value (in millions of U.S. dollars)	709.6	933.3	981.7	1,182.4
Volume (thousands of barrels)	13,299.8	14,521.1	13,802.8	12,185.0
Unit value (U.S. dollars per barrel)	53	64	71	97
Silver				
Value (in millions of U.S. dollars)	12.4	12.3	13.1	12.9
Volume (tons)	52.1	48.0	51.0	50.3
Unit value (U.S. dollars per ounce)	7	8	8	8
Logs				
Value (in millions of U.S. dollars)	130.5	179.9	214.6	207.7
Volume (thousands of cu. meters)	2,270.0	2,653.0	2,816.0	2,512.0
Unit value (U.S. dollars per cubic meter)	58	68	76	83
Coffee				
Value (in millions of U.S. dollars)	151.8	145.0	190.3	280.9
Volume (thousands of tons)	72.1	52.3	54.6	67.0
Unit value (U.S. dollars per ton)	2,106	2,773	3,485	4,193
Cocoa				
Value (in millions of U.S. dollars)	64.1	65.7	87.8	128.7
Volume (thousands of tons)	44.2	44.0	47.8	53.3
Unit value (U.S. dollars per ton)	1,449	1,492	1,837	2,414
Palm oil				
Value (in millions of U.S. dollars)	126.1	149.9	262.8	381.9
Volume (thousands of tons)	345.6	362.3	368.3	446.0
Unit value (U.S. dollars per ton)	365	414	714	856
Copra				
Value (in millions of U.S. dollars)	5.6	3.0	4.0	14.6
Volume (thousands of tons)	22.3	12.7	12.6	32.6
Unit value (U.S. dollars per ton)	250	236	320	447
Copra Oil				
Value (in millions of U.S. dollars)	30.2	23.0	28.5	34.4
Volume (thousands of tons)	54.4	41.5	51.3	62.0
Unit value (U.S. dollars per ton)	555	555	555	555
Tea				
Value (in millions of U.S. dollars)	6.5	7.0	5.9	6.4
Volume (thousands of tons)	6.9	6.6	6.4	5.4
Unit value (U.S. dollars per ton)	944	1,054	924	1,176
Rubber				
Value (in millions of U.S. dollars)	5.8	8.0	8.1	11.1
Volume (thousands of tons)	4.8	4.4	4.1	4.9
Unit value (U.S. dollars per ton)	1,209	1,819	1,977	2,256
Other				
Value (in millions of U.S. dollars)	292.6	236.3	346.5	495.0
Total exports (in millions of U.S. dollars)				
Minerals and petroleum	3,375	4,324	4,822	5,823
Non-mineral	2,562	3,506	3,673	4,262
	813	818	1,149	1,561

Sources: Data provided by the Papua New Guinea authorities; and Fund staff estimates.

Table 17. Papua New Guinea: Direction of Trade, 2005–08 1/
(In percent of total)

	2005	2006	2007	2008
Exports (f.o.b.) by destination				
Australia	42.7	40.5	40.0	40.0
Japan	11.4	14.3	16.8	16.8
Philippines	5.5	9.7	7.8	7.8
Germany	7.2	4.4	8.2	8.2
Korea	7.4	4.4	2.5	2.5
China 2/	3.6	3.7	3.3	3.3
Great Britain	1.8	1.5	1.6	1.6
Indonesia	0.4	1.2	0.2	0.2
United States	1.5	1.1	1.6	1.6
Italy	0.7	0.9	1.3	1.3
Spain	0.3	0.6	1.8	1.8
Singapore	1.1	0.6	1.6	1.6
Malaysia	0.7	0.6	0.4	0.4
Other	15.8	16.5	12.9	12.9
Imports (c.i.f.) by origin				
Australia	44.8	34.2	42.3	42.3
United States	13.8	21.0	19.5	19.5
Singapore	6.4	19.2	14.6	14.6
Japan	3.9	5.0	4.2	4.2
New Zealand	5.0	2.8	2.8	2.8
China 2/	2.0	2.2	3.0	3.0
Malaysia	1.7	2.1	2.0	2.0
Indonesia	1.5	1.2	1.3	1.3
Hong Kong SAR	1.2	1.1	1.2	1.2
Great Britain	0.4	0.7	0.4	0.4
Germany	0.7	0.5	0.2	0.2
Taiwan POC	0.2	0.3	0.1	0.1
Philippines	0.5	0.3	0.3	0.3
Other	18.0	9.5	8.1	8.1

Source: Papua New Guinea authorities.

1/ Ranked based on the 2006 data.

2/ Excluding Hong Kong SAR.

Table 18. Papua New Guinea: Net Services and Transfers, 2005–08

(In millions of U.S. dollars)

