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SPECIAL REPORT

PROCEEDINGS OF THE 2014 PAPUA NEW GUINEA TAX REVIEW AND RESEARCH SYMPOSIUM

29-30 MAY 2014
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MESSAGE FROM THE MINISTER FOR TREASURY

Read Mr Dairi Vele (Secretary for the Department of Treasury)

Esteemed symposium participants,

It is encouraging to see so many scholars and practitioners here, many of whom have come from overseas. You have come with a rich body of thought and literature on taxation issues from around the world, and your contribution to the tax reform process in Papua New Guinea (PNG) is warmly welcomed. I believe your discussions involved detailed analysis of issues and challenges associated with specific areas of taxation. I think it is, however, appropriate for me to briefly reflect on the broader context in which taxation policy is made and in which tax systems operate.

An effective tax system is the foundation of our government and will play an important part in helping PNG realise its development goals in the years to come. Tax and, indeed, non-tax revenue will enable the government to fund our education and health systems, to build and maintain our roads, to help us meet our security challenges and to help us build the broader institutional capacity that we need to generate and maintain growth. An effective tax system is one means by which PNG can strive to achieve the national aspirations that were outlined in our constitution. Put another way, tax revenues can help all Papua New Guineans to reach the potential that we know that they can achieve.

Taxation is not simply a means of financing government. It is part of the social contract between the state and its citizens – citizens are expected to pay taxes and in exchange the government is expected to provide public goods. The tax-paying population has more of an interest in holding their government to account so, in this sense, a taxation system can help build accountability, and strengthen institutions and democratic processes. In PNG, as in many developing countries, much needs to be done in building this social contract. But with a very large informal sector, a significant majority of Papua New Guineans have little (if any) interaction with the country’s tax system. This partly reflects both the policy framework that the country has established and the challenges in administering the tax system across our culturally, socially and geographically diverse country.

While diversity is one of PNG’s greatest strengths, it is also a significant factor in the future development of the country’s tax system. In many ways, the challenges facing PNG’s tax system are not unique and the success or otherwise of reforms in other countries may provide some useful reform directions that PNG needs to take. But they cannot provide the complete answer — there is no magic blueprint for a tax system. Inevitably, tax systems are the outcome of complex social and political interactions between different groups in a society, and must necessarily reflect the unique circumstances of each country. Hence, we need to use Papua New Guinean forms of social, political and economic organisation to design our own path of development.
To do this, the Tax Review Committee is placing emphasis on consulting a wide range of stakeholders which, together with the National Research Institute’s (NRI) engagement on this important public policy issue, will help to shape the tax policy direction of the country. I am grateful for your discussions and contribution to this agenda.

Hon. Patrick Pruaitch, M.P.

Minister for Treasury
MESSAGE FROM THE CHAIR OF THE TAX REVIEW COMMITTEE

Distinguished guests, scholars, ladies and gentlemen,

On behalf of the members of the Tax Review Committee I would like to warmly welcome you all to this tax symposium. I would also like to thank Dr Thomas Webster and the NRI for hosting this important event. NRI has played and continues to play an important role in helping to find solutions to the nation’s most pressing issues.

Indeed, it is through NRI’s initiative that so many scholars and leading policy and industry experts are here today to contribute to the tax reform process currently underway in PNG. The committee is looking forward to the presentations and discussions over the next two days and to better understand how tax policy reforms affect individuals and businesses in our community. However, before we commence the presentations, it is perhaps worth reflecting on the context in which this event is being held.

The last comprehensive taxation review was undertaken in 2000; and there have been substantial economic, fiscal and technological developments since then. In 2013, the government appointed a committee that I chair to undertake another review to ensure that PNG’s tax regime remains relevant, efficient and effective. Other committee members are David Sode (Deputy Chair), Sir John Luke Crittin, John Lohberger and Lady Aivu Tauvasa. The committee is assisted by a secretariat of staff from the departments of Treasury, Finance, and Trade, Commerce and Industry; and the Internal Revenue Commission and Papua New Guinea Customs Service.

The terms of reference outlining the review objectives highlight not only the importance of this reform exercise, but also its place in the medium- and longer term development objectives of the country. The objectives of the review are to:

• align PNG’s revenue system with its development aspirations of being a competitive middle-income nation in the Asian century
• improve the competitiveness and efficiency of the tax system to encourage investment, employment and economic development
• enhance the fairness and simplicity of the taxation system
• consider options to change tax mix between the levels of taxation on land (including resources), capital and labour
• improve taxpayer compliance, including considering options to enhance services to taxpayers and reduce the cost of compliance through the use of modern technology
• review non-tax revenues with the aim of ensuring that fees are appropriate and fair.

The review has a broad scope and will include consideration of a broad range of taxation areas to be discussed in this symposium, including tax administration and non-taxation revenues.
Successful tax reform depends not only on the strength of ideas and analysis, but also on the process of reform. The committee therefore took a deliberate and consultative approach to the review, allowing for as broad an input as possible.

- First, the committee invited interested parties to provide their perspectives on the broad directions for reform and key priority areas; and is holding open regional consultation forums throughout the country. Throughout the process, the committee and the secretariat stand ready to meet with any interested groups or individuals. In addition, we have sought to embrace social media and electronic communication — people are already providing useful comments on our Facebook page.

- The next step will involve consultations on a series of issues papers on specific taxation areas and issues as identified in the first stage of the consultation process. The purpose of this stage of consultation is to promote more targeted discussion and debate, assisting the committee to develop its draft recommendations. The issues papers will be released throughout 2014.

- The last stage of public consultation will focus on the Draft Final Report prepared by the committee. The Draft Report will draw on the feedback received in the previous stages of the consultation and will put forward for discussion the committee’s proposed recommendations to government.

- In order to progress the work of the review as it relates to tax administration, and to identify how this review process can support the reforms already underway within our revenue administration bodies, diagnostic reviews will commence shortly on both the Internal Revenue Commission and the PNG Custom Services.

The process of developing tax policy is a challenging one and, while the committee has some expertise, it would be wishful thinking to suggest that we know everything. I can therefore assure the scholars here today, and indeed all in attendance, that the discussions and work that arise from this event will make a very real contribution to the review and the future direction of this country’s tax system. We are looking forward to the presentations and discussions that will take place here over the next two days.

I hope, as part of this consultation process, the outcomes of this symposium will provide additional rich trove of reform options for consideration by the committee, and provide an additional repository of information and data for future reforms.

Thank you.

Sir Nagora Bogan, KBE, Kt.

Chair, PNG Taxation Review Committee
In October 2013, the Government of Papua New Guinea took the initiative to commence the tax review process via the formation of a Tax Review Committee, chaired by Sir Nagora Bogan. Through the committee, the government intends to put in place appropriate reforms in order to realign the tax system to support the country’s present, medium-term and long-term economic and social development objectives.

In February 2014, the Taxation Review Committee released framing questions and issued a call for both papers and submissions to collate ideas about the future taxation system in Papua New Guinea. In response to that call, the National Research Institute, as a public policy ‘think tank’, commissioned a team of experts to research and analyse various areas of taxation and related topics under the common theme of ‘Analysis of taxation policies and reforms affecting individuals and businesses in Papua New Guinea’. The commissioned papers formed the basis of the presentations at the symposium that took place in Port Moresby from 29 to 30 May 2014.

The symposium was not open to the public; it was by invitation only to various industry and sector groups, because we wanted to have focused technical and in-depth analysis and discussions with academics and policy practitioners. We believe this approach allowed different interest groups to contribute to the discussions, facilitated by the experts, which enabled us to better understand each other and our views and positions.

Nevertheless, we had a large media presence at the symposium and we are looking forward to their continuing to communicate many of the discussions and the issues generated in our two-day symposium to the wider community. I would appreciate if participants could also continue contributing to this topic by talking to the media and being involved in the discussion forums that they facilitate. We hope that the symposium generated valuable discussions and feedback from the participants that will inform the work of the tax review team.

On behalf of the NRI Economic Policy Research Program team, I wish success for the publication. I am happy that it is published in 2015, at the time when the Tax Review Committee has just released its recommendations to the government, which has the prerogative to accept or reject the committee’s recommended tax reform proposals. I hope it will convince readers of the value of some of the options for tax reform for the government to consider.

Thank you all.

Dr Thomas Webster

Former Director, National Research Institute
Acknowledgements

We thank the Australian Department for Foreign Affairs and Trade (DFAT) for increased funding support to the work of the NRI that enabled the institute to commission a wide range of experts to contribute to the research and analytical work, including the papers in this book. The publication of this book would not have been possible without the support of the Taxation Review Committee and Secretariat, under the leadership of Sir Nagora Bogan, and DFAT. We are also grateful to the Tax Review Committee for co-sponsoring the 2014 symposium.

We acknowledge and thank invited panellists for focused comments and feedback on the presentations. We asked the presenters to finalise their papers based on the comments and discussion at the symposium. Ron Duncan (Emeritus Professor, Crawford School of Public Policy, Australian National University) reviewed the papers and provided many helpful comments and suggestions. A selection of the revised papers is now published, each in a separate chapter, in this volume under the title Tax policy and practice in Papua New Guinea: Review and options for reform. The editor of the book is Dr Francis Odhuno, Senior Research Fellow at the NRI. Comments on the draft of the book by staff of the Economic Policy Research Program at NRI are acknowledged. We thank all the authors and the editorial team, and especially Jennifer Parina, who was responsible for preparing the book for print.

And to the rest of the participants, we thank you for accepting our invitation to attend and participate in the discussions at the symposium.

Dr Thomas Webster was the Director of NRI until May 2015. Dr Charles Yala now holds this post and has assisted in the completion of this publication.

About the Authors

The papers presented in this volume were prepared as part of a research project of NRI, supported by funds provided by DFAT — none of these institutions endorses the views presented in this publication. The authors benefited from numerous comments and suggestions made by the participants at the symposium organised by NRI, and by Ron Duncan, Emeritus Professor at the Crawford School of Public Policy, Australian National University. The authors remain entirely responsible for the contents.
CHAPTER 1  A MODERN AND RATIONAL TAX ADMINISTRATION SYSTEM

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1.1 Background

In September 2013, the Government of Papua New Guinea (PNG) appointed a Taxation Review Committee to undertake a comprehensive review of the country’s fiscal regime. The National Research Institute (NRI), with its mission to provide accurate, relevant and timely information to the committee, invited academics and researcher–practitioners to deliver papers that highlight areas that are particularly topical for the country's tax reform. The authors of the papers were granted support by the NRI to conduct deeper analysis of taxation and related issues from past years to:

• identify concerns with the current taxation system  
• describe the characteristics of a good tax system  
• consider options for reforms  
• evaluate the pros and cons of those options.

The Symposium on Analysis of Taxation Policies and Reforms Affecting Businesses and Individuals in Papua New Guinea was then held on May 29–30 2014 in Port Moresby. The two-day symposium brought together about 100 attendees, some as presenters, some as discussants, and others as active participants or observers. Attendees were drawn from a range of backgrounds, including policy makers, business and civil society representatives, academics and researcher–practitioners, and representatives from the media. They discussed and debated the collection of research papers. The main aim was to collate ideas about how to improve the taxation system in PNG. This publication presents the proceedings of the symposium. Because the symposium produced much material impossible to publish in entirety, we have tried to present a balance between academic papers and reflections by practitioners; incomplete papers are not presented.

Dr Thomas Webster, then Director of the NRI, and Sir Nagora Bogan, Chair of the Tax Review Committee, gave keynote addresses at the opening session on the first day of the symposium, excerpts of which have been included here in the preliminary pages. Unfortunately, the keynote addresses by Ms Betty Palaso (Commissioner General, Internal Revenue Commission) and Mr Ray Paul (Commissioner, PNG Customs), on challenges facing revenue administrators, on the second day were not made available for publication. Excerpts of the closing remarks by Mr Dairi Vele (Secretary for the Department of Treasury), delivered on behalf of Mr Patrick Pruaitch (Minister for Treasury), are also included. At the symposium dinner, Sir Henry Chow’s (Chair of the NRI Council) address focused on developmental challenges and lessons for PNG, drawing on experience from China,
Thailand and the Philippines.

1.2 Summary of Symposium Paper Contributions

The symposium followed the standard academic format: for every symposium session, after presentation of the papers on a particular theme, the paper presenter(s) and designated, relevant academic, professional, industry and policy discussants of the papers engaged in a discussion; the discussion was opened to attendees to present their views. While the papers considered the changes proposed for the PNG tax regime, the main issues concerned the current multiplicity of taxes, the fiscal burden for taxpayers, and the high levels of tax avoidance and tax evasion in PNG. The following summary is based on the Symposium Summary Report, published by the NRI as a Discussion Paper (Odhuno et. al. 2014).

The session on tax administration (Chapter 2 by Prasad) highlighted a number of problems facing the Internal Revenue Commission (IRC). Many of the difficulties can be attributed to the manpower and infrastructure required to tax the large (unregistered) informal economy; the complex tax system, coupled with poor taxpayer education and knowledge of tax laws and regulations; and the resulting poor tax compliance, associated with poor attitudes towards paying taxes. The presentation discussed a number of valuable examples from other tax jurisdictions, such as the tax administration model of the Netherlands. However, because national revenue bodies face different environments within which they administer their taxation systems, a ‘copy and paste’ approach is rarely possible. Therefore, attempts to reform tax administration systems must be sensitive to the wide variety of environmental and cultural conditions in the particular country. Most important, perhaps, is that a major reform of tax administration may be impossible without major political, social and economic changes.

It was also suggested that, when the IRC automates its tax administration system, the commission may need to adopt an item-based and taxpayer-based system organising its activities — a complete shift from a function-based administration structure. This change of structure and focus aligns with global fiscal administrative practices. In addition, the discussion aligned with the session on tax compliance and morale (chapters 8 and 9): both suggested that the modernisation of the tax administration body to increase its efficiency, effectiveness and fairness will most probably improve taxpayer compliance. Considerable debate ensued on not only the capacity challenges facing the IRC, but also on whether the IRC should be delinked from Treasury; in developing countries, the supervision of revenue institutions by ministries of finance or treasuries is fraught with difficulties, including interference with day-to-day administration of the revenue institutions and, hence, loss of revenue. Autonomy would allow the IRC to discharge its duties without undue external control.

While anecdotal evidence suggests that the goods and services tax (GST) is the most broad-based tax in PNG, Mawuli’s presentation (Chapter 3) argued that the distribution of the GST revenue between the national and provincial governments is unfavourable to the least developed provinces. Since the GST is an important component of government revenue for promoting equitable growth and development across provinces, the paper suggested that 20% of internal GST collection should be placed in a trust fund dedicated to increasing and improving labour-intensive activities that generate income and employment in the poorer provinces.
The issue of the GST imposing a heavy tax burden on disadvantaged consumers, including the very poor individuals and rural dwellers in the least developed provinces and urban (informal) settlements, was also discussed. Because the majority of poor people in PNG live in villages, where essential services are limited or non-existent, Mawuli argued that the GST affects rural dwellers more than it affects urban dwellers. The goal of any tax policy should be to improve national welfare, especially when revenues from natural resources are guaranteed for the foreseeable future. Therefore, removing the GST from basic food items, health and educational supplies — that is, widening the scope of exemptions — should be considered. However, the current GST rate of 10%, applied to all taxable items and supported by straightforward provisions, makes the tax relatively simple to administer and easy to understand. Hence, the general consensus was that the GST should remain unchanged.

PNG is a resource-rich country of low to middle income. Its viable industries based on the natural gas, oil and mineral resources have produced a trajectory and scope of economic transformation in the past 10 years that is probably the most impressive in the South Pacific. However, the country’s impressive economic development has not translated into optimal fiscal and revenue yields. The presentation on resource taxation by Emerson and Kraal (Chapter 4) contends that PNG’s system of taxation for the petroleum, gas and mining industries has collected too little revenue during periods of high profitability: concessions provided in project-specific agreements that override general legislation have greatly reduced effective rates of taxation. However, since the country’s resource sector is expected to grow significantly in the next few decades, and with the prospect of an extended period of strong economic growth, the government’s tax revenue from mineral, petroleum and gas resources should improve. From a resource-tax perspective, the future is uncertain, which threatens confidence in the anticipated revenue from liquefied natural gas (LNG) exports. Although PNG’s crude oil exports and, hence, tax revenue from this sector is minimal, development of the shale gas industry around the world may reduce future LNG prices, thereby exerting pressure on government revenue.

Chapter 4 presents a number of ideas that are well accepted in the literature on resource taxes. Some of these schemes could align PNG’s fiscal regime to reflect the country’s current socioeconomic growth and medium-term trends. For example, the government could transition to rent-based taxes rather than relying on dividends from state equity shares in mining, petroleum and gas companies. The presenters suggested that the debt-raising capacity of the government would be better invested in much-needed economic and social infrastructure than used to buy into mining, petroleum and gas projects. Further, a tax system full of exemptions is not required: if tax rates remain high by international standards, and are accompanied by tax holidays and exemptions to “favoured” enterprises, the Treasury will recoup less revenue.

Chapter 5 (by Devos) argues that, although the resident company tax rate of 30% is similar to that of countries in the Organisation for Economic Co-operation and Development (OECD), the rate may be too high when PNG is competing to attract Foreign Direct Investment (FDI) since many Asian countries have competitive corporate tax rates (e.g. Malaysia’s rate is 25%). Moreover, to remove the inequity between resident and non-resident corporations, the paper proposes a single corporate tax rate of 25%. Although government revenue may initially decline because of this change, it will potentially attract and increase critical investment; while investment is increasing, a lower tax rate is sustainable. Besides simplifying the administration of company tax, taxing all companies at the same rate rather than taxing a few companies at disproportionately high rates will remove the existing
distortions in the investment regime. Moreover, the incentive for companies to transfer taxable income offshore would be removed.

Similar to Chapter 5 on corporate tax, the session on personal tax systems confirmed that PNG is probably the highest taxpaying country in the world. Chapter 6 (by Levantis) reveals that the burden of personal income tax falls on only 5 percent of the country's population; and fewer than half of the 5 percent pay 90 percent of the total personal income tax. Moreover, the highest marginal tax rate of 42 percent is considerably higher than the global average rate of 31 percent and the Asian average rate of 28.4 percent. How wage earners with low and middle incomes — the people best placed to invest in micro and small enterprises — are taxed in PNG is also problematic. Those who both own a micro or small business and receive a salary or wage have both incomes aggregated to calculate their total tax liability. However, those who run a micro or small business and with no other source of income are taxed at a lower marginal rate. Unincorporated micro and small businesses should be similarly taxed, regardless of the owner's status in the formal workforce. Removing business and investment incomes from the personal income taxation regime, with the same tax-free threshold of K18 000 for both wage and investment incomes, would simplify compliance requirements.

Currently, PNG has no environmental taxes, yet concerns about environmental pollution and degradation are increasing. Hence, the presentation and ensuing discussion of the environmental taxation paper by Asafu-Adjaye (Chapter 7) stressed the need to introduce some form of environmental taxation — as PNG continues to rely on revenues from mineral resources, environmental pollution and degradation from mining activities will probably increase. However, it was also argued that, given PNG's current stage of development, certain environmental taxes, such as a carbon tax or an energy tax, would be inappropriate. Such taxes are regressive and could stifle PNG's development. However, because PNG has made an international commitment to contribute to mitigating global emissions, other measures to improve environmental quality must be considered. Although the country's greatest environmental threat is the rapid and often overharvesting of resources, polluting behaviour by households has increased as the country's population and income continue to grow; for example, the one-off sales duty on imported vehicles will not reduce traffic congestion and urban air pollution. Increasingly, individuals, farm owners and businesses in PNG only consider their private interests and are rarely mindful of the damage they do to the environment.

There was considerable discussion about the attractive features of environmental taxes in PNG, principally to help conserve the environment. That the country's current and future prosperity depends on the people's wise stewardship of our natural resources is not in question; the question is whether the today's taxpayers are morally and socially obligated to pay environmental taxes for the purpose of environmental conservation. If they are so obligated, however, the present value of the ecosystem — the forest and marine environments — is difficult to quantify. If they are not obligated, lessons can be drawn from the Bougainville experience where extractive industries failed to combat their negative impact on the environment and depleted this valuable resource. To promote the quest for a clean and healthy environment, polluters should pay for the negative environmental impacts of their production and consumption activities. The objective is not to raise revenue for the government but to achieve clean production and conserve the environment, including mitigating the effects of climate change.
The session on taxpayer compliance and taxpayer morale (see chapters 8 and 9 by Piatti et al.) address some of the challenges of revenue collection in PNG. PNG has one of the highest levels of tax arrears as a percentage of net revenue (25.5 percent). The unpaid corporate income tax (as of year 2012) comprises the largest proportion (70 percent) of total debt owed to the IRC, suggesting that noncompliance with corporate tax laws is a major concern. Moreover, many corporate taxpayers with high incomes pay relatively little tax, which greatly affects tax revenue. Such debts harm the operations of tax administration and management of public finance. Corruption is rampant in PNG, producing low trust in authority and, hence, little incentive for cooperation and compliance. However, participants generally agreed that not all noncompliance is intentional: the complexity of the tax systems, the logistical difficulty of complying, and various other factors probably cause some tax leakage through unintentional noncompliance.

The discussion therefore stressed the importance of moving away from previous systems that employed deterrence and “command and control” to models that reinforce a norm of voluntary compliance. Such models make compliance easy and provide plausible and effective deterrence for noncompliance. The impact upon compliance of factors such as corruption, other institutional factors, and tax administration were debated, with the general consensus that further improvements in the quality of governance (e.g. lower corruption levels and higher bureaucratic quality) will increase the efficiency of the tax system in PNG. Thus, improving institutions by enhancing law and order, government stability, voice and accountability and by reducing corruption should be a high priority; however, improving the governance structure and the tax administration system are also essential in order to guarantee a successful long term and sustainable tax compliance strategy.

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Levantis, T., 2014. ‘A new look at the personal income tax regime in Papua New Guinea’. This volume (Chapter 6).

Mawuli, A., 2014. ‘Goods and services tax: An appraisal’. This volume (Chapter 3).


Piatti, M., Schaffner, M., and Torgler, B., 2014b. ‘Understanding what drives tax morale’. This volume (Chapter 9).

Prasad, R. V. 2014. ‘A modern and rational tax administration system for Papua New Guinea’. This volume (Chapter 2).
2.1 Introduction

Jean-Baptiste Cobert once famously remarked that the art of taxation consists of plucking the goose in order to obtain the largest amount of feathers and the least hissing. Although made some 350 years ago, the essence of this quote is still relevant. Taxation involves two major stakeholders (the taxpaying community and the taxing authority), who often have competing self-interests. This is especially true in a tax administration context. The taxpaying community generally prefers a simple tax-compliance model that involves minimum compliance and tax-audit costs. Governments and revenue authorities often have limited resources but have a vested interest in ensuring maximum compliance (with minimum tax evasion and avoidance). Hence, the tax administration system will invariably incorporate checks and balances that could be onerous for taxpayers in terms of time expended and cost.

The designers of the best tax systems arguably find a good balance between the two competing interests. Further, recent focus in this area has changed considerably. For example, the Forum on Tax Administration\textsuperscript{1} of the Organisation for Economic Co-operation and Development (OECD) was set up to encourage tax authorities to move away from a confrontational dialogue to more constructive engagement with taxpayers.

As a practitioner who has worked on both sides of the tax administration fence (in private tax practice and as a revenue official), the writer is as aware of the challenges facing tax authorities as of the expectations of the taxpaying community. Hence, the aim of this paper: to recognise that designing an effective tax administration is a finely balanced exercise, and to generate discussion about where that balance sits for the tax administration of Papua New Guinea (PNG). The writer suspects that there is no single model that will yield the best results: PNG has its own dynamics (e.g. level of economic participation) that will dictate the effective design of its tax administration system. Yet there is much to learn from the somewhat revolutionary changes taking place in the tax administration sphere in countries such as the Netherlands\textsuperscript{2}, and from the ever increasing role of technology in tax administration.

Tax administration is a very wide topic, incorporating issues such as:

- the structure and constitutional nature of the revenue authority
- taxpayer compliance: tax returns and assessments and the growing trend to abolish

\textsuperscript{1} See Background to the Forum at www.oecd.org/site/ctpfta/abouttheforum.htm
\textsuperscript{2} As discussed later in this chapter.
tax returns for individuals
• commissioner’s powers to withhold refunds
• use of compliance models as a tool for resource allocation
• commissioner’s powers to audit or investigate tax positions taken by taxpayers and amendments to assessments
• commissioner’s powers for information gathering
• use of electronic services in tax administration
• the international dimension of taxing multi-jurisdiction entities.

A detailed study on every topic that falls under the tax administration umbrella is beyond the scope of this paper and, moreover, unnecessary. The purpose of this paper is to highlight:

• lessons learnt from international practice and trends that can be adapted to PNG
• aspects of the current tax administration system of PNG that are undergoing reform
• areas for possible reform.

The writer considers that a tax regime that has a low rate, is comprehensive, and has minimum incentives and structural inequities will be a tax system that is easier to administer.

This paradigm follows the trend in most OECD countries and in PNG’s main trading partners (e.g. Australia) to move towards the “Haig-Simons” comprehensive tax base that includes realised capital gains and the same rates for all entities. Incentives and all personal deductions are removed. Professor Chris Ohms’s unpublished manuscripts deal with a conceptual framework for this overall reform\(^1\). The reform occurs within the context of an economic model that promotes a competitive market, supported by a government structure, in order to provide public goods and assistance such as social welfare (when necessary).

This chapter may be read as part of an overall package, with papers relating to the tax base, tax rates and tax incentives that are also part of the research of the National Research Institute of Papua New Guinea (NRI). No analysis on these topics is undertaken in this chapter. Hence, the analysis of tax administration issues specific to PNG is based on core tax laws as they stand.

The paper follows the expected flow of activity in any tax authority: from the set-up of the revenue authority to tax assessments, commissioner’s investigation powers, and solving tax disputes.

### 2.2 Corporate Structure and Resourcing Issues

The most fundamental aspect of tax administration is arguably in relation to the corporate structure and resourcing of a tax authority. Obviously, the better resourced a tax authority, the more it can achieve in terms of tax administration.

This scoping paper does not include a full examination of the appropriateness of the resources available to the PNG Internal Revenue Commission (IRC). However, any analysis of the effectiveness of the IRC’s tax administration capabilities will not be complete without

\(^1\) See Ohms, 2014a,b.
an examination of the funding structures, and these should be considered in due course.

Some indications of the IRC’s structure and funding are contained in a paper entitled “A Comparative Analysis of Tax Administration in Asia and the Pacific” by Araki & Claus (2014). The authors note that the IRC is not affiliated with the PNG Ministry of Finance and thus has considerable autonomy. An autonomous structure is arguably the best structure for creating an atmosphere in which the IRC can carry out its statutory functions without undue influence from other sources. The authors note the benefits of an autonomous structure.  

A semi-autonomous body can:

- be free from political interference in day-to-day operations
- implement human-resources policies differently from the Ministry of Finance to recruit and retain motivated and skilled staff members
- implement organisational reforms such as establishing specialised audit functions
- allow more flexibility in budget arrangements to invest in information and communication technology (ICT).

A review of the IRC’s Corporate Plan 2013–20172 shows that the organisation is fully cognisant of the important role it plays in enabling social development. The plan also has several exciting initiatives for building the organisation. Two key initiatives stand out. First, the IRC aims to have an ICT capability that fully supports its business activities. Specifically, it aims to have appropriate and effective information technology and communication systems.

Technological tax tools are already revolutionising tax administration in developed countries and will probably also play a crucial role in developing countries. The writer suggests that a detailed plan be drawn up to show how technological tools can help overcome previous barriers faced by the PNG tax administration (e.g. geographical challenges).

The authors of the Asian Development Bank (ADB) report note that the IRC spent 23.4 percent of its total expenditure on ICT activities, which is broadly comparable to the percentages spent by developed countries in the region. At present a significant proportion of the IRC’s ICT budget relates to the introduction of the Standard Integrated Government Tax Administration System (SIGTAS). SIGTAS runs a range of functions, including taxpayer registration, account management, electronic filing (e-filing), electronic payments and refunds, case-tracking for audit purposes, and reporting.

While significant progress has been made in allowing PNG taxpayers to make tax payments electronically, presently taxpayers cannot electronically file returns. The overall benefits for tax compliance from e-filing capabilities have been immense wherever they have been introduced. The Corporate Plan notes that the IRC anticipates that this facility will be in place in the “near future” with the introduction of its new accounting system.3

The Corporate Plan also highlights the need to build human resource capabilities, and lists a number of credible plans to achieve this goal. The writer suggests that concurrently an-

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3 ibid., p.2
other exercise should be undertaken to ascertain whether there is further scope for staff to specialise in handling different types of tax and taxpayers (eg. large enterprises).

The Corporate Plan also states that the IRC uses external benchmarks such as the Pacific Islands Tax Administration Base Line Assessment Framework. This is an initiative run by the International Monetary Fund\(^1\) that provides a yardstick against which Pacific Island tax administrations can measure their performance and progress. This excellent initiative provides scope for continual feedback on the performance of the IRC.

### 2.3 Internal Organisational Design of the IRC

The authors of the ADB report note that the internal design of a tax administration can be modelled broadly on three bases: tax item–based; function-based; and taxpayer segment–based.\(^2\)

The tax item–based model is the traditional organisational design, that is, an internal organisation that is structured according to the tax laws administered. For instance, revenue bodies might have divisions for personal income tax, corporate income tax, and a value added tax (VAT). In the function-based model, departments and divisions are structured according to business functions such as audits, taxpayers’ account management, arrears collection and taxpayer consultation.

In the taxpayer segment–based model, organisational units are structured around taxpayer segments, for example, individual taxpayers, small- and medium-sized businesses, and large companies.

Currently, the IRC is organised solely on a functional basis, which is consistent with international practice — all the countries surveyed used function-based modelling at minimum. The IRC may be unable to achieve its stated aim of a modern and rationalised tax administration system without introducing some level of tax item–based and taxpayer segment–based systems of organising its activities. However, the authors of the ADB report note that the IRC has mooted the introduction of a “large taxpayers office”.\(^3\) Taxes from the mining and petroleum sectors will probably contribute most to any significant growth in PNG revenue — the taxpayers involved are relatively large, with complex tax issues. The introduction of a well-resourced office with trained staff to handle large taxpayers will be crucial in ensuring that appropriate taxes are obtained from mining and petroleum activities.

### 2.4 Tax Compliance Models

In an ideal world, all taxpayers are fully tax compliant, and the following would occur:

- All taxpayers are registered in the tax system.
- Taxpayer data are collected and stored electronically.
- All taxpayers participate fully in their statutory tax-reporting requirements (i.e. re-

\(^{1}\) [www.pftac.org/page/tasectors/revenue/](http://www.pftac.org/page/tasectors/revenue/)

\(^{2}\) ibid., n1, at 14

\(^{3}\) ibid., n1, p.16
turns are completed and filed).
• The amounts returned are in accordance with tax laws.
• The returns are filed on time.
• Any amounts due are paid on time.
• Taxpayers participate fully in any post-assessment activities by the commissioner (i.e. tax audits).

The reality is that every jurisdiction will have noncompliant taxpayers on a spectrum of noncompliant behaviour. With limited resources, a tax authority must decide where to employ its resources to obtain the maximum return for the resources expended. A tax compliance model is a critical component of any tax authority’s compliance strategy. The tax-compliance models currently used in Australia and New Zealand are derived from a wider body of work by Ayres and Braithwaite (1992) in relation to regulatory risk differentiation. The models are encapsulated in a “compliance triangle” framework (CTF) that is divided into four “sections” (Figure 2.1).

Figure 2.1: Taxpayer compliance model

2.4.1 Disengagement
Starting at the top of the CTF, the posture of “disengagement” describes a taxpayer who is both resistant to complying with the tax system and who feels a sense of hopelessness. The state of disengagement is accompanied by non-responsiveness and the tax system is viewed as something to be avoided at all cost; any demands for compliance should be dealt with in a minimalist fashion (Braithwaite & Braithwaite, 2001).

2.4.2 Resistance
The second level on the CTF is the posture of “resistance”. This describes taxpayers who have a confrontational approach to the taxing authority and who regard the tax system as oppressive, burdensome, inflexible and unforgiving. Braithwaite and Braithwaite (2001) suggest that, within this group, “Tax officers are likely to be construed as unhelpful, incompetent, mistrustful and unwilling to consult with taxpayers.”

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1 ibid.
2 Braithwaite and Braithwaite (2001) conclude (incorrectly in our opinion) that the posture of disengagement-
Both these postures are termed “noncompliant”.

2.4.3 Capture

The third level on the CTF is “capture”, which is similar to “accommodation”; however, the taxpayer adopts a more laissez faire approach. This posture is associated with the expectation that trust and cooperation will prevail.

2.4.4 Accommodation

At the base of the CTF, the posture of “accommodation” describes a taxpayer who is “willing to do the right thing”. Such taxpayers display an explicit commitment to support the system, accept responsibility for compliance, and manage their compliance obligations. The postures of accommodation and capture are termed “compliant” postures.

2.4.5 Compliance Strategies

Associated with this model of taxpayer-compliance behaviour that is represented by the four postures are corresponding compliance strategies to be adopted. The overall strategy is to create downward pressure from the top of the CTF to the bottom, with the highest pressure at the top and the lowest at the bottom; logically, more pressure is applied at the top of the CTF, which represents the “worst” compliance behaviour. One of four micro-compliance strategies is associated with each posture: (i) a “making it easy” strategy for accommodative taxpayers; (ii) for captured taxpayers, a strategy to assist them to comply; (iii) for resistant taxpayers, a “deterrence by detection” (audit) strategy; and (iv) for disengaged taxpayers, the full force of the law is used to achieve compliance.

2.4.6 Criticisms of the CTF model

Research by Ohms (2014a,b) shows that the CTF is flawed in that it fails to recognise several important factors:

- The compliance “process” comprises a system involving the steps of registration, recording, return filing, assessment, collection, post audit, and disputes. A single two-dimensional model basically amalgamates all the statutory steps into one. This view is hardly correct, given that each step has a different form, shape and set of jurisprudence.
- The compliance process involves both the compliance population and the compliance authority: the CTF assumes the compliance authority operates “perfectly” and has no compliance obligations. This is fallacious.
- The CTF ignores the scenario in which assessment is required at an individual level (e.g. the Australian tax legislation). In this situation, “lumping” taxpayers into one amorphous group is not helpful.

Ohms suggests that a three-dimensional model is appropriate. The model (which is the subject of continuing work) comprises the steps seen in a typical tax administration cycle (e.g. under the Papua New Guinea Income Tax Act 1959 [ITA59]):

— ment is different from that of resistance in that the “resistor” has a desire to be respected by the authorities, whereas the “disengaged” does not.
1. registration
2. recording financial transactions for an income year
3. classifying transactions
4. undertaking return or self-assessment
5. payment of tax liability
6. resolution
7. participation in post-assessment activity (e.g., audits and disputes).

The model recognises that the scheme of the ITA59 and similar legislation adopts a yearly assessment cycle. This cycle is denoted as P0 to P365 in the first simple representation and is plotted along a Cartesian plane as the Y axis in Figure 2.2. Taxpayer compliance (measured as a monetary value) is plotted along the Z axis and tax authority compliance is plotted along the X axis.

Figure 2.2: Typical tax administration cycle

Ultimately, this scheme will be developed to include transfer payments such as benefits for the single taxpayer entity, as illustrated in Figures 2.3 and 2.4.

Figure 2.3: Compliance matrix table

An IT system provides a “dashboard” view and dataset for each taxpayer, taxpayer groups and the entire taxpayer population (Figure 2.4).
2.5  The Netherlands Approach

2.5.1 The Tax Control Framework

Another revolutionary change in tax administration has been taking place in the Netherlands and is gaining attention worldwide. It represents a move away from the traditional “vertical” monitoring, which involves retrospective auditing of tax positions of taxpayers. The new approach uses “horizontal” monitoring, whereby taxpaying entities with strong tax control mechanisms enter into an “agreement” with the Dutch tax authority in relation to future tax positions.

The Dutch approach has its genesis in the rumblings in the corporate governance world after the collapse of giants such as Enron, which in turn led to the spectacular collapse of Arthur Anderson. A significant reason for these collapses was the failings in the internal and external control systems of the affected corporations. The enactment of legislation known as the Sarbanes–Oxley Act 2002 was felt necessary to restore confidence in large businesses and the professional services firms.1 The Act imposes stringent requirements for internal control reporting on the boards of corporations listed in the United States. The Netherlands adopted its own version in the form of the Netherlands Corporate Governance Code. While full compliance is not absolutely necessary, the code does impose an obligation on the management of affected entities to issue an “in control statement” that outlines the extent to which its internal control systems lead to compliance with the code.

Tax obligations are a significant aspect of the overall compliance by a corporation. The horizontal monitoring scheme of the Netherlands latches on to the work that must be done by Netherlands corporations’ in issuing their “in control statement”. The approach is based on the notion that, because these entities need to set up effective internal controls for tax issues (i.e. a tax control framework, or TCF), the Dutch tax authority should become involved at an early stage and review the tax controls.2 If the internal tax controls are robust, then it is highly likely that tax positions taken from the internal controls will comply with

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tax laws.

The TCF mechanism requires significant trust between the corporations covered by the TCF and the Netherlands tax authority, and transparency of the corporations’ tax arrangements, but is mutually beneficial for both parties.

For corporations participating in the TCF, the following advantages generally apply (CHMTCA, 2012):¹

- greater certainty
- less audit activity
- room for disagreement
- previous-year issues resolved in a timelier manner.

**Greater certainty**

The TCF mechanism works in “real time”; hence, compared with previous approaches, TCFs focus less on what tax issues arose in the past. Instead, they focus on present and future tax issues. This focus facilitates greater transparency between taxpayers and tax authorities and leads to more timely determinations on tax issues from the tax authority. It greatly reduces uncertainty and provides the taxpayer with a fixed point of contact in the tax authority.

**Less audit activity**

Having tested and approved the internal tax controls of a corporation, the tax authority has greater confidence in the corporation’s ongoing compliance. Hence, future audits will be limited.

**Agree to disagree**

The TCF mechanism is not rigid and does allow for corporations and the Dutch tax authority to disagree on certain tax issues. There is provision for further discussion between the parties on contentious issues, and the possibility of taking the matter to court if unresolved.

**Speedy resolution of tax issues from previous years**

Before participating in a TCF, all tax issues relating to the past need to be resolved. The Dutch tax authority has stated that it will endeavour to resolve past issues in a positive atmosphere and an efficient manner.

### 2.5.2 Lesson for PNG

Arguably the most significant area of tax activity for PNG in the immediate future is taxing the resources sector. As part of the ongoing work in finalising the rules and structure of PNG’s resource tax, a Dutch-style horizontal monitoring system should be considered. The nature of taxing resource extractions involves complicated issues of timing related to in-

come and expenditure, but these issues remain static for long periods. Further, such issues are probably generic for taxpayers in the resources sector, which creates an ideal environment for the implementation of a Dutch-style approach.

As noted above, this approach should not be compulsory for taxpayers and can work alongside the traditional vertical monitoring approach.

2.5.3 Technology and Social Media

No discussion on tax compliance strategies is complete without discussing the significant changes in technology and the rise of social media, and their ever-growing impact on tax administration. For many tax authorities in the developed world, this has meant applying new opportunities to old tax administration strategies. Such change has often posed significant challenges, especially in relation to secrecy legislation that was written well before the advent of the technological era. For PNG, which is embarking on an ambitious and exciting plan to improve its tax administration capabilities, the opportunity exists to incorporate technology and social media into the plan.

As the PNG economy grows and more of the population participates fully, technological and social-media tools will play a crucial and cost-effective role in the IRC’s engagement with taxpayers. As discussed earlier, resourcing of tax authorities is often limited and there is always an expectation of a certain return (in terms of tax collected). Increasingly, a greater proportion of resources will need to be invested in technology infrastructure; hence, the existing costly approach centred on investigation will probably need to be replaced with an approach that is less resource intensive and less confrontational in nature. However, the introduction of technology and social media in a tax administration context will not be without challenges. As the OECD notes:

As with any new technology, there are challenges and risks to be taken into account. However, these appear manageable within the framework of properly considered and coordinated strategies; and given the relatively low costs and barriers to entry, there would seem to be a convincing business case for the deployment of social media technologies as a new communication tool with exciting possibilities.

2.6 Tax Assessments and Return Filing: SIGTAS

The IRC of PNG has joined a growing number of tax authorities in committing to use the Standard Integrated Government Tax Administration System (SIGTAS); work on the rollout is currently underway, led by Adam Smith International. The number of countries that have adopted SIGTAS indicates widespread acceptance in developing countries.

However, SIGTAS is a generic (non-customised) system; presumably, the suitability of SIGTAS for PNG has been fully considered as part of the procurement process. A detailed review of the capabilities of SIGTAS and its implementation in PNG to date is beyond the scope of this paper. Obviously, proper implementation is vital to obtain maximum value from SIGTAS.

SIGTAS has been used by the Tax Administration of Kosovo since 2001. The Kosovo Office of the Auditor General (OAG) conducted a review into the effectiveness of SIGTAS. In its report\(^1\), the OAG noted a number of shortcomings.

- Significant shortcomings regarding the SIGTAS design:
  - shortcomings in the management of information in the system
  - lack of information update related to several activities developed in the system.

- Significant issues regarding the use of SIGTAS:
  - delay in applying the use of system modules
  - incomplete reporting and incorrect information from the system
  - lack of interface between the activities within the system
  - delays in the processing of information in the system
  - lack of reconciliation of system information (with another tool used by the Tax Administration of Kosovo).

The writer stresses that he is not an expert in the mechanics of SIGTAS and recognises that the current version of SIGTAS probably differs from that initiated by Kosovo in 2001. However, because SIGTAS is critical for the long-term success of the IRC, any shortcomings must be minimised during the rollout.

Regarding changing systems, the New Zealand experience is worth noting. The FIRST system used by the New Zealand Inland Revenue Department is outdated and needs replacing. The options being considered involve costs of up to NZ$1.5 billion. One of the structural issues of FIRST was its very limited ability to adapt to new requirements (eg. social policy initiatives administered by Inland Revenue). Because the new system will be completely different, there will probably be logistical and expensive migration issues from FIRST to the new system. It is unclear whether SIGTAS modules can be changed and added to suit the needs of a particular revenue authority.

### 2.6.1 Self-assessment and Voluntary Disclosure

The IRC Corporate Plan states that one of its objectives is to position the IRC for taxpayer self-assessment and voluntary disclosure.\(^2\) For self-assessment to function effectively, taxpayers must be tax literate or have cost-effective access to tax advisers. At present, neither option is common in PNG. Hence, the rollout of self-assessment must include taxpayer education on at least the basics of taxation.

In the model proposed by Ohms, self-assessment occurs in real time, with the individual taxpayer unit and the taxing authority accessing the same screen regarding ongoing compliance. This access is encrypted in a unique card carried by the taxpayer.

### 2.6.2 Tax Investigations and Commissioner’s Powers

Another important aspect of tax administration relates to the commissioner’s ability to

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\(^2\) ibid., n5, p.9
conductor tax audits and to the commissioner’s rights and duties during this process. Specialist tax-controversy teams that are trained to critically examine the commissioner’s actions in an audit are now common in large tax practices in professional services and law firms. Probably, the tax-advice industry in PNG will also follow this path (this may be happening already). Thus, there is greater scrutiny of the commissioner’s powers and actions, which requires both clear rules and regulations governing the ambit of these powers and ensuring that field staff are adequately trained.

Numerous aspects of investigations and commissioner’s powers require consideration, particularly:

- audit methodology
- information-gathering powers (e.g. timelines for requests)
- right to withhold refunds
- search and seizure powers.

As the authors of the ADB report note, the PNG tax legislation does give the commissioner powers in most areas of compliance activity and information gathering. Most are contained in the Income Tax Regulation 1959. However, information-gathering powers do not extend to third parties, which should be amended to conform to international practices.

The writer also considers that the current legislation covering taxpayers’ rights and the commissioner’s powers needs urgent review, and preferably should be codified in a separate Act on tax administration. As the complexity of tax issues increases, PNG taxpayers (especially larger ones) will probably test the ambit of tax-administration legislation. Tax-administration legislation has apparently been introduced in PNG on an ad hoc basis, and no comprehensive study has examined the effectiveness of the laws and regulations. A comprehensive review of tax administration should be the first step in the modernisation.

2.6.3 Tax Disputes

After an investigation, if problems are found, the matter proceeds to the disputes stage. The PNG tax legislation contains an objections system that is similar to the Australian system.

The Australian system for resolution of income-tax disputes starts from the initial self-assessment undertaken by the taxpayer under s166A of the Income Tax Assessment Act 1936 (Cth Aust) (ITA36).\(^1\) The deemed assessment is then subject to post-assessment checking and audit. The Federal Commissioner of Taxation\(^2\) may then issue an amended assessment under s170 of the Act or objection s175A if a difference arises between the initial self-assessed taxable or net income and the tax payable. The taxpayer then has the right to issue a Notice of Objection pursuant to s14ZU of the Tax Administration Act 1953 (Cth Aust) (TAA53).\(^3\) The FCT is then required to consider the objection and issue an Objection Decision (s14ZY TAA53). If the taxpayer is not satisfied with the outcome, the matter may be referred to either the Administrative Appeals Tribunal\(^4\) or the Federal Court, as appropriate (s14ZZ TAA53).

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\(^1\) Herein ITA36. Note difference between self-assessment and full self-assessment.

\(^2\) Herein FCT.

\(^3\) Herein TAA53.

\(^4\) Herein AAT.
2.6.4 Assessment

Under the Australian self-assessment system there are two groups of taxpayers. The first is those taxpayers subject to withholding tax such as “pay-as-you-go”.\(^1\) These taxpayers are not subject to full self-assessment in that there is no deemed “assessment” on the filing of their income tax return.\(^2\) However, the FCT does not check the application of the law before issuing a notice of assessment; and returns are only examined to ensure they are suitable for computer input and are coded to enable the correct calculation of tax and the balance payable or refundable.\(^3\)

The second group of taxpayers is termed “full self-assessment” taxpayers and includes companies, superannuation funds, approved deposit funds, public trading trusts and unit trusts.\(^4\) Section 166A(3) of ITA36 deems an assessment to be made by the FCT in respect of returns lodged by full self-assessment taxpayers. It provides that, if a taxpayer submits a return for an income-tax year for which the taxpayer is a full self-assessment taxpayer (and no previous return has been submitted or assessment made), the FCT is taken to have made an assessment of the taxable income or net income, and the tax payable on that income, equal to the respective amounts specified in the return. The assessment is taken to have been made on the day on which the return is lodged and the return is taken to be a notice of assessment under the hand of the FCT, served on that day. The same situation applies to the deemed assessment of “instalment” taxpayers.\(^5\)

Despite the apparent distinction between self-assessment taxpayers and full self-assessment taxpayers, in practice no real difference exists. As noted by Deputy President R. K. Todd in Case V10:\(^6\)

> In the past taxpayers have been able to include imaginative if not bizarre claims in their taxation returns ... knowing that, at worst, the claims could be expected to be rejected at the time of assessment. Pursuant to self-assessment provisions, however, the assessments that issue will not be final, and in a number of years’ time the taxpayer may be subjected to an audit following which, if the claims are disallowed, the taxpayer will be presented with penalties for late payment.

Certain instalment taxpayers\(^7\) — those who are small to medium taxpayers and who are basically not subject to withholding tax but instead pay instalment tax — are also deemed to undertake self-assessment.\(^8\)

2.6.5 Post Self-Assessment Audit and Reassessment

Clearly, under the self-assessment system, the FCT focuses on post-assessment audit and checking.\(^9\) The FCT will accept or is deemed to accept the taxpayer’s calculations as presented in the income tax return. The distinction between the former FCT assessment and

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\(^1\) [http://selfassessment.treasury.gov.au/content/discussion/05Chapter1.asp](http://selfassessment.treasury.gov.au/content/discussion/05Chapter1.asp)

\(^2\) [http://selfassessment.treasury.gov.au/content/discussion/05Chapter1.asp](http://selfassessment.treasury.gov.au/content/discussion/05Chapter1.asp)

\(^3\) AFTR 79-550.

\(^4\) See s6(1) ITA36 and Div 1B s166A.

\(^5\) Ibid. Div 1c.

\(^6\) Case V10, 88 ATC 154, p.156.

\(^7\) Simply put, those taxpayers other than wage and salary earners, retirees, etc.

\(^8\) See s6(1) ITA36 Act and Div 1C s 166A.

\(^9\) AFTR 79-550
self-assessment has been described in these terms:

The old administrative assessment system requires the Commissioner, from returns lodged and any other information in the Commissioner’s possession, to make an assessment of the amount of a taxpayer’s taxable income and tax payable thereon [s 166 ITA36]. When this process is complete a formal notice of assessment is served on the taxpayer. In contrast, under the self-assessment system, the Commissioner initially accepts a taxpayer’s own calculations in order to determine the taxpayer’s liability to tax.

It is beyond the scope of this paper to describe in any depth the audit program undertaken by the Taxpayer Audit Group within the ATO. All that need be said now is that post-assessment audit and checking, together with the power of the FCT to amend assessments that are inaccurate, is a lynchpin of the self-assessment and disputes-resolution system in Australia. As noted by one commentary:

Amendment of assessments is particularly important because of the self-assessment system. Under this system, taxpayer’s returns are not checked to the same degree before the assessment is issued — so if the return is inaccurate, any necessary correction is more likely made by amendment to the assessment.

The FCT may then issue an amended assessment under s170 ITA36 if a difference arises between the initial self-assessed taxable or net income and the tax payable.

2.6.6 Notice of Objection

Part IVC of the TAA53 establishes the procedure for statutory disputes for a taxpayer to follow once an amended assessment (or assessment) is made by the FCT and the taxpayer wishes to dispute the new assessment. The next step in the Australian disputes-resolution process is the issuance of the Notice of Objection pursuant to s14ZW. Section 14ZQ sets out what is meant by a taxation decision that can be objected to. Section 14ZU TAA53 governs the form of the notice. Under s14ZU, a “taxation objection” is made by a taxpayer’s lodging the objection with the FCT in the approved form, within the period specified in s14ZW TAA53, and, most importantly, stating the grounds upon which the taxpayer relies “fully and in detail.”

a. Objection Notice

Under s14ZY, the FCT, on receipt of a taxation objection, must rule on the objection and notify the taxpayer of the decision in writing, although no time limit is specified.

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1 AFTR 79-550.
2 AITR 10-535.
3 Herein FCT.
4 TAA53 part IVC (s14ZL to 14ZZS).
5 S14ZQ “taxation decision” means the assessment, determination, notice or decision against which a taxation objection may be, or has been made.
6 Under s170(2) & (3), from the income year ending 30 June 2005, the FCT has a 2-year time limit for amending assessments that applies to most individual taxpayers and those who conduct a small business. For those taxpayers with more complex affairs, the time limit is 4 years: s170(4). If the FCT is of the opinion that fraud or evasion is involved, there is no time limit: s170(5). Finally, the FCT may amend an assessment at any time to give effect to a decision of the Administration Appeals Tribunal or a court: s170(6)(a)-(b).
7 S14ZU TAA53.
The decision by the FCT is called the "objection decision".

b. Taxpayer’s Right to Appeal an Objection Decision

If dissatisfied with the objection decision, the taxpayer may elect to refer the matter to the Administrative Appeals Tribunal in the case of a reviewable decision, or to the Federal Court if it is a question of law under s14ZZ.

2.6.6 The New Zealand Dispute Resolution System

The Australian process of dispute resolution differs from the New Zealand system, which may be regarded as an example of an unnecessarily complicated process. The New Zealand system is contained in Part 4A of the Tax Administration Act 1994. If, upon the completion of the audit, the commissioner’s delegated officers do not agree with the taxpayer’s position, the delegated officers must enter into a protracted dispute-resolution process. This process is multi-layered and consists of a number of steps. The dispute process can also be initiated by taxpayers if they wish to dispute a fiscal decision by the commissioner (although nearly all disputes are initiated by the commissioner).

The steps are:

1. A Notice of Proposed Adjustment is issued by the party initiating the dispute.
2. A Notice of Response is issued by the other party.
3. A conference stage follows, in which the parties attempt to resolve the issues.
4. If the matter remains unresolved, Statements of Position are prepared by the parties. A rule on disclosure of evidence applies after this point (ie. no further evidence can be produced in respect of the matter). However, in practice, this rule does not fit conceptually with discovery rules that apply in any litigation that may follow.
5. The matter is referred to the Adjudications Unit of Inland Revenue. This unit is designed as a totally independent unit, but only decides matters on documentary evidence. Therefore, the decisions reached are not based on any testimonial evidence that may be pertinent to the matter. The unit’s Adjudication Decision represents the Commissioner’s final decision on the matter.

In the past, a number of criticisms have been levelled at this system. The main criticism is that the disputes system is costly for taxpayers.

If a taxpayer prevails at the Adjudication level, the commissioner will not take the matter to the courts, which will generally be the end of the matter.

However, if the taxpayer’s arguments are unsuccessful at the Adjudication level (after having spent a considerable sum during the dispute process), and the taxpayer wishes to take the matter further, they must undertake another costly procedure — litigation. This “double whammy” often means that taxpayers with good cases concede, unless the tax sums involved are significant.

Justice Susan Glazebrook of the New Zealand Supreme Court (a specialist tax lawyer before her promotion to the bench) gave an excellent critique of the New Zealand tax-disputes system in 2013. Her Honour noted in her conclusion:

While there are aspects [of the tax disputes system] that operate well, I have argued that certain aspects of the dispute resolution process may prevent worthy cases from being brought before the courts. This not only threatens justice being achieved in the particular situation, but also may impede the development of taxation law, with obvious implications for the rule of law.

### 2.7 Tax Administration Reforms Currently Underway in PNG

The IRC Corporate Plan contains a number of objectives aimed at achieving a world-class tax administration system. Regarding administering taxes and collecting revenue, the following objectives have been set:

- All types of returns and other lodgements are efficiently processed in a timely manner.
- All taxpayers are fairly assessed with the legally correct amount of tax payable.
- Noncompliant returns, withholding statements and reconciliations are promptly identified.
- Overpaid taxes are promptly processed and refunded.
- Non-payment of tax liabilities is promptly followed up, debt recovery is enforced, and aged debts are minimised.
- Well-researched and professionally presented advice on all aspects of taxation is provided to internal stakeholders and taxpayers alike.
- Operational files are well managed throughout their life cycle.
- Taxpayer ledger accounts are up to date.
- Tax agents are provided with efficient services.
- IRC regional offices are well managed and productive.
- Objections are quickly resolved and in accordance with the law.
- Revenue transfers are regularly made in accordance with the expectations of the Department of Finance and provincial administrations.
- Revenue analysis is regularly conducted and reports are distributed to internal and external stakeholders on a timely basis.

The following apply to the stated objective of improving compliance:

- Taxpayer compliance is increased through better structured and targeted taxpayer education and awareness activities.
- An annual audit plan is developed and implemented, supported by an audit quality-assurance program.
- A tax help-desk and contact centre is established for all taxpayer enquiries in order to improve communication with taxpayers.
- The Commissioner General has been granted additional enforcement and debt recovery powers.
- Improved strategies for enforcing compliance are developed and implemented.
- Taxpayer satisfaction surveys are conducted.

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1 ibid., n5, p.9
• IRC shopfronts are established to better provide administration services for personal tax to taxpayers.

Objectives should be realistic to be achievable; the writer considers that the IRC has set itself realistic, practical objectives, and the steps to achieve them.

2.8 Conclusion

The PNG tax administration is undergoing a developmental phase. Based on the material reviewed, currently the focus is establishing the basic infrastructure for tax administration (e.g. legislation and technology). Tax administration is a very broad subject with many facets. At this stage, the work being done appears sufficient to establish the infrastructure in a coherent manner. The next phase is putting the micro aspects in place (i.e. the many components that comprise the tax-administration framework).

In the short term, the following matters require attention:

• It is difficult to envisage a modern system of tax administration for PNG that does not include a strategy for tax compliance. Tax-compliance strategies have been used with considerable success in, for example, Australia and New Zealand, in order to focus tax-compliance activities where they are most needed. With the limited resources available to the IRC, an effective tax-compliance strategy will help ensure that the PNG Treasury obtains the maximum return on resourcing the IRC. While the Braithwaite model has been used in Australia and New Zealand in the past, the writer considers that a modern compliance strategy based on the work of Professor Chris Ohms should be developed.

• Urgent overhaul of the legislation on tax administration is required to modernise and streamline the administration of tax in PNG. As the complexity of tax issues in PNG increases, taxpayers will probably test the ambits of tax-administration laws and regulations. Existing laws and regulations are simplistic and inadequate in places. All legislation on tax administration should be codified in a separate tax administration Act.

• Ongoing and regular reviews of the process to modernise the tax administration system are required.

• Regular monitoring of the SIGTAS implementation is required to ensure it meets expectations in the medium to long term.

• As part of the SIGTAS implementation, e-filing capabilities require building.

• With regard to large mining companies, the introduction of a “horizontal monitoring” approach similar to that of the Netherlands should be considered.

References


Any discussion of tax administration needs to begin with a very obvious point: a good tax system will only exist where good tax policy is matched by good tax administration. Tax administration matters — and it matters a lot. If that aspect of a tax system is not correctly in place, the tax system will probably not operate effectively or efficiently. Tax administration matters not simply because it generates revenue, but also because it constitutes one of the major interfaces between states and their citizens. Thus tax administration is a key element in constructing and sustaining a viable governance system in any country.

Moreover, tax administrations reflect and are shaped by the culture and environment in which they function. How a tax administration works is influenced both by history (path dependence) and its current environment (context specificity). Attempts to reform tax administrations must be sensitive to a wide variety of environmental and cultural conditions.

A series of principles for "good" revenue administration is easily laid out on the basis of either theory or international benchmarking exercises. Nor is it difficult to identify those features of any particular tax administration that differ from the standards thus set. However, successful implementation of those standards may be much more difficult than experts, international agencies or politicians think. Indeed, in some circumstances, major reform of tax administration may be impossible without major political, social and economic changes.

In summary, how well a tax administration works is complex; reforming the system is not simply a matter of changing that which is now done "wrongly". However, much can be done to improve the tax administrations of most countries without causing major national trauma — provided it is done properly given the prevailing circumstances in the country concerned.

Significant changes have taken place in how taxes are administered, especially in the way that revenue authorities are organised and the manner in which they approach the tasks of administering the law and collecting the tax revenue that is properly due — “extracting the maximum amount of feathers [from taxpayers] with the minimum amount of hissing.”

1 Note: these comments are based on the version of the scoping paper “A Modern and Rational Tax Administration System for Papua New Guinea” submitted to the NRI by Roneil Vijay Prasad and received by Prof Evans on 18 May 2014, and may not reflect the content of later versions of that paper.

2 For a good example of the many benchmarks that can be used to assess the efficiency and effectiveness of tax administrations, see Araki and Claus (2014).
Major trends in tax administration include:

- modernising and professionalising tax administrations to promote increased flexibility in the organisation of human resources and of pay scales, with greater emphasis on externally validated and merit-based performance targets
- introducing autonomous and semiautonomous structures whereby tax administrations operate independently, or more independently, of their political masters
- growth of the internal organisation of revenue authorities to reference market segments (e.g. large taxpayer units) rather than only the type of tax collected or the function performed by revenue officers
- increasing reliance on self-assessment as opposed to official assessment
- much greater use of technology in all aspects of revenue-administration work
- above all, a shift from “command-and-control” regulatory frameworks (that rely on penalties and enforcement to ensure compliance) to risk-management approaches designed to foster voluntary compliance — that is, making it easy for those who wish to comply, and providing plausible and effective deterrence for those who do not.

The scoping paper by Roneil Vijay Prasad covers some, though not all, of these points in the context of the operation of the Inland Revenue Commission in PNG. Although a sound start, clearly the paper is a work in progress. As the paper develops, it must recognise the path dependence and context specificity of developments in PNG’s tax administration. In particular, the notion of introducing ideas from abroad — such as the Netherlands’ horizontal monitoring — may be superficially appealing. However, on closer examination, such a transplant, particularly from a country with a very different culture and at a very different stage of development, may be inappropriate for PNG.
CHAPTER 3 GOODS AND SERVICES TAX: AN APPRAISAL

3.1 Introduction

A Goods and Services Tax (GST) was introduced in Papua New Guinea (PNG) on 1 July 1999 in the midst of a protracted economic slump, which prevailed between 1995 and 2002. During this period, the PNG economy experienced high budget deficits, high inflation, high interest rates, and a high public debt ratio. In addition, there were discriminatory and distorted indirect taxes, cascading provincial sales taxes, declining revenues from mineral and petroleum sources, and perceived pressures to liberalise trade and investment. There was a fervent search for policy reforms to revamp the economy. The crisis-prone economy did not recover until a commodity price boom emerged in 2002. This paper explains the main impacts of the GST, including the adverse impacts on disadvantaged taxpayers. It puts forward suggestions for reforming the GST and minimising the significant negative impacts.

3.1.1 Purpose of Reviewing the GST

The GST was introduced as a value added tax (VAT). Later, the name was changed, without any change in the design or application of the VAT.

The National Research Institute (NRI), a think-tank of the Government of Papua New Guinea (GoPNG), commissioned this paper, requesting an appraisal of the GST and suggestions for reforming it, if necessary. This paper was presented at the Tax Review Symposium held from 29 to 30 May 2014. The symposium was organised by the NRI in partial fulfilment of the institute's aim to contribute to the GoPNG's agenda for reviewing and reforming the taxation system. The institute intends to follow up with recommendations to the PNG Tax Review Committee, which the GoPNG has tasked with conducting a comprehensive review of taxes and making recommendations for reforming the tax regime.

3.1.2 The Method of this Appraisal

A desktop review of PNG’s GST was carried out to examine the following questions for the purpose of making recommendations for reforming the GST:

• What is the GST of PNG and why was the GST adopted?
• What are its main impacts?
• How should the GST be reformed, if at all?

Using existing data and information, the appraisal focused on how the GST package has...
affected individuals, businesses and both the national and provincial governments.

3.1.3 The Organisation of the Paper

The paper has five sections. An explanation of why the GST was adopted and the nature of the GST follows this introduction. Section 3 presents the analytical framework for assessing the GST principles and axioms that underpinned its formulation. Section 4 discusses the GST’s impacts on individual payers, businesses and provinces, and its fiscal policy implications, focusing on disadvantaged payers, businesses and recipient provinces that benefit least from the GST distribution. Section 5 puts forward, and defends, recommendations.

3.2 The GST of PNG

3.2.1 What is the PNG GST?

The GST is a consumption tax applied as a value added tax on a product. The final consumers or end users of the product pay the GST. Businesses that purchase the product and use it in the course of the business pay the GST at the sales outlet, but receive a refund for the GST paid, hereafter referred to as “input credit”.

Many issues were raised and debated at the time of the introduction of the GST. A GST package emerged, comprising a 10 percent GST on virtually all taxable products. Measures included:

- few product exemptions or zero ratings (services of a few institutions such as hospitals or schools exempted and exports zero rated)
- tariff reductions on a wide range of goods
- reductions in customs and excise duty
- abolition of provincial sales tax
- GST revenue-sharing between national and provincial governments (mentioned at the time of introduction, but the formula for the GST distribution not specified or critically examined; Independent VAT Study Group, 2000).

3.2.2 Why Adopt the GST?

Generally, governments introduce consumption taxes or increase their tax rate in order to raise revenues or reduce the consumption of the product on which the tax is imposed. The introduction of a new consumption tax, or effecting a change in an existing one, is justified by either a prevailing economic problem or a political motivation at which the tax is aimed. A consumption tax is an indirect tax that may be in the form of a sales tax, a turnover tax or a value added tax, with the tax passed on to the final consumer or end user.

The GST was introduced by the GoPNG amidst a general downturn of the economy and deepening recession. In the second half of the 1990s, the economy experienced budget deficits, high inflation, declining government revenues, and a rapid depreciation of the exchange rate of the kina that followed floatation in 1994. The government then searched for new policies to remedy the economic decline. Several authors have written on aspects of the economic problems that PNG faced in those years, including King and Sugden (1996) on increasing public debt; Mawuli (1997) on shortfalls in GoPNG revenues, the public
debt and budget deficits; Standish (1999) on extensive budget cuts; and Duncan (2002) on uncontrollable government expenditures. After the crisis was over, Batten (2010) reasoned that the GST was introduced to reassure aid providers and development partners of GoPNG’s commitment to responsible fiscal policy.

PNG’s economic slumps have been due mainly to a derailment of fiscal policies, and have usually been short lived. Policies have played no apparent role in the recoveries. The fiscal crises often end because of the resurgence of resource revenues. For example, in the early 1980s, an excessive budget deficit caused economic overheating was rescued by the development of the huge Ok Tedi Mine in 1984 and the Misima Gold mine in 1988; and the fiscal slump of 1989–90, due mainly to the closure of the Bougainville Copper mine, ended when Porgera Mine, a world-class gold mine, came into production in 1991. However, the adverse impacts of the macroeconomic mismanagement of the first half of the 1990s lasted longer than previously, despite the Kutubu Petroleum development in 1996.

The introduction of the GST in 1999 after the kina floatation in 1994, together with the structural adjustment programs and drastic budget cuts (1996–2001), did help to soften the fiscal crisis and recession, which lasted until the commodity price boom began in 2002.

The proposal of the GST during the economic crisis of the second half of the 1990s was motivated by several reasons. At a seminar, the Indirect Tax Summit 1996, the former Deputy Prime Minister and Minister for Finance, Chris Haiveta, and the then Secretary of Finance, Rupa Mulina, officially claimed that the new tax aimed to:

- reduce the deficit
- cut tariffs and excise
- cut personal income taxes (Millet, 1996).

The summit was organised by the Internal Revenue Commission (IRC) and the Institute of National Affairs. These reasons given for the new tax were politically tolerable. However, there were also perceived pressures on the government to:

- broaden the tax base. Before the introduction of the GST, less than 5 percent of the population paid most of the taxes (Millet, 1996).
- reduce tariffs and export duties that were considered too high, with numerous exemptions, economic incentives, and discriminatory or protective tariffs (Millet, 1996).
- abolish provincial sales taxes of various rates, which significantly contributed to cascading of indirect taxes and high transaction costs for the provinces in collecting these taxes. These factors led to tax evasion and corruption. Sales-tax cascading was real, both within and between provinces. For example, domestic commerce was least developed in some provinces such as Enga, Central and Gulf provinces, forcing them to buy goods from Western and Morobe provinces and the National Capital District to sell in their trade stores. Sales taxes were applied in all provinces, which meant that the payers in the least commercially developed provinces were doubly taxed. This double taxing also occurred within provinces.
- liberalise trade and investment in conformity with the global trend and PNG’s commitment to some international organisations.
3.3 The GST Analytical Framework

3.3.1 Nature of the GST

The theoretical formulation of the GST, which is administered as a VAT, is illustrated in tables 3.1 and 3.2. The GST is applied at each stage of the trade transactions. The sum of the GST collections at all stages of the trade transaction is greater than that of a one-off application of the 10 percent GST, because the services of each GST-registered supplier are taxed. The GST is therefore a broad-based tax. The tables also show how the final consumers or end users who buy the product at a later stage of the supply-consumption chain pay a higher GST than those further up the chain.

Table 3.1: A GST of 10% with product transformation

<table>
<thead>
<tr>
<th>Stage of trade transaction</th>
<th>Supplier</th>
<th>Item</th>
<th>Price inclusive of GST</th>
<th>Input credit</th>
<th>GST to IRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Logger</td>
<td>Log</td>
<td>50</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>2</td>
<td>Saw-miller</td>
<td>Plank</td>
<td>70</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>Furniture</td>
<td>Factory</td>
<td>80</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Store</td>
<td>Table</td>
<td>110</td>
<td>11</td>
<td>3</td>
</tr>
</tbody>
</table>

Note: IRC = Internal Revenue Commission; NA = not applicable.

Table 3.2: A GST of 10% without product transformation

<table>
<thead>
<tr>
<th>Supplier</th>
<th>Item</th>
<th>Price inclusive of GST</th>
<th>Input credit</th>
<th>GST to IRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Importer</td>
<td>Table</td>
<td>110</td>
<td>--</td>
<td>11</td>
</tr>
<tr>
<td>GST-registered shop</td>
<td>Table</td>
<td>140</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>GST-registered shop</td>
<td>Table</td>
<td>160</td>
<td>14</td>
<td>2</td>
</tr>
</tbody>
</table>

Note: IRC = Internal Revenue Commission; NA = not applicable.

3.3.2 GST Reform Principles and Axioms

The theoretical principles of a good tax are equity, efficiency and simplicity. Despite the fact that consumption taxes (one form of indirect tax) are regressive, governments generally apply them in order to raise revenues or to influence consumption. Thus a GST, similar to other consumption taxes, must be justified by other reasons.

- Broadening the tax base sustainably: tables 3.1 and 3.2 illustrate how a GST broadens the tax base by taxing the services of the intermediary suppliers. These suppliers are not taxed if a one-off indirect tax is applied. A broad-based tax such as a GST is more sustainable and dynamically stable because changes in the elements of the indicator are influenced many factors that are unlikely to change in the same direction for the numerator and the denominator, which measure the growth of the indicator.
Furthermore, as the economy grows, higher collections are expected through increased purchases by existing and new payers of the tax.

- Enhancing competitiveness and transparency: as businesses do not pay the GST, they face a level playing ground and thrive on competition, which promotes growth and progress.
- Minimising tax distortions, avoidance and cascading: all these factors increase when businesses pay the tax and are not reimbursed.

3.4 Impacts of the GST

There seem to have been good reasons to support a case for introduction and application of the value added tax (VAT), which subsequently has been replaced by the goods and services tax (GST). However, the GST can potentially impoverish poor people and the rural economy and needs an overhaul. (Mawuli and Sanida, 2004a,b)

3.4.1 Focus

This section identifies the impacts of the GST, and focuses on those that are important for reforming the GST: impacts on poor people; impacts on micro- and own-account enterprises, particularly informal economic activities; and impacts on provinces with the least developed trading environments, which are hereafter referred to as “least GST recipient provinces” or “least developed provinces”.

3.4.2 How the GST Affects Individuals

The GST is a consumption tax: an indirect tax applied as a VAT. Consumers ultimately bear the tax burden. GST is applied at various stages of selling and buying a product in the supply-consumption chain (tables 3.1 and 3.2), which distinguishes it from other indirect taxes that are applied as one-off taxes.

The value of a GST is greater if a specified product — as in Table 3.2 — is purchased at a later stage in the trade transaction. The consumer who purchases the product at a later stage pays more than the user who buys the same product at an earlier stage. The disadvantaged payers, especially in a developing country such as PNG, who suffer the brunt of the GST are (relatively) poor people — rural dwellers and urban settlement-dwellers — and informal businesses. The impact on the latter is discussed in the next subsection.

A GST favours the relatively rich over the poor, and urban residents over rural residents and urban settlement-dwellers. Advantaged GST payers generally purchase products at a lower price in the supermarkets in the cities and towns, or by making bulk purchases at a discounted rate.

3.4.3 How the GST Affects Businesses

The GST affects businesses in four dimensions according to a business-type classification. The GST is applied to a broad range of products that are marketed by GST-registered businesses. Both individuals and businesses pay GST if a product is sourced from a GST-registered supplier, but businesses are reimbursed for the tax. For example, GST is paid on products and services such as canned beef, soft drinks, potatoes or legal services from a GST-registered supplier. Also, staple foods such as bananas or taro become GST-taxable products if purchased from a GST-registered supplier, but they are non-taxable if sold by
non-registered GST traders. Thus there is a “hidden” aspect of the GST on ex-factory, farm-gate or imported products or services that are sold by GST-registered businesses.

Earlier we saw that, in the chain from producer (or importer) to distributor to end user, the GST increases at each stage of a trade transaction, making the GST a broad-based and, therefore, desirable tax. However, this characteristic has negative effects when the tax is applied in a less developed economy where less transformation of one product to another occurs. Thus, in a country that is predominantly a primary producer, Table 3.2 is more relevant than Table 3.1 when considering application of a GST — many businesses do not generate GST revenues because they are not GST-registered or do not comply with the requirement to submit monthly returns.

However, the GST has the ability to undermine the viability of unregistered businesses, which lose their competitiveness. These businesses are predominantly small: producers of agricultural staples; smallholders of cash crops; own-account trade operators such as carpenters, plumbers and mechanical repairers; and informal activities that should be nurtured. To simplify this evaluation of GST impacts on businesses, the paper classifies PNG businesses into three categories:

- companies that are GST-registered businesses
- small and medium enterprises (SMEs) that are GST-registered and comply with the requirements
- grassroots businesses (GBs) and enterprises; GBs comprise those SMEs that are GST-registered but do not submit monthly GST returns as required by law, plus a host of unregistered businesses that undertake informal income-generating activities.

### 3.4.4 GST Impacts on Companies

The services performed by GST-registered companies are taxed at each stage of a trade transaction, making the tax broad based. Excise taxes or customs duties are one-off and hence have a narrow base. There are several positive aspects of the GST with respect to companies:

- minimising the tax burden on the companies that pay the tax but receive a refund (the input credit)
- increasing a domestic company’s competitiveness in producing import substitutes
- providing an incentive to the companies to pay the tax and receive a refund, hence minimising tax avoidance — especially by providers of professional services
- providing companies with a competitive advantage over their unregistered domestic businesses that produce the same product; for example, a barber at a Port Moresby settlement pays the GST on a pair of scissors bought at Vision City with no refund, whereas the barber shop at Vision City receives the full refund for the same tax paid.

However, benefits of receiving the input tax credits come at a cost. The transaction costs of meeting the requirements for GST registration in order to secure input tax credits are high. Also, the costs include the financial costs of preparing GST returns and the time taken to visit a GST centre to submit a monthly return to the IRC in order to receive the input tax credits.
3.4.5 GST Impacts on SMEs

The SMEs that comply with the registration requirements and become GST-registered receive similar benefits to companies. However, there are many unregistered SMEs. Also, some SMEs register but do not submit the GST returns for their input tax credits. These SMEs carry a GST burden that undermines their viability or expansion.

3.4.6 GST Impacts on Grassroots Businesses

Grassroots businesses include micro-businesses or own-account enterprises that do not qualify for GST registration or are unlikely to voluntarily register for the GST, as well as SMEs that are registered but do not claim the input tax credit. At PNG’s present level of development, GBs are predominantly rural or urban businesses, agricultural enterprises, semi-subsistent farmers, and informal trades and craft providers. All GBs pay the tax but are not entitled to or do not claim a refund. For example, if a barber buys a pair of clippers for haircuts, or a woodcutter buys an axe, or a farmer buys a bush knife for clearing the garden in order to produce staple crops, they pay the tax but it is not refunded. The tax burdens of the barber, woodcutter and farmer are therefore doubled. The GST they pay is probably high because the goods are bought at a late stage or at the end of the chain of supply, distribution and end use. Moreover, the GST is not refunded. Wouldn't it be better to grow these businesses in a low-income economy?

3.4.7 The GST Package Affects the National and Provincial Governments

PNG’s GST package included:

- abolition of provincial sales taxes, which were applied at different rates
- introduction of a nationwide system of tax collection without cost to the provincial governments
- establishment of a revenue-sharing arrangement between the National Government and the provinces. The Inland GST collected (i.e. collected within the border, not at the border, such as tariff duties) is shared 60:40 between the provincial governments and the National Government. The provincial distribution is based on the provincial origin of derivation of the Inland GST. The National Government receives 40 percent of the Inland GST collection plus all of the GST on imports, which is usually greater than the Inland GST collection.

Arguably, the above conditions of GST policy were well intended. However, some provinces still complain about the GST distribution and call for restoration of their fiscal powers to impose sales taxes. The use of a nationwide system of GST collection is administratively costly for the IRC, and hence for the National Government. However, it has relieved the provinces of the difficult and costly task of collecting the sales tax, and has eliminated tax cascading. Actually, the net revenues received by many provinces have increased because of the efficiency of the GST collection. However, the least developed provinces are disadvantaged. The GST distribution has several negative dimensions.

The GST collection, and hence the distribution, favours the more urbanised (more developed) provinces. The provinces where commerce is least developed shop in the more developed provinces, where they pay GST. The goods purchased are traded in medium and small trade stores or tucker-trading outlets, which are not GST registered — or, if registered, do
not have the capacity to comply with GST requirements. Consequently, the least developed provinces of PNG are disadvantaged by the mode of GST revenue-sharing, which is patterned on provincial GST collection. The National Capital District (NCD) alone receives nearly 50 percent of the total of the provinces’ share of GST. If the revenue were used to finance development, it would increase the attraction of rural to urban migration. Together, the NCD and Morobe province share about two-thirds of the total revenue. The top five provinces — NCD, Morobe, Eastern Highlands, East New Britain, and Western Highlands — receive 88 percent of the total provincial GST distribution. The five least developed provinces (Gulf, Manus, Bougainville, Sandaun and Enga) received only 1 percent of the total provincial GST revenue in 2012, while the middle 10 provinces (Madang, East Sepik, West New Britain, New Ireland, Western, Milne Bay, Central, Simbu, Southern Highlands and Oro/Northern) received 11 percent.

Because the recipients of the GST distribution are not directly involved in the collection of the GST, the payers do not pressure the provinces to discharge their development responsibilities. When roads and schools are in disrepair, who do the local taxpayers turn to? In the past they held the provincial governments responsible and refused to pay the sales tax or delayed their payment. Now silence prevails and development stagnates.

### 3.4.8 The GST Impact on the Least Developed Provinces

Unsurprisingly, GST collection is low in the less developed provinces; if the suppliers are GST-registered, GST collection is greater at the generation stages of trade transactions in the supply–distribution–consumption chain, which are beyond these provinces.

In a less developed province, the supply–distribution–consumption chain is probably zero, or at the first stage for SMEs. Some registered SMEs do not submit GST returns because they lack the needed capacity or because the expected input credits are too low to serve as an incentive. Consequently, GST collection and GST receipts are low. Also, the people and traders in these communities frequently commute to the neighbouring, more developed provinces to shop. For example, many people and GBs from Central and Gulf provinces shop in the NCD; similarly, the people of Engan shop in places such as Mt Hagen and Lae. Thus, as final consumers or end users, their GST payments are credited to other provinces. Gulf and Central provinces have sought compensation from the NCD because their populations mostly shop in the NCD — evidence of a flawed GST distribution.

A low GST collection, and therefore a low distribution to a province, tends to perpetuate underdevelopment of the province. The GST is meant to improve expenditure on enablers of development and growth, such as Health-Posts, schools for basic education, and feeder roads. Under the current GST system, these provinces will languish in their development.

### 3.4.9 Fiscal Policy Implications of the GST

The fiscal impacts of the GST are insignificant at present. The GST share of both total government revenue and total tax revenue from 2000 to 2012 has been between 5 percent and 14 percent. During this time, growth in total GST revenues has fluctuated markedly and has not exceeded 1 percent. Moreover, the total GST collection comprises Inland collections and non-Inland collections (i.e. tariffs). PNG is a long way from removing import taxes, given its heavy dependence on imports. Furthermore, at PNG’s stage of development, GST revenues fluctuate widely, which does not contribute to fiscal stability.
However, when contemplating GST reform, these considerations are less important than the social effects discussed earlier.

3.5 Conclusions and Recommendations

3.5.1 Conclusions
A GST is a poor fiscal tool to aid development a low-income country such as PNG, with the following economic features:

- inadequate transport infrastructure for the trading environment
- predominance of grassroots enterprises comprising semi-subsistence and smallholder cash cropping, and family or self-employed businesses
- heavy dependence on import of manufactured goods.

The GST rate in low-income countries should be low, if a GST is used at all. Nevertheless, many developing countries have a higher GST rate than that of PNG. Retention of traditional or existing taxes for financing public development has lost its appeal. Yet, in the 19th century and most of the 20th century, the now developed Western countries relied heavily on trade taxes (tariffs and export duties) and other taxes for public finance (e.g. excise taxes, personal income tax with an appropriate tax-free threshold, and company taxes). In a country such as PNG that predominantly exports primary produce, to rely on broad-based consumption taxes and abolish instruments such as tariff walls, economic incentives and subsidies, and various tax distortions is tempting. Advocates of economic globalisation underrate these types of taxes. Rather, they encourage measures such as trade and investment liberalisation and value added taxes. However, these globalisation policies may hurt the economies of developing nations because of structural constraints and capacity problems. These countries cannot seize opportunities that are offered by comparative advantage. Their export, industrial and non-tradable sectors cannot respond to comparative advantage. Promoting reductions in income tax and indirect tax ahead of putting in place sufficient enablers of economic growth will perpetuate underdevelopment.

Policy makers should bear in mind that a low-income country such as PNG needs to raise revenues to finance development from its income-generation sectors. In PNG, the mining, petroleum and gas sectors will probably provide the bulk of revenues. Relying heavily on indirect taxes such as a GST to increase revenue is simply unsound policy. Duncan (2010) warned that it is not revenues per se that cause the fiscal constraints; although a country must have effective control over revenues, the primary management problem may be effective expenditure of the resource revenues.

Although Duncan sounded this caution regarding revenue spending, we might apply the principles in the revenue-raising context. For example: Is it unsound taxation policy to maintain or increase the GST in order to reduce income tax or reduce other indirect taxes such as trade taxes? Why increase these taxes at a time when resource revenues are not disappearing? Resolving these questions is beyond the scope of this paper.

Anecdotal evidence suggests that the GST is the most broad-based tax in PNG. However, it imposes a heavy burden on disadvantaged payers, including very poor individuals and rural people, the least developed provinces without supermarkets, and myriad SMEs that either cannot register for the GST or lack the capacity to submit monthly GST returns for
input credits although they are registered. Moreover, the GST revenue-sharing is based on the total collections for each province, although it is well known that people from the least developed provinces make their purchases from the more developed neighbouring provinces. Thus, the GST does not promote broad-based growth.

3.5.2 Recommendations

This paper puts forward recommendations with a defence that is premised on the rationale that the goal of a tax should be to enhance national welfare, at least in the long term, and must not in any way disadvantage taxpayers in the foreseeable future.

Recommendation 1
Retain the GST. The GST will be more useful as PNG develops further. It should be retained for its potential to raise more revenue, and more sustainable revenue, than do the existing indirect taxes, because it is a broad-based tax. A GST:

• minimises tax avoidance and distortions
• avoids tax cascading, which happens when subnational governments are permitted to impose sales taxes
• promotes competitiveness with imported products and other domestic products
• is transparent and avoids the imposition of discriminatory indirect taxes and the offering of subsidies and tax incentives.

Recommendation 2:
Retain the GST rated at 10 percent. This rate can adequately accommodate for the revenue loss due to the abolition of the provincial sales tax, and the administration infrastructure for the GST is in place. A higher GST rate is not needed while revenues derived from mining, petroleum and gas sources remain strong. A lower GST rate is not justifiable because of the investment in nationwide infrastructure to collect the tax, and while the provincial sales taxes remain abolished and the provinces need to be continually compensated.

Recommendation 3:
Change the current internal GST distribution for the provinces from 60:40 to 60:20:20. Currently, the GST revenue distribution to the provinces is patterned on the principle of the origin of derivation of the internal GST collection. The goal of the GST policy is to collect revenues for public finance, to be partly used to promote growth and development. The GST distribution should support this goal. The current method of distribution disadvantages the least developed provinces, indirectly perpetuating their underdevelopment.

The proposed distribution formula, 60:20:20, is designed to avert this situation:

• Retain 60 percent of internal GST revenue to the provinces; it would be politically undesirable to do otherwise.
• Allocate 20 percent to the National Government to add to the non-Inland GST collection.
• Put 20 percent in a trust fund to be accessed by the least developed provinces on a competitive bidding basis. The bidding is guided by a set of criteria designed to increase labour-intensive activities that generate income and employment. To access
the fund, entrepreneurs from the least developed provinces submit well-conceived plans for business expansion that meet the established criteria. The submissions are judged by the managers of the trust fund. The success of this policy would depend on good design, supporting legislation and appropriate implementation.

Recommendation 3 takes a cue from the Australian GST distribution, which favours the least developed states. In Australia, the Commonwealth Grant Commission distributes the GST to the states based on a process known as “horizontal fiscal equalisation”, which is rationalised on the ability of each state to offer the same quality of service for every $1 of GST generated. The Weekend Australian (17–18 May 2014, page 16), reported that, using this process, Western Australia (a mining-rich state) received $0.37 from each dollar it generates, whereas Tasmania received $1.61 and the Northern Territory $5.30.

**Recommendation 4**

Implement IRC policies to promote disadvantaged SMEs and grassroots enterprises. Both the GBs that register for the GST but do not submit GST returns for lack of capacity, and those GBs that cannot be induced to register voluntarily, need assistance from private accounting firms. The objective is to increase GST registration and compliance, which will benefit the businesses and improve their growth prospects — a primary goal of the GST. Increasing GST registration and compliance regarding returns remains a problem for the IRC. We suggest two means of achieving this goal.

- The IRC should encourage freelance consultants to provide assistance by licensing them to perform these tasks, following a short course designed to impart the necessary knowledge. The SMEs and GBs could also be required to submit GST returns only twice per year, instead of the current monthly requirement.
- The IRC should conduct an educational awareness program to promote GST registration and compliance that includes:
  - developing training programs for GST officers
  - fully briefing SMEs and GBs on the importance of GST registration, the benefits of receiving the tax credits, and avoidance of penalties for noncompliance with GST requirements.

GST registration and compliance are critical for the success of the GST. Putting instruments in place to promote them is a worthy undertaking.

**3.5.3 Further Study and Investigation**

For informed decision-making on policy, research is needed on:

- costs to the GST-registered businesses in preparing and submitting their claims for input tax credits
- how the GST affects the taxation system
- SMEs that are registered but fail to submit GST returns
- corruption and mismanagement within the GST system, because GST revenues fluctuate widely; for example, the 2011 and 2012 returns were 7 percent and 12 percent, respectively, of total tax revenues, which raises suspicion about the processes of GST administration and compliance
- the efficiency of administering the GST at the IRC GST centres.
Over the longer term, the GST should be a sustainable source of revenue, but the revenues must be soundly managed to benefit the payers, including the disadvantaged payers.

References


4.1 Socioeconomic Trends for PNG Natural Resources

4.1.1 Natural Gas and Liquefied Natural Gas (LNG)

Papua New Guinea (PNG) is situated in the Asia-Oceania region where competition for project capital requires governments to apply competitive fiscal arrangements within a predictable and stable tax regime. Although PNG has viable, proven reserves of natural gas, there are large reserves elsewhere in the region (Table 4.1). PNG needs to attract investment in the infrastructure required for natural gas production and processing for the export of liquefied natural gas (LNG).

Table 4.1: Proven reserves of natural gas (trillion cubic feet)

<table>
<thead>
<tr>
<th>Selected countries (Asia and Oceania)</th>
<th>2013</th>
<th>World ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>43</td>
<td>27</td>
</tr>
<tr>
<td>Brunei</td>
<td>14</td>
<td>33</td>
</tr>
<tr>
<td>Burma (Myanmar)</td>
<td>10</td>
<td>39</td>
</tr>
<tr>
<td>Malaysia</td>
<td>83</td>
<td>15</td>
</tr>
<tr>
<td>Papua New Guinea*</td>
<td>9</td>
<td>46</td>
</tr>
<tr>
<td>Indonesia</td>
<td>108</td>
<td>11</td>
</tr>
</tbody>
</table>

Source: US Energy Information Administration
http://www.eia.gov/countries/country-data.cfm?fips=pp
* Oil Search Ltd
http://www.oilsearch.com/

Successful construction of the AU$20 billion PNG LNG project, which is developing the gas fields of the Southern Highlands and Western provinces, has captured the attention of the international petroleum and gas industry and encouraged further exploration for natural gas reserves in PNG.¹ Recent reports claim there are now over 70 live petroleum prospecting licences in PNG (PNG Chamber of Mines and Petroleum, 2014). These licences cover most of the petroleum prospective areas; there is a backlog of applications.

In 2014, a major construction phase concluded for the PNG LNG project, with the completion of an onshore pipeline for transporting natural gas from the Hides gas conditioning plant to the Omati River. The pipeline connects to an offshore section of pipeline that

¹ The natural gas for the PNG LNG project is sourced from the Hides, Angore and Juha fields.
runs to the new LNG plant located near Port Moresby (Figure 4.1). The first shipment of LNG occurred in late May 2014, well ahead of schedule.

Figure 4.1. PNG LNG Project (Source: Exxon Mobil PNG Ltd, 2014)

The PNG LNG project is expected to produce 6.9 million tonnes of LNG per annum for about 30 years, and the co-venture partners have contracts to sell LNG to the Asian markets of China, Japan and Taiwan.\(^1\)

The tax arrangements for the project were settled in 2008 when the PNG LNG project participants formally signed a Resource Development Agreement that established the fiscal regime and legal framework for regulation of the project and set the terms for state equity participation in the project. The PNG LNG project commercial co-venture partners are Esso Highlands Ltd (the operator), Oil Search Ltd, Santos Ltd, and JX Nippon Oil & Gas Exploration. These entities, which are part of transnational corporations (TNCs), will be the main taxpayers of gas-related taxes. The project’s state venture partners are National Petroleum Company of PNG Ltd (PNG government), Mineral Resources Development Company Ltd (PNG landowners) and Petromin PNG Holdings Ltd.\(^2\)

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2. Esso Highlands Ltd is the project operator and is a subsidiary of the ExxonMobil Corporation. The NPCP is a wholly owned subsidiary of the Independent Public Business Corporation of PNG (IPBC), which is a 100 percent State-owned company. JX Nippon Oil & Gas Exploration is a 100 percent subsidiary of Nippon Oil Corporation. The MRDC is a 100 percent state-owned company. MRDC concentrates entirely on landowner equity interests in both mining and petroleum projects. Petroleum Resources Kutubu Limited and Petroleum Resources Gobe Limited each hold direct interests in the Project and are both 100 percent-owned subsidiaries of MRDC. Petromin PNG Holdings Limited is an independent company created by the State of Papua New Guinea to hold the State’s assets and to maximise indigenous ownership and revenue gains in the petroleum and mining sectors. Eda Oil Limited is 100 percent owned by Petromin PNG Holdings Limited, an entity directly owned by the PNG Government to hold its interests in petroleum and mining resource projects. See http://pnglng.com/project/.
separate strategy to expand the PNG LNG project by using its licence on gas reserves in the Papuan fold-belt and Southern Highlands Province.¹

Key social issues arising from the PNG LNG project are resettlement, claims for compensation and mineral ownership, and security of project personnel.² Increased unemployment from redundancies linked to the completion of the construction phase compounds these social issues.

A report commissioned by the ANZ Bank concludes that PNG’s resources sector will grow significantly over the next 20 years. However, to achieve this end, capital inflows for resource projects are needed, among other things. The report points out that part of the perceived risk for investors is the relationships with landowners. It claims that good outcomes could follow if the customary landowners were respected, paid fairly for natural resources, and provided with training opportunities (Port Jackson Partners, 2013). Other more structured processes for managing customary landowner risk include the Involuntary Resettlement Policy, which the World Bank claims will enable developers to take a consistent approach to auditing the resettlement and compensation issues faced by affected communities (Minerals Resources Authority of Papua New Guinea, 2014, pp.1, 4).³

Other recent PNG natural gas activities include the plan by Inter Oil to develop a second LNG project from its gas discoveries at the Elk and Antelope fields of the Gulf Province. In May 2014, Inter Oil completed a sale of an interest with the co-venture partner, Total SA. Both are TNCs.⁴ The PNG government and landowners have the option to exercise their rights to take a 22.5 percent interest in this expanded project.⁵

Horizon Oil holds petroleum exploration licences for the forelands of Western Province. Horizon Oil operates the exploration and appraisal program for the Stanley condensate project. Gas condensate will be recovered and then exported; the second product, natural gas, will be sold for domestic use, with unsold gas re-injected into a reservoir for later sale. The development project is a joint venture between Horizon Oil and two TNCs: Talisman Energy, and Mitsubishi and Osaka Gas. Talisman and Mitsubishi are working closely together with a view to aggregating their natural gas fields, with the goal of LNG export. The PNG government holds an option to participate in the Stanley project at 22.5 percent. The supply of natural gas to rural areas in Western Province is the key social objective (PNG Chamber of Mines and Petroleum, 2014).⁶

4.1.2 Crude Oil

In the Asia-Oceania region, PNG is not a significant net exporter of crude oil when compared to Indonesia and Vietnam (Table 4.2). PNG’s crude oil production is from the mature fields of Kutubu, Gobe and Moran. From the perspective of resource tax revenue, this income stream is minor.

Table 4.2. Crude oil proven reserves (billion barrels)

<table>
<thead>
<tr>
<th>Net export countries of crude oil (Asia and Oceania)</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>1.4</td>
</tr>
<tr>
<td>Brunei</td>
<td>1.1</td>
</tr>
<tr>
<td>Indonesia</td>
<td>4.0</td>
</tr>
<tr>
<td>Malaysia</td>
<td>4.0</td>
</tr>
<tr>
<td>New Zealand</td>
<td>0.1</td>
</tr>
<tr>
<td>Papua New Guinea *</td>
<td>0.2</td>
</tr>
<tr>
<td>Philippines</td>
<td>0.1</td>
</tr>
<tr>
<td>Thailand</td>
<td>0.5</td>
</tr>
<tr>
<td>Vietnam</td>
<td>4.4</td>
</tr>
</tbody>
</table>

Source: US Energy Information Administration  
* Oil Search Ltd  
http://www.oilsearch.com/

4.1.3 Mining

PNG has a number of world-class mineral deposits comprising mainly gold, copper and zinc (Bourassa and Turner 2013, p.144). Mining activity in PNG centres on gold, silver and copper, although exploration for other minerals — in particular chromite, nickel, iron, platinum-group metals, and industrial minerals — has become more prolific (Bourassa and Turner, 2013). Currently, PNG hosts eight operating mines; one is a recently commissioned nickel mine and the remainder are gold mines — with some copper and silver by-products. The locations of the mines are shown in Figure 4.2. The copper and gold mines at Bougainville Island, once operated by Bougainville Copper Ltd (a subsidiary of Rio Tinto), are subject to scrutiny about possibly reopening. The Bougainville mines are claimed as potentially among the largest in the world. The company wants its production lease renewed and the mine reopened, which has been idle since the military conflict in 1989. The reopening issue will be further complicated by the Bougainville islanders’ vote on independence that was scheduled to be held between 2015 and 2020.

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1 Production for the year 2013 for Kutubu was 18.7 million barrels, Gobe 0.2 million barrels, both operated by Oil Search Ltd; and Moran 13.9 million barrels, which is operated by Esso Highlands Ltd and Oil Search in separate licence areas. See www.oilsearch.com.

Figure 4.2. Operating mines in PNG.

Source: Mineral Resources Authority of Papua New Guinea (2012, p.3)

Table 4.3 shows the 2012 production from mining in PNG.

Table 4.3. PNG mining production, January–December 2012

Figure 4.3 depicts the gross value added (GVA) from gold production in a range of countries, expressed as a percentage of GDP — which is just less than 16 percent in the case of PNG (Price Waterhouse Coopers, 2013, p.3).\(^1\) The high-yielding gold industry in PNG sustains a workforce of over 16,000 employees, but the PNG economy is not as diverse as many of the countries itemised in Figure 4.3. Thus, the PNG government should scrutinise the taxation levels on gold given the level of its GVA, in order to improve tax revenue (as discussed in Section 4.1.1).

Table 4.4 shows that PNG’s main producing mines are owned and operated by transnational corporations (TNCs), except for the Tolukuma gold mine and the Ok Tedi copper–gold mine in the Western Province. When the Ok Tedi mine was handed back to the government by BHP, it was expected to close down within a short time. However, during the resource boom of the past decade, Ok Tedi became very profitable again. It is now PNG’s largest mine and revenue earner. In 2011, it paid K1.2 billion in tax.\(^2\)

Table 4.4. PNG’s operating mineral mines and leaseholders

<table>
<thead>
<tr>
<th>Mineral Mine</th>
<th>Type</th>
<th>Leaseholder</th>
<th>TNC*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Ok Tedi</td>
<td>copper/gold/silver</td>
<td>PNG state</td>
<td>-</td>
</tr>
<tr>
<td>2  Lihir Newcrest</td>
<td>gold/silver</td>
<td>Newcrest Mining Ltd</td>
<td>Y</td>
</tr>
<tr>
<td>3  Porgera</td>
<td>gold/silver</td>
<td>Barrick Gold Corporation</td>
<td>Y</td>
</tr>
<tr>
<td>4  Tolukuma</td>
<td>gold/silver</td>
<td>PNG state: Petromin PNG Holdings</td>
<td>-</td>
</tr>
<tr>
<td>5  Morobe Mining Joint Ventures (MMJV)</td>
<td>gold/silver</td>
<td>Newcrest 50%/Harmony Gold 50%</td>
<td>Y</td>
</tr>
<tr>
<td>6  Simberi</td>
<td>gold/silver</td>
<td>St Barbara Ltd</td>
<td>-</td>
</tr>
<tr>
<td>7  Simvett</td>
<td>gold/silver</td>
<td>New Guinea Gold Corporation</td>
<td>Y</td>
</tr>
<tr>
<td>8  Ramu</td>
<td>nickel/cobalt/chromium</td>
<td>China Metallurgical Corporation (MCC) 70% + others</td>
<td>Y</td>
</tr>
</tbody>
</table>

* TNC: a trans-national corporation

Source: company reports

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1. Gross value added (GVA) measures the contribution to gross domestic product (GDP), employment and taxes paid.
Ok Tedi is the largest and longest operating mine in the country and epitomises both the windfalls and challenges that mining brings to PNG. The social benefits of the mine are claimed to be the training and education of “over a thousand tradesmen and women and university graduates” (MRA of PNG, 2012, p. 3). However, social and environmental problems plague this mine and have adversely affected tax revenue.

Lobby groups point out the long and complex history of environmental issues associated with mining in PNG. Most issues relate to the poisoning of waterways by riverine tailings disposal. Tailings disposal by BHP during the 1980s and 1990s caused destruction of the Ok Tedi River ecology and adversely affected downstream villages that use the river as their primary water source. In 2002, BHP, then the major shareholder and operator, divested 63 percent of its Ok Tedi shares to a charitable trust, the PNG Sustainable Development Program, to help affected communities, with the state owning the rest of the shares. In return, BHP was granted legal immunity from liabilities relating to environmental damage. Remediation of the tailings-polluted land and ecosystem is ongoing and costly. In September 2013, the PNG parliament passed legislation that cancelled the state’s shares, and issued new shares to the state, giving it complete ownership. Legislation was also passed to remove the legal immunity from liability that BHP had negotiated upon departure (IMF, 2013, p.16–17).

Social and environmental issues are prevalent in other PNG mining ventures. The Lihir mine, one of the world’s largest known gold deposits, suspended operations briefly in 2012 due to the protests of traditional landowners over inadequate benefits for local people. More recently, in March 2014, workers’ protests for better working conditions resulted in suspended production at MMJV’s Hidden Valley gold mine. MCC, the operator of the recently commissioned Ramu nickel mine, has faced ongoing court challenges by landowners over the practice of submarine tailings disposal (STD) into Basamuk Bay (MRA of PNG, p. 31). STD is claimed to cause loss of habitat and associated organisms in a tailings area. High concentrations of heavy metals can adversely affect fish communities and the human populations that depend on them. PNG is earthquake prone and subject to high rainfall, which raises serious issues in the control of run-off from mines. The issue of cost recovery for disposal of mine tailings and rehabilitation is outside the scope of this paper.

4.2 Trends in PNG Tax Revenue

In PNG, mineral, petroleum and gas resources are owned by the state on behalf of the people. However, as with many developing countries, PNG lacks the domestic capital to

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1 An example of a lobby group is the Mineral Policy Institute, an “international civil society organisation with a volunteer board”; see www.mpi.org.au/our-work/papua-new-guinea/.
2 See e.g. ‘Ok Tedi’ (radio and current affairs documentary), Radio National Australia, transcript: www.abc.net.au/radionational/programs/currentaffairspecials/ok-tedi/4434570.
5 See also ‘New $1.5 billion nickel mine can start dumping waste in PNG ocean’, July 2011. See www.mining.com/new-1-5-billion-nickel-mine-can-start-dumping-waste-in-png-ocean/.
develop these resources, and relies instead on foreign investment, technology and expertise. 
Extractive industry projects tend to operate as enclaves, especially in developing countries, 
with limited non-fiscal benefits for the host nation. PNG’s intention has been to use reve-


4.2.1 The Tax Take

The overview of key projects has shown that PNG is a competitor country in the Asia-Oce-
ania region for LNG exports to China, Japan and Taiwan, and that PNG’s mining activities 
need to be economically viable to secure investor capital. Government strategies to attract 
capital inflow should observe investors’ key considerations, which include the general fac-
tors of resource “prospectivity”, fiscal regime, sovereign risk, prevalent debt to equity ratios, 
labour, infrastructure, security of operations, issues surrounding corruption, and environ-
mental and social concerns. These factors need to be considered and ranked in terms of 
degree of importance to investors into PNG. They should also be ranked by project, given 
the potential impact of such perceptions on PNG government “tax take” (tax revenue as a 
proportion of GDP) for mineral resources.

The 2013 International Monetary Fund (IMF) staff report on PNG calls for an “enabling 
environment for sustained, inclusive growth in the post-boom era” (IMF, 2013, p.1). The 
IMF’s consultation with PNG officials and its statistical analysis produced a report reveal-
ing that for the past 10 years “PNG has achieved strong economic growth (averaging 6 per 
cent per annum), supported by high commodity prices, large mineral investment inflows, 
sound macroeconomic policies, and a healthy banking sector” (IMF, 2013, p.3). The report 
notes that, in the longer term, development of the shale gas industry around the world 
could reduce LNG prices, exerting pressure on government revenue, export earnings and 
the kina’ (IMF, 2013, p.4). This situation could be further exacerbated by private sector 
debt (the majority of which is debt owed by LNG Project partners), which reached around 
120 percent of GDP in 2012. The debt could pose a risk to profitability because of the risk 
of declining LNG prices (IMF, 2013, pp. 4, 13).

The IMF’s 2013 staff report on PNG promotes the aim of the PNG government to increase 
revenue over time and “improve transparency in the management of resource revenue … 
The authorities will need to… rationalize tax exemptions and concessions, particularly 
given the expected moderate increases in mineral revenues from the LNG project over the 
project life.” (IMF 2013, p.1). In particular, “authorities should aim to increase the pro-
gressivity of PNG’s resource revenue regime — moving toward less reliance on dividends 
from state equity shares and more on rent-based taxes — and remove some of the tax incen-
tives, such as income tax holidays and the double deduction for exploration … and restrict 
tax exemptions” (IMF 2013, pp. 8-9).

4.2.2 PNG Revenue Data

The IMF notes the shortcomings in PNG’s collection and compilation of data to con-
struct fiscal accounts, although some data were adequate for a broad surveillance. The PNG

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Treasury has been estimating National Accounts data since 2002. Central government tax revenue data are deficient. The data associated with the major presence of TNCs in the mining and petroleum sector, such as the International Transactions Reporting System (ITRS), is “not tightly monitored” and differences exist in import–export data between official and trading-partner sources. There are “major deficiencies in reporting private external debt and foreign direct investment.” In 2013, PNG was a beneficiary of a Japanese project on external-sector statistics to address this issue, with more projects planned (IMF 2013, pp.10–11).

Table 4.5 shows the tax take of mineral revenue as a percentage of GDP. PNG’s mineral revenue as a share of GDP is expected to be relatively constant at around 3.4 percent.

Beyond 2014, the projected increase over the near to medium term in government tax take from LNG sales is a modest 5 percent of 2013 GDP. Given the PNG LNG project is approximately four-fifths owned by non-residents, “accelerated depreciation is expected to delay tax payments until early next decade” (IMF, 2013, p.15).

Table 4.5. PNG mineral revenues and GDP

<table>
<thead>
<tr>
<th>Year</th>
<th>Mineral Revenue (% of GDP)</th>
<th>Non-Mineral Revenue excl. Grants (% of GDP)</th>
<th>Tax as a % of Total Government Revenue</th>
<th>GDP at Current Prices (in millions of Kina)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>3.7</td>
<td>19.7</td>
<td>86</td>
<td>22,331</td>
</tr>
<tr>
<td>2010</td>
<td>6.7</td>
<td>19.3</td>
<td>83</td>
<td>26,421</td>
</tr>
<tr>
<td>2011</td>
<td>7.4</td>
<td>19.6</td>
<td>89</td>
<td>30,511</td>
</tr>
<tr>
<td>2012</td>
<td>3.4</td>
<td>22.7</td>
<td>89</td>
<td>32,132</td>
</tr>
<tr>
<td>2013*</td>
<td>3</td>
<td>22.6</td>
<td>93</td>
<td>34,605</td>
</tr>
<tr>
<td>2014*</td>
<td>3.4</td>
<td>20.1</td>
<td>93</td>
<td>40,244</td>
</tr>
</tbody>
</table>

*Projected figures.

Note: Mineral revenue equals mineral and petroleum taxes; and mining and petroleum dividends.

Sources: PNG authorities, PNG Staff Report (IMF, 2013).

Generally, the size of the tax take should not be used as an indicator of government effectiveness in increasing its tax base. Instead, the commonly used approach of “tax effort” — the difference between predicted tax take and actual tax take — should be considered (Moore, 2013, p.17). Revenue performance can be improved by a few percentage points of GDP in any country, and is correlated with a wide range of developmental, structural and institutional indicators (IMF, 2013, pp.59-62).

4.3 Petroleum and Gas Taxation Law

The taxation of petroleum and natural gas in PNG is provided for in the Income Tax Act 1959 (PNG). Petroleum and gas operations are covered by the general provisions of the Act that cover all taxpayers. In addition, the Income Tax Act 1959 contains specific provisions for mining, petroleum and designated gas projects.

A petroleum project may produce oil and natural gas together. Designated gas projects are defined in the Oil and Gas Act 1998 and the Income Tax Act 1959. A designated gas

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1 The IMF considers tax effort for PNG and cites a range of empirical literature on global revenue performance generally at fn 73.

project exists when a gas agreement has been signed with the minister responsible for petroleum. Otherwise the arrangements for petroleum projects apply.

The Oil and Gas Act 1998 covers upstream activities, pipelines and processing facilities. It provides for the granting of licences for exploration, further assessment of discoveries, and the development of commercial projects, pipelines and processing facilities. Petroleum includes oil and natural gas, and the Act distinguishes between oil fields and gas fields. This differentiation can give rise to different fiscal treatment when an oil project is converted to a gas project. A gas field is defined as a petroleum field where oil recovery is not expected to be the primary object of petroleum development. A declining oil field may be converted to a gas field for the purposes of the Act.

Investor entities might enter into Resource and Development Agreements with the Minister of Petroleum and Energy on behalf of the State of Papua New Guinea. These agreements can modify the operation of the general taxation legislation by containing negotiated, project-specific tax concessions. They contain the terms of any state equity participation and any provisions for fiscal stabilisation. These agreements can conflict with existing laws, which may require amendment of those laws for consistency with the terms of the agreement. Petroleum and gas agreements also contain other fiscal arrangements such as royalties and fees, as well as equity entitlements of landowners and project benefits for local communities and local governments.

Petroleum and gas agreements are strictly confidential. To overcome this lack of transparency, new model agreements for all types of petroleum projects are under preparation.

4.3.1 Taxes on Petroleum and Gas Projects

Petroleum and gas operations in PNG are subject to company income tax, royalties and an Additional Profits Tax (APT) that now applies only to designated gas projects.

4.3.2 Company Income Tax

Extractive industry projects are subject to rates of company taxation as shown in Table 4.6.

Table 4.6. PNG: company tax rates, 2014

<table>
<thead>
<tr>
<th></th>
<th>Resident</th>
<th>Non-resident companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining</td>
<td>30%</td>
<td>40%</td>
</tr>
<tr>
<td>Petroleum - Existing Projects</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Petroleum - New Projects</td>
<td>45%</td>
<td>45%</td>
</tr>
<tr>
<td>Petroleum - incentive rate</td>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td>Gas</td>
<td>30%</td>
<td>30%</td>
</tr>
</tbody>
</table>


There are several rates of company income tax for petroleum projects. For existing petroleum projects — those that existed and derived income before the end of 2003 — the
company tax rate is 50 percent.

For new petroleum projects — those that did not exist before the end of 2003 — the rate is 45 percent. An incentive rate of company tax of 30 percent applies to any petroleum projects arising from a Petroleum Prospecting Licence granted between 2003 and 2007, from which a Petroleum Development Licence was granted before the end of 2017.

For designated gas projects, the company tax rate is 30 percent, the same as the incentive rate for new petroleum projects but lower than the 45 percent base rate for new petroleum projects.

An income tax credit (an offset to income tax payable) is available, up to the value of 0.75 percent of assessable income derived in the year of income, for expenditure on prescribed infrastructure for petroleum and gas operations. Excess tax credits can be carried forward.¹

Petroleum companies may apply for “fiscal stability”, which, if granted, results in the addition of a premium of 2 percentage points to the company tax rate.² Fiscal stability is designed to lock in existing fiscal arrangements. Ultimately, however, an existing parliament cannot legally bind future parliaments.

Petroleum and gas development and operating costs are deductible on a project basis rather than on a company-wide basis. This “ring-fencing” means that operating costs incurred on one project cannot be offset against income from another project. Expenses that are attributable to more than one project, such as administration, are apportioned to each project on a reasonable basis.

A special incentive applies to the PNG LNG project. It allows for an additional deduction for allowable capital expenditure if the project has not reached a specified level of profitability at the end of the 10th year of production.

There are exceptions to the project basis, for example, exploration costs and discontinued projects. Exploration costs can be entered into a pool for general exploration. A company can claim 25 percent of the pooled exploration expenditure as a deduction against its assessable income from an operating resource project, subject to not reducing income tax payable in that year by more than 10 percent.³

4.3.3 Royalties

A royalty is applied at the rate of 2 percent of the wellhead value of petroleum or gas production. New petroleum and designated gas projects are also subject to a development levy, which is also applied at the rate of 2 percent of the wellhead value of production. Where both the royalty and development levy apply, the royalty may be claimed as a credit against income tax payable.

¹ Section 219C, Income Tax Act 1959 (PNG) and Section 10F, Income Tax Regulations (PNG).
4.3.4 Additional Profits Tax (APT)

The APT was introduced in its current form in 2008 for designated gas projects, including the PNG LNG project. The APT becomes payable if and when the accumulated value of net cash receipts becomes positive.

The APT is a progressive-rate tax comprising two rates and involving two calculations. The first calculation is referred to as calculation X. Under this calculation the cumulative amount carried forward is uplifted using Accumulation Rate X. The second calculation is referred to as calculation Y. Under this calculation the cumulative amount carried forward is uplifted using Accumulation Rate Y.

Accumulation Rate X is 17.5 percent and Accumulation Rate Y is 20 percent, unless the taxpayer has made an election to adopt the alternative rates. Where such an election is made, the Accumulation Rate X is 14.5 percent plus the rate of inflation for the year of income in the United States, as measured by the Producer Price Index. Accumulation Rate Y is 17 percent plus the rate of inflation for the year of income in the United States, as measured by the Producer Price Index.

The rates of APT are 7.5 percent of the amount of taxable additional profits determined under calculation X, and 10 percent of the amount of taxable additional profits determined under calculation Y. Any payments of APT at the 7.5 percent tax rate are deductible for the purposes of calculating APT obligations at the 10 percent tax rate (Price Waterhouse Coopers, 2012).

4.3.5 Carry Forward of Losses

Taxpayers can carry forward losses indefinitely for petroleum and gas operations, compared to a 20-year limitation for other industries.¹

4.3.6 Interest, Dividend and Stamp Duty Concessions

For petroleum and gas projects, there is a range of stamp duty, interest and dividend-withholding tax concessions.²

4.4 Mining Taxation Law

The taxation of mining in PNG is provided for in the Income Tax Act 1959 (PNG). Mining operations are covered by the general provisions of the Act that cover all taxpayers. In addition, Division 10 contains specific provisions for mining, petroleum and designated gas projects. Provisions for mineral royalties and state equity participation are contained in the Mining Act 1992 (PNG).

An investor entity might enter into Resource Development Agreement with the State of Papua New Guinea. These agreements can modify the operation of general taxation by containing negotiated, project-specific tax concessions. They contain the terms of any state equity participation and any provisions for fiscal stabilisation. They can conflict with exist-

¹ Section 101, Income Tax Act 1959 (PNG).
² Sections 35(2)(e) and 42(3), Income Tax Act 1959 (PNG); Income Tax & Dividend (Withholding) Tax Rates Act; and Stamp Duties Act (PNG), schedule.
ing laws, which may require the amendment of those laws for consistency with the terms of the agreement. Mining development contracts also contain other fiscal arrangements such as royalties and fees, as well as equity entitlements for landowners and project benefits for local communities and local governments. Mining development contracts are strictly confidential.

4.4.1 Taxes on Mining Projects

Mining operations in PNG are subject to company income tax and royalties. An Additional Profits Tax (APT), previously applied to petroleum, gas and mining projects, now applies only to designated gas projects.

4.4.2 Company Income Tax

Extractive industry projects are subject to rates of company taxation (see Table 4.6).

After taking account of dividend withholding tax, the rate of company tax on resident companies for distributed mining income is 37 percent. For non-resident companies, the company tax rate is 40 percent.

An income tax credit (an offset to income tax payable) is available up to the value of 0.75 percent of assessable income derived in the year of income for expenditure on prescribed infrastructure for mining operations. Excess tax credits can be carried forward.¹

Mining companies may apply for “fiscal stability”, which, if granted, results in the addition of a premium of 2 percentage points to the company tax rate.² Fiscal stability is designed to lock in existing fiscal arrangements. Ultimately, however, an existing parliament cannot legally bind future parliaments.

Mining development and operating costs are deductible on a project basis rather than on a company-wide basis. This ring-fencing means that operating costs incurred on one project cannot be offset against income from another project. Expenses that are attributable to more than one project, such as administration, are apportioned to each project on a reasonable basis.

There are exceptions to the project basis, for example, exploration costs and discontinued projects. Exploration costs can be entered into a pool for general exploration. A company can claim 25 percent of the pooled exploration expenditure as a deduction against its assessable income from an operating resource project, subject to not reducing income tax payable in that year by more than 10 percent.³

A double deduction applies to mining exploration expenditure incurred after 1 January 2003.⁴ Exploration expenditure is deductible against resource income earned elsewhere within PNG; if a resource project eventuates from the exploration expenditure, that expenditure can be deducted again from income from the resource project.

¹ Section 219C, Income Tax Act 1959 (PNG) and Section 10F, Income Tax Regulations (PNG).
⁴ Ibid.
Overall, there are no great project-specific variations to the general fiscal regime for mining, with one exception, the Ramu nickel mine. It was granted a 10-year tax holiday and an exemption from import duties.

4.4.3 Royalties
A royalty is applied at the rate of 2 percent of the gross value of mining production.

4.4.4 Additional Profits Tax (APT)
An APT based on a project’s net cash flow applied generally to mining projects until 2003, when it was abolished.

4.4.5 Carry Forward of Losses
Taxpayers can carry forward losses indefinitely for mining operations, compared to a 20-year limitation for other non-extractive industries.¹

4.4.6 Interest, Dividend and Stamp Duty Concessions
For mining projects, there is a range of stamp duty, interest and dividend withholding tax concessions.²

4.5 Theoretical Approaches to Petroleum, Gas and Mining Taxation
The finite nature of deposits of petroleum, gas and hard minerals gives them a characteristic not shared by other industries. Those deposits that are of higher quality and closer to final market can generate returns greater than the risk-weighted returns on investment needed to find, develop and extract them. These additional returns are known as resource rent and are also referred to as economic rent.

In most countries, deposits of petroleum, gas and hard-mineral resources are owned not by the landholder with title to the land above the deposit, but by the state on behalf of the people. As resource owner, the state, which is the principal, engages in a contractual arrangement with a petroleum or mining company, which is the agent.

As principal, the state engages the agent to find, develop and extract resources. The objective of a fiscal regime is for the principal and agent to share risks and returns in a way that maximises the rent accruing to the state. From the agent’s perspective, when a project is more risky and when a fiscal regime is more uncertain, the returns required by the agent to justify investing in the project will be greater.

It is therefore in the interests of both parties to base the fiscal regime on resource rent and to avoid the sovereign risk associated with changing the tax regime after the investor has sunk capital into the project. Frequent changes in fiscal arrangements applying to new projects

¹ Section 101, Income Tax Act 1959 (PNG).
² Sections 35(2)(e) and 42(3), Income Tax Act 1959 (PNG); Income Tax & Dividend (Withholding) Tax Rates Act; and Stamp Duties Act (PNG), schedule.
also heighten investor perceptions of sovereign risk. Under the resource-rent principle, the investor is allowed to recover exploration and development costs before tax is payable, but when profits are high government revenue is high. These features of rent taxes offer stability of the fiscal regime over time, which is highly valued by investors.

Companies highlight stability and predictability as the most important aspects of taxation regimes. It seems to be well understood that there is often an inverse relationship between low tax rates and the stability of a tax regime (ICCM and Commonwealth Secretariat, 2009, p.11).

Since the actual rent realised from a petroleum, gas or mining project depends on the revealed quality of the deposit, and on actual investment costs, operating costs and prices, the rent-based fiscal regime needs to be sensitive to these variables.

The ‘resource rent’ principle provides the underpinning for much of the theoretical mining taxation literature. It supports the argument that taxation should be based on profitability, not on production or sales (ICCM and Commonwealth Secretariat, 2009, p.8).

Various fiscal regimes based on resource rent have been formulated (Kraal, 2013). As early as 1948, E. Cary Brown attempted to address the shortcomings of production-based royalties through a variation of income-based taxation (Brown, 1948). His approach, termed the “cash flow method”, applies tax to the difference between the project’s cash inflows and cash outflows, both capital and recurrent. In cases in which the cash flow is negative, including at the start of a project when capital investment is occurring, the government provides a cash contribution, set by the rate of tax multiplied by the negative cash flow. A cash contribution also applies to any negative cash flows associated with decommissioning projects at the end of their economic life. Under this approach, a government shares equally in all losses and profits. The government is effectively a joint venture partner, with its level of equity participation determined by the tax rate.

Later, Garnaut and Clunies Ross (1975, 1979) posited their variation on the “Brown Tax”, whereby a resource rent tax (RRT) is levied only on the accumulated positive net cash flow of a project. In instances of negative cash flows, there are no government cash contributions. Rather, such negative cash flows are carried forward with interest (the accumulation rate) to preserve their value. The government is effectively a joint venture partner, with its level of equity participation determined by the tax rate.

The next refinement was the “allowance for corporate capital” (ACC) method, derived by Broadway and Bruce (1984). The ACC method differs from the Garnaut and Clunies Ross RRT: under the ACC method, capital expenditure is not fully deducted when incurred. Rather, capital expenditure is depreciated over its effective life. In instances of negative balances, the negative amount is carried forward at the ACC rate (accumulation rate) to preserve its value. The method includes a “tax credit” for project losses, which is refundable as a cash payment by the government. Because the Brown Tax and the RRT are based on actual cash flows, and the ACC method approximates a cash flow–based tax, these taxes do not distinguish between debt and equity financing of investment costs. Accordingly, interest on debt financing is not a deduction and nor are the dividends from equity financing. Instead, total cash outflows, whether funded by debt or equity or both, are deductible.
The Brown Tax is theoretically the tax that least distorts exploration and investment decisions, because the state is effectively a joint venture partner with the private investor on fully contributing terms. The state contributes its share of exploration and development costs by making cash payments to the investor. If the project fails to make profits or makes losses at the decommissioning stage, the state again provides cash payments to the investor. Therefore, the Brown Tax is described as a two-sided tax, sharing equally in profits and losses.

In practice, investors will doubt whether the state would make good on its obligations to provide cash payments in the event of projects ultimately making losses, and during the decommissioning stage. They will assess that future governments will likely renege on their obligations to bear their share of project losses by making cash payments to TNCs. Consequently, while theoretically elegant, the Brown Tax is not applied anywhere in practice.

The Garnaut and Clunies Ross RRT does not make cash payments to the investor and does not oblige the state to contribute a share of project losses. Thus, it is described as a one-sided tax; it taxes high profits but does not compensate for any ultimate losses. While the RRT is far less distorting than are taxes that are not based on actual cash flows, its one-sidedness can be regarded as increasing the risk of a project’s ultimately making after-tax losses. To help compensate for this risk, negative net cash flows are accumulated at a risk-adjusted accumulation rate. The more risky a project, the greater the risk premium that should be included in the RRT accumulation rate. If the RRT accumulation rate corresponds to the investor’s hurdle rate — the rate the investor needs to justify undertaking the project — then the RRT taxes only the revealed resource rent. If the accumulation rate is less than the hurdle rate, the RRT taxes more than the resource rent. If the accumulation rate exceeds the investor’s hurdle rate, the RRT under-taxes the resource rent.

Australia’s petroleum resource rent tax (PRRT), which is based on the Garnaut and Clunies Ross method, has been levied on offshore petroleum and gas since 1987. In 2012, the PRRT was extended to onshore petroleum and gas, including coal-seam gas developments. The present Australian Government plans to retain the PRRT for both offshore and onshore petroleum and gas. Around A$20 billion in revenue has been successfully collected by the PRRT. The accumulation rate for exploration costs under the PRRT is the Australian Government’s long-term bond rate plus 15 percentage points. For development costs, the accumulation rate is the long-term bond rate plus 5 percentage points.

In 2010, a tax reform panel appointed by the Australian Government and chaired by Dr Ken Henry released a report (Australia’s Future Tax System Panel, 2009) that recommended a rent tax on mineral resources. It was named the resource super profits tax (RSPT). The RSPT provided for conventional capital depreciation, with losses and undepreciated capital costs carried forward at an accumulation rate equal to the government’s long-term bond rate. While the RSPT would collect 40 percent of project profits, any ultimate tax losses were refundable by the government at the same rate of 40 percent. Thus Australia’s RSPT was based on the Boadway and Bruce ACC method, whereby capital expenditure is not fully deducted when incurred (e.g. Kraal and Nash 2010; Kraal and Yapa 2012).

Industry judged that, regarding the RSPT, the government of the day would not make good on its share of any ultimate project losses. Following an industry campaign against the RSPT, the Australian Government substantially modified the tax. Renamed the Minerals
Resource Rent Tax (MRRT), it applied only to iron ore and coal because their resource rent value is generally much greater than that of other minerals. The accumulation rate for the MRRT was the government’s long-term bond rate plus 7 percentage points, and the effective tax rate was 22.5 percent. Taxpayers could elect either historical cost or market value as a base from which to depreciate previous capital expenditure (starting-base assets). Starting-base assets at book value were depreciable over 5 years; starting-base assets at market value were depreciable over 25 years. By contrast, new capital assets could be written off immediately. MRRT losses were transferable to other iron ore and coal projects in Australia. Unused MRRT losses could be carried forward, using the accumulation rate of the long-term bond rate plus 7 percentage points; unused credits for state royalties paid could be carried forward at the long-term bond rate plus 7 percentage points. Unused MRRT losses and credits for royalties paid were not refundable. For new projects, the MRRT therefore shared the design features of the PRRT, but with different accumulation rates and tax rates. Both are applied versions of the RRT.

The Australian Government that was elected in September 2013 gained parliament’s approval to rescind the MRRT, which left only royalty and company tax payable on mining activities.

Figure 4.4. A cash flow resource rent tax

Figure 4.4 shows a resource rent tax as a cash flow tax, where the tax is levied at a constant percentage of the difference between receipts and expenditure, or net positive cash flow. The cash flow in excess of the investor’s hurdle rate represents the above-normal profits, or resource rent. PNG’s Additional Profits Tax for designated gas projects is an applied version of the RRT. The IMF assessed that the accumulation rate for PNG’s APT was so high that it undermined the credibility of the fiscal regime, since nothing was paid. The IMF generally advises that developing countries should use low accumulation rates for the purposes of rent tax (IMF 2012, p.48).

An addition to a rent tax on actual cash flow can be cash bidding for exploration acreage. Cash bids are based on anticipated rent, taking account of a project’s fiscal obligations, so
they are also a form of rent tax. Cash bidding can be a means of extracting residual rent on highly valuable acreage.

Leading theoretical work identifies the optimal combination of rent taxation based on actual cash flow and upfront cash bidding (e.g., Emerson and Garnaut 1984; Emerson and Lloyd 1983; Leland 1978). The greater the risk aversion of the investor relative to the government, the greater the reliance that should be placed on the rent tax based on actual cash flows. In these circumstances, the rent-tax rate should be relatively high, leaving the cash-bidding process to pick up any residual anticipated rent on highly prospective exploration acreage.

Efficiency requires that more risk be borne by the party better able to bear it (IMF 2012, p.14).

In ideal circumstances, the RRT accumulation rate and tax rate are tailored to reflect the characteristics of each project, since an investor’s hurdle rate will vary with the perceived riskiness of different projects and the tax rate will reflect the optimal degree of risk sharing between the investor and the state. In practice, however, the uncertainty associated with negotiation of accumulation rates and tax rates for each project heightens investors’ perceptions of sovereign risk, elevating investors’ hurdle rates and reducing resource rent. Given these realities, the RRT design features should be incorporated in general legislation, but in a way that reflects the typical risk profiles of different types of resource projects.

In typical petroleum projects, the major costs and risks are at the exploration stage. Typically, the chances of finding commercial reservoirs are low and the cost of drilling multiple exploration wells is high relative to development costs at the wellhead.

In mining projects, the main cost is the capital cost of developing a mineral deposit and the risk of cost over-runs can be large. Exploration costs are relatively low compared with mine development costs. Investors will be anxious to recover the very large mine development costs out of project revenues as quickly as possible.

The unconventional gas resources that have emerged, such as coal-seam gas and shale gas, have cost features more similar to those of hard minerals than to those of conventional gas, that is, their exploration risks and costs are lower than their development costs (IMF 2012, pp.12–13).

There are important differences between the oil, gas and mining sectors. Exploration is often costlier or riskier for petroleum (a deep water well, for instance, can cost over US$100 million, and the chance of success in a new basin may be 1 in 20 or less). But the risks in the ‘development’ phase (bringing a discovery to extraction), and of failure during the extraction phase, may be greater for mining (IMF 2012, p.12).

These considerations suggest a larger risk premium should be included in the RRT accumulation rate for petroleum and gas exploration costs and a lower accumulation rate should be used for development costs. For minerals, the RRT accumulation rate for development costs needs to account for the risks associated with development, which will typically be greater than the risks associated with exploration.
A design feature for the RRT that would reduce the risk to investors of being unable to recoup exploration costs before the RRT becomes payable is to allow the pooling of exploration costs. That is, while ring-fencing might apply to development projects, exploration costs anywhere in the country could be pooled and be deductible immediately against cash flows of the development project. Where they cannot be fully deducted in the year in which they were incurred, the pooled exploration costs would be carried forward at an RRT accumulation rate lower than the rate that otherwise would apply if the exploration costs were ring-fenced and therefore not pooled.

Accumulation rates for the RRT should not be set so low that the riskiness of the project is inadequately recognised and would therefore tax more than the resource rent; nor should they be set so high that they leave much of the rent untaxed. Also, setting the accumulation rate too high can lead to wasteful overinvestment — gold plating — by effectively subsidising resource investment (Garnaut and Clunies Ross, 1975, 1983; IMF 2012, pp. 22, 59).

In theory, the RRT can be set at 100 percent, because it is taxing only the rent — the returns in excess of those necessary for the investment to be made. However, if the rate of rent tax is set too high, the project operator has an incentive for inefficient operating practices, because the operator is permitted to keep only a small share of any savings from more efficient practices. If the rate of RRT is set too low, resource rent will be undertaxed. The lower the tax rate, the stronger the case for cash bidding for exploration acreage to help collect expected residual rent.

Taxes that are not based on resource rent can deter exploration, project development, and the recovery of parts of the deposit or reservoir that are more expensive to extract. Royalties on minerals are levied in two ways: on an output basis (by volume or value) of production; or on an income basis (a tax on profits). The volume approach is not tax neutral from an industry perspective, because it is levied irrespective of the profitability of a project, noting the typically high capital costs of the minerals industry. The higher the royalty rate, the greater the deterrence. Even if royalties are applied at low rates, parts of a deposit or reservoir that are more expensive to extract, but which would otherwise be profitable to extract, will be left in the ground. Further, the value (ad valorem) method of calculation can be complicated, because mineral values must be calculated back to the wellhead, field-gate or mine-gate value. From a state's perspective, the volumetric method does not reflect a market of high commodity prices, and thus revenue flow can be flat; whereas the income-basis royalty might generate no revenue if early capital costs of the producer are high.

Company tax is usually applied to all incorporated businesses within a country. It is based on an accounting notion of profits rather than on resource rent. In assessing company tax, there is no allowance for companies to achieve their hurdle rate of return on investment. Capital expenditures are not deductible immediately, as for rent taxes, but are written off over a specified number of years. Interest on debt is deductible for company tax purposes but not for rent taxes.

While company tax can deter projects that otherwise would have proceeded, its general applicability on returns to equity support its application to petroleum, gas and mining operations. Otherwise, investment will tend to flow into the income tax–exempt mining, petroleum and gas sectors, and away from other economic activities. In an effort to tax resource rents, company income tax could be applied to petroleum, gas and mining, but
at a higher rate than that for other industries. While this would collect some extra rent for the state, the deterrent effects of company tax on exploration and development outweigh this benefit.

Concerns have been expressed that the RRT can lead to delays in taxation revenue, in turn leading to community demands for increased resource taxation in times of high mineral, petroleum or gas prices. Any attempt to bring forward revenue departs from resource rent taxation, with the consequent deterrent effects on exploration and development. Applying company income tax at a higher rate is one such attempt. Another is a so-called R-factor tax, where R stands for the ratio of cumulative revenues after company tax to cumulative capital costs. These revenues and costs are accumulated at a zero accumulation rate — each year’s figures are just added together. When the R-factor reaches one, the cumulative revenues equal the cumulative costs. An R-factor greater than one is chosen as the trigger point for the R-factor tax.

Another variation of the RRT (or APT) is a so-called Income Tax Surcharge (Taxation Review Committee, 2014, pp.43–45). It calculates a project’s assessable income for purposes of company income tax. Next, it adds back losses that have been carried forward, and then adds back depreciation deductions. Then it adds back interest and financing deductions. It then deducts any capital expenditure incurred in the period. It then deducts any income tax paid in the period. If the result is negative, it is a surcharge loss and it is carried forward to be offset against any future surcharge gains. If the result is positive, any carried forward surcharge losses are offset against it. If a positive amount remains, then the surcharge rate is applied to the surcharge gain. Arguably, this is a simple tax more easily understood by the citizens of PNG; however, although the Income Tax Surcharge does not involve an accumulation rate, it has nine steps (Taxation Review Committee, 2014, p.44), and taxes more than a project’s resource rent — with consequent deterrent effects on exploration and development.

The tax data required for the APT are the same data as required to assess company income tax. An Income Tax Surcharge relies on company tax data — that is, no less information is required than is required for company tax or the APT. Hence, the problem with PNG’s APT is not that it requires extra data; the problem is the very high accumulation rates of 17.5 percent and 20 percent. These high accumulation rates have ensured the APT has never been paid.

One form of resource rent is equity participation, if designed on a carried-interest basis: where state equity is paid from a project’s future positive net cash flows. It is equivalent to an RRT with an accumulation rate equal to the rate at which the cost of the equity is uplifted and carried forward. If the equity participation is paid as it falls due, it is equivalent to a Brown Tax, making the state a joint venture partner. However, if this equity participation on fully contributing terms does not occur during the exploration stage, the state is not fully participating in project risks and costs, which gives the tax a degree of one-sidedness instead of being fully equivalent to a Brown Tax. If the state takes an equity position but does not pay for it, the effect is similar to a higher rate of company tax, because the state has a share of accounting profits set at the rate of equity participation.
4.6 Concerns with PNG’s Natural Resource Taxation

4.6.1 Frequent Changes Since the Late 1980s

PNG’s taxation regime for petroleum, gas and hard minerals has frequently changed, beginning with the highly concessionary terms of the 1967 Bougainville Copper Agreement under colonial administration. This agreement was unsustainable, leading to agreement renegotiations in 1972 and 1974.

The 1974 renegotiated Bougainville agreement removed the major concessions: a three-year tax holiday; immediate write-off for capital expenditure; and an exemption from income tax of 20 percent of income from copper sales. A novel progressive profits tax was introduced: income in any year in excess of 15 percent of an agreed capital base attracted tax at the rate of 70 percent; the capital base was adjusted annually for new capital expenditure.

The Bougainville project’s progressive profits tax was a forerunner to the RRT. In PNG, the RRT was called the APT and was applied to the Ok Tedi copper and gold project. The Ok Tedi Agreement of 1976 combined company income tax with an APT set at the rate of 70 percent less the prevailing company tax rate. The accumulation rate for the APT was either 20 percent or 10 percentage points above the prevailing prime corporate lending rate in the United States; the investor chose an option at the start of production. Dividend withholding tax was applied at 15 percent. An ad valorem royalty was applied at 1.25 percent.

In mining projects, the PNG government could take an equity position of up to 20 percent on fully contributing terms.

These features were subsequently included in general provisions for mining tax in the income tax legislation, although accumulation rates differed slightly. For mining, the accumulation rate was either 20 percent or 12 percentage points above the prime corporate lending rate, but the tax legislation did not include government equity participation; this was to be negotiated on a case-by-case basis.

In the general petroleum legislation of the late 1970s, the company tax rate was set at the higher rate of 50 percent, compared with the generally prevailing rate of 36.5 percent; no divided withholding tax applied to petroleum companies. An APT (RRT) was applied at the rate of 50 percent and the APT accumulation rate (27 percent) was higher than the mining rate.

For petroleum, the PNG government could take an equity position of up to 22.5 percent on a carried-interest basis. The government purchased its equity out of future petroleum cash flows by carrying forward an amount equal to the cost of equity at an accumulation rate of 5 percentage points above the US prime corporate lending rate.

The carried-interest equity added another rate of APT. Petroleum projects that earned less than the prime corporate lending rate plus 5 percentage points paid no APT. Those that earned more than that rate but less than the APT accumulation rate paid rent tax at the rate of 22.5 percent. Projects that earned more than the APT accumulation rate paid rent tax at the marginal rate of 72.5 percent, being the carried-interest equity rate of 22.5 percent plus the APT rate of 50 percent (Emerson and Garnaut, 1984, pp.88–89).
These arrangements remained in place until the late 1980s. From 1989 through the 1990s, successive governments amended and added to the fiscal regimes for petroleum, gas and mining. Between 1995 and 1999, there were 13 significant changes to these arrangements (Banks, 2001). The changes mainly increased the taxation on petroleum, gas and mining; moved to production-based charges such as royalties; brought tax payments upfront; and moved away from rent taxation. Made on an ad hoc basis, they severely affected investor confidence.

Faced with a sharp downturn in mining, petroleum and gas exploration and development during the 1990s, the PNG government made further changes in 2001 to increase the attractiveness of the fiscal regime to investors. Further changes were made, effective from the beginning of 2003. Under these arrangements, the company tax rate was set at 30 percent; an accelerated depreciation allowance was granted; a double deduction was offered for exploration expenditure; the APT was abolished; and the option of a fiscal stability clause was offered at a cost of an additional 2 percentage points on the company tax rate.

An APT was reintroduced for designated gas projects in 2008, but at tax rates below those applied before 2003.

4.6.2 Inadequate Revenue Collection

PNG’s taxation system for the petroleum, gas and mining industries has collected too little revenue during periods of high profitability; concessions provided in project-specific agreements that override general legislation have greatly reduced effective rates of taxation.

In its country report for PNG, the IMF (2013) warned that the PNG tax system will require greater efforts towards revenue collection to keep the fiscal deficit in check. Regarding taxation on mining, petroleum and gas industries, the IMF called for the rationalisation of exemptions and concessions and the implementation of IMF recommendations on fiscal arrangements for extractive industries, with a view to increasing government revenue. The IMF (2013, pp.8–9) recommends the government move towards relying on rent-based taxes and remove some tax incentives such as income tax holidays and the double deduction for exploration.

The IMF (2012, p.6) has analysed mining and petroleum taxation regimes around the world. It estimates that taxation regimes for mining collect 40–60 percent of resource rents, while for petroleum the share is higher, at 65–85 percent. The IMF considers PNG’s fiscal regime collects too little rent. As a result of tax concessions, and the abandonment of the additional profits tax in 2003 (for mining), the average effective tax on PNG’s mining, oil and gas companies is low compared with international fiscal regimes. Observers have noted that the Ramu nickel and cobalt mine has a 10-year tax holiday before it will contribute to national revenue. Other similar concessions have been made to the mining sector.¹

As the PNG Taxation Review Committee (2014, p.14) points out, the APT for gas projects is not highly progressive, leading to relatively low government take when project profitability increases. The reasons are that the first accumulation rate of 17.5 percent is high

and the two tax rates of 7.5 percent and 10 percent are low (Taxation Review Committee, 2014, p.14).

4.7 Global Trends in Taxation of Natural Resources

Globally, eight obstacles to increasing tax revenues are acknowledged (Moore, 2013):

1. economic structure
2. systemic use of rent-taking
3. use of the tax system as a direct instrument of rule
5. configuration of government institutions
6. TNC (transnational corporation) profit shifting
7. poor tax administration practice
8. property tax issues.

Without describing all of the above, Point 3, for example, concerns how power is used selectively to favour certain entities through tax exemptions and concessions of various kinds; at the other extreme, there might be threats of punitive audits to reluctant taxpayers. The power to tax can thus deplete the tax take. Point 6 (TNC profit shifting) might apply to PNG — an issue that is a current focus of international tax experts. Profit-shifting is exacerbated by both tax-incentive competitiveness among governments to attract business investment and the global extensiveness of TNC activities, which together can cause transfer pricing (Leite, 2012; Nitsch, 2012; OECD, 2013). Research indicates that mining TNCs are more undertaxed than are those entities engaged in oil and gas (Lundstol et al., 2012; OECD, 2013).

In the postcolonial era, the legal mechanisms for collecting the state’s share of profits from resource projects have taken different paths for petroleum, gas and mining. In mining, the contract between the principal (the state) and the agent (a private investor) has typically involved the state’s granting exploration and development leases to private companies. Private commercial entities control the resource extraction process and have ownership of the minerals extracted, but pay royalties and taxes for the extraction rights. The legal framework in the developing world for petroleum and gas taxation has involved contractual arrangements where national oil companies have been granted monopoly rights to extract petroleum and gas resources. The national oil companies then enter into production-sharing contracts with foreign providers of investment and services (IMF, 2012, p.17). In legal terms, the contractor gains a share of the extracted petroleum and gas to cover costs and receive remuneration. The state oil company retains a share of production as profit.

The historical reason for the use of production-sharing contracts and service contracts in petroleum and gas development was that they were perceived to better reflect national sovereignty in the postcolonial era. First used in Bolivia in the early 1950s, and by Indonesia after independence, such contracts were in reaction to the colonial-style leasing arrangements. In these arrangements, foreign oil companies gained leases, owned the petroleum...

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1 In Australia, new legislation to increase mineral taxes through a new resource rent tax was effectively opposed by business lobby groups.
produced, and extracted it on highly concessionary fiscal terms. State-owned companies now control around 80 percent of world petroleum and gas reserves, and 15 of the 20 largest oil companies are state-owned (IMF, 2012, p.23).

4.7.1 Petroleum and Gas Taxation

Production-sharing contracts can be designed to account for exploration and development costs to a greater or lesser extent, similar to different types of resource taxes (IMF, 2012, p.17). Where no costs are allowed, a production-sharing contract is equivalent to volumetric or ad valorem royalty set at a rate determined by the production split between the national oil company and the foreign contractor.

Some production-sharing contracts apply production splits in favour of the national oil company that are tied to the daily rate of production from the field. This is equivalent to a sliding-scale royalty.

Another form of production-sharing contract is based on accumulated net cash flows from a project. This is equivalent to an RRT with an accumulation rate of zero. Finally, some production-sharing contracts are based on the internal rate of return achieved on the project. This is equivalent to an RRT with a positive accumulation rate.

In developed countries, conventional leasing systems similar to those applied to mining are still common in the petroleum and gas industries. The state issues exploration and development leases, the private investor retains control of production, and taxes are applied.

Upfront cash payments are common in fiscal regimes for oil and gas. They are either negotiated or set by competitive-bidding processes. Upfront cash payments are used in production-sharing contracts and service agreements, as well as in conventional leasing arrangements.

The IMF has observed an increasing use of resource-rent taxation in the petroleum and gas industries (IMF, 2012, p.21). Typically, a form of rent tax is combined with a royalty to constitute a total “resource charge”.

Nevertheless, the United States still relies heavily on royalties, in combination with upfront cash bidding and company tax. Canada has been moving to rent taxes. Norway combines a rent tax with company tax in what has been a very stable fiscal regime. After frequent changes, the United Kingdom has settled on a rent tax and company tax. Australia combines a rent tax with company tax for oil and gas developments.

4.7.2 Mining Taxation

In the colonial and early postcolonial era, mining tax regimes were typically highly concessionary to the investor. Lengthy tax holidays were granted to encourage private investors, and any tax payable was usually at low rates. Rent taxes were unknown. From the mid 1970s through to the early 1980s, various rent taxes were designed and applied. They were usually applied in addition to the general system of company tax and were accompanied by an ad valorem royalty.
In the mid 1980s and in the 1990s, when mineral prices were at historical lows, the design of mining taxation was driven by international comparisons of tax regimes and a perceived need for an internationally competitive tax system for mining. The process of bidding for scarce foreign investment during the 1990s may have, in some instances, reduced government shares of revenue to excessively low levels (ICCM and Commonwealth Secretariat, 2009).

The report cited above claims that, as mineral prices boomed from around the mid 2000s, mainly through demand from China, governments of mineral-rich countries turned their attention again to gaining a reasonable share of the huge profits generated from mining. However, on the whole, regimes for mining taxation have not been heavily profits based, which suggests they were designed when mineral prices were low and countries were competing for investment.

A further possible reason why rent taxes have not become more popular during the period of higher prices (i.e. from the mid 2000s) is that they are perceived by the jurisdictions of developing countries as more difficult to administer than royalties. Yet, for a government that already administers company tax effectively, the extra complexity and effort involved in administering a rent-based tax is small (ICCM and Commonwealth Secretariat, 2009).

Royalties applied at a relatively low rate have typically featured in regimes for mining taxation. Usually, royalties are ad valorem rather than volumetric, sometimes with a sliding scale for rates — higher rates apply when mineral prices are high. Although ad valorem royalties applied at a low rate and assigned to local governments may enhance a project’s acceptability to the local community, empirical evidence for this contention is inconclusive (ICCM and Commonwealth Secretariat, 2009).

4.7.3 Stability Clauses

To address problems of sovereign risk, sometimes governments and investors have inserted so-called stability clauses in contractual agreements. These clauses are designed to lock countries into fiscal arrangements to safeguard against future legislative changes. Stability clauses are usually inserted in circumstances where the bargaining position of the government is weak. However, when the government’s bargaining power strengthens with rising resource prices, pressure intensifies to rescind stability clauses, creating even greater perceptions of sovereign risk. A government in office when mineral prices are high will not necessarily feel bound by the decisions of former governments run by political rivals (ICCM and Commonwealth Secretariat, 2009, p.9).

4.8 Options for Tax Reform

4.8.1 General Legislation or Specific Agreements?

In designing fiscal arrangements for petroleum, gas and mining, governments have a choice of enshrining them in general tax legislation or negotiating them on a project-by-project basis and including them in specific agreements. A hybrid might involve specific agreements that refer to the generally legislated tax arrangements but which provide for project-specific variations such as special investment incentives.
The weight of international evidence favours the transparency of general legislation. Specific agreements based on bilateral negotiations tend to be less stable over time, because new governments tend to feel less morally and politically bound to them than to general economy-wide legislation. This instability is exacerbated when agreements are kept confidential between the government and the investor. The political cost of varying legislation that applies to all companies, in terms of elevating sovereign risk, acts as a constraint on governments to unilaterally change fiscal arrangements for resource projects (ICCM and Commonwealth Secretariat, 2009, p.12).

4.8.2 Rent Tax, Company Tax and Modest Royalty

A fiscal regime that requires a fair share of revenue from petroleum, gas and mining developments, while minimising deterrence to profitable projects and offering stability, could comprise company income tax, a rent-based tax, and an ad valorem royalty set at a modest rate. This fiscal regime is recommended by the IMF in its technical-assistance report on fiscal regimes for extractive industries (IMF, 2012, pp.6, 26). The strengths of such a regime are that it ensures some revenue flows from the start of production and that government revenue rises when rents are large. This progressivity in the regime offers stability, lowering perceptions of sovereign risk.

In addition, to reduce the riskiness of exploration and, therefore, investors’ hurdle rates, a case can be made for governments to facilitate early geological survey work. Results of the work would be made publicly available. By reducing risk and lowering investors’ hurdle rates, early geological survey work funded by government could increase the overall tax take. A government agency could do this work directly or, if it lacked the necessary expertise, could outsource the work to private surveyors (Emerson and Lloyd, 1983; IMF, 2012, p.58).

As the IMF points out, this combination of royalties, company tax and rent tax can be applied across a wide range of circumstances for mining, oil and gas projects, although the exact combinations might vary (IMF, 2012, p.26). This regime could be augmented by upfront cash bidding for exploration acreage when competition for exploration leases clearly exists.

Among the major alternative rent taxes — the Brown Tax, the Garnaut and Clunies Ross RRT, and the Boddington and Bruce ACC method — the RRT is the most practical because it does not require upfront cash contributions from government, or payments to investors in the event of ultimate project losses. The RRT, in the form of Australia’s petroleum resource rent tax (PRRT), has proven stable over a quarter of a century and effective in collecting a fair share of rents. The APT, which previously applied to petroleum, gas and mining developments in PNG, is identical to the RRT. The RRT can be applied at a single rate (as with Australia’s PRRT) or at progressive rates (as with PNG’s APT for designated gas projects).

Fiscal arrangements for petroleum, gas and mining developments in PNG should be incorporated into general legislation and not varied for individual projects or over time. While petroleum and gas agreements entered into with the State of Papua New Guinea should cover non-taxation matters, the fiscal arrangements should be those contained in general legislation.
Fiscal-stability clauses in individual contractual agreements have been ineffective in reducing perceptions of sovereign risk, because they inevitably come under pressure in circumstances of high resource prices.

Countries that have attracted substantial mining investments in recent decades have used general fiscal terms rather than case-by-case negotiation. These include not only advanced countries such as Australia, Canada, or Norway, but also Bolivia, Brazil, Chile, Indonesia, Namibia, Peru, and South Africa (IMF, 2012, p.36).

The general legislation would be the income-tax legislation, with separate divisions for rent taxes for mining and for petroleum and gas. Different RRT parameters would be legislated for mining and for petroleum and gas.

IMF simulations suggest that average effective tax rates of 40–60 percent for mining and 65–85 percent for petroleum and gas are achievable (IMF, 2012, p.29).

Renegotiation of terms agreed in contracts can increase perceptions of sovereign risk. However, as the IMF observes, renegotiation is warranted when terms have become egregiously at odds with either international practice or terms in comparable circumstances. When renegotiation happens through consultation or mutual agreement, it can strengthen the investment climate (IMF, 2012, pp.36–37). Unilateral variation of fiscal terms for existing projects, however, would inevitably increase investor perceptions of sovereign risk in PNG.

Equity participation by the PNG government on fully commercial terms usually necessitates large government borrowings from overseas sources to finance equity contributions. Further, equity participation on fully commercial terms obliges the state to assume the risk of repaying debt if the project proceeds are insufficient to do so. If the state does not assume this risk, the participation is not on fully contributing terms, and the state’s equity stake becomes more akin to company income tax.

If state equity is purchased from future profits on a carried-interest basis, it is equivalent to another tier of RRT, the rate of which is set at the percentage of equity held by the state. This rate would need to be accounted for in assessing the overall size and reasonableness of the tax take from oil and gas projects.

4.9 Recommendations for Reform of PNG’s Taxation of Natural Resources

4.9.1 For All Future Petroleum, Gas, and Mining Developments

The fiscal regime for all future petroleum, gas, and mining developments should comprise company income tax and dividend withholding tax at the generally prevailing rates (30 percent for company tax and 15 percent for dividend withholding tax), a royalty, and a resource rent tax in the form of an APT.

The company income tax should be part of the taxation regime for petroleum, gas, and mining so that some revenue is raised from activities of low profitability. The business community generally accepts this form of impost.
The ad valorem royalty at the rate of 2 percent should be retained. This form of taxation should be payable irrespective of project profitability. Its low rate of 2 percent, and the potential for this revenue to be expended early in the life of projects to remedy the social impacts and the impacts of environmental extraction, support the argument for its retention.

A resource rent tax in the form of an APT should be applied to oil, gas and mining developments, legislated in a timely manner, and with appropriate “low-profit” thresholds to exclude taxpayers with small amounts of assessable profits. The APT should be applied at a single rate. For petroleum and gas, the APT rate should be higher than the present highest gas rate of 10 percent. As a guide, the tax rate for the Australian PRRT is 40 percent. The accumulation rate for exploration expenditures under the PRRT is the Australian Government’s long-term bond rate plus 15 percentage points, and for development expenditures is the long-term bond rate plus 5 percentage points. PRRT payments are deductible for purposes of company income tax. While the PRRT is assessed on a project basis, exploration expenditures incurred by the same corporate entity outside the project area are immediately deductible against project cash flows. The PRRT should be used as a model in designing PNG’s APT for petroleum and gas; its legislation is not too complex or lengthy for tax practitioners or their clients. Consideration should be given to lower accumulation rates and tax rates for the APT than those of the PRRT.

Turning to the APT rate for mining, as a guide, the tax rate for the Australian MRRT was 22.5 percent. The accumulation rate for the MRRT was the government’s long-term bond rate plus 7 percentage points. For APT purposes, exploration expenditure anywhere in PNG should be deductible against assessable income from operating projects. Un-deducted exploration expenditure should be carried forward at a low accumulation rate for APT purposes.

The fiscal regime for petroleum, gas and mining should be incorporated into general legislation. Development agreements should be confined to non-fiscal arrangements and matters such as revenue sharing with local governments and landholders. Stability clauses should be removed from legislation.

Any state equity participation other than on fully commercial terms is effectively another form of tax and should be taken into account in setting the rate of APT. While it has been argued that equity participation gives the state a full stake in the success of projects and a sense of land ownership, conflicts can arise between a government’s role as regulator and owner. In any case, the petroleum, gas and hard minerals in the ground are unambiguously owned by the state, with or without state equity participation. The financing of state equity participation on fully commercial terms would inevitably increase sovereign debt. The debt-raising capacity of government might be better used for investing in economic and social infrastructure.

Moreover, whereas rent tax payments may be claimed as a credit against an investor’s income tax liability in its home jurisdiction, dividends from state equity are unlikely to be creditable. State equity participation therefore entails costs and risks to the state that are not borne in the case of rent taxes, which argues against using state equity participation as a profit-sharing device in PNG petroleum and gas projects (Taxation Review Committee 2014, pp.36–39).
Cash bidding should be used to allocate future petroleum and gas exploration licences, and relinquished and surrendered exploration acreage, through an open and transparent institutional process. Cash bidding should also be used for hard minerals when evidence of competition for exploration acreage exists. The PNG Government should consider contracting out geological survey work in the early stages of exploration, funded from within the proceeds of cash bidding. The information gathered should be freely available to participants in cash-bidding processes to help inform their bids and to maximise the value of bids received. This system has worked successfully in Australia.

4.9.2 For All Existing Petroleum, Gas and Mining Developments

Exploration expenditure for petroleum and gas anywhere in PNG should be deductible against assessable income from operating projects. This would replace the limited provisions for pooled exploration costs. The exploration double deduction for mining exploration should be removed. Entering into discussions with the project operators of Ramu Nickel about the company’s tax holiday and exemption from import duties should be considered. No other changes are recommended.

References


Company Tax, Royalties and the APT

The paper’s recommendations advocate the use of a corporate tax rate, a royalty and a resource rent tax for future petroleum developments. PNG’s fiscal regime already incorporates those features, so this approach is consistent with our current fiscal regime.

- Income from oil operations is already subject to tax at a 50 percent rate and gas at a 30 percent rate.
- Both the above are subject to royalties which are effectively based on some measure of profitability given the wellhead value calculation, a basis which is supported by the authors, as opposed to a royalty based solely on value.
- The APT as it applies to gas and state participation are effective rent taxes that will achieve the progressivity that is required. The APT seems to have been dismissed as an option based solely on the fact that historically the APT has failed to derive significant revenue. Whether this failure is because of a design flaw in the accumulation rate or because the APT applied in a time of lower commodity prices (hence project developers were making lower returns) is open to debate.

By design, the APT is an effective resource rent tax, with the only real question: What is the appropriate accumulation rate?

- Hurdle rates for the APT in the negotiation of gas development agreements and, therefore, revenue derived from the APT is within the control of our government.
- We should understand what revenue the state derives from the PNG LNG project through the APT before we consider moving away from it. The next significant gas development is some way off.

There appears to be more than one view on accumulation rates for a resource rent tax:

- The resource rent tax that the authors and the IMF support features an accumulation rate which effectively allows for the time value of money and is also a mechanism for setting an appropriate economic return for project developers.
- The resource rent tax alternatives proposed by the Tax Review Committee’s Issue Paper do not feature an accumulation rate and hence would result in taxes being borne by project developers before the derivation of an economic profit. Departing
from APT requires a balanced view by the people of Papua New Guinea of the benefits and shortcomings of any alternatives, given the high stakes that are involved. All that may be required is to adjust the status quo to deliver optimal results for the people of Papua New Guinea.

**State equity**

There may be merit in dropping state equity, but how does a nation move away from this notion and still feel that we are truly benefiting from the exploitation of our mineral wealth? This question requires an answer.

Turning to state policy, which is to maintain the status quo, two issues arise:

- The efficiency of the investment vehicles employed by the state to manage state equity and pass through revenue to the state. There is a mix of investment vehicles currently: shares in Oil Search and direct participation through Petromin and the National Petroleum Company of Papua New Guinea.
- A government has to deliver services and infrastructure. But should it also invest? Papua New Guinea has lacked three elements in realising its aspirations to own and operate in our industry: capital, management capability and technical knowhow. Access to capital is no longer an issue. We are about five years away from realising the management capability. We can hire technical expertise. It is difficult to discard the policy of state equity without debating the issues of this forum more broadly.

Beyond that, state equity is a well-known form of resource rent tax. It is progressive and, in the case of PNG, where the state only backs in at the development stage, the state carries no exploration risk. The state benefits from knowledge transfer, as well as buying into projects for less than the commercial value. Buying in at historic cost is a significant upfront tax on project developers and, economically speaking, is not an efficient tax mechanism.

Finally, state participation also creates an alignment of interests between the state and project developers. State equity is our industry’s fiscal stability premium. The development of large-scale resource projects requires the close coordination of developers, the state, financiers, landowners and other stakeholders. In our experience, state and landowner participation has resulted in more timely development of projects because all parties work towards a common goal. Timely development of these types of projects creates significant economic benefits. PNG LNG is testament to the benefits of this partnership. PNG LNG was ahead of its schedule to deliver contracted LNG cargoes – the project commenced production and shipped its first gas export cargo in May 2014.

**Stability clauses**

The authors suggest that stability clauses create uncertainty among investors. One can identify with the issue that is raised. Is stability guaranteed? The power relationship between host government and developer evolves over time. In PNG’s case, for example, we have been able to deliver a foundation LNG project. PNG’s credentials have been established and its economic future has been secured. The power relationship has shifted to the
state. PNG can dictate the pace at which subsequent developments are progressed, and also the fiscal terms on which they are brought to fruition. As the domestic capital market starts to grow even more, stability may become less relevant. Thus, perceptions of instability may be a fact of life. This all points to interesting times ahead as both host government and our industry engage on the industry’s growth agenda and the fiscal terms on which future developments are undertaken.

Having said that, stability clauses do influence lender perceptions of risk and, consequently, the cost of finance. Marginal projects will be the biggest beneficiary of the retention of stability clauses because of the positive effects of stability clauses on borrowing costs. Beyond Elk/Antelope, all future gas developments will be of a relatively marginal nature.

**Exploration deduction concessions**

The authors advocate an open discussion about deduction concessions for exploration, referring to the IMF 2013 Staff Report. However, the exploration deduction concessions that are flagged for review in the Tax Review Committee’s paper apply to the mining industry, not the petroleum industry. Therefore, we assume that the authors are referring to the proposed removal of the cap on deducting pooled exploration expenditure as a method to incentivise exploration in PNG.

Much of PNG remains unexplored. Most acreage is spread over five sedimentary basins. All of the known discoveries are marginal and stranded. All exploration over the past 20 years has been undertaken in one sedimentary basin. Therefore, the proposed change, and any other measure designed to promote greater investment in exploration, is important for Papua New Guinea.

**Removal of resource development agreements**

The authors support the removal of resource development agreements and replacing them with a set of model agreements. We note that the development of model agreements is already taking place in the PNG mining and petroleum industries; we support this approach and the general avoidance of the use of tax incentives, because they can distort the market. In our industry, each discovery has unique characteristics of size, quality and access to market. A standard approach needs to incorporate sufficient flexibility to promote the development of otherwise marginal projects. PNG is a country which presents significant geological, topographical and infrastructure challenges, which have led to many “stranded” resources. One of the key challenges of any agenda for fiscal reform is how to unlock the economic benefits associated with these stranded resources.

Historically, tax incentives granted in PNG have been in the form of tax holidays and rate cuts. We are receptive to the future use of tax incentives for marginal projects, but these need to be progressive, similar to a resource rent tax. When previously marginal projects benefit from macroeconomic changes such as spikes in commodity prices, these projects should face a tax impost consistent with that of other taxpayers.
**Cash bidding**

The authors consider that implementation of a cash-bidding system would promote exploration.

In a country with no capital gains tax regime, any bidding system must be based on technical merit and work programs. There have already been examples in PNG of speculative acquisition of exploration licences by parties without the financial support or technical ability to undertake an exploration program. This ability to undertake an exploration program, and ideally to then develop a discovered resource, should be the main focus in the process of allocating licences, because it will be the largest driver of state revenue and economic growth in PNG.

Before making any decisions on a cash-bidding system, we need to examine the relationship between the state and the minister, his powers under the Oil and Gas Act, and the interaction of that office with our industry’s regulatory authority and the industry, in order to restore the integrity that has been eroded over the years. This includes deciding what our regulatory philosophy is — whether it should be self-regulated, prescriptive, or a hybrid. We must understand what these options might mean for the role of the regulator, for regulatory capacity and capability, and for the licensing regime. All of this information will inform policymakers in deciding whether a cash-bidding system is appropriate.

**Concluding remarks**

The PNG Tax Review is an important step in setting the platform for the next phase of economic growth in PNG. The challenge is, and will always be, to optimise state take without having a material adverse effect on the attractiveness of PNG as a global destination for petroleum investment. Regarding international petroleum characteristics, we cannot ignore the nature of PNG geology and topography, and the lack of infrastructure, which all make for a high-cost environment. The real challenge is not the design of our fiscal regime, it is to translate mineral wealth into a transformed economy and country, and to equitably distribute that wealth across this great country.
The data provided by the IMF suggests there has not been sufficient revenue collected during periods of high profitability and recommends reliance on resource-rent taxation, and removal of tax holidays and the double deduction for minerals exploration expenditure.

These comments present only one side of the story because, clearly, a greater amount of tax has been paid during periods when commodity prices have been higher. At the same time, we need to remember that another function of increased commodity prices is increased operating costs. In PNG, our main operating mines and petroleum project have been operating for many years; most mines face difficult mining conditions, and some have required further capital investment. Thus, higher commodity prices do not automatically translate into higher profits.

Under the existing law, allowable capital expenditure is amortised on a 10-year, straight-line basis for petroleum and gas projects, and for mining projects which started before 31 December 2002. For mining projects starting after 31 December 2002, allowable capital expenditure is amortised on a 25 percent diminishing-value basis. Assuming these reasonable rates of amortisation are retained, there would be no need for projects to seek a tax holiday; thus the negative perceptions created by granting such holidays could be avoided.

As far as I am aware, no taxpayer has actually claimed a double deduction for expenditure on minerals exploration. As such, while the incentive has proved attractive to explorers, it has not resulted in any “lost” revenue. I would suggest clarifying the technical operation of the double-deduction mechanism to ensure the potential double deduction is available once through the deduction for allowable exploration expenditure and then through the Section 155N pool deduction. This mechanism will both cap the amount of the double deduction and ensure that, in any year in which a deduction is claimed, tax remains payable.

The paper notes that losses of resource projects can be carried forward indefinitely. However, it does not mention that deductions for allowable exploration expenditure and allowable capital expenditure are capped such that the amount of the deduction in any year cannot create a tax loss. Hence, the ability to carry forward losses indefinitely (which also applies to primary producers) does not offer any real concession to resource projects.

The paper is persuasive in the commentary on the concept of resource rent and seems to acknowledge that the existing state equity represents, in part, a resource rent. Because the state acquires its interest at cost, the effect of state equity is to impose a 100 percent rate
of tax on the profits attributable to that portion acquired by the state through the exercise
of the state equity option. If the state cannot give up the state equity option, the design of
a resource rent tax needs to account for the effective taxation impact of state equity. This
would suggest higher rates of return and lower tax rates than envisaged in the paper.

Over the past 30 years, a number of changes have been made to the taxation of resource
projects. The most recent significant changes are those made with effect from 1 January
2003 for mining projects, and those made in 2008 regarding the LNG project. Given that
taxation law in PNG is generally only changed at the time of the annual National Budget,
it may be an overstatement to say there have been frequent changes to the general princi-
pies of the taxation of resource operations. On balance, I would say there has been stability
in the essential concepts of the taxation of resource projects since the introduction of the
current Division 10 was included in the *Income Tax Act 1959*, with effect from 1 January

Resource Project Agreements serve a number of purposes, not only agreement of fiscal
terms. Accordingly, such agreements should not simply be abandoned. However, to reduce
the use of such agreements for the negotiation of fiscal terms, the taxation law should be
amended to deal with standard matters. For example:

- Amend Section 14 (2) of the *Income Tax Act 1959* to remove the Commissioner
  General’s discretion to allow foreign currency reporting for companies engaged in
  resource operations (including exploration).
- Amend Section 40AA of the *Income Tax Act 1959* to grant automatic exemption of
  “leave fares” for employees working at the site of resource operations.
- Amend the *Customs Tariff Act 1951* and the *Excise Tariff Act 1956* to provide for
  automatic exemption from import duties for the construction of resource projects.
- Amend the *Resource Projects Fiscal Stabilisation Act 2000* to provide for automatic
  application of fiscal stabilisation.

For mining, upfront cash bidding is a disincentive to take up exploration rights, and does
not promote real “in-ground” expenditure. Expected revenue under such a scheme is ques-
tionable because it is highly unlikely mining companies will pay large amounts of cash to
undertake “greenfield” activities. Exploration is a major expense to shareholders, and the
pool of capital available to undertake such activities is limited (especially in the current
climate). Both of these factors lead to fewer discoveries and less economic development.

For oil and gas exploration, a move to replace the current “apply any time” process with
competitive tendering would be a significant improvement, but should be based on a struc-
tured-work-program system of bidding, not on cash bidding. As an overall comment, the
existing system of taxation of resource projects has been successful in attracting explorers
and investors to PNG. The concepts and the law are not overly complex. However, the
taxation review can add considerable value by identifying areas in which the administra-
tion of the law can be simplified. Presently, the IRC’s inefficiency in managing all aspects
of taxation administration represents a cost to all business and to the state. The state has
already identified the IRC as an area of government administration that requires improve-
ment. In general, I consider the focus should be to ensure the IRC can efficiently manage
the existing system before making significant changes to the taxation of resource projects
or the overall taxation system.
5.1 Introduction

Papua New Guinea (PNG) has witnessed outstanding economic growth over the past 10 years, accounting for 2.3 percent of the South Pacific region’s gross domestic product (GDP). However, according to the Department of Treasury, the country’s impressive economic growth has not been translating into optimal fiscal and revenue yields. The threat to the revenue is projected to reach K1.2 billion by 2018. Consequently, in an effort to stem this potential loss of revenue and improve tax collection and administration, an immediate analysis of the tax regime is critical.

The aim of this paper is to investigate the corporate income tax regime in PNG and make recommendations for tax reform with the view to improving future revenue collections. The paper is organised as follows. Following this introduction, Section 2 briefly outlines the main features of the corporate tax regime in PNG. Section 3 identifies concerns with the current corporate tax regime, including revenue trends over the past 5 years. Section 4 describes the features of a good corporate tax system and best-practice measures as derived from the Organisation for Economic Co-operation and Development (OECD). Based on some of these features and practices, Section 5 considers the various options for corporate tax reform in PNG. Section 6 provides an evaluation of the main options, considering the advantages and disadvantages of each. Finally, Section 7 concludes by indicating both the short-term and long-term priorities and tax-policy implications for the corporate tax system in PNG.

5.2 The Main Features of the Corporate Tax Regime in PNG

The residence of a corporation for the purposes of the Income Tax Act (1959) PNG is similar to that of Australia. Specifically, it is incorporated in PNG and either (a) carries on business in PNG and its central management and control is in PNG, or (b) it carries on business in PNG and its voting power is controlled by shareholders who are resident in PNG. Resident companies are taxed on their worldwide income, whereas non-resident companies are only taxed on PNG-sourced income. Foreign-sourced income derived by
responsible companies is subject to corporation tax in the same way as PNG-sourced income.\(^1\)

Corporation tax is imposed on a company’s profits, which are derived from business or trading income. Assessable income equals gross income less exempt income. Generally, assessable income less allowable deductions equals taxable income. Taxable income multiplied by the tax rate (30 percent for resident corporations and 48 percent for non-resident corporations in 2014), less any credits or rebates, equals tax payable. Normal business expenses may be deducted when calculating taxable income. In this regard, if the deduction provided for in the tax law differs from accounting expenses, the deduction must be calculated using the appropriate tax-law calculation. Tax losses are subject to the continuity of ownership and continuity of business tests and may be carried forward for 20 years, except for primary production ventures where the carry forward is unlimited. The carry back of losses and transfers between group companies is not permitted.

There is no capital gains tax in PNG unless either the gains are realised as part of a profit-making scheme or undertaking, or the gains form part of the ordinary business of the taxpayer. Dividends received by a company resident in PNG are subject to a rebate on the portion of tax paid on the dividend, so that they are only subject to tax at the company level; this is similar to the system for dividend imputation that operates in Australia. Likewise, a credit is granted for foreign tax paid on the foreign income of a PNG resident company. The credit is equal to the lesser of the foreign tax paid or the PNG tax payable on such income. No participation exemption or holding company regime exists in PNG. Likewise, there is no capital duty, payroll tax or real property tax. However, there is a research and development (R&D) incentive of 150 percent deduction on eligible expenditure; also, certain industries and projects have been granted exemptions and concessions (eg. fishing and exports).

Final rates for withholding tax vary with the type of payment made. Dividends paid to non-resident companies and individuals (whether resident or non-resident) are subject to 17 percent withholding tax. Dividends from mining companies and those covered by tax treaties are subject to 10 percent withholding tax. Dividends from gas and petroleum companies are exempt. PNG-sourced interest paid by a financial institution or company to a resident or non-resident is subject to 15 percent withholding tax, unless subject to a treaty. Interest paid to a non-resident financial institution by mining and petroleum companies is exempt from withholding tax. Where the recipient and payer of a royalty are transacting at arms-length, the royalty payment to a non-resident is subject to 10 percent withholding tax. However, where the parties are associated, the withholding tax rate is 30 percent. Fees for management and technical services paid to non-residents are subject to 12 percent withholding tax. Certain service fees paid to non-residents are subject to 12 percent withholding tax. PNG also imposes a 3 percent or 4.8 percent withholding tax on non-resident insurers and sales of certain prescribed products, respectively.\(^2\)

With regard to anti-avoidance measures, the transfer pricing rules follow an OECD-based approach, which requires an arms-length or reasonable commercial value to be used when determining the value of transactions between related entities. Likewise, thin capitalisation

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2 Checkpoint World Papua New Guinea – Key Features. See www.checkpointworld.com
rules apply from 1 January 2013. Where the lender is a non-resident entity, a maximum debt to equity ratio of 2:1 applies for most businesses, and a 3:1 ratio for resource companies, before interest in excess of the ratio is disallowed as a deduction to the PNG borrower. A general anti-avoidance provision operates, which allows the Internal Revenue Commission (IRC) to cancel any tax benefit derived by a taxpayer when carrying out an arrangement for the sole or dominant purpose of obtaining a tax benefit. Specific anti-avoidance rules prevent accelerated deductions, excessive costs for depreciation deductions, and non-arms-length charges for management fees. There is no consolidation or grouping treatment for companies and no controlled foreign companies (CFC) regime. However, investments by foreign-owned entities in PNG must be approved by the Investment Protection Authority.

The tax administration and compliance of companies in PNG is fairly standard. Consolidated returns are not permitted and companies file separate returns regardless of whether or not they are part of a group. Payments of the estimated tax liability for the current tax year are due on 30 April, 31 July and 31 October of each year. The fiscal tax year runs from 1 January to 31 December and the lodgement date is 28 February following the tax year. Penalties apply for late filing or late payment of income tax. Also, a 10 percent tax is imposed on payments to PNG business entities that undertake certain services and fail to have a certificate of compliance. A system for income tax rulings has recently been introduced, which formalises the issue of public tax circulars on matters of administrative practice, procedural instruction, and interpretation of the tax laws. However, there is no system for formal private ruling, or any requirements for formal disclosure by corporations.

5.3 Concerns with the Current Corporate Tax Regime in PNG

5.3.1 Growth in Tax Revenues

To meet the country's spending needs and to minimise PNG's budget deficit planned for the four fiscal years 2013–2017, it will be important for the IRC to meet or exceed its revenue-performance targets. In 2012, the IRC collected a total net tax amount of K6 863.1 million, of which K1010 million was GST transferred to the Waigani Public Account (WPA) (Table 5.1). This total was below the original 2012 budget revenue projection of K7089.9 million, but was above the Mid-Year Economic and Fiscal Outlook (MYEFO) revised projection of K6816.9 million.

Table 5.1 displays the trend in total tax revenue collections by the IRC over the 5 years 2008–2012, during which the revenue trend has been upward. However, in 2009, PNG revenue was reduced following the global financial crisis, which saw a drop in world com-

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2 IRC Annual Report 2012, p.11.
3 Note, net collections are defined as total direct tax revenue plus GST revenue transferred to the Waigani Public Account (WPA). Hence, net collections exclude the K272 million of GST transfers to provinces in 2012.
4 Note that IRC collections include tax on income and profits (direct taxes) and GST (inland GST and import GST) only. Revenue from import duty, export duty, and excise are recorded as Customs revenue, and is not a component of the IRC’s revenue.
modity prices and demand. These drops led to a significant fall in tax revenue from mining and petroleum, although corporate tax revenue continued to increase. Since 2009, collections have trended upward, but revenue growth experienced a slowdown in 2012. This concern requires investigation, that is, revenue collections have not improved as much as expected. Besides the slow growth in corporate taxes, falls in related dividend withholding taxes and mining and petroleum taxes from 2011 to 2012 are also cause for concern.

Table 5.1: IRC total tax collections, 2008–2012 (Million kina)

<table>
<thead>
<tr>
<th>Tax Type</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual income tax</td>
<td>1 097.9</td>
<td>1 254.5</td>
<td>1 553.1</td>
<td>2 158.8</td>
<td>2 645.1</td>
</tr>
<tr>
<td>Corporate income tax</td>
<td>839.7</td>
<td>1 085.9</td>
<td>1 201.1</td>
<td>1 373.1</td>
<td>1 704.6</td>
</tr>
<tr>
<td>Dividend withholding tax</td>
<td>190.6</td>
<td>248.6</td>
<td>278.8</td>
<td>290.7</td>
<td>176.6</td>
</tr>
<tr>
<td>Mining and petroleum taxes</td>
<td>1 991.4</td>
<td>749.9</td>
<td>1 476.1</td>
<td>2 073.5</td>
<td>981.1</td>
</tr>
<tr>
<td>Stamp duty</td>
<td>74.5</td>
<td>57.7</td>
<td>65.4</td>
<td>63.6</td>
<td>70.2</td>
</tr>
<tr>
<td>Gaming machine tax</td>
<td>84.3</td>
<td>89.2</td>
<td>93.1</td>
<td>111.3</td>
<td>133.9</td>
</tr>
<tr>
<td>Other direct taxes</td>
<td>46.6</td>
<td>54.4</td>
<td>68.6</td>
<td>73.2</td>
<td>105.9</td>
</tr>
<tr>
<td><strong>Total Direct Taxes</strong></td>
<td><strong>4 325.0</strong></td>
<td><strong>3 537.5</strong></td>
<td><strong>4 736.1</strong></td>
<td><strong>6 144.2</strong></td>
<td><strong>5 853.1</strong></td>
</tr>
<tr>
<td>GST to WPA</td>
<td>647.1</td>
<td>693.0</td>
<td>788.2</td>
<td>560.5</td>
<td>1 010.0</td>
</tr>
<tr>
<td><strong>Total Revenue</strong></td>
<td><strong>4 972.1</strong></td>
<td><strong>4 230.5</strong></td>
<td><strong>5 524.3</strong></td>
<td><strong>6 704.7</strong></td>
<td><strong>6 863.1</strong></td>
</tr>
</tbody>
</table>


Tax revenue as a percentage of gross domestic product (GDP) is one indicator used to determine if tax revenue is rising in line with a country's gross annual income. Revenue as a percentage of GDP was estimated at 20 percent in 2012. However, GDP increased more sharply than tax revenue between 2011 and 2012, leading to a fall in this measure from 22 percent to 20 percent. In 2012, total collections of tax revenue were 3 percent below the initial budget projections. Over the past few years, actual collections have been consistently greater than budget forecasts (e.g. 8 percent greater in 2011). These figures indicate that revenue performance has been better than expected for each year, and projections conservative relative to actual revenue performance. However, this position changed in 2012, when budget projections for the year were strong relative to actual collections. This disparity was largely due to a high projection for tax revenue from mining and petroleum.1

5.3.2 Corporate Governance

Issues of corporate governance exist within government bodies and similar issues may exist in the private sector. An IRC key objective is to foster public confidence in the IRC’s management and operations, and to analyse corporate risks and identify opportunities for improved performance. While satisfactory audits and investigations of the IRC were carried out by the Auditor General, there were concerns regarding staff recruitment and expertise. In particular, the lack of recruitment and retention of suitable candidates has meant that a

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number of senior internal audit positions have remained vacant. The number of complaints received compared to the staff on strength to address the matters was another challenge faced by the Internal Audit and Integrity Division. At the end of 2012, the total number of completed IRC investigations was 12. Consequently, staff numbers within the Internal Investigation Unit continued to negatively affect completion rates.

There are also no schemes that specifically encourage good governance. That is, the development of governance strategies that are supported by all levels of management and then communicated to staff is absent. The structures and resources to implement governance strategies are not clearly defined. Policies, procedures and guidelines still need to be developed, implemented and communicated in order to support governance strategies. The existence of systems and related processes to support governance frameworks has been ad hoc. More specifically, an infrastructure for strategic risk management needs to be implemented to cover issues such as board performance and dealings with stakeholders and service providers.

5.3.3 Company Tax Rate and Withholding Taxes

Although the 30 percent company tax rate for residents is similar to that of OECD countries, this rate may be too high for a developing country such as PNG, which wants to be more internationally competitive. In particular, non-resident companies that pay tax at 48 percent of their taxable income would find this situation unfavourable when compared to that in OECD countries. Special tax rates that apply to resource companies could also be a concern and may require a change in the mix. Resident mining companies are currently taxed at 30 percent while non-resident mining companies are taxed at 40 percent. This 10 percent discrepancy may affect willingness to invest in PNG. In comparison, for petroleum companies, the rate is 30 percent for both residents and non-residents; for designated gas projects, the rate is 30 percent plus an additional profits tax of 7.5–10 percent on cash profits, which could also negatively affect investment decisions.

Withholding taxes are a very important source of revenue for PNG. They protect the taxing rights of PNG in relation to income sourced from within PNG and, in some cases, apply even if the foreign company does not have a permanent establishment in PNG. Subject to the main withholding tax rates as outlined in Section 2 above, for dividends, interest and royalties it is important that this mix is appropriate for PNG. Rates, currently between 10 percent and 30 percent in line with most OECD countries, may be too low or too high in certain circumstances, and are non-existent in other cases. For example, payments made for construction-related services are not subject to withholding where the payee produces a certificate of compliance from the IRC. On the other hand, the withholding tax of foreign contractors is an important means of collecting tax from foreign companies that are rendering services in PNG, and should be retained rather than discarded.

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2. See www.oecd.org/tax/tax-policy/tax-database.htm#C_CorporateCaptial for corporate rates ranging from 20 percent to 30 percent.
5.3.4 Tax Incentives and Concessions

The Income Tax Act 1959 provides tax incentives to businesses operating in PNG depending upon the nature of the industry, the location of their business, and the nature of the activity they engage in. The issue here is whether the concessions are generous enough to encourage corporations to invest in PNG but are also revenue neutral. The 150 percent deduction available for R&D may need to be increased, or perhaps replaced with a tax offset, which would be a more attractive tax concession.\(^1\) This concession may be offset by a reduction in the current 100 percent accelerated depreciation allowance of expenditure on “industrial plant”\(^2\) not previously used in PNG.

Likewise, a 20 percent accelerated depreciation deduction, which is allowed for capital expenditure on new plant and equipment with an estimated useful life of more than 5 years, could be increased and offset with a reduction in the somewhat generous outright deduction for certain capital expenditures in agriculture. Given the increase in taxpayers engaged in mining, petroleum and gas in PNG, an increase in the 0.75–1.5 percent income allowance for infrastructure development costs is feasible. At present, these taxpayers are entitled to special accelerated depreciation deductions for exploration and capital expenditure, which is insufficient when compared to the revenue generated.

PNG does not have any grouping provisions for companies, or any formal consolidation rules. PNG assesses income tax on companies separately, regardless of whether they are part of a group or are associated entities.\(^3\) Consequently, losses of one company cannot be offset against the profits of another company for tax purposes. Although there are no capital gains tax (CGT) implications on the transfer of assets, the use of available losses is critical and should be addressed. However, the Companies Act 1997 does allow companies to amalgamate and operate as one company, without adverse tax consequences. In this regard, losses from the prior year, tax written down value (WDV) of assets, and dividend withholding tax (DWT) credits can be passed on. The issue is whether this falls short of the advantages attributable to a truly consolidated regime.

5.3.5 Double Tax Agreements (DTAs)

PNG has entered into international tax agreements\(^4\) with nine countries: Australia, Canada, China, Fiji, Germany, Malaysia, Singapore, South Korea and the United Kingdom. Because these treaties override domestic tax laws, the residents of these countries enjoy some tax advantages over residents of other countries. Under most of the tax treaties that PNG has entered into, the definition of “permanent establishment” (PE) is narrow and allows the foreign country to apply PE to its advantage in order to reduce or vary its PNG tax liability.\(^5\) This could cause damage to the revenue stream over time and should be addressed.

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1. For example, a 45 percent tax rebate was introduced in Australia in 2011 for R&D expenditure, instead of the 150 percent deduction.
2. “Industrial plant” refers to plant with an effective tax life exceeding 5 years and used in manufacturing processes.
by widening the PE definition. As investment in PNG grows in future years, further double tax agreements (DTAs) must be tightened regarding the regulation of branches of foreign companies. This may require addressing the activities of both the Register of Companies and the Investment Promotion Authority (IPA) when dealing with branches of foreign companies.

Table 5.2: 2011 and 2012 end-of-year debt by tax type (Million kina)

<table>
<thead>
<tr>
<th>Tax Type</th>
<th>2011</th>
<th>2012</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company tax</td>
<td>1 494</td>
<td>1440.1</td>
<td>–4 percent</td>
</tr>
<tr>
<td>Group tax</td>
<td>206</td>
<td>227.3</td>
<td>10 percent</td>
</tr>
<tr>
<td>Goods and services tax</td>
<td>200</td>
<td>151.0</td>
<td>–24 percent</td>
</tr>
<tr>
<td>Individual tax</td>
<td>147</td>
<td>136.5</td>
<td>–7 percent</td>
</tr>
<tr>
<td>Business payment tax</td>
<td>23</td>
<td>20.2</td>
<td>–11 percent</td>
</tr>
<tr>
<td>Others</td>
<td>52</td>
<td>60.1</td>
<td>15 percent</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2121</td>
<td>2035.22</td>
<td>–4 percent</td>
</tr>
</tbody>
</table>


5.3.6 Tax Compliance, Audits and Penalties

PNG operates on a full assessment basis and companies are required to lodge an annual income tax return by 28 February following the calendar year. PNG collects corporate income tax under a provisional tax system, but evidence exists of problems in collections. As a result, company debt makes up the largest portion (71 percent) of total debt (Table 5.2). The reasons are varied and need to be addressed. They include delays in assessing company tax returns (partly due to their technically challenging nature) and delays in issuing assessments. Poor lodgement compliance among company taxpayers is also a factor, which has led to many default assessments being issued.

While penalties apply for late filing (not less than K500 and not more than K5000 plus K50 for each day the failure continues) and late payment of income tax (statutory rate of interest is 20 percent), perhaps these amounts should be increased in an attempt to curb the level of noncompliance. The current taxpayer education and awareness activities of the IRC, which involved some 2344 inspections focused on non-lodgers, non-payers and non-registrations, yielded K812 million in 2012. Likewise, penalties for breaches of the tax law resulted in some 14374 cases, yielding about K132.6 million, showing that non-compliance significantly affected PNG revenue. Further, penalties imposed decreased from 2011 to 2012, possibly due to the increased number of assessments processed and in preparation for a new tax administration system (SIGTAS). Ensuring that penalties are more vigorously enforced in future will be vital in order to improve deterrence.

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1 Under this system, a taxpayer makes payments on income in the same year that they derive that income.
3 Ibid., p.32.
4 Ibid., p.33.
Overall, the IRC has limited resources for conducting tax audits; while returns are selected primarily on industry, more corporate audits of companies other than mining companies are needed. This situation has arisen because in recent years the IRC tax audits have focused on GST refunds and group tax (employee withholding). However, the IRC’s approach to tax audits is largely manual, including detailed consideration of invoices and key documents. This process needs to become more sophisticated, particularly the data-matching techniques employed, if revenue detection is to improve.

5.4 Features of a Good Corporate Tax System

5.4.1 The OECD Best Practice

Although PNG is not a member of the OECD, lessons on good practice in corporate tax can be derived from member countries, for example, developed countries such as Australia. Overall, a corporate tax system should encompass a number of standard features, as well as special features peculiar to the particular country. They include, but are not limited to the following:

- an internationally competitive corporate tax rate
- stringent compliance requirements
- strong corporate governance guidelines
- competitive international withholding tax rates
- dividend holding rules
- strict rules for the use of tax losses and bad debts
- tax consolidation and group relief
- rules for the transfer of assets and shares
- controlled foreign corporations (CFC) rules
- transfer pricing rules
- thin capitalisation rules
- a general anti-avoidance rule and specific anti-avoidance rules
- anti-treaty shopping
- a rulings system
- incentives and concessions
- disclosure requirements.

**Internationally competitive corporate tax rate and withholding tax rates**

Most OECD countries have statutory corporate tax rates ranging from 20 percent to 40 percent. Many Asian countries also have competitive corporate tax rates, for example, Malaysia, at 25 percent. However, central to this issue is the statutory corporate rate as

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2. The 2010 Henry Review (http://en.wikipedia.org/wiki/Henry_Tax_Review) recommended a 25 percent corporate tax rate for Australia, which was rejected.
opposed to the average and marginal effective rates of tax. Whereas an average effective tax rate (AETR) measures the share of corporate taxes in the profits of a hypothetical investment, the marginal effective tax rate (METR) measures the extent to which tax increases the required rate of return for a marginal investment. A large difference between the statutory rate and implicit rates may suggest a need for base-broadening and anti-avoidance measures (Heady, 2006). Withholding rates for dividends, interest and royalty payments generally hover between 10 percent and 30 percent in most OECD countries.

In PNG, there are strict rules concerning residence and source, business profits and PEs in the DTAs, which give rise to peculiar withholding payments. The tax rates negotiated in the DTAs must be competitive and sustainable, given that DTAs override domestic tax laws. Renegotiating agreements and establishing new ones will be an ongoing process.

**Strict compliance and disclosure requirements**

Increasing voluntary compliance is achieved through a combination of service and enforcement functions. Corporate taxpayers need to understand that the tax law and regulations should be strictly adhered to and that noncompliance will be dealt with swiftly via an active revenue agency and a strong penalty regime. In particular, taxpayers need to know that they will be supported via the use of a helpful website and that compliance costs will be kept to a minimum. The costs of doing business in a particular country should not be unnecessarily hampered by strenuous tax obligations; thus, minimising the complexity of the tax system is critical.

Disclosure of tax information and encouraging transparency and openness among corporations is also a feature of good tax system. The issue of privacy and the right to manage reporting varies from country to country, but minimum disclosure requirements allow a revenue agency and government to track and monitor corporate operations effectively. Whereas disclosure of individual tax information is becoming less common worldwide, corporate tax disclosure is becoming more common.¹

**Tax consolidation rules — losses and bad debts**

A consolidation regime allows wholly owned groups of companies to consolidate as a single entity for tax purposes. The major benefits of consolidation are reduced compliance costs among member companies, and ease of reporting. Intragroup transactions between members are ignored, as are all transfers of assets and losses. In the absence of CGT provisions, asset transfers are not critical; but if rollover relief has been removed and CGT exists, then consolidation becomes an important consideration. The costs and benefits of consolidations should be weighed up when considering optional entry.

Losses are usually subject to either a continuity of ownership test or a same-business test in order to be carried forward. The carry back of losses is not common but is subject to integrity tests. Generally, it only applies to revenue losses and is limited to the company’s franking account balance. Similar tests apply for deductions for corporate bad debts.

¹ See the introduction of new corporate disclosure requirements in Australia where the corporation has total income of $100 million or more for the year: Taxation Law Amendment Bill 2013.
Controlled Foreign Corporation (CFC) rules

The broad scope of the CFC rules is to tax resident shareholders on their share of CFC “tainted income”\(^1\), because such income is earned, unless that income is comparably taxed offshore or the CFC mainly derives its income from exclusively active business activities. The CFC rules generally apply accruals taxation to CFC residents in “unlisted countries”. The accruals legislation will generally not apply to income derived by CFC that passes an “active business test”\(^2\). The main aim of the CFC rules is to ensure that the relevant income is attributable to the respective corporations. As such, the rules act as an integrity measure for the safeguard of the revenue.

Transfer pricing and thin capitalisation

Revenue agencies around the world develop transfer pricing regulations to capture their share of tax on profits from an increasing volume of international trade, especially in services and intangibles.\(^3\) OECD members have accepted the arms-length principle as the basis for their transfer-pricing regulation, and a number of acceptable methodologies for determining those prices. Transfer pricing guidelines are under continuous review and require constant monitoring in order to keep pace with global changes (OECD, 2013). Whether an entity has received a transfer-pricing benefit must be determined consistently within these guidelines and conventions. Safe-harbour provisions and advanced pricing arrangements (APAs) are also highly desirable features.

Thin capitalisation rules prevent multinational enterprises shifting profits out of the country by funding the country's operations with high levels of debt and relatively little equity in order to reduce their taxable income. Consequently, thin capitalisation rules limit deductions for interest expenses and borrowing costs (debt deductions) where the debt-to-equity gearing ratios exceed prescribed debt limits.\(^4\) There are a number of different debt limits for calculating the maximum debt allowed, including a “safe harbour limit”, an “arms-length limit” and the “worldwide gearing limit”. Ultimately, although debt limits vary depending on the type of entity, it is important that governments monitor and review the ratios in order to protect the revenue from excessive interest deductions. However, in order to minimise compliance costs, smaller businesses should be excluded from the thin capitalisation regime if they operate below a de minimise threshold.\(^5\)

Corporate governance

As indicated earlier, within the framework of good corporate governance lie a number of important elements. Initially, governance needs to be taken seriously and good governance practices need to be put into place. The governance framework should start with a well-defined strategy that is aligned to and supported by all levels of management and is communicated to all staff. With regard to risk and process management, the resources to implement the governance strategy need to be well defined. All policies, procedures and

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\(^1\) “Tainted income” is generally income from investments or arrangements that are likely to be significantly affected by taxation considerations (e.g. interest, dividends and royalties).
\(^2\) The active business test is where more than 95 percent of income is derived from genuine business activities. The distinction between active and passive income is critical.
\(^5\) In Australia the de minimise threshold is $2 million debt deductions.
guidelines need to be developed, communicated and effectively supported by the governance strategy. Processes should be in place to effectively implement, maintain and monitor policies and procedures. Finally, infrastructure for strategic risk management should be implemented and should cover board performance and other dealings with stakeholders and service providers.¹

To make good governance a reality, the decision-making of the board and upper management must be ethically sound, which is typically facilitated by a properly implemented and communicated code of conduct.

**General and specific anti-avoidance rules**

Typically, both the general anti-avoidance rule and specific anti-avoidance rules will operate to uphold the integrity of the tax system and protect the revenue stream from abuse. The general anti-avoidance rule is a provision of “last resort” in that it may apply to a taxpayer’s situation where specific anti-avoidance rules have not applied. Whereas specific anti-avoidance rules target a variety of situations (e.g. alienation of personal services income, accelerated deductions, or non-arms-length charges for management expenses), the general rule acts as a fall-back measure for the tax authority. The effectiveness of the general anti-avoidance rule is thus critical in order to catch what may have escaped the specific provisions. A good general anti-avoidance rule is usually premised on the identification of a particular scheme that the taxpayer has entered into for the sole or dominant purpose of obtaining a tax benefit. If these elements can be established, then the tax authority should be able to effectively cancel the tax benefit and impose a penalty accordingly.

**Anti-treaty shopping**

The OECD has a Model Tax Convention plus associated commentary and guidelines, which may be used as a basis for the negotiation, application and interpretation of bilateral tax treaties. This is crucial to counter the spread of treaty shopping in order to achieve the best tax result. Anti-avoidance rules may also apply to treaty shopping schemes (e.g. where there is an investment in the shares of a local company by an entity resident in a tax haven such as Cayman Islands through a complex series of interposed entities). Having either working guidelines or legislation to tackle treaty shopping is certainly an element of good corporate tax regime.

**Rulings system**

A sophisticated rulings system is certainly a feature of a good tax regime. The rulings system assists in the interpretation and application of the law, and provides certainty for taxpayers. Rulings should be both private and public, and oral rulings are also a desirable option. As rulings are only the revenue authority’s interpretation of the law, they can still be challenged in an appeals process. However, rulings should be legally binding on the Commissioner of Taxation when they apply to a taxpayer and the taxpayer relies on and acts in accordance with the ruling. Failure to follow a ruling should not result in a penalty, but it may be considered when determining whether the taxpayer has a reasonably arguable position in a court of law.

**Incentives and concessions**

Tax incentives and concessions take a number of forms but are highly desirable for modern corporate tax regimes. Common incentives and concessions include those for research and development, intellectual property, concessions for primary producers and mining companies, investment allowances, and exemptions and concessions for certain industries that are relevant for the particular country. Special deductions for capital expenditure are critical in order to encourage investments in major capital projects. Other concessions may take the form of dealing with abnormal receipts or insurance recoveries, and providing tax relief through elections and income averaging. Tax credits for expenditure on mining exploration and environmental protection activities are also common.

5.4.2 Options for Reform of the Corporate Tax Regime in PNG

Given the preceding discussion regarding the features of a good corporate tax regime, certain options can be identified for corporate tax reform in PNG. Overall, there appears to be a strong need to improve corporate governance, tax compliance (including audit and penalty), and disclosure measures. In particular, the rates for company and withholding tax, tax incentives and concessions, and the rulings system need revisiting. Introducing a CFC and consolidation regime should also be considered. Increasing the number of DTAs and fine-tuning the transfer pricing and thin capitalisation rules are also other options. The options specific to PNG corporations that are considered a priority are briefly outlined below.

**Improving Corporate Governance**

Developing a corporate governance strategy would begin with developing a conceptual framework of government processes to establish sustainable value (Figure 5.1).

*Figure 5.1: Governance model for sustainable value*

![Governance model for sustainable value](image)

As indicated in Figure 5.1, concentration on the board’s issues of developing the main elements in the framework will provide ongoing value to all the corporation’s key stakeholders, both in PNG and externally. The accountability of boards to their shareholders includes issues such as value and ethics; fair and equitable treatment; access and transparency; the environment; and community welfare (Barrett, 2013). Consequently, these elements are important considerations if corporations wish to be viewed as good corporate citizens.

**Improving Corporate Tax Compliance, Audits and Penalties**

As indicated earlier, corporate compliance needs to dramatically improve by conducting more sophisticated corporate audits. Initially, the training and qualifications of IRC personnel (auditors) needs to improve, and money should be invested wisely in this venture. Another issue entails developing strong techniques for data-matching interest and dividends with financial institutions and various corporate bodies. An automated and refined approach should be adopted for case selection and investigation where particular sections of the taxpayer community can be easily identified. Other techniques that promote voluntary compliance should be encouraged, given the limited resources of the IRC. For example, increasing the advertising of IRC activities among members of the community and educating them on the benefits of operating in PNG can positively influence compliance behaviour (Hite, 1997). Generally, more IRC visibility through the local media (TV, radio and newspapers) also has a deterrent effect.

As well as performing both a service and an enforcement function, the IRC should be imposing substantial penalties upon those corporate taxpayers who breach the tax law, which would also act as a deterrent. Evidence suggests that the audit activity, as opposed to the penalty per se, drives compliance (Wickerson, 1994). However, where resources are limited, as in PNG, strong penalties combined with voluntary initiatives can increase deterrence. The currently penalties may need revisiting: the statutory penalty rate of 20 percent for late payment; between K500 and K5000 for late lodgement; and K50 per day for each day the failure to lodge corporate returns continues. Arguably, the penalty that is levied on private company directors for failing to act on IRC notices of non-remittance of salary and wages could also be increased.

**Increasing Corporate Disclosure Measures**

Improving the visibility and transparency of corporate operations is also highly desirable. The main aims are to discourage aggressive tax avoidance practices; promote greater debate on tax policy; improve public disclosure of aggregate tax revenue collections, despite taxpayers being potentially identified; and allow improved sharing of tax information between government agencies. However, the particular level or threshold of disclosure in PNG kina is critical in determining the effectiveness of the measures. The implications of increased disclosure will vary for listed, privately held, large businesses and PNG subsidiaries of foreign-owned multinational groups. It will also depend on the cash tax profiles of large businesses.

Other than revenue considerations, increased disclosure may help in updating PNG’s tax rules in order to cope with the modern global economy. In the digital age, the ability to conduct business over the internet anywhere in the world has helped highlight the inadequacy of residence and source rules. Thus new disclosure measures may be the first step in
diagnosing deficiencies in the tax system and may pave the way to aligning the system with a digital and global economy (Grieve, Bertram and Smith, 2013).

**Review company and withholding tax rates**

As indicated in Section 3, the international competitiveness of PNG's company tax rate and withholding tax regime is critical for future investment and revenue protection. Hence, the rates and regulations may require reviewing. Entities that make dividend, interest and royalty payments to an overseas person or an entity that receives such a payment on behalf of a non-resident must withhold. No deductions should be allowed for an amount of interest or royalty unless withholding obligations have been fulfilled. A payer must also withhold an amount from interest, dividend or royalty payments if the payer is authorised to make the payment outside PNG.

When receiving a payment from a non-resident, an entity should withhold immediately afterwards or, if the non-resident becomes entitled to receive the payment at a later time, immediately after that time. A PNG entity acting as agent for a non-resident licensor is also required to withhold tax from royalty payments it receives in PNG on behalf of a non-resident licensor. Also, regarding overseas permanent establishments, any entities resident in PNG that derive interest payable in PNG in carrying on business in a foreign country through a PE must notify the payer of those facts. This should also be the case where interest is payable to entities where at least one entity is a PNG resident that derives interest through an overseas PE.

**Introduce a CFC Regime**

As indicated in Section 4, a CFC regime can assist in safeguarding the revenue. A company is treated as a CFC where it satisfies particular “control tests.” In applying the CFC rules, it is important to determine whether a country is a “listed” or “unlisted” country. Listed countries generally include those with a tax system very similar to that of PNG. All other countries are considered unlisted countries. As the CFC rules operate under a self-assessment regime, the taxpayer is required to include income derived by a CFC in the assessable income. An “attributable taxpayer” in relation to a CFC is a taxpayer who has a minimum percentage of “associate inclusive control interest” in a CFC.

Although the CFC regime should be specifically designed to suite PNG, other general aspects must also be considered. For example, the IRC will need to make adjustments to amounts included in CFC-recognised accounts to reflect the application of the principles of arms-length transfer pricing of the CFC’s transactions with related parties. Also, where a CFC resident in an unlisted country passes the active income test, its attributable income will not include its “adjusted tainted income” (ie. passive income tainted sales and services income that is subject to certain modifications). Modifications may include gross amounts, instead of net gains from the disposal of tainted assets and commodity investments, and from fluctuations in currency exchange rates. Where a CFC resident in a listed country satisfies the test, however, there will be no attribution in respect of its designated concession income.

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1 The CFC residency rules may have to be quite detailed.

2 “Associate inclusive control interest” is the aggregate of the direct and indirect control interests held by the taxpayer and the taxpayer’s associate.
Introduce a Consolidation Regime

As indicated earlier, the major benefits of consolidation are reduced compliance costs among member companies, and the ease of reporting. Generally, the head entity of a consolidated group will choose for it and its eligible subsidiary entities to be treated as a consolidated group; this decision may be irrevocable. The consolidated group continues to remain in effect until the head company ceases to be a head company. A foreign-owned group of PNG-resident subsidiaries that does not have a single PNG-resident head company may still consolidate by forming a multiple-entry consolidation (MEC) group.

Where the group consolidates and is treated as a single entity for tax purposes, obligations are simplified and cost savings identified. Benefits include pooling of losses and credits; elimination of provisions that apply to intragroup transactions; and facilitation of corporate restructuring. Although the head company pays the income tax liability on behalf of the whole group, other tax liabilities such as GST and other withholding taxes remain the responsibility of the individual members.

Increasing and improving DTAs

Because PNG has only a limited number of operational DTAs, it relies on its tax law when dealing with most countries. This situation can create bias and preferences in favour of those countries with DTAs while disadvantaging other countries. To create a level playing field and promote international business, increasing and improving DTAs is highly desirable. A critical element of the DTAs is the definition of a PE. Generally, a primary definition of a PE is a fixed place of business through which the business of an enterprise is wholly or partly conducted. A narrow interpretation of the definition has implications for the revenue.

Another important feature of a good DTA is the reciprocal recovery of taxes. For instance, this DTA provision allows the mutual recovery of tax by the IRC and foreign states. Other measures include tax information exchange agreements (TIEAs), which support DTAs and enable the exchange of information between participating countries. For the TIEAs to be effective, they should be negotiated with a wide cross-section of countries, and possibly supported by offshore information notices.

Amending Transfer Pricing Rules

In addition to safeguarding PNG revenue via DTAs, strict transfer pricing rules can be embedded within both the domestic tax law and the DTAs. The application of the arms-length principle in PNG’s domestic law must be aligned with international standards for transfer pricing (OECD, 2013). In particular, this will require amending the current PNG rules on dealings between associated and non-associated entities, and attributing an entity’s actual income and expenses between its parts. Consequently, the amount brought into PNG as tax from non-arms-length dealings should reflect the economic contribution made by the PNG operations.

Current rulings on transfer pricing issued by the IRC can be expanded to cover the more

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2. See the OECD guidelines regarding the attribution of profits to permanent establishments, which suggest that the “functionally separate test” should be adopted (2012). <http://www.oecd.org>.
detailed regulations and, in particular, incorporate safe harbour rules that are currently not prescribed in the legislation. While safe-harbour rules offer taxpayers some measure of protection, the administrative penalty under the transfer pricing rules would not be reduced on the basis that the taxpayer had a reasonably arguable position, unless it complies with specific documentation requirements. The records kept would need to ascertain matters relating to the arms-length conditions, the actual conditions and comparable circumstances, possibly particulars of the methods used, and their effects in the particular circumstances.

Amending Thin Capitalisation Rules

The interaction of the transfer pricing rules with the thin capitalisation rules is important. Broadly, the arms-length rate determined under the rules is applied to the entity’s actual debt to determine the amount of transfer benefit. Then the thin “capitalisation” rules are applied to the amount of debt deductions remaining after the transfer pricing benefit has been negated. If the amount is excessive under those rules, the relevant deductions are reduced further. Even if there is no excess debt under the thin capitalisation rules, the transfer pricing rules may still apply.¹

PNG has reintroduced thin capitalisation rules from January 2013 for non-resource companies, at a debt to equity ratio of 2:1. For mining and petroleum companies, the ratio remains at 3:1. However, a tightening of the debt–equity ratio could be considered to provide safe-harbour limits and worldwide gearing ratios; for example, for non-resource companies or general entities, the safe-harbour limit could be reduced from 2:1 to 1.5:1 on a debt to equity basis. This change could reduce interest deductions by up to 20 percent. Further amendments could include reducing the safe-harbour debt limit for non-bank financial entities to 15:1 on a debt to equity basis, and extending the worldwide gearing ratio to inward investors. This change would allow PNG operations of foreign multinationals to claim debt deductions on debt if they were geared to the same level as their worldwide group, even if it exceeded the safe-harbour limit.² Finally, as indicated previously, in order to reduce compliance costs and ensure small businesses are excluded from the thin capitalisation regime, a feasible de minimise threshold of debt deductions should be in place.

5.5 Evaluation of the Options for Reform of the Corporate Tax Regime in PNG

The following section of the paper brings together the main short-term options suggested for the reform of the corporate tax regime in PNG. The advantages and disadvantages of each option will be briefly outlined as part of the evaluation.

5.5.1 Option A: Increasing the Disclosure Rules for Corporations

The main advantages of increasing the disclosure rules for corporations revolve around discouraging aggressive tax avoidance practices and allowing for improved sharing of tax information between government agencies. As indicated earlier, disclosure rules may also assist in aligning with the digital and global economy by making information more trans-

² Ibid., p.1261.
parent for conducting international business. Advocates of publicity see disclosure as increasing taxpayer confidence in the tax system, which in turn has the salutary effects of increasing voluntary compliance and revenues (Kornhouser, 2005; Linder, 1990; Mazza, 2003; Schwartz, 2008; Thorndike, 2009; and Bernasek, 2010). Likewise, publicity can improve taxpayers’ knowledge of tax law, which in turn can diminish both intentional and unintentional noncompliance (Kornhouser, 2005). Targeted disclosure also has the capacity to improve education and tax knowledge as advocated by Kornhouser (2005) and Mazza (2003). Corporate taxpayers may think twice before engaging in more tenuous legal tax avoidance because of the shaming that follows, as the detection, if not the enforcement function, is increased if the public discovers schemes not caught by tax officials.

The main disadvantages of increasing disclosure are the negative public perceptions that may arise. For example, if businesses have low cash tax payable due to factors such as carry-forward losses or R&D deductions, increased queries may arise — in the absence of full information — from analysts, the public or social welfare groups (Ernst & Young, 2013). Another danger for business is that mandatory disclosure of tax information may adversely affect consumers’ buying behaviour (similar to the recent protests directed at Starbucks in Britain). In addition, the government is a large consumer of goods and services and may take information on tax contributions into account when making purchasing decisions. There have also been reports about “ethical investors” who ignore purchasing shares in companies that are not viewed as tax compliant (Grieve, Bertram and Smith, 2013). Any bad publicity could have financial implications and may influence the investment decisions of companies currently operating in PNG, and those considering establishing a business in PNG. Thus corporations must review the appropriateness of their business and entity structures and transfer-pricing policies so that they are not exposed to legitimate criticism. Potentially, the legal costs of large businesses and multinationals will rise if they need to take advice on whether increased disclosure breaches any legal or commercial confidentiality obligations. Consequently, one danger of more onerous obligations for disclosure is a “race to the bottom” as enterprises discover they are paying more tax than their competitors. This could negate the overall benefits derived from increased disclosure.

5.5.2 Option B: Improving Corporate Governance

Improving corporate governance brings a number of positives to a corporation as well as enhancing the corporation’s governance regime. As indicated previously, having a governance strategy in place for the running and operation of a company can improve the culture, accountability and transparency, performance-evaluation remuneration, risk-management stewardship, and financial disclosure of the enterprise. Importantly, good governance provides sustainable value to management, suppliers, regulators, shareholders and the general public. Sound governance policies will clearly identify the responsibilities and functions of the board of directors; monitor board performance, including induction, continuing education, and remuneration; and help avoid any potential conflicts of interest for directors. An established governance program will also allow for periodic checks of performance, and allow a corporation to emerge in accordance with its corporate goals.

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1 Coffee chain Starbucks agreed to voluntarily pay an additional 20 million pounds in tax over the next 2 years after it was revealed that, despite having generated over 3 billion pounds in sales since 1998, it had only paid 8.6 million pounds in income tax.

2 Under-performing and reporting less income to avoid disclosure requirements.
However, with improving corporate governance come the risks associated with the absence of an ethical code or whistle-blower protection. Without a sound code of conduct, directors may find themselves in a position, or have an interest, that either conflicts with an interest of the organisation or gives the appearance of a conflict. Likewise, the confidential reporting of issues of unacceptable behaviour or undesirable conduct must be available so that bad governance can be eradicated. Occasionally, board members appear more concerned about ethics as a reaction to, for example, bad publicity or high-profile remuneration for board members, rather than as a critical part of good corporate governance. Inadequate ethical standards will result in substandard formal practices or processes at board and management level. This “expectation gap” between the formalities of governance and the realities of its operation is what needs to be properly closed.

5.5.3 Option C: Changing the Corporate tax and Withholding tax rates

The potential change in the corporate tax rate of the current 30 percent to a proposed 25 percent could be seen as a reduction in government revenues. However, it is the potential increase in investment that this reduction will attract into PNG by making it more competitive with other OECD countries that is the critical benefit. Consideration should also be given to bringing the rate for corporate non-residents (currently 48 percent) closer to the resident rate. In addition, the rates for resident and non-resident mining companies (currently 30 percent and 40 percent, respectively) should be closer, as PNG has huge potential in this area.

In this regard, removing some of the ad hoc tax incentives and concessions (including tax holidays and favourable deductions) given to mining companies should be considered; as should reintroducing the discarded Additional Profits Tax (APT).

Overall, as indicated in Section 4, the METR measures how the tax increases the required rate of return for a marginal investment; as long as investment per se is increasing, the lower rates of tax can be sustained. In that case, there would be no need to broaden the tax base or strengthen anti-avoidance measures.

Manipulating withholding tax rates may also be desirable, given the variation in the current rates. At present, withholding rates for dividends, interest and royalties vary between 10 percent and 17 percent, which is consistent with most OECD countries. However, whether this is the right mix for PNG, given the large resource base the country boasts, is questionable. Non-resident contractors may be charged 12 percent withholding, whereas non-resident insurers without a PE in PNG may be taxed at 48 percent. This amount of variation may also be restricting participation and sending mixed messages to potential foreign investors. Perhaps, foreign contractors could be taxed at a rate of 20–25 percent.

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3. Currently, Malaysia, PNG’s neighbour, has a 25 percent corporate rate, which is closer to the OECD average corporate rate.
4. The APT, which was originally introduced in 2008, was an additional 7.5 percent when the PNG LNG project’s internal rate of return exceeded 17.5 percent, and was another 10 percent when the rate exceeded 20 percent. See [www.ogi.com/articles/2008/06/papua-new-guinea-revives-profits-tax.html](http://www.ogi.com/articles/2008/06/papua-new-guinea-revives-profits-tax.html).
and encouraged to incorporate; foreign insurers could also be taxed at a similar rate, which could potentially improve overall fairness and voluntary compliance.

The potential advantages of reducing tax rates carry the danger of reduced revenue, particularly if economic conditions change dramatically. If investment in PNG was reduced in the future, including investment in the resource sector, lower tax rates would not recoup the lost revenue. The trade-off or mix of tax rates has to be appropriate for PNG, which should be encouraging investment in the mining sector, but not to the detriment of the financial sector. Other tax incentives and concessions for investors may need consideration in conjunction with the tax rates. Broadening the tax base, introducing a capital gains tax (CGT), or increasing the GST rate are other possible trade-offs for reducing the corporate tax rate; however, a discussion of these options is beyond the scope of this paper.

5.5.4 Option D: Increasing and Improving Double Tax Agreements

PNG has entered into nine DTAs and should consider expanding this number in view of future increased trade and international business. Because DTAs override domestic laws, they have the ability to clarify and provide certainty for transactions between countries; also, their tie-breaker rules help to resolve any deadlocks or inconsistencies in tax treatment. Improving the existing agreements should also be a priority, especially widening the definition of PEs and tightening the regulations that deal with branches of foreign companies. In this regard, the Investment Promotion Authority and Register of Companies can work alongside the IRC in addressing their regulations when dealing with foreign branch companies. As PNG continues to develop, the number of trading partners will increase and, consequently, the number of DTAs required will also increase (particularly with South-East Asian countries and the USA).

The constant danger with DTAs is treaty shopping. Treaty partners may find loopholes and inconsistencies in poorly drafted DTAs and take advantage of them to improve their own tax situation. Broad rules in DTAs that allocate the taxing rights between countries are based on residence and source. However, a treaty can only impose tax on income via its domestic laws and is not self-enforcing. Therefore, treaties are only as strong as the laws on which they are premised. The general structure of most DTAs is based on the OECD Model Tax Convention on Income and Capital, which member countries can adopt as the basis of negotiating individual DTAs. Because PNG is not an OECD member, this may create some problems in both developing and endorsing compatible DTAs with some countries. Some countries may also find that, in attempting to prevent fiscal evasion and secure revenue via a DTA, the general anti-avoidance rules need to be improved, which could hamper the development of further DTAs.

5.6 Conclusion

This scoping paper has provided a general analysis and investigation of the current corporate tax regime in PNG, has identified the features of a good corporate tax system, and has made an evaluation of the various options for reform of the corporate tax regime in PNG. Some of the suggested reforms are appropriate in the short term while others are more

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1 A DTA is given the force of law by virtue of s4 of the International Tax Agreements Act 1953(Cth).
long-term solutions (See Appendix to this chapter).

5.6.1 Short-term priorities

It is highly recommended that, as a short-term priority, PNG increases and improves the corporate disclosure and governance rules. These priorities, although requiring changes to the law, can be implemented fairly quickly and become operational in the near future. Receiving the endorsement of both corporate taxpayers and community groups for these changes should not be problematic. Other recommended short-term measures include changes to the corporate and withholding tax rates, which again require legislative changes, but will immediately increase PNG’s international competitiveness. However, where the rates are lowered, the revenue gains may only be realised over time as investment increases. Increasing and improving DTAs can also begin immediately. The negotiation of new treaties and amendments to existing treaties may take time and requires a diplomatic approach. However, this work will have immediate benefits for international relations and business.

5.6.2 Long-term priorities

It is recommended that a more cautious approach be adopted for introducing a consolidation and CFC regime. These two recommendations involve major tax reform that requires extensive consultation and negotiation with all interested parties (business community, shareholders, government representatives and community stakeholders). The CFC and consolidation regimes of other countries should be carefully examined, and changes made to adapt to local customs and law. The complexity of consolidation and CFC regimes in some countries needs to be avoided, but attention to detail is paramount. Improving general compliance with the tax laws is also an ongoing reform requiring a mix of both improved enforcement and improved service. Audit will depend upon available resources and qualified staff, and penalties require reviewing. Establishing a culture of voluntary compliance takes time, and proactive measures will require progressive implementation in order to reap benefits in the long term.

5.6.3 Tax Policy Implications

In conclusion, the staged implementation of the proposed reforms should promote sustained economic growth in PNG in the coming years, with coincidental improvement in the revenue stream. The reforms will assist PNG in positioning itself in the global economy.

References


Barrett P., 2013. ‘Governance risk and compliance’ in Australian Corporate Practice Manu-


Appendix to Chapter 5: Further Options for Corporate Tax Reform

A.5.1 Option E: Improving Corporate Tax Compliance

More sophisticated corporate tax audits run by highly qualified IRC tax auditors have the potential to improve compliance and revenue collections. Improved data-matching and case-selection techniques that identify key areas that are a risk to the revenue stream are critical elements of corporate compliance. Without a large IRC presence in PNG for audit activity, the use of appropriate penalties is vital. While the size of the penalty may act as a deterrent, the certainty of its imposition (including prosecution) on those corporates in breach of the tax laws is probably a greater deterrent (Slemrod, 2007).

However, improving voluntary compliance through increased media advertising and education of the public will bring more sustained, long-term improvements in compliance behaviour, and this approach is recommended for PNG. The disadvantages of employing only audit and penalties to improve compliance are well documented. In particular, it appears that relying on legal sanctions and punitive mechanisms alone will not produce favourable outcomes if taxpayers are unaware of their tax obligations and responsibilities, as is probably true in PNG.

Studies suggest that the combination of lighter enforcement and better service by the revenue authority is highly desirable for improving compliance. Sheffrin and Triest (1992) study indicated that broadly based enforcement programs might reduce the chance of adversarial relationships between the IRS and taxpayers and lower taxpayers’ estimates of the probability of detection as a result of being affected by the enforcement program. Feld and Fry (2003) found that deterrence could be achieved by the tax authorities if they practised procedural fairness and justice, and displayed a general respect for taxpayers. A systematic relationship between external intervention and intrinsic motivation was also established through this study. A further US study by Alm et al. (2010), which investigated deterrence from the “service” paradigm rather than from the “enforcement” paradigm, found that when the tax agency provided information at low cost to the taxpayer the level of uncertainty was reduced and tax compliance improved. The study acknowledged that a compliance strategy should emphasise both enforcement and other administrative policies (e.g. taxpayer services) in order to provide balance and increase effectiveness.

A.5.2 Option F: Introducing a CFC Regime

The aim of the CFC legislation is to ensure that PNG residents cannot store certain profits

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1 ibid., p.16.
2 ibid., p.17.
3 ibid., p.581.
4 ibid., p.583.
derived from foreign operations in offshore companies and trusts, and thereby defer PNG tax on them. Therefore, this measure is employed to protect the revenue stream, particularly in a growing economy where foreign investment is increasing. As the CFC rules apply accruals taxation to CFC residents in unlisted countries, they can catch revenue that would normally go undetected or unrecognised. In widening the net, CFC rules supplement existing international tax rules such as the foreign tax credit system. In determining the attributable income of a CFC, its taxable income is determined on the assumption that the CFC is a resident of PNG. CFC legislation should specifically list the amounts to be included in the calculation in order to ease the duty of reporting and compliance. Eligible designated concession income generally comprises profits that are either not taxed at all or are taxed at concessional rates in the foreign jurisdiction. A CFC regime would ensure that these profits are brought back into PNG and taxed accordingly.

The major disadvantage of the CFC regime is its potential complexity. It probably requires a number of detailed rules and provisions that require technical interpretation and may lead to increased tax disputes and litigation. One example is the definition of “adjusted tainted income” and what income should be included. Also, other required modifications (e.g. fluctuations in the currency exchange rate) could be problematic. Australia’s CFC regime has become complex; however, the proposed revision of the rules to make them simpler and more streamlined has not been adopted. Also, history indicates that the CFC mechanism operated with limited success in the United Kingdom, and with some variations in the USA, Canada, France, Germany and Japan (Hamilton and Deutsch, 1988).

**A.5.3 Option G: Introducing a Consolidation Regime**

This option could be one of the most fundamental corporate tax reforms recommended for PNG (i.e. allowing a group of related entities to be treated as a single entity for income tax purposes only). The main advantages are to prevent double taxation of the same economic gain realised by the consolidated group while also preventing duplication of the same economic loss (i.e. value shifting). Another advantage of consolidation is the potential reduction in compliance costs and improvements in business efficiency, which is achieved through both a reduction in complexity and a simplification of procedures. Consequently, many consolidation regimes require an ownership level equal or close to 100 percent among group members. As indicated earlier, a single-entity regime also allows for the pooling of losses and credits, which simplifies obligations and delivers cost savings, eliminates complex provisions applying to intragroup transactions, and reduces impediments to group restructuring. Overall, a consolidation regime is designed to promote equity and improve the integrity of the tax system.

Similar to the CFC regime, the major disadvantage of a consolidation regime is its potential complexity. Again, a number of detailed rules and provisions may require technical interpretation, which may lead to increased tax disputes and litigation. This is true in Australia, where the sheer volume of the technical legislation and related materials issued has been overwhelming; also, substantial resources have been required in order to implement the regime (Sadiq, 2013). Specifically, the costs of consolidation to companies involve software changes, generation of information, and increased accounting and legal fees in order to set up their system. Other upfront costs for compliance involve determining asset values (complex calculations are required) for joining subsidiary members; also, the group's
available fraction may need to be calculated when a loss entity joins the group. This calculation requires valuations of both the loss entity and the whole group at the joining time.\footnote{Australian Taxation Office (2002).} A company group will need to weigh up the costs and benefits of consolidation carefully because, while joining the scheme may be optional, once notified, the decision is generally irrevocable.
6.1 Some Perspectives on Papua New Guinea’s Personal Income Tax System

The personal income tax system of PNG is derived from the colonial era when the Australian administrators transposed the system from Australia. For colonial times and in the early years of independence, this may have been entirely appropriate because very few Papua New Guineans were captured in the income tax system. Instead, it was the Australian workers living in PNG who were then the main contributors to income tax.

Of course, PNG has changed greatly since those days, particularly in the past decade. Discriminatory pay rates in the public service have been removed and there is now a large and growing middle class of professionals and business people in PNG. However, the philosophy and design of the income tax system — that existed mainly to tax Australian workers — has largely remained static.

Whether this historical regime for personal income tax is appropriate for the PNG of today requires carefully considered analysis within the context of PNG’s current position on the path toward economic and social development. From the outset, this careful analysis needs to dismiss acquired wisdom on what is appropriate for developed countries. For example, if something works well in Australia or in OECD countries, one should not presume it will work well in PNG.

On the administrative side of the income tax regime, the challenge is finding the right balance between fairness of the regime and the administrative cost for government to effectively enforce the regime. For developed countries, the scope for collecting income taxes is deep. Under these conditions, there is opportunity to invest in a strong administration system that places an emphasis on fairness.

In contrast, the Internal Revenue Commission (IRC) of PNG struggles to enforce tax compliance, and PNG cannot afford to allocate scarce resources to a larger tax bureaucracy. These circumstances mean that PNG needs to adopt a very different strategy for income-tax administration than those of prosperous countries such as Australia.

This paper will take a fresh analytical look at the system for personal income tax in the context of PNG, and navigate to a design in accordance with the structure of the economy, the characteristics of the labour market, and the government’s agenda of prioritising spending on nation-building services — not on bloated bureaucracies.
6.1.1 The Existing Personal Income Tax System

PNG has a six-tier progressive income tax regime for personal taxation (Table 6.1). The progressive system results in the tax rate at the margin rising progressively as income rises. The rate starts at 0 percent for annual incomes below K10,000 and rises in five steps to reach 42 percent for incomes above K250,000. There is a five-tier system for non-residents, who do not benefit from the tax-free threshold of K10,000.

Taxable income includes wage income and income derived from returns on investments. Hence, interest income on bank deposits, dividend income, rental income from properties, and income from unincorporated businesses are all part of taxable personal income. Investment income only becomes taxable once it reaches a threshold of K100.

Expenses incurred in earning taxable income can be deducted, but only when they are in excess of K200 a year. For example, interest expenses and maintenance expenses on a rented property are deductible. There are also allowable deductions for items not related to earning income, including deductions according to the number of dependants and gifts to charities.

Table 6.1: The six-tier personal income tax regime of Papua New Guinea

<table>
<thead>
<tr>
<th>Tier</th>
<th>Taxable income</th>
<th>Residents</th>
<th>Non-residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier 1</td>
<td>K0 – K10,000</td>
<td>0 percent</td>
<td>22 percent</td>
</tr>
<tr>
<td>Tier 2</td>
<td>K10,000 – K18,000</td>
<td>22 percent of amount above K10,000</td>
<td>22 percent</td>
</tr>
<tr>
<td>Tier 3</td>
<td>K18,000 – K33,000</td>
<td>30 percent of amount over K18,000 + $1,760</td>
<td>30 percent of amount over K18,000 + $3,960</td>
</tr>
<tr>
<td>Tier 4</td>
<td>K33,000 – K70,000</td>
<td>35 percent of amount over K33,000 + $6,260</td>
<td>35 percent of amount over K33,000 + $8,460</td>
</tr>
<tr>
<td>Tier 5</td>
<td>K70,000 – K250,000</td>
<td>40 percent of amount over K70,000 + $19,210</td>
<td>40 percent of amount over K70,000 + $21,410</td>
</tr>
<tr>
<td>Tier 6</td>
<td>Over K250,000</td>
<td>42 percent of amount over K250,000 + $91,210</td>
<td>42 percent of amount over K250,000 + $93,410</td>
</tr>
</tbody>
</table>

The treatment of fringe benefits paid by the employer is complicated, with some benefits exempt, some partially exempt, and others not exempt. School fees paid by the employer are exempt, as are leave fares for employees to return to their place of origin. Allowances for the provision of cars and meals are subject to income tax, but at predetermined rates — there is a weekly prescribed amount of taxable income for motor vehicles and a prescribed amount for meals, according to the number of meals provided. The taxation of motor vehicle allowances becomes further complicated with the requirement to calculate the ex-
tent that the vehicle is provided for personal use. Telephone allowances are also subject to income tax, but only to the extent they are used for personal purposes.

The taxation of allowances for housing is particularly complicated. An allowance paid directly to the employee is not exempt. Some degree of exemption is allowed when the housing is provided directly by the employer, but depends on both the location and the market value of the home.

6.1.2 How Much Revenue Should be Raised from Personal Income Tax?

Revenue raised from personal income taxes in PNG is about 6 percent of GDP, which is very high compared to that of other countries with similar per capita GDP. Figure 6.1 shows a clear global pattern of increased reliance on personal income taxation as countries become richer.

Personal income tax revenue for PNG is more similar to that of middle-income countries than that of low-income countries: among the 20 countries in Figure 6.1 with GDP per capita below US$7000 in 2010, PNG easily had the highest level of personal income taxation. Besides PNG, only four of these countries collected more than 3 percent of GDP in personal income taxes. That is, the rate of personal income taxation in PNG is more than double that of most low-income countries.

![Figure 6.1: Personal income tax revenue versus GDP per capita (countries where UN data is available), 2010](image)

Source: Compiled from data from the websites of PNG Treasury, Australian Bureau of Statistics, and UNDATA.

That such a high level of income tax is raised in PNG is extraordinary given the very low levels of formal employment. Labour market statistics in PNG are very poor, but a study in 2000\(^1\) found that in the late 1990s less than 3 percent of the population had formal jobs in the private sector. Although this share is probably higher now, a large majority of the

\(^1\) Levantis (2000).
population still works informally in rural areas. In contrast, in the developed world, most working-age citizens are taxed — yet in PNG the income-tax revenue raised as a share of GDP is similar to that in the developed world.

The high rate of revenue raised from personal income tax in PNG might best be explained by the combination of high tax rates and high wages for skilled workers — particularly foreign skilled workers — in comparison to those found in other low-income countries. High wages for skilled workers and the heavy dependence on foreign skilled workers are explained by the low priority given to higher education over the past three decades.

What is the right level of personal income tax revenue for PNG? Should it be below 3 percent of GDP as in most other low-income countries? That PNG is out of step with the rest of the world does not necessarily mean that PNG is wrong.

However, broadly speaking, evidence weighs against this high level of taxation. Figure 6.1 shows Australia sits at the opposite end of the chart to PNG, because it has one of the highest GDPs per capita in the world. That is, the economic structure and level of economic development of Australia are in direct contrast to those of PNG. Arguably, therefore, the tax systems of the two countries should be designed very differently to accommodate the comprehensive differences in their economic structures. However, PNG has a system of personal income tax inherited from Australia, with a multi-tiered scale of tax rates very similar to that of Australia.

Harder evidence that PNG depends too heavily on personal income taxation is provided in Figure 6.2, which compares average rates of economic growth with average rates of labour taxes among 44 lesser developed countries. A clear pattern emerges of lower economic growth as rates of labour income tax rise. Among countries with labour tax rates at or below 4 percent, the average rate of economic growth from 2007 to 2012 was 6.6 percent — exactly double that of countries with high rates of labour taxes of 25 percent and above.

This pattern of progressively higher economic growth as labour tax rates become lower is too clear to be coincidental or spurious. Figure 6.2 demonstrates that high levels of labour taxes impede economic development in low-income countries. Based on the evidence in figures 6.1 and 6.2, PNG would best be served by developing a personal income tax system that raises about half that currently raised, and relying more on other forms of taxation.

6.1.3 The Unfair Yet Sensible Scheme of “Final Tax” for Wage Income

An important measure in place to ease the administrative burden of processing tax returns is the declaration of “final tax” for the tax on wages withheld by employers. The existing procedure for wage earners is that the tax liability on their pay is deducted by the employer and the employer remits that tax to the IRC. The amount that is deducted is the “final tax” and is declared as the final tax liability of the tax payer, and so the tax payer does not need to engage further with the IRC — unless they have other non-wage income.

What this means is that a person’s income tax liability is not calculated on an annual basis but according to their pay period — which may be weekly, fortnightly or monthly. For example, where an employee is taxed on a fortnightly basis, the tax scale in Table 6.1 is rescaled to a fortnightly tax table.
Figure 6.2: Average rates of labour income tax versus average rate of GDP growth 2007–2012 for all in lesser developed countries

Sources: Compiled from labour tax rates from PWC Paying taxes and from average growth rates calculated from the IMF Global Economic Outlook database available on the IMF website.

The final tax policy makes sense from the perspective of simplicity of administration, but it can be unfair. This is because a person’s income tax liability is not calculated on an annual basis but according to their pay period (weekly, fortnightly or monthly), and the progressive tax scale means that average tax rates rise as wages rise (Figure 6.3a). As a result, the tax liability of individuals over the course of the year will be higher than it would have been had the tax liability been calculated on an annual basis — except in the case where individuals receive exactly the same pay in each pay period of a year.

For example, if a person earns K3000 a fortnight, then the tax liability would be K862 a fortnight. If during a year that person works for only six fortnights and is out of work for the rest of the year, then the tax liability for that year becomes K5172, despite only earning K18 000. If the tax was calculated annually, then the income tax liability would be only K1760.

For PNG, this compromise in fairness for the sake of simplifying the administrative system is sensible. The administrative burden on the government and on the public is kept to a minimum by reducing the need to lodge tax returns. If PNG were to follow the procedures of annual returns seen in developed countries, the tax bureaucracy would need to be substantially increased, at significant cost. Moreover, the public would be subjected to the administrative burden of annual returns, including the costs associated with hiring tax agents.

Also in support of the existing system is the fact that, when people leave formal employment, they often secure informal employment, which is hidden from the tax system. Hence, for those workers most affected, who shift in and out of formal employment and receive inconsistent earnings throughout the year, working in informal employment offsets their tax liability.
6.2 A New Way Forward for Investment Income

Investment by small and micro-businesses represents the foundation of a thriving, broad-based economy. The government’s long-term planning documents — Vision 2050 and the PNG Development Strategic Plan 2010–2030 (Department of National Planning and Monitoring, 2010a, b) — recognise this and prioritise private-sector development of small-scale enterprises in the development agenda.

With the importance of small-scale, private-sector development for PNG’s future, taxing the income of small enterprises needs careful consideration. On one hand, it is preferable to steer away from taxing fledgling small-scale enterprises in order to help them establish and flourish. However, taxation of successful businesses is a crucial part of the tax base.

Medium and large businesses are normally incorporated, and so are taxed through the system for corporate income tax. However, unincorporated businesses are taxed through the personal income tax system. Where a person’s income from business and investment exceeds K100 for the year, that income is taxable through the scales for personal income tax (see Table 6.1) and must be declared. The tax-free threshold of K10 000 applies, which means micro-businesses with low incomes may be exempt from income tax.

But if a person who owns a small or micro-business also receives a wage income, then the investment income must be added to the wage income to calculate the total tax liability. For example, if a person earns wages of K70 000, and has a micro-enterprise that earns K10 000, then the total taxable income is K80 000. The extra K10 000 business income will be taxed at the marginal rate of 40 percent (see Table 6.1).

Clearly, how small and micro-businesses are taxed is hugely problematic. The people best placed to invest in small and micro-businesses are wage earners, because they already have a cash flow. Yet these potential investors are severely curtailed by high marginal tax rates, even for micro-businesses with notional incomes. This probably helps explain the high prevalence of informal businesses and the difficulty in encouraging businesses to transition to a formal status. Hence, not only does this mechanism of taxing the small business sector curtail investment in the sector, it also shifts people into informality to avoid taxes.

Moreover, the system of taxing small and micro-enterprises is grossly unfair and uncompetitive. For example, a micro-business set up by a wage earner on K70 000 a year and earning K10 000 will be taxed K4000 on the business earnings, while the same business set up by a person with no other income will have a tax liability of zero. The same business owned by another wage earner who instead decides to keep the business informal will also have a tax liability of zero. Even a medium or large business operating in the same sector will only be liable for K3000 in tax.

This method of applying income taxes to small and micro-businesses is another legacy of a tax system inherited from PNG’s wealthy neighbour, Australia. Significant reform is needed to make the system appropriate for PNG in terms of the country’s development plans. A level playing field is urgently needed so that small and micro-businesses are similarly taxed regardless of the owner’s status in the formal workforce.

I recommend the following way forward for PNG:
1. Abolish the personal income tax system and replace it with two separate and mutually exclusive forms of income tax — wage income tax and investment income tax.

2. Continue treating the wage income tax as a “final tax” collected by employers in accordance with the previous section.

3. Introduce a new and separate tax scale for the investment income tax so that wage income is not added to investment income in calculating tax liability.

4. Set the rate for the investment income tax at the same rate as the corporate tax rate (30 percent).

5. Introduce a tax-free threshold for investment income tax of K50 000.

6. For non-residents, set the tax rate for all income at the corporate rate, that is, the tax-free threshold does not apply.

The reasons for these recommendations are clear and unambiguous:

- consistency with the government’s agenda of promoting small and micro-enterprises
- a level playing field for all small and micro-businesses, regardless of the formal workforce status of the owners
- a level playing field between micro/small and medium/large enterprises by removing the high marginal tax rates from micro/small businesses
- an incentive for existing informal businesses to formalise — greater scope to raise finance and employ people with low incomes not required to pay tax and relieved of the administrative burden of submitting tax returns — provides important equity benefits
- the tax-free threshold for investment income replaces the current requirement to declare investment income above K100 per year — substantially reduces the administrative burden for the IRC
- the threshold of K50 000 allows most informal businesses to formalise without incurring a tax penalty
- a separate stream for investment income replaces the existing system — simplifies the administration of personal tax for the IRC
- no deductions of investment expenditure against wage income — further eases the administrative burden for the IRC; and removes the practice of negative gearing (declaring losses on property investments) to reduce tax liability on wage income.

One impact of this proposed system is that income from passive investments — interest and dividends — would be subject to the K50 000 tax-free threshold. This means that a high-income wage earner can earn additional tax-free income from these passive investments if the additional income is below the tax-free threshold. However, in the interest of moving to a vastly simplified and improved system, this is a small price to pay, and there are advantages associated with encouraging people to save.

### 6.3 Finding an Appropriate Top Rate for Marginal Income Tax

The top rate for marginal income tax in PNG (42 percent) is out of step with those elsewhere in the developing world. Although about the level of OECD countries (average top
marginal rate of 41.5 percent\textsuperscript{1}, the global average is 31.0 percent, and the average in Asia is only 28.4 percent.

This finding reaffirms the findings demonstrated in Figure 6.1: PNG has a system of personal income tax more similar to that of wealthy countries than to a country at PNG’s level of development. Thus, a top rate for marginal income tax of about 30 percent is probably more appropriate to allow PNG to be competitive with neighbours in Asia and with developing countries around the globe.

There are at least five important advantages to lowering the top rate to this level. First, it reduces the incentive for tax avoidance, which, at marginal tax rates of 40 percent and above, is very strong. The incentives for tax avoidance need to be understood in the context of the limited capacity of the IRC — the risk of being detected practising illegal tax avoidance is not high.

Second, it removes the incentive for foreign workers and consultants on short-term placements to transfer taxable income offshore. It is quite straightforward to shift taxable income offshore; for example, by reducing wages and allocating large end-of-year bonuses, by manipulating visits to PNG, or even by outright avoidance. The scope for shifting income is underpinned by a large grey area in deciding whether short-term consultants are liable for local taxation in PNG. Lowering the top tax rate in PNG would probably result in the reverse situation, that is, foreign workers and consultants would shift taxable income away from their home country and into PNG. Australia, for example, is the source of many foreign workers and consultants in PNG, and a top rate of 30 percent is significantly lower than that in Australia. Thus, PNG’s income tax revenue from foreigners could increase rather than decrease.

Third, the lower tax rate increases the incentive to become a high-income earner and to continue investing in order to increase income further — although this advantage is mostly negated if the proposal outlined earlier to separate wage and investment income is adopted. Fourth, the lower rate would be similar to the rate for company income tax, which removes the incentive for high-income earners to shift taxable income into companies in order to lower their tax burden — although again, this advantage would mostly be negated if the separation of investment income tax were adopted.

Fifth, and importantly for PNG, the Wantok system means that people on high incomes are obliged to look after those in the community on low incomes. This is an excellent social system that ensures all people are cared for, but it highlights the failure of government to provide support and jobs for needy people, and requires individuals to fill the void left by government. Hence, high-income earners incur an implicit tax as a result of their Wantok distributions, while doing what other countries consider the government’s work.

The implicit “Wantok tax” means that the effective marginal tax rate for high-income earners is even higher than 42 percent. The Wantok system means that reducing the top marginal tax rate will free up more funds for redistribution. Hence, paradoxically, PNG’s high top marginal rate could be viewed as regressive rather than progressive.

\textsuperscript{1} All information on marginal tax rates is sourced from the KPMG website, www.kpmg.com/GLOBAL
An important downside to lowering the top marginal rate is the potential impact on government revenue, which is needed for nation building. However, although a high rate of taxation for high-income earners is important on both equity and revenue-raising grounds, achieving the right balance is vital; the tax rate should compare favourably with those elsewhere in what is now a global labour market for skilled labour.

6.4 The Way Forward for Taxation of Wage Income: Residents

To compensate for the potential downside of reducing the top marginal rate to 30 percent, the tax burden for people on low and middle incomes could be reduced through reforms to the system of progressive tax rates.

PNG’s system of progressive taxation is complex, with six rates of taxation as well as a tax-free threshold (see Table 6.1). It is difficult to understand how such a complex system is appropriate in PNG. In theory, progressively increasing the tax rate as peoples’ incomes increase is appealing. But in practice, this approach is unnecessarily complex — another legacy of an Australian system that is inappropriate for PNG’s level of development.

The diametrically opposed system is a simple flat tax rate for all personal income earned, with no tax-free threshold. However, this system is also inappropriate because it is not equitable. Moreover, the concept is not simple in practice; actually, the opposite. A flat tax rate is an administrative nightmare, with millions of liable taxpayers instead of tens of thousands. Moreover, most of these liable taxpayers are poorly educated, have no access to banking, and live in remote rural areas.

The tax-free threshold therefore serves two crucial functions:

- It relieves low-income earners of the burden of paying income taxes.
- It vastly reduces the number of taxpayers with tax obligations — thereby reducing the administrative burden for government, and the burden for both employers and individuals.

The higher the tax-free threshold, the greater the gains in equity and in reduced administrative burden. But how high should the tax-free threshold be? The higher the threshold, the more people drop out of the taxation net, and thus the lower the revenue raised. The right balance is vital.

The existing income tax system is further complicated by the system of rebates for dependants. This concept — adopted from Australia — is designed to relieve the tax burden for people with dependants. Again, this approach is inappropriate for PNG and is an unnecessary administrative burden. Most wage earners in PNG could claim the new full rebate, making the rebate unnecessary. Moreover, anyone unable to claim a rebate will still be supporting dependants through the Wantok system; they would be unfairly penalised. Rebates should be abolished; lowering the tax scales for all people will more than compensate.

Hence, I recommend that, for all residents, the system for taxation of wage income should comprise:

- a flat tax rate of 30 percent for all residents
• a tax-free threshold of K18 000
• no dependant rebates (see Table 6.2).

The logic of a 30 percent tax rate has been outlined previously; currently the 30 percent tax rate begins at K18 000 (see Table 6.1). Figure 6.3a shows that the simple concept of a flat 30 percent tax rate combined with a tax-free threshold of K18 000 is more progressive than the existing, complex, six-tier system for people on low to middle incomes. High-income earners also benefit, but lowering the top marginal rate to an internationally competitive level is fundamental — particularly in view of the implicit Wantok tax described previously.

There are a number of important advantages for PNG in this pathway:

• The personal income tax system becomes simple and easy to understand, with a shift from a six-tier to a two-tier progressive scale (see Table 6.2).
• The tax scales become more progressive for earners of low and middle incomes.
• People earning between K10 000 and K18 000 are no longer liable for tax:
  • good for poor people
  • reduces the administrative burden for government and employers.
• The top marginal rate and revenue raised from taxation of wage income become comparable with those of neighbouring developing countries in Asia, instead of with those of wealthy OECD countries.
• As suggested by international evidence, reducing the marginal rates and the revenue from income taxation promotes higher economic growth.
• The dependant rebates of no value are removed.

6.5 The Way Forward for Taxation of Wage Income: Non-Residents

The philosophy behind the existing system for non-residents is difficult to understand. Poverty and low incomes in PNG are not often associated with non-residents. Therefore, non-residents should not receive the tax-free threshold. Why would PNG extend its affirmative action on income equity to non-residents through a five-tier progressive tax system?

Non-residents who work in PNG are mostly skilled professionals and tradespeople attracted by the opportunity to earn higher incomes than they would earn at home. In this regard, the only logical form of taxation is a single tax rate on all income.

So, what flat tax rate should be adopted for non-residents? The 30 percent tax rate proposed for residents might also be chosen for non-residents. However, this contradicts the earlier discussion of the implicit Wantok tax and the important practice of high-income earners redistributing their income to the poor through the Wantok system. Clearly, this is not the case for non-residents, who instead will return their income to their place of origin.

Therefore, setting a higher rate for non-residents is logical. Concurrently, the tax rate should be internationally competitive in the global labour market. As noted earlier, the top rate in developing countries is about 30 percent, and about 42 percent in OECD countries. Most foreign workers in PNG are from OECD countries; thus a flat tax rate of 33 percent on wage income is justified. At this rate, high-income earners coming to PNG are less inclined
to shift their reported earnings for tax purposes offshore, and are taxed at a higher rate than are local income earners, in order to compensate for the implicit Wantok tax.

### 6.6 An Interim Approach for Wage Income Tax

If the above proposed scales for income tax on wages were adopted in PNG, revenue raised from personal income taxes would fall sharply. Modelling analysis based on the estimated income profiles of the labour force suggests that the average rate of income tax across all workers under the existing system is about 21 percent. This rate would fall to a minimum of 15 percent under the proposed system — although it would probably be higher. However, the lower top rate would attract non-residents on short-term work to declare their incomes in PNG.

Taking a conservative approach and assuming the 15 percent average rate, income tax revenue would drop by nearly 30 percent. In the 2014 Budget, revenue collections from personal income tax were forecast to reach K2746 million in 2015. If, for example, the proposed regime were introduced in 2015 along with the 30 percent tax rate for investment income proposed earlier, then revenue would drop by K728 million to K2018 million.

The maintenance of the tax base would require these losses to be recovered from other sources of revenue, which would require a radical overhaul of the tax system. However, implementing radical change is difficult. Instead, a pragmatic approach might be needed to progressively shift the regime, with the proposed two-tier income tax scale as the end goal. Thus, the reform process would best be served by first implementing an interim scale.

#### Table 6.2: The proposed two-tier regime and the interim 3-tier regime for wage income tax for PNG

<table>
<thead>
<tr>
<th>Taxable income</th>
<th>Residents</th>
<th>Non-residents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The final two-tier wage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>income tax regime</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tier 1</td>
<td>K0 – K18,000</td>
<td>0 percent</td>
</tr>
<tr>
<td>Tier 2</td>
<td>Over K18,000</td>
<td>30 percent of amount</td>
</tr>
<tr>
<td></td>
<td></td>
<td>above K18,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>33 percent</td>
</tr>
<tr>
<td>The interim 3-tier wage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>income tax regime</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tier 1</td>
<td>K0 – K18,000</td>
<td>0 percent</td>
</tr>
<tr>
<td>Tier 2</td>
<td>K18,000 – K70,000</td>
<td>30 percent of amount</td>
</tr>
<tr>
<td></td>
<td></td>
<td>above K18,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>33 percent</td>
</tr>
<tr>
<td>Tier 3</td>
<td>Over K70,000</td>
<td>40 percent of amount</td>
</tr>
<tr>
<td></td>
<td></td>
<td>over K70,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+ K15,600</td>
</tr>
<tr>
<td></td>
<td></td>
<td>42 percent of amount</td>
</tr>
<tr>
<td></td>
<td></td>
<td>over K70,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+ K23,100</td>
</tr>
</tbody>
</table>

An appropriate interim scale would have much less impact on revenue collections, but would significantly shift towards the two-tier system. Under the existing system, the 40 percent tax rate begins at K70 000. The interim regime could retain this rate for residents at this threshold as the new top rate. Thus, the six-tier scheme for residents would be cut back...
to a three-tier system. For non-residents, the interim top rate could be kept at 42 percent, which is equivalent to the OECD average and is set higher than the rate for residents in recognition of the implicit Wantok tax. Table 6.2 illustrates the interim three-tier regime and the final two-tier regime.

The average tax rate for the interim proposal is estimated at 17 percent; the revenue raised in 2015 if implemented would drop to K2230 million from the forecast level of K2746 million under the existing regime. This interim regime mitigates the impact on revenue while significantly moving toward the end objective of the two-tier scheme.

Figure 6.3a shows how the equity characteristics of the proposed tax regime for earners with low and middle incomes are improved, with average tax rates dropping sharply for those earning less than K30 000 per year. For example, the average tax rate for people earning a modest K20 000 is currently 12 percent; this rate would drop to 3 percent under the proposed system. For high-income earners (eg. K300 000), the average tax rate of just over 37 percent in the existing system would drop only marginally to 36 percent under the interim regime.

6.7 Taxation of Fringe Benefits

Fringe benefits are personal living expenses that are paid by the employer. By packaging a salary so that fringe benefits are provided and the wage rate is reduced to compensate for the fringe benefits, a person's income-tax liability can be reduced, because the fringe benefits are not declared as income.
To stop this mechanism for tax avoidance, the tax system has in place rules for taxing fringe benefits. In the interests of fairness, this is a usual practice in tax systems, particularly in wealthy countries.

Earlier, it was explained that the system of taxing fringe benefits in PNG is complex, with a range of inclusions and exclusions. Some benefits are partially excluded, such as housing, motor vehicle and phone benefits, which increases both complexity and enforcement. The rationale is to minimise tax avoidance through fringe benefits, but to retain exemptions that are necessary for employment. For example, a person’s electricity bill is regarded as an entirely personal expense and taxed if paid as a fringe benefit. However, a phone provided to an employee is exempt from tax to the extent that it is used for business purposes.

The complex system of taxing fringe benefits makes administering and enforcing the system properly very costly and difficult for both the government and the employer. Moreover, the complexity increases scope for avoidance — adding further to the difficulty of enforcing compliance. These issues raise questions of whether such costs outweigh the benefits of tax revenue and increased fairness.

For PNG, I recommend replacing the existing complex system with a simple, easy-to-administer and easy-to-enforce system. A fair yet simple design is to tax in full all fringe benefits within the system for wage income tax, but to allow a minimum threshold. For example, the minimum threshold could be K20 000 a year; if employees were provided housing, a car or other benefits that total less than K20 000, these benefits would not need to be taxed and so would not need to be declared. Combined benefits that exceed K20 000 would be taxed in full for the amount exceeding K20 000. For example, if the fringe benefits total K30 000, the first K20 000 would be exempt, with the remaining K10 000 taxed in full.

The fringe benefits eligible for the threshold should be restricted to items for which fringe benefit exemptions are currently available, including housing, cars, phone, home travel, and education. Other items should be fully taxable without a threshold, as they are now. For example, if an employer paid an employee’s electricity bill, that would be taxed in full.
and not subject to the threshold.

This proposal has several benefits:

- A large number of workers currently captured by fringe benefits tax drop out of the system — substantially reducing the administrative burden for employers and the government.
- Complexities associated with exclusions, inclusions and partial exemptions are removed, with all benefits over K20 000 included — further reducing the administrative burden for employers and the government.
- Fringe benefits that are clearly not employment related continue to be taxed in full.
- The overall impact on revenue is about neutral or is positive:
  - losses in tax collections on fringe benefits for those falling under the threshold more than compensated by higher taxes paid on fringe benefits by high-income earners
  - increased compliance by businesses due to much easier enforcement and reduced scope for avoidance.
- The focus of the fringe benefits tax is appropriately on high-income earners who are shifting large amounts of income into fringe benefits.

6.8 Summary of Core Recommendations

I consider that the existing income tax system is completely inappropriate for PNG and needs major reform. The current design both negatively affects broad-based economic growth and significantly impedes private-sector development through small and micro-enterprises. As such, the system is completely out of touch with the development agenda of PNG.

**Recommendation 1:** Abolish the current system of personal income taxation and replace it with two new, mutually exclusive taxes: Wage Income Tax and Investment Income Tax.

**Recommendation 2:** For Wage Income Tax, retain the existing scheme of “final tax” declaration on all taxes deducted from wages by employers.

**Recommendation 3:** Introduce a new scale for Investment Income Tax comprising a tax-free threshold of K50 000 and a tax rate of 30 percent for all amounts thereafter (similar to corporate taxation).

**Recommendation 4:** The tax-free threshold should not apply to non-residents for the Investment Income Tax of Recommendation 3.

**Recommendation 5:** For Wage Income Tax of residents, replace the existing six-tier tax scale with a two-tier scale, with a tax-free threshold of K18 000 and a tax rate of 30 percent for amounts above K18 000.

**Recommendation 6:** For Wage Income Tax of non-residents, replace the existing five-tier tax scale with a flat tax rate of 33 percent for all income.
Recommendation 7: Until other parts of the tax system are reformed to accommodate the loss in revenue associated with Recommendation 5, introduce an interim three-tier tax scale for Wage Income Tax of residents. The interim scale would be the same as the two-tier scale, except for a tax rate of 40 percent for all wage income above K70 000.

Recommendation 8: Introduce an interim two-tier tax scale for Wage Income Tax of non-residents, with a 33 percent tax rate for earnings up to K70 000 and a 42 percent tax rate for all wage income above K70 000.

Recommendation 9: Abolish dependant rebates.

Recommendation 10: Abolish the existing system of fringe benefits tax and replace with a simplified system in which all fringe benefits are taxed in full in the Wage Income Tax system, except for housing, car, phone, home travel and education benefits up to a combined threshold of K20 000. Beyond K20 000, benefits are taxed in full.

Bibliography


Internal Revenue Commission (www.irc.gov.pg)


7.1 Introduction

Papua New Guinea (PNG) has recorded impressive economic growth over the past 15 years on the back of a booming natural-resource sector. Economic growth averaged 5.6 percent per annum between 2005 and 2013 (Figure 7.1). However, the resource boom in PNG peaked in the mid 2000s. Figure 7.2 shows that resource revenue as a percentage of non-mining gross domestic product (GDP) has fallen to levels below those experienced over the past decade. Currently, this share of total tax revenue in GDP is about 25 percent. The importance of mining in revenue generation in PNG is highlighted by the fact that over the past six years mining and petroleum have contributed an average of about 15 percent of total tax revenues. However, the share of mining and petroleum tax in GDP has averaged only about 3 percent per annum in recent years (Figure 7.2). Although there are resource projects in the pipeline, clearly, in order to meet its development objectives in a timely manner, PNG needs to increase its tax take not only from the mining and petroleum sectors but also from the non-mining sector.

With such concerns in mind, the Government of PNG initiated a comprehensive taxation review in 2013 “to ensure that PNG has a modern tax system that is able to support the country’s medium and long-term economic and social development objectives” (Department of Treasury, 2013). Among other things, the committee for taxation review will consider submissions from various stakeholders in the country, including from academic researchers on best practices elsewhere in the world. This paper forms part of the National Research Institute’s input into the taxation-review process. The paper discusses the role of environmental taxes in this comprehensive taxation review, and makes policy recommendations.

Environmental taxes are important for a variety of reasons:

- Environmental taxes could help PNG to maintain a healthy environment to enhance the welfare of its citizens and to sustain economic growth and development for the benefit of current and future generations. A highly degraded environment would be a major constraint to continued economic growth.
- Environmental taxes could be used to raise revenue to offset negative environment-
tal effects of economic activity or resource exploitation. They could also be used to offset other price distortions in the economy (e.g. labour taxes).

- Environmental taxes could be used to change the behaviour of individuals and firms that would ultimately lead to cost savings for the government. These cost savings could be in the form of reduced health expenditures or reduced clean-up and waste-disposal expenditures.

- From a distributive perspective, environmental taxes could be used to monitor the distribution of environmental taxes among taxpayers, as well as viewing changes over time as taxation policy changes.

- As opposed to other instruments of environmental policy, environmental taxes could promote innovation and technological progress on the part of firms.

- Finally, a key argument in favour of environmental taxes is their potential to achieve multiple objectives. As well as achieving certain environmental goals, the revenue generated may be used for poverty reduction or for other development purposes, which is often referred to as the ‘double dividend’.

In light of the foregoing, the specific objectives of the paper are to critically review options for applying environmental taxes in PNG, and to propose recommendations for the consideration of the taxation-review committee. The methodology employed consists of a detailed review of the literature on environmental taxes and practices in other countries, as well as a review of current practices in PNG that is based on interviews with senior staff from selected national departments in PNG.

The remainder of the paper is organised as follows. Section 7.2 defines an environmental tax from both a theoretical point of view and a practical (or operational) perspective. Definitions from selected developed countries are also presented. Section 7.3 reviews various types of environmental taxes and the uses to which they could be put. Within the context of the current taxation review, Section 7.4 analyses policy options for environmental taxes for PNG, taking account of its current stage of development. Section 7.5 presents the summary and conclusions.

### 7.2 What is an Environmental Tax?

Environmental (or “green”) taxes form part of a suite of instruments, including fees and charges, tradable permits, deposit–refund systems, and subsidies, which can be used to manage the exploitation of natural resources and to control pollution. These instruments are collectively referred to as “market-based instruments” (MBIs) and must be distinguished from other instruments such as environmental standards or regulations, which are referred to as “command-and-control” (CAC) instruments. Later in this paper we compare MBIs with CACs and argue that CACs are inferior to the former in terms of sustainable management of natural resources. The UN’s System of National Accounts defines a tax as a compulsory, unrequited payment, in cash or in kind, made to the state by an individual or other legal entity. It is referred to as “unrequited” because the state provides nothing in return to the individual or entity making the payment, although the state may use the funds raised in taxes to provide goods or services to other units, either individually or collectively, or to the community as a whole.

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1. This issue is further explored in the paper.
The concept of an environmental tax (also referred to as a Pigouvian tax) was proposed by the British economist Arthur Pigou to address the market failure caused by pollution (Pigou, 1920). As shown in Figure 7.3, individuals and firms who are causing pollution only consider their private marginal costs (MPC) and do not necessarily take into account the environmental damage (or externality) caused by their actions. This results in a higher level of consumption (and hence pollution or environmental damage) than the socially optimal level (ie. Q1). According to Pigou, this problem can be addressed by imposing a tax that is proportional to the environmental damage caused. The tax plus the MPC equals the marginal external cost (MEC), which eliminates the externality and results in a lower, and hence socially optimal, level of consumption (and pollution), Q*. The revenue generated by the tax is shown by the pink area in the figure; the green triangle represents a net gain to society. An environmental tax is consistent with the “polluter pays principle”, or PPP (OECD, 1989). The tax affects the relative prices of environmental-related products and activities, thereby forcing firms and individuals to pay for the negative externalities generated by their consumption or production activities.

Ideally, an environmental tax should be levied directly at the externality and equal the MEC of the emissions or production activity. This is referred to as a “first best” tax. In practice, however, the implementation of an environmental tax tends to deviate from the theoretical optimum. One reason is that the demand curve for pollution control and the curve for marginal external cost are difficult to estimate, due to the fact that market prices do not exist for most environmental goods, such as clean air. Other considerations preventing the implementation of the theoretical optimum include market failures, conflicting political stands, pressure groups, and considerations other than pure economic efficiency.

In many advanced countries, some taxes are commonly described and incorrectly referred to as environmental taxes, even in cases of low or no environmental externalities. Often the so-called environmental taxes include other elements such as fiscal taxes and resource rents. The next subsection briefly considers definitions of environmental taxes used in the European Commission (EC), the United Kingdom (UK) and Australia.

7.2.1 The European Commission, OECD and IEA Definitions

In 1997 the European Commission, the Organisation for Economic Co-operation and Development (OECD), and the International Energy Agency (IEA) decided to develop official statistics that would cover environmentally related taxes, that is, taxes related to energy, transport and pollution, as well as taxes levied on resources (Eurostat, 2001; European Environment Agency, 2005; OECD, 2006). An environmentally related tax was defined as:

A tax whose tax base is a physical unit (or a proxy of it) of something that has a proven, specific negative impact on the environment (Eurostat, 2001).

This definition includes all taxes on energy and transport but excludes value added taxes (VATs). The reason for excluding VATs is that they are deductible for many producers but not for households, and thus were considered to have no influence on relative prices in the same way that other environmental taxes do. Eurostat (2001) groups environmental taxes

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Pigouvian taxes can also be negative. Where an activity yields positive externalities, a subsidy can increase private returns to the activity and so raise the willingness of private actors to undertake it.
into four categories: energy, transport, pollution and resources. Each of these categories are briefly discussed below.

**Energy taxes**
Energy taxes include taxes on energy production and on energy products used for both transport and stationary purposes. The most important energy products for transport purposes are petrol and diesel. Energy products for stationary use include fuel oils, natural gas, coal and electricity. Carbon dioxide (CO2) taxes are included under energy taxes rather than under pollution taxes. There are a number reasons for this, including the fact that it is often not possible to identify CO2 taxes separately in tax statistics because they are integrated with energy taxes; for example, through differentiation of tax rates for mineral oil according to the carbon content of the fuel.

**Transport taxes**
Transport taxes include taxes related to the ownership and use of motor vehicles. Taxes on other transport equipment (e.g. aircraft or ships) and related transport services (e.g. duties on charter or scheduled flights) are also included in this category when they conform to the general definition of environmental taxes. Transport taxes can be “one-off” taxes related to imports or sales of the equipment, or recurrent taxes such as an annual road tax. Taxes on petrol, diesel and other transport fuels are considered as energy taxes and not transport taxes.

**Pollution taxes**
Pollution taxes include taxes on measured or estimated emissions to air and water, management of solid waste, and noise. An exception is CO2 taxes, which are included under energy taxes as indicated above.

**Resource taxes**
Resource taxes include taxes related to the extraction or use of natural resources such as water, forests, and wild flora and fauna. The rationale is that these activities deplete natural resources. However, resource taxes exclude taxes designed to capture the resource rent from the extraction of natural resources. Environmentally related taxes also exclude land taxes, taxes on income and labour, and consumption taxes such as alcohol and tobacco taxes.

### 7.2.2 The UK Government’s Definition

The UK Government released its definition of an environmental tax in 2012. It defines an environmental tax as a tax that meets all of the following three principles (HM Treasury, 2012):

- The tax is explicitly linked to the government’s environmental objectives.
- The primary objective of the tax is to encourage environmentally positive behavioural change.
- The tax is structured in relation to environmental objectives: for example, the more polluting the behaviour, the greater the tax levied.
Applying these principles, the UK Treasury identified a number of taxes as environmental taxes, including the climate change levy, aggregates levy, landfill tax and the EU emissions trading system. The government indicated that other taxes could deliver environmental benefits, but their aim is revenue raising, not environmental outcomes. These taxes, such as the vehicle excise duty, fuel duty and air-passenger duty, are specifically excluded from the UK Treasury’s definition.

7.2.3 The Australian Government’s Definition

The Australian Government’s definition of an environmental tax is similar to that of the European Commission in that it defines it as “a tax whose tax base is a physical unit (or a proxy of it) of something that has a proven specific negative impact on the environment” (United Nations, 2012, para. 4.150). From this definition, the statistics are compiled on the basis of the tax on a good or a production process. In general, payments on the extraction of minerals or energy resources are excluded because such payments are recorded as payments on rent (i.e. payments for services). This definition of environmental taxes includes taxes on production and imports, capital taxes, and current taxes on income and wealth. Following the OECD procedure, Australian environmental taxes are divided into four broad categories: energy, transport, pollution and resources. The environmental taxes currently levied in Australia are energy taxes (e.g. carbon tax) and transport taxes (e.g. stamp duties). Pollution and resource taxes are currently not legislated in Australia.

In general, payments that are not based on a physical unit with a negative impact on the environment are not considered as environmental taxes. Examples include local government rates (e.g. municipal rates), land taxes and stamp duties on transfer of land, and rents on non-renewable natural resources (e.g. the petroleum resource rent tax [PRRT] and the Minerals Resource Rent Tax [MRRT]). The Goods and Services Tax (GST) is also excluded.

7.3 The Pros and Cons of Environmental Taxes

Command-and-control mechanisms are the oldest forms of pollution-control policies. As the name implies, the CAC mechanism consists of a “command”, which sets a standard (e.g. the maximum level of pollution allowable), and a “control”, which monitors and enforces the standard. Examples of standards include ambient standards (e.g. for greenhouse gases), emissions standards and technology standards (Asafu-Adjaye, 2005). Although CACs are widely understood, they have deficiencies in terms of providing incentives to reduce pollution. First, under a CAC mechanism, firms and households have no incentives to reduce pollution beyond the standard. Second, penalties for violating standards tend to be too low and enforcement tends to be weak. Third, to set an optimal standard and penalty, the government must know the demand (marginal social benefit) and the supply (marginal social cost) curves for pollution abatement. However, since air (or water) quality is a non-market good, the demand curve is not directly observable. Also, it is difficult for the government to know exactly an industry’s marginal abatement (or external) cost curve, given the large

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1 A carbon pricing scheme in Australia, commonly referred to as the “Carbon tax”, was introduced by the Gillard Government and became effective on 1 July 2012, and was in operation until it was repealed by the Australian senate (under the Abbott Government) on 17 July 2014.
number of polluters. Therefore, the government will probably get the standard wrong.

Fourth, to be effective, standards need to be revised frequently in response to rapidly changing circumstances. However, in practice, legislation tends to lag behind the pace of change. By far the most serious defect of standards is the fact that they are uniformly applied to all firms and regions. This takes flexibility away from polluters. Pollution-abatement costs differ between firms and regions, and forcing high-cost “abaters” to reduce pollution as much as low-cost abaters results in more resources being used to achieve a cleaner environment. The community can achieve cost savings by having more abatement undertaken by firms that can do so at a relatively low cost.

Unlike CACs, MBIs use price or some other economic variables to provide incentives for economic agents to abate pollution. MBIs are more cost efficient than CAC mechanisms: they have been shown to achieve the same environmental objectives at a lesser cost (Tiexenberg, 1991). They provide incentives for reducing pollution and have the potential to raise revenue. In 2011, environmental taxes in the UK raised 43 billion pounds sterling, equivalent to 8 percent of GDP (Leicester, 2013). Unlike CACs, MBIs minimise the risk of regulatory capture by reducing the need for individual negotiations with stakeholders.

However, environmental taxes, which are considered a specific type of MBI, also have disadvantages. Environmental taxes suffer from the same deficiency as standards, in that the demand curve for pollution abatement and the marginal external cost curve may not be known precisely, thereby making it difficult to set the optimal tax rate. However, a tax is more flexible than a regulation or a standard, and therefore can be manipulated more easily to reach the desired level. Although a uniform tax rate may be inefficient, it may be difficult to differentiate the tax appropriately. In addition, environmental taxes may add to the costs of tax collection and compliance. However, by far the greatest concern of environmental taxes is that they may be regressive. But this concern cannot be assumed true for all countries. The evidence in the UK has been mixed. While energy taxes have been found regressive, fuel taxes on vehicles have not, due to low ownership of vehicles among poor people. On the other hand, taxes on aviation have been found progressive.

A study conducted by Blobel and Gerdes (2011) found that, in several European countries, environmental taxes have had regressive effects — that is, poorer population groups pay more in relation to their income than do richer population groups. These effects remain, to some extent, even in the presence of redistribution and compensation mechanisms. However, the report rejects the idea of keeping the prices of energy and other environmental resources low as a means of social policy. Instead, the authors argue in favour of a careful design of overall policy that ensures access to basic energy and transport services for all parts of the population while maintaining effective price signals, especially at higher levels of consumption.

Therefore, to be effective in achieving key environmental goals, an environmental tax may need to be combined with other instruments. Examples of such MBIs include Pigouvian taxes and subsidies in the renewable resources sector, user fees (or charges), and tradable emission permits. Tradable emission permits are not relevant for PNG given the structure and size of its economy; therefore we will ignore them and briefly discuss the others. Taxes on renewable resources are, however, relevant, and include user fees or charges, payments for ecosystem services, forest taxes, forest subsidies and fisheries taxes.
7.3.1 User Fees

Strictly speaking, user fees (or charges) are not taxes because they are voluntary payments made or received in exchange for goods or services. They are, however, included here because they are similar to Pigouvian taxes in some respects. In particular, user fees and Pigouvian taxes serve the same functions in terms of regulating the use of a natural resource (by discouraging excessive use) and generating revenue for the state. An appropriate user charge or user fee could result in some cost recovery and promote the maintenance of sustainable resource use. User fees evoke the same concerns as environmental taxes regarding their effects on the poor. However, in cases where regressive impacts are likely, the solutions (e.g. lowering charges for low-income households, or exempting them altogether) are broadly the same as those suggested for taxes.

7.3.2 Payments for Ecosystem Subsidies

Payments for ecosystem services (PES) are a form of Pigouvian subsidy or negative tax. In this case, the resource owners are paid to conserve the resource or to achieve stated environmental goals. The Millennium Ecosystem Assessment defines PES in four different categories as follows:

Ecosystem services are the benefits provided by ecosystems. These include provisioning services such as food, water, timber, fibre, and genetic resources; regulating services such as the regulation of climate, floods, disease, and water quality as well as waste treatment; cultural services such as recreation, aesthetic enjoyment, and spiritual fulfilment; and supporting services such as soil formation, pollination, and nutrient cycling (Millennium Ecosystem Assessment, 2005, p.39).

Costanza et al. (1997) estimated the global value of ecosystem services at about US$33 trillion. Barbier (2007) undertook a cost–benefit study of clearing mangrove swamps in Thailand to establish shrimp farms. He estimated that the activity generated net returns of US$1220 per hectare, which far exceeded the direct benefits of the mangrove swamps. However, when the wider value of ecosystem services to local people, including the regulation of fisheries and coastal management, were included in the analysis, the net returns increased to US$12,000 per hectare. Such studies clearly show that ecosystem values are valuable in the sense that they provide a range of local and global benefits. However, local communities that traditionally own such resources have no incentives to conserve them, especially when there are commercially viable alternatives for their exploitation.

The aim of PES is to overcome this disincentive by paying a subsidy to landowners to manage the resources so that environmental services continue to flow sustainably. Natural resources such as forests support a wide range of biodiversity, which has real economic benefits for many stakeholders. They also help to protect and regulate water sources, benefiting everyone within a given area. Forests also function as global carbon sinks and provide environmental benefits not only to the local communities but also to the world.

7.3.3 Forest Taxes

The most common forestry management model used in most countries (including PNG) is to grant long-term concessions to logging companies and impose forest fees on them.
However, this system has proven ineffective in promoting sustainable forestry management (GIZ, 2005). In general, it results in under-pricing of timber and sends wrong signals about the value of the forest, leading to overharvesting of forest resources. The fees also do not capture sufficient forest rents for the state.

A far better approach is to use a combination of area-based taxes, volume-based taxes, and export taxes. These taxes, calibrated at the right rates and linked to global prices to maintain constant incentives, are capable of maintaining a given level (and form) of forest cover, and of stimulating a sustainable domestic industry based on timber processing. However, the experience in many developing countries (including PNG) is that forest taxes have not been encouraging due to a range of factors, including poor enforcement and inability to prevent illegal logging. One of the difficulties associated with determining the optimal forest tax is valuation of the marginal external costs and marginal benefits of logging. However, implementing such taxes should be attempted: the tax level can be periodically adjusted, and levying the taxes is clearly a better option than doing nothing.

7.3.4 Forest Subsidies

Forest taxes are a good idea in principle. However, given the problems associated with their implementation, they may not by themselves encourage sustainable forest management. Landowners need incentives for undertaking sustainable management activities through compensation, for example, the UN’s Reducing Emissions from Deforestation and Forest Degradation (REDD) programme. The REDD programme is designed to place a value on the carbon content of forests. Under the scheme, payments would be made to developing countries to preserve their stock of forests and maintain them as carbon sinks. The REDD+ programme extends the framework to include payments for “sustainable forest management”, forest conservation and afforestation. Following the Copenhagen Climate Change Conference, it is envisaged that up to US$30 billion per year may ultimately be transferred to developing countries through REDD+. Progress on REDD+ has currently stalled, pending a binding global agreement on climate change. However, PNG needs to consider how schemes such as PES and REDD+ could be integrated into a future national system of forest taxation and regulation.

7.3.5 Fisheries Taxes

Many would agree that PNG has underexploited the opportunities provided by its extensive exclusive economic zone. For a long time the country has relied on bilateral fishing agreements with foreign governments, allowing their trawlers to fish in PNG’s waters. Such agreements can be criticised because, given poor monitoring, overfishing of certain species can occur; also, the government has not benefited much from the tax revenues. From a value-chain perspective, PNG could maximise the benefits of its marine resources by developing a viable fish-processing industry. In this regard, the proposed Pacific Zone Marine Industrial Park in Madang is a step in the right direction. The state could raise revenue through several tax instruments. First, limits could be placed on the total allowable catch and catches taxed on a volume basis. Second, incentives could be offered to employ Papua New Guineans, to involve PNG businesses, and to establish fish-processing industries within the country. In addition, significant resources should be devoted to monitoring and enforcement of the system. Efficient local management of fisheries is paramount. To promote sustainable management of the resources, local fishing communities must be in-
7.4 Developing Country Experience and Environmental Tax Options for PNG

7.4.1 Environmental Taxes in Developing Countries

Although environmental taxes have historically been associated with developed countries, these types of policy instruments are increasingly being applied in developing countries in response to various concerns, some of which are environmental in nature. The Government of Vietnam implemented an environmental tax law in 2012 (GIZ, 2011). Under the law, taxes are levied not only on energy in terms of refined fuels and coal, but also on environmentally harmful substances such as hydrochlorofluorocarbons (HCFCs), selected pesticides and soft-plastic bags. Before the law came into effect, taxes were already levied on petrol and diesel; thus no additional tax was imposed on them. In China’s twelfth 5-year plan unveiled in 2011, the government indicated that it would place emphasis on improving air and water quality. A government White Paper released in 2011 hinted that an emissions trading scheme would be introduced (Government of China, 2011). China already has a pollution levy system that addresses waterborne and airborne pollutants.

Environmental taxes have been applied in the forest sector of several African countries with mixed success. A 2007 study (Milledge et al., 2007) estimated that Tanzania was losing up to 96 percent of potential tax revenues (US$58 million per year). This loss was blamed on a number of factors, including corruption and lack of transparency in the awarding of logging rights. In contrast, Cameroon successfully implemented a forest tax that resulted in revenues growing from US$3 million to US$30 million between 1995 and 2001, which accounted for a quarter of government revenues (OECD, 2008). The key lessons from the Cameroonian experience are that auctioning of logging rights captures more rent than fixing rents on an administrative basis; however, while higher taxes (and greater enforcement) may discourage over-logging, they also incentivise illegal logging (Karsenty, 2011).

In 1997, Costa Rica implemented a carbon tax; the proceeds are used to fund payments (ie. PES) to landowners to manage forests sustainably. The fund now distributes around US$15 million per year, and has been credited with maintaining biodiversity as well as promoting significant reforestation (OECD, 2008).

Namibia, which gained political independence in 1990, has successfully used fisheries taxes to manage its fish stocks. Three key measures were employed. First, limits were placed on the total allowable catch, quotas were allocated to a specified number of vessels, and the fish catch was taxed on a volume basis. Second, incentives (tax rebates on the catch and the awarding of longer periods for quota rights) were offered to employ Namibians, involve Namibian businesses, and establish fish-processing industries within the country. Third, significant resources were devoted to monitoring and enforcing the measures. The policy has generally been perceived as successful. The onshore processing industry is the fastest growing industry in Namibia’s economy, and fish stocks — which were heavily depleted before independence — have returned to more sustainable levels (Sumaila et al., 2005).

Despite the revenue potential of fuel taxes, a number of developing countries do not impose such taxes on equity grounds because they disproportionately impact poor people.
Some countries even subsidise fuel use because of equity concerns. However, recent increases in fuel costs due to rising oil prices have exerted significant fiscal pressure on the budgets of many developing countries. For example, the Indonesian Government was estimated to spend about a quarter of its outgoings on fuel subsidies (Coady et al., 2010); the government has now begun the process of removing some of the subsidies.

7.4.2 Current Environmental Taxes in Papua New Guinea

PNG does not currently have environmental taxes of the Pigouvian variety. However, it does have a number of ad valorem excise duties, levies and fees. In the transport sector, there are fuel duties, vehicle excise duties and duties on air passengers. There are currently no energy taxes in the energy sector. In the natural-resource sector, prospective companies are required to pay a range of fees. These fees include application fees that form part of the environmental impact statement; fees for environmental permits, such as water-use permits that depend on the amount of water to be used; and waste-disposal fees that are based on the amount of waste disposed. The Department of Environment and Conservation (DEC) also charges fees for the collection of biodiversity material and samples sent overseas for research purposes. The schedule of fees payable is specified in the Environmental Act 2000.

The DEC uses these fees, as required under the Act, to regulate the activities of companies that have an impact on the environment. The DEC has introduced the concept of Biodiversity Offsets. In this approach, companies that are planning to undertake economic activities that will have adverse environmental impacts in a given part of the country will be required to pay fees to conserve particular areas determined by the DEC. The DEC has established a trust fund, which will be backed by a law still being drafted. The trust fund will be managed by an independent board. Fees and charges levied on resource developers, as well as donor funds provided for environmental protection and climate-change mitigation, will be channelled into this fund and the money used for conservation activities. Parliament has recently passed a bill to create a Conservation and Environmental Protection Authority (CEPA). CEPA will consist of the current DEC and the Department of Climate Change. The CEPA Act will give the authority the power to impose new environmental charges and to amend current charges.

7.5 Policy Recommendations for Papua New Guinea

Pressure on natural resources and environmental quality in PNG is highly likely to increase in the future. Such pressure will come from the urgent need for the state to generate income for development purposes, and from population growth, which increases demand for resources. However, to protect the environment, promote economic growth, and maintain the quality of life of both current and future generations of Papua New Guineans, the government needs to devise environment-related tax policies for the short and medium terms. The current taxation review provides an excellent opportunity to consider policies for future progressive implementation.

However, any suggested policies must be subjected to further analysis to ensure that they are relevant and appropriate for PNG at different stages of its development process. Therefore, we must first rule out theoretically appropriate policies such as a carbon tax. PNG’s
per capita emissions are minute in global terms, and not likely to grow rapidly. Thus, any benefits are probably outweighed by the foregone opportunities to earn income for development. However, PNG has committed itself internationally to address climate change; therefore, other measures require consideration. I propose below policies in the areas of transport, pollution, energy and renewable natural resources. I then consider institutional and operational issues to be addressed before these policies can be successfully implemented.

7.5.1 Transport

Given the problem of traffic congestion on city roads, the government has, over time, increased the sales duty on imported motor vehicles. The duty is currently about 100 percent of the sale value. However, considering population growth and increasing incomes, this measure is unlikely to be effective in reducing traffic congestion and urban air pollution. The sales duty is a one-off tax. In its place, or in combination with the sales tax, I propose a recurrent tax—an annual road tax. This tax could start at a flat rate. However, as capacity is built, the tax could be linked to vehicle emissions. To be effective, standards and regulations must be established for air quality. Furthermore, the importation of old vehicles (e.g. more than 10 years old) should be banned. Alternatively, an environmental levy proportional to the age of the car could be imposed on the importation of used cars. This levy would discourage the importation of old vehicles. These measures would not be highly regressive because the citizens who drive are relatively wealthy. To lessen the impacts on poor people, exemptions could be given for commercial vehicles that are used for public transport. One of the key factors underlying the rapid increase in motor vehicle ownership is the lack of a public transport system. Therefore, implementation of these measures should be accompanied by investment in public transport to provide alternatives to driving. Furthermore, the road infrastructure needs improving to justify the road tax.

7.5.2 Pollution

The measures proposed above will also reduce air pollution. In addition, measures are required to reduce incentives for the dumping of waste. The current fines for littering are probably not high enough to change littering habits. In addition, the use (and dumping) of plastic bags and bottles should be discouraged by imposing a small fee. This fee could be levied on the suppliers of these products, although probably some of the fee would be passed on to consumers. Public education is needed to discourage the practice of littering of plastic products. On the issue of waste management, public–private participation (PPP) should be encouraged in the management of landfill and waste disposal. Given population growth and rapid urbanisation, this issue will probably become important in the future, and public agencies may not be adequately resourced to deal with it. Further, the importation of used refrigerators that use chlorofluorocarbons in their cooling systems should be banned and subsidies given to households with such refrigerators to purchase new ones.

7.5.3 Energy

At this stage of PNG’s development, I do not advocate a fuel tax based on the carbon content of fuel, which is common in many advanced countries. Such a tax is likely to be regressive: although poor people do not own cars, they do use other products such as elec-
tricity, public transport and paraffin, and therefore could be adversely affected. However, we propose that any subsidies on fuel should be gradually phased out to reduce the burden on the public purse. Furthermore, innovative policies should be introduced to encourage more efficient use of energy. First, the sale of incandescent light bulbs could be taxed and the sale of fluorescent light bulbs subsidised. Second, tax exemptions could be given for LPG use to shift demand for biomass. Third, the sale of solar water heaters could be tax exempt. In the medium to long term, tax incentives should be given for the sale or use of photoelectric solar panels to generate domestic and industrial electricity. However, in the medium term and as PNG develops further, an energy tax or fuel excise tax based on the carbon content of fuel needs to be considered.

7.5.4 Renewable Natural Resources

I advocate establishing mechanisms for payment for ecosystem services (PES) throughout PNG, with the support and participation of local communities, in order to encourage the wise use of the country’s natural capital (forests, fisheries and biodiversity). How PES could be integrated into ongoing programs such as REDD+ requires consideration. Further careful analysis of the institutional and managerial arrangements is required to ensure smooth implementation of the two programs. Currently, the Environment Act 2000 does not support REDD+ and therefore an amendment to the Act may be necessary. For the forestry and fisheries sectors, I advocate that volume-based taxes replace the current area-based and quota-based approaches. In the long term, I advocate the integration of mechanisms such as PES and REDD+ into the national taxation systems for forestry and fisheries.

7.5.5 Institutional and Implementation Issues

In general, people do not like to pay new taxes, and environmental taxes are no exception. Important factors in gaining public support for any environmental tax are to explain why the tax is necessary and how the revenues will be spent through public education and awareness. People need assurance that the tax is not just a revenue-raising measure. The revenues could be spent in a number of ways: as a direct tax break on labour income; indirectly as a tax break on household income; to fund poverty-reduction initiatives; or for environmental conservation (e.g. conservation of protected areas). Stakeholder input should be encouraged in determining which approach is most suitable. Multi-agency and stakeholder collaboration on the design of these taxes would minimise the risk of duplicate taxes. After implementation, environmental taxes must be monitored to track their effectiveness and equity, and to determine if there are any unintended consequences. Subsequent measures must be taken to redress any adverse effects.

7.6 Summary and Conclusions

Papua New Guinea is richly endowed with natural resources (both renewable and non-renewable), which have generated substantial revenues to the state. However, the government cannot continue to rely so heavily on natural-resource taxes to fund its development needs. Government needs to explore ways in which the tax take can be increased. This paper has discussed the contribution that environmental taxes could make to revenue generation. Environmental taxes belong to the group of instruments referred to as market-based in-
centive mechanisms (MBIs). MBIs were compared to regulations (or standards), which are an alternative instrument for pollution control; MBIs are more effective in achieving environmental goals, and also give firms and households incentives to reduce pollution. In addition to environmental taxes, other forms of MBIs, specifically renewable-resource taxes, were discussed. These include user fees (or charges), payments for ecosystem services, forest taxes, forest subsidies and fisheries taxes. After discussing the experience of environmental taxes in selected developing countries, the paper assessed environmental tax options for PNG.

I argued that PNG’s current stage of development makes introducing certain environmental taxes such as a carbon tax or an energy tax inappropriate. In addition to being regressive, such taxes could stifle PNG’s development. However, because PNG has made an international commitment to contribute to the mitigation of global emissions, other measures to improve environmental quality require consideration. Hence, I recommended a range of taxes to discourage traffic congestion and reduce motor vehicle pollution, discourage dumping of plastic waste, and promote energy conservation. I also proposed a range of taxes and subsidies in the sector of renewable natural resources. These include volume-based taxes for fisheries and forestry, and the promotion of subsidy schemes such as payment for ecosystem services and REDD+.

To gain public support for initiatives regarding environmental taxes (and subsidies), public awareness and education campaigns are required. Stakeholder input should be encouraged in decisions on the recycling of the tax revenues. Also, various government agencies need to collaborate on the design of the taxes in order to avoid duplication. After implementation, I recommend the new taxes are monitored to assess their effectiveness and equity, and to determine whether measures to mitigate any unintended effects are required.

References


8.1 Introduction

Countries such as Papua New Guinea (PNG) are required to spend a substantial amount on public infrastructure, education, health services, etc. Hence, a sufficiently high tax effort (sometimes referred to as taxable capacity) is required if the country wishes to grow and develop. “Tax effort” is measured as tax revenue as a percentage of gross domestic product (GDP). Thus, the levying and payment of taxes are important activities for a public administration and its citizens.

PNG became an independent country in 1975, inheriting a public-finance structure that was fundamentally unsustainable on both the revenue and expenditure sides (Bird, 1989a). There is some consensus among researchers that, in order to grow, a country needs tax revenues close to 20 percent of GDP, although revenues between 22 percent and 30 percent are better (see, for example Kaldor, 1963; Martin and Lewis, 1956). Figure 8.1 provides an overview of the tax effort in PNG for the past five decades. There is a positive trend, with taxable capacity surpassing the 20 percent mark during the 1990s. However, we observe considerable fluctuations during the period for which yearly data are available (since the 1990s), indicating that there are some instabilities in the system. Thus, convergence to equilibrium has not been achieved so far. Nevertheless, few countries have been able to raise their tax ratio to this extent in such a short time. In most developing countries, the tax ratio has changed little in recent decades (Bird, 2008). It seems that PNG is on a successful march towards post-independence fiscal self-reliance.
Figure 8.1: Tax effort in Papua New Guinea

Note: For the period 1961 to 1980, data are sourced from Bird (1989a, p. 1149) because yearly data are not available for all the years (years collected: 1961, 1971, 1975 and 1980). Yearly data have been included from 1984. These data were derived from Alm and Embaye (2013), Asian Development Bank, World Development Indicators and own calculations from the Internal Revenue Commission reports of PNG.

Figure 8.2: Regional tax effort

Note: Data based on WDI.
Despite the fluctuations, the tax-effort values for PNG compare favourably with those of other Asian and Pacific nations (Figure 8.2). The average tax performance for the Asia and Pacific region is considerably less than PNG’s tax effort, as are the individual values for nations such as Indonesia and the Philippines. This seems to indicate that, over the decades, PNG has been successfully working to strengthen its revenue system. Obviously, PNG has the advantage of revenues generated from the exploitation of mineral resources. Yet, the key challenge of avoiding a mismatch between the nature of the PNG economy and its tax system remains. For example, the Internal Revenue Commission’s (IRC) Annual Report 2011 points out the challenges for the tax administration that arise from increasing complexity in the business environment — the workload for tax administration is greater due to the expanding PNG economy. However, PNG has experienced a solid growth rate over the past decade (Figure 8.3).

Thus, Figure 8.2 indicates that PNG’s problem is not one of inadequate tax effort. An interesting World Bank study by Le, Moreno-Dodson, and Bayraktar (2012) provides a country classification based on data from 1994 to 2009, looking at tax collection and tax effort. The authors classify countries into four different groups: a low-collection and low-effort group; a high-collection and high-effort group; a low-collection and high-effort group; and a high-collection and low-effort group. PNG is in the high-collection and high-effort group.\(^1\)

Figure 8.3: Growth rate

![Figure 8.3: Growth rate](image)

**Note:** Data based on WDI.

\(^1\) Other countries in this group are Australia, Austria, Belarus, Belgium, Botswana, Brazil, Chile, Costa Rica, Croatia, Cyprus, Finland, France, Greece, Italy, Jamaica, Malta, Mongolia, Morocco, Namibia, the Netherlands, New Zealand, Poland, Portugal, Slovenia, South Africa, Trinidad and Tobago, Tunisia, United Kingdom, Uruguay, Vietnam and Zimbabwe.
Of course, supply-side factors such as the ready availability of economic activities that are easily taxed (e.g. foreign trade and mining) are certainly important. However, PNG cannot rely solely on its rich natural resources: emphasis should also be given to demand-side factors (Bird et al., 2005, 2008). For example, political institutions are crucial to a sustainable fiscal policy. More than 50 years ago, Kaldor (1963) argued that, in order to establish lasting solutions, the capacity to tax depends primarily on political institutions. Since then, one of the principal lessons learned from tax-reform experiences around the world is that “political will” is the sine qua non of any successful tax reform (Bird, 2004) and that a country’s tax system reflects its political institutions. Rodrik, Subramanian and Trebbi (2002) state unequivocally that “institutions rule”. Obviously, other factors restrict the ability to construct a successful taxation system, such as limits on administrative capacity (Bird, 1989a); but reforms within the tax administration are strongly linked with political reforms and political will.

Thus, a good understanding of institutions, as well as the procedures within the structure of institutions (e.g. level of procedural fairness), is crucial to the understanding of tax compliance and its corresponding tax system. Increasing tax compliance requires a sustainable policy balance that is able to efficiently handle the conflicting and frequently changing internal and external political and economic forces a country faces. We argue that a country tends to achieve an equilibrium position with respect to the size and nature of its fiscal systems that largely reflects the balance of political forces and institutions. There is a natural limitation on how far one can pursue tax reform if the political structure is not reformed. Moving tax compliance beyond a certain level requires institutions to be “shocked” or “pushed” to a new equilibrium.

Figure 8.4: Tax evasion in Papua New Guinea

![Tax evasion in PNG](image)

Figure 8.4 reports the level of tax evasion (shadow economy) in PNG over time (as a per-
percentage of GDP). The literature demonstrates that different methods of calculation lead to different results (Schneider and Enste, 2002); thus we use three methodological approaches to obtain a better overview of the situation. By definition, estimating the size of tax evasion, tax avoidance or the shadow economy is challenging. Not only are we interested in something that is intentionally concealed from any kind of record-keeping, we also have to assume that it is intertwined with a great number of outcomes in the formal economy. For a long time, economists have worked on developing a method to uncover this hidden variable from available data (see Schneider and Buehn, 2013, for an overview).

We have now reached the stage where a large number of reliable economic indicators are available for many countries and many years, which mean this endeavour is more likely to succeed than ever before. In this report, we focus primarily on three of the current approaches employed to estimate the extent of tax evasion or the size of the shadow economy. Naturally, each has its own merits and caveats.

Elgin and Öztunali (2012) use the classical economics approach, modelling a two-sector, dynamic, general equilibrium economy to explicitly estimate the size of the shadow economy. In essence, their approach assumes that the economy of a country consists of a formal and an informal sector. Since the economy is assumed to be in equilibrium, perturbations to the economic indicators of that economy follow the real business cycle. Using a set of parameters for this expected movement, and relying on the fact that most of the indicators for the formal sector are known, they use historical data to accurately calibrate the model. Thus, they directly calculate the implied size of the shadow economy. The approach certainly has its advantages: it is based on a strong micro-foundation and does not rely heavily on the selection of econometric methods (as is the case with the other methods). Furthermore, this method produces a direct estimate of the size of the shadow economy.

In contrast, the other two methods require additional assumptions based on measures of relative size in order to calculate the size of the shadow economy. However, the reliability of Elgin and Öztunali’s approach largely depends on the underlying model being correct, and does not account well for unobserved influences on the shadow economy.

Alm and Embaye (2013) propose an alternative, more empirically based method. The basic premise is that the shadow economy is a key influence on the demand for currency, hence driving, to some extent, the currency demand of a country. The method calculates the impact on currency demand of a set of variables that are known to influence the demand for cash, such as the interest rate and the level of urbanisation. Other indicators of the extent of the shadow economy are also included; for example, the tax rate and the level of enforcement in a country. The resulting estimates allow calculation of the currency demand for the formal economy in the absence of drivers for the informal economy. The proportional size of the informal economy is backed out using the relative difference between this estimate of the formal economy and the estimate of the actual cash demand in the economy (accounting for all factors). However, the key challenge in this model is to account for the interdependencies between the various drivers of currency demand in the formal and informal economies across time and between countries. Alm and Embaye account for this factor by using a dynamic panel method, namely a General Method of Moments (GMM) estimator, which is a state-of-the-art methodology to account for the endogeneity problems outlined above. Moreover, the advantage of this method is that it uses a limited set of variables, all of which are available for most countries over a long period, which gives credence
Figure 8.5: International comparison of tax evasion

Schneider et al. (2010) use a similarly empirical, but more methodologically comprehensive, approach to calculate the size of the informal economy. Recognising the limitations of
working with any single indicator, they use a Multiple Indicators Multiple Causes (MIMIC) model, which incorporates a number of different approaches into a unified model. Technically, their approach employs a Structural Equation model with one latent variable — the size of the shadow economy. A latent-variable model allows indirect insights into the behaviour of a hidden variable. If you have no reliable single indicator for a hidden entity, but you do have information about the movement of a number of variables in relation to your variable of interest, you can understand the movement of the hidden (latent) variable by carefully accounting for the covariance of the indicator variables. Compared with the first two methods discussed, this approach is much less restrictive in terms of explicitly modelling the shadow economy, because it statistically exploits an artefact of the co-movement of variables. However, this freedom comes at a cost: the approach can neither claim the rigorous micro-foundation of the Elgin and Öztunali (2012) approach, nor can it explicitly control for the endogeneity issues addressed by Alm and Embaye (2013). Moreover, the MIMIC-Dynamic MIMIC (DYMIMIC) approach used by Schneider et al. (2010) is sensitive to sample changes and adjustments in the set of variables for indicator and cause (Fuest and Riedel, 2009). As La Porta and Shleifer (2008, p.282) point out, the measure “is only as good as the model that supports it”.

Moreover, if measurements of the shadow economy include criminal activities such as drug trafficking, then detecting and eliminating such crimes would reduce the shadow economy but would not increase the tax performance (Fuest and Riedel, 2009). However, this is not a big issue when studying tax compliance, although a reduction in crime increases citizens’ quality of life, which could be reciprocated with higher tax compliance. Methodological disadvantages can also be discounted if we look at changes in tax evasion or the shadow economy over time, as (upward or downward) biases remain constant. The time dynamics for PNG displayed in Figure 8.5 show some mixed results for the 1980s and 1990s. However, there is a relatively consistent trend of decreasing tax evasion in the 2000s. This trend can be taken as good news. However, the extent of tax evasion (size of the shadow economy) in PNG is still significant and requires drastic action and a policy agenda that prioritises the fight against tax evasion.

If we compare tax evasion in PNG with that in other countries or regions, we find that PNG has a higher level of tax evasion than those of OECD (Organisation for Economic Co-operation and Development) countries, and PNG’s level is also higher than the Asia and Pacific average.

The importance of combating tax evasion can be interpreted from Figure 8.6. There is a very strong negative correlation between tax evasion and the economic performance of a country. The charts on the left cover all available countries, while the charts on the right focus only on the Asia–Pacific region.

There are different dimensions to tax compliance. Figure 8.6 focuses on one aspect, measuring tax compliance via arrears or debts that are incurred when taxpayers fail to pay the due tax amounts. Such debts harm the operations of tax administrations and management of public finance (Araki and Claus, 2014). This aspect (not paying on time or not paying at all) has gained increased attention in the literature on tax compliance (Erard and Ho, 2001; Torgler, 2004a; Gangl et al., 2014).
Figure 8.7 indicates that tax arrears are an issue in PNG. Of the 18 countries reported, PNG had one of the highest levels of tax arrears as a percentage of net revenue (25.5 percent). Only India had a higher level in 2011. Erard and Ho (2001) argue that the tax-compliance burden of filling out the tax form must be reduced because, for taxpayers near the threshold of filing, any burden serves as a filing restriction: “Once a ghost is brought into the system, he is likely to remain in the system” (p. 48). Establishing education programs to inform individuals about the filing procedure can help overcome this burden and reduce non-filing.
Figure 8.7: Compliance for payment of tax (tax debt)

Figure 8.8 demonstrates that there is a relationship between payment compliance (2010 and 2011) and the three tax-compliance proxies discussed above.

8.2 The Importance of Institutions

Reducing tax evasion improves government revenues, allowing the provision of better public goods and services and the maintenance of civil order. The guiding principle of the Medium Term Fiscal Strategy 2013–2017 for PNG is the maintenance of equitable taxation regimes, with a special focus on compliance. However, reducing tax evasion is not simply a matter of applying higher penalties and increasing the frequency of audits. The risk of this command-and-control approach is that extreme penalties may backfire by increasing bribery and corruption, resulting in lower tax compliance and a general loss of trust in public institutions (Cummings et al., 2009). Designing effective policies for reducing tax evasion therefore requires an understanding of the behavioural and institutional aspects of the decision to comply. As Bird (2008, p.16) points out “tax policy decisions are not made in a vacuum. Nor are they made by a benevolent government. Instead, they are the
outcome of complex social and political interactions between different groups in society in an institutional context established by history and state administrative capacity. Taxation is not simply a means of financing government; it is also a very visible component of the social contract underlying the state”.

Figure 8.8: Relationship between payment compliance and compliance proxies

However, countries vary enormously in the effectiveness and nature of their political systems. Institutions also reflect the interaction of policy ideas (equity and fairness, efficiency, growth), social interests (capital, labour, region, ethnic identity, income inequality), and key institutions at the political and economic levels (Bird et al., 2005, 2008). Changes in the tax system and tax compliance are therefore a reflection of these complex and challenging forces. A tax reform can be compared to a seat-belt law (Bird, 2008). That is, if everything else stayed the same, lives would be saved (tax compliance). But things do not stay the same — some people drive faster when they are belted in, so death rates (tax evasion) show little change.

To reform and improve the tax system, we must account for the underlying balance of political forces and institutions. Economic structure, administrative capacity, and political institutions limit the range of possible tax policies (Bird, 2008). Tax reforms that aim to increase tax compliance should not be undermined by unrelated ad hoc measures or policies, and should not be offset by administrative deficiencies. Securing a certain degree of consent from the populace about taxation is important because state legitimacy largely rests on citizens’ “quasi-voluntary compliance” (Levi, 1988). To secure such compliance, tax systems must, over time, represent the basic values of a large proportion of the population.

We now investigate institutional conditions in greater detail, starting with an overview of corruption. There is evidence of corruption throughout human history. Pharaohs in Ancient Egypt gave high salaries to the tax collectors (called scribes) to increase the opportunity costs of cheating taxpayers (Adams, 1993). Corruption is a “symptom that something has gone wrong in the management of the state” (Rose-Ackerman, 1999, p.9). Friedman et al. (2000) and Torgler and Schneider (2007, 2009) demonstrate empirically that countries with higher levels of corruption also have a greater proportion of activity in the unofficial
economy. Previous empirical studies have, for example, found that corruption is negatively associated with government expenditure on education (Mauro, 2002), which leads to allocation biases in favour of less productive investments (Tanzi and Davoodi, 2002) and is associated with higher income inequality and poverty (Gupta, Davoodi and Alonso-Terme, 2002). Insecurity of property rights and corruption might also affect tax compliance. Corruption is particularly a problem if the government and the administration have substantial discretionary power over the allocation of resources. Agents such as the political elite, administrative staff and legislators often have discretionary power, because institutions are neither credible nor working well. Tanzi (2002, p.28) mentions several situations in which corruption is likely to be a problem in tax administration:

- The laws are difficult to understand and can be interpreted differently so that taxpayers need assistance in complying with them.
- The payment of taxes requires frequent contacts between taxpayers and tax administrators.
- The wages of the tax administrators are low.
- Acts of corruption on the part of the tax administrators are ignored, not easily discovered or, when discovered, penalised only mildly.
- The administrative procedures (e.g., the criteria for the selection of taxpayers for audits) lack transparency and are not closely monitored within the tax or customs administrations.
- Tax administrators have discretion over important decisions, such as those related to the provision of tax incentives, determination of tax liabilities, and selection of audits, litigations, etc.

In countries where corruption is systemic, we cannot assume that the obligation of paying taxes is an accepted social norm. Corruption generally undermines the tax compliance of the citizens for many reasons, chiefly because they become frustrated. In a country where corruption is rampant, citizens experience a reduced trust in authority, which decreases their incentive to cooperate and be compliant. Taxpayers feel cheated if they believe that corruption is widespread and their tax burden is not well spent. Furthermore, when there are many corrupt colleagues, there might be a “crowding-out” effect regarding morality among the tax administrators. If the level of corruption is high and corruption is an accepted practice, bureaucrats may have incentive to delay transactions in order to extract higher payments, which leads to several types of distortions (Djankov et al., 2002). For example, a corrupt bureaucracy will not award contracts to the most efficient producers, but rather to the producer who offers the largest bribes. Thus, corruption reduces the efficiency of allocation and produces delays in transactions when it is necessary to acquire additional payments (Rose-Ackerman, 1997; Jain, 2001).

To understand the importance of institutions, we used a large set of data sources such as the International Country Risk Guide (ICRG), the well-known Transparency International (TI) Corruption Perception Index, and the Quality of Governance Indicators. The ICRG specifically focuses on factors affecting decisions for private foreign investment (Knack, 1999). The rating comprises 22 variables in three subcategories of risk: political, financial and economic risk. We focused on the political risk component, measured by
BUREAUCRATIC QUALITY,\(^1\) CORRUPTION,\(^2\) DEMOCRATIC ACCOUNTABILITY,\(^3\) GOVERNMENT STABILITY,\(^4\) LAW & ORDER,\(^5\) and INTERNAL\(^6\) or EXTERNAL\(^7\) CONFLICT. A higher number of points indicates a lower potential risk, and therefore higher scores are correlated with better quality institutions and governance.

We used the Quality of Governance Index introduced by Kaufmann, Kraay and Mastruzzi (2003) as another proxy for governance and institutional quality. It allowed us to focus on several factors:

1. Process by which governments are selected, monitored and replaced:
   - a. VOICE AND ACCOUNTABILITY: measures the political process, civil liberties, and political rights
   - b. POLITICAL STABILITY AND ABSENCE OF VIOLENCE: measures perceptions of the likelihood that the government will be destabilised/overthrown

2. Capacity of the government to effectively formulate and implement sound policies:
   - a. GOVERNMENT EFFECTIVENESS (inputs required for the government to produce and implement good policies and deliver public goods)
   - b. REGULATORY QUALITY (focuses more on policies, such as incidence of market/unfriendly policies, perceptions of the burdens imposed by excessive regulation).

3. Respect of citizens and the state for the institutions that govern economic and social interactions:
   - a. RULE OF LAW (several indicators measuring the degree of agents’ confidence in and compliance with the rules of society). According to Kaufmann et al. (2003, p.4), these indicators “measure the success of a society in developing an environment in which fair and predictable rules form the basis of economic and social interactions”
   - b. CONTROL OF CORRUPTION: measures the perceived corruption

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\(^1\) Institutional strength and quality of the bureaucracy: “High points are given to countries where the bureaucracy has the strength and expertise to govern without drastic changes in policy or interruptions in government services. In these low-risk countries, the bureaucracy tends to be somewhat autonomous from political pressure and to have an established mechanism for recruitment and training. Countries that lack the cushioning effect of a strong bureaucracy receive low points”.

\(^2\) Assessment of corruption within the political system. Lower scores indicate “high government officials are likely to demand special payments” and that “illegal payments are generally expected throughout lower levels of government” in the form of “bribes connected with import and export licenses, exchange controls, tax assessment, police protection, or loans.”

\(^3\) Measures the level of responsiveness of a government to its people.

\(^4\) Assessment of the government’s ability to carry out its declared program(s), and its ability to stay in office (subcomponents: government unity, legislative strength and popular support).

\(^5\) The “law” subcomponent measures the strength and impartiality of the legal system, while the “order” subcomponent is an assessment of popular observance of the law.

\(^6\) Assessment of the political violence in a country and its actual or potential impact on governance (subgroups: civil war/coup threat, terrorism/political violence, civil disorder).

\(^7\) External conflict is measured as “an assessment of the risk to both the incumbent government and inward investment. It ranges from trade restrictions and embargoes, whether imposed by a single country, a group of countries, or the whole international community, through geopolitical disputes, armed threats, exchanges of fire on borders, border incursions, foreign-supported insurgency, and full-scale warfare.”
(exercise of public power for private gain).

All estimated scores lie between –2.5 and 2.5, with higher scores corresponding to better institutions (and governance outcomes).

First, we analyse corruption levels by examining the TI Corruption Perception Index (CPI). Figure 8.9 shows that PNG is struggling in this respect. Corruption values are very high and have not decreased over time. The red line shows PNG’s ranking position: higher values are linked with higher levels of corruption. The blue line is the ranking position divided by the number of countries included in the ranking. A ranking value of 1 denotes the country that reports the highest level of corruption among all countries. The values for PNG are close to 1, which indicates a very high level of corruption in relative terms. Because the values for most years are between 0.8 and 0.9, it is important that strong anticorruption measures are adopted to remedy this situation.

Transparency International PNG Inc. authored the *UN Convention against Corruption Civil Society Review: Papua New Guinea 2012*, pointing out several deficiencies in corruption prevention in PNG. Although bribery is prohibited under the Criminal Code Act 1974 and Excise Act 1956, and under the Customs Act 1951, the Food Sanitation Act 1991, the Public Health Act 1973 and the Liquor Licensing Act 1963, PNG legislation has been criticised for being incomplete. For example, the legislation does not expressly cover all modes of actively committing bribery, such as when a bribe is offered but not received, or when bribery happens through intermediaries. The report criticises the lack of legislation (outside common law) that directly monitors illicit enrichment of the public and private sectors. In addition, at the time the report was completed, there was no legislation to protect whistle-blowers. However, PNG has introduced an encouraging practice that awards commendations to public officials who refuse bribes.

The 2011 Annual Report of the IRC, for example, reports that three of the staff members of the tax administration were awarded commendations for taking a personal stance against corruption by refusing bribes. This approach celebrating those who do not participate in corruption takes into account the importance of peers and social context for the perceived acceptability of corruption. Dong, Dulleck and Torgler (2012) found empirical evidence that willingness to be corrupt depends on the corruption level of other individuals in a society. Thus, a person's willingness to act corruptly depends on the pro-social behaviour of other people, and social context is relevant to the understanding of corruption. In addition, given that perceptions are often based on behaviour observed in the past, the study also found empirical evidence that current corruption is affected by the past corruption levels.
Incorporating an economics-of-crime approach, the return to corruption for an individual depends on the number of individuals expected to be corrupt in the same organisation or society (Andvig and Moene, 1990; Murphy et al., 1991; Acemoglu, 1995; Sah, 2007). A corrupt official remains corrupt if they have interacted with sufficient corrupt officials in the past, because they know that looking for bribes will be worthwhile (Sah, 1988, 2007). In societies where corruption is more common, the expected costs of being caught in a corrupt act are lower, because corruption is more difficult to detect (Lui, 1987; Cadot 1987). Figure 8.10 (derived from Dong et al., 2012) indicates that the higher the levels of perceived corruption in a society, the more citizens report that it is justified. Dong and Torgler (2012) also found that social interactions shape corruption rates.

The policy implications are clear and have been discussed by Dong et al. (2012). Policy strategies must take into account that individuals are not acting in isolation. Thus, understanding social interactions, group dynamics and path dependencies is crucial. A critical mass of cooperative individuals is essential to induce a positive dynamic process of cooperation and compliance. A society that has many noncompliant individuals struggles with a weak social norm, which results in a shift to a noncompliant situation similar to a “corruption trap”. Torgler and Piatti (2013) found a strong link between corruption and extreme wealth accumulation, and Gupta et al. (2002) found empirical support for the notion that corruption increases inequality. The problem is that, in a corrupt environment, wealth is often transferred into the hands of a small group of individuals (“insiders” of the system).
Figure 8.10: Correlation between justifiability of corruption and perceived corruption

Analysing additional data from the ICRG indicates that corruption was lower in the 1980s and 1990s (Figure 8.11). Similarly, the Quality of Governance Indicators (Figure 8.12) do not show that corruption has been reduced in PNG. The results of the analyses consistently indicate that further action on this issue is required. Corruption has been a common theme in PNG for many years. For example, in 1996, then Governor of the Bank of Papua New Guinea, Mekere Morauta, stated, “the most corrosive and intractable problem we face now is corruption” (May, 2001 p.10). PNG, as a relatively newly established nation state with renowned cultural diversity, has faced some debate surrounding the acceptability of certain practices (Walton, 2009). A survey of rural people on their perceptions of corruption indicated that respondents were aware of regular abuses of power within both the private and public sectors. Some of the respondents stressed that fixing corruption would require policies that dealt with wider social problems such as power asymmetries, social justice, weak government, poor accountability mechanisms, and lack of services in rural areas. Activities such as increasing levels of education, improving health facilities, and policing the actions of powerful government officials and candidates therefore become important (Walton, 2009). Monitoring institutions through independent bodies such as anticorruption commissions would also help address the problem. However, as long as such commissions remain “toothless”, they will only achieve limited success.
Next, we look at institutional structure using institutional data beyond corruption (Figures 8.11, 8.12, 8.13). Most of these proxies indicate that PNG is not performing well, compared with both the OECD average performance and that of individual countries in Asia. Making the right policy decision requires an awareness of all the relevant institutional conditions. To generate compliance, a tax system needs to convey a sense of giving the people what they want — essentially it is a system that transmutes citizen preferences into policy decisions (Bird et al., 2008). An important social contract between government and the population is embedded in taxation and fiscal practices, and good political institutions enhance legitimacy and capacity (Lledo, Schneider and Moore, 2003). Moreover, good taxation requires good representation. The interaction between a tax administration (or the government) and the taxpayers should be seen as a contractual relationship in which the government provides public services to citizens in exchange for tax payments, resulting in a “fiscal equivalence between public goods and tax prices” (Feld and Frey, 2002a,b). An imbalance in this relationship reduces tax compliance (Torgler, 2007).

Moreover, governments should avoid giving the perception of uncertain performance if the administration wishes to improve the incentives for investment and activity in the formal sector. Evidence indicates that countries should also attempt to reduce transaction costs faced by people who want to open a business and, furthermore, should try to avoid corruption becoming entrenched during this process (de Soto, 1989, 2000).
Government stability is important in order to implement strategies that take a sustainable and long-term view towards increasing a country's living standards, economic performance, and citizens' wellbeing. For example, it is encouraging that the National Government of PNG has a 40-year plan, Vision 2050, to