	2005	2006	2007	2008
Services balance (net)	-680.5	-1306.2	-1730.8	-1389.9
Freight, insurance (receipts)	33.5	33.8	34.2	41.0
Travel payments	-75.9	-33.5	-75.0	-78.8
Mineral	-4.7	-3.5	-4.0	-4.2
Non-mineral	-71.2	-30.0	-71.0	-74.6
Other	-480.3	-1014.8	-1334.0	-971.6
Receipts	199.7	238.5	270.2	315.1
Mineral	70.0	88.8	116.0	136.9
Non-mineral	129.7	149.7	154.2	178.2
Payments	-680.0	-1253.3	-1604.1	-1286.7
Mineral	-420.0	-856.8	-1049.8	-824.7
Non-mineral	-260.0	-396.5	-554.3	-461.9
Other misc. services payments	-157.8	-291.7	-356.0	-380.6
Income (net)	-370.8	-781.1	-600.5	-643.8
Interest	-23.0	-115.0	-83.6	-87.2
Receipts	35.4	67.2	86.3	82.0
Mineral	13.7	35.6	36.7	34.9
Non-mineral	0.7	1.3	1.4	1.3
Official	21.0	30.3	48.2	45.8
Payments	-58.4	-182.2	-169.9	-169.2
Mineral	-10.1	-133.6	-120.1	-114.9
Non-mineral	-9.1	-10.1	-11.1	-10.5
Official	-39.3	-38.5	-38.8	-43.8
Concessional	-37.6	-37.5	-38.2	-43.2
Nonconcessional	-0.7	-0.6	-0.6	-0.5
IMF charges	-1.0	-0.4	0.0	-0.1
Dividends	-347.8	-666.2	-516.9	-556.6
Receipts	0.9	2.1	2.2	2.1
Mineral	0.0	0.0	0.0	0.0
Non-mineral	0.9	2.1	2.2	2.1
Payments	-348.7	-668.3	-519.1	-558.7
Mineral	-227.8	-510.0	-413.6	-450.0
Non-mineral	-120.9	-158.3	-105.5	-108.7
Current transfers (net)	434.3	196.2	347.3	163.1
Official	393.3	299.2	313.1	129.6
Receipts	393.3	299.2	313.1	129.6
Australia budgetary support	0.0	0.0	0.0	0.0
Project & commodity aid	393.3	299.2	313.1	129.6
Other grants	0.0	0.0	0.0	0.0
Payments	0.0	0.0	0.0	0.0
Private	41.0	-103.0	34.1	33.5
Receipts	122.0	0.0	130.1	91.1
Payments	-81.0	-103.0	-96.0	-57.6

Sources: Data provided by the Papua New Guinea authorities; and Fund staff estimates.

Table 19. Papua New Guinea: External Debt Outstanding, 2005–08
(In millions of U.S. dollars)

	2005	2006	2007	2008
Total external debt	2,048	2,176	2,034	2,052
Public external debt 1/	1,273	1,196	1,140	1,067
Central government	1,245	1,194	1,136	1,065
Multilateral creditors	818	801	750	713
Of which: World Bank Group	326	318	256	228
Asian Development Bank	428	416	401	394
Bilateral creditors	385	352	344	317
Of which: Australia	7	3	5	5
Japan	335	310	304	279
Commercial creditors	43	41	42	36
Central bank	0	2	4	2
Of which: IMF liabilities	0	0	0	0
Commercial statutory authorities	27	0	0	0
Private external debt	776	980	894	985
Of which: mineral sector	504	703	626	708
Memorandum items:				
Total external debt	41.2	38.6	30.7	30.7
Total public external debt 1/	25.4	21.1	16.7	16.7
Private external debt	15.8	17.5	14.0	14.0

Sources: Data provided by the Papua New Guinea authorities.

1/ Including central government, central bank external debt, and statutory authorities.

Table 20. Papua New Guinea: Public External Debt Service, 2005–08
(In millions of U.S. dollars)

	2005	2006	2007	2008
Total public sector	212.1	158.3	208.2	122.9
Principal	172.8	119.8	169.9	91.8
Interest	39.3	38.5	38.3	31.2
Central government	151.9	157.9	208.2	122.8
Principal	113.6	119.8	169.9	91.8
Interest	38.3	38.1	38.3	31.1
Multilateral creditors	71.1	109.6	162.7	78.8
Principal	48.8	83.1	135.2	58.5
Interest	22.3	26.5	27.5	20.4
World Bank Group	36.5	40.8	96.0	42.7
Principal	26.4	27.5	81.1	33.2
Interest	10.1	13.3	14.9	9.5
Asian Development Bank	31.5	64.9	62.9	32.9
Principal	20.7	52.6	51.0	22.5
Interest	10.8	12.3	11.9	10.4
Other	3.1	3.9	3.8	3.3
Principal	1.7	3.0	3.1	2.8
Interest	1.4	0.9	0.7	0.5
Bilateral creditors	74.7	42.3	39.5	37.5
Principal	59.4	31.3	29.3	27.4
Interest	15.3	11.0	10.2	10.1
Australia	35.0	4.3	0.2	0.2
Principal	32.1	3.9	0.0	0.0
Interest	2.9	0.4	0.2	0.2
China	0.6	0.6	0.6	0.6
Principal	0.4	0.4	0.4	0.4
Interest	0.2	0.2	0.2	0.2
Japan	32.8	31.4	30.7	33.3
Principal	21.7	21.8	21.7	24.1
Interest	11.1	9.6	9.0	9.2
Other	6.3	6.0	8.0	3.4
Principal	5.2	5.2	7.2	2.9
Interest	1.1	0.8	0.8	0.5
Commercial creditors	6.1	6.0	6.0	6.5
Principal	5.4	5.4	5.4	5.9
Interest	0.7	0.6	0.6	0.6
Banks	0.0	0.0	0.0	0.0
Principal	0.0	0.0	0.0	0.0
Interest	0.0	0.0	0.0	0.0
Other	6.1	6.0	6.0	6.5
Principal	5.4	5.4	5.4	5.9
Interest	0.7	0.6	0.6	0.6
Central bank	60.2	0.4	0.0	0.1
Principal	59.2	0.0	0.0	0.0
Interest	1.0	0.4	0.0	0.1
Memorandum item:				
Public debt-service ratio	6.0	3.5	4.1	2.5

Sources: Data provided by the Papua New Guinea authorities; and Fund staff estimates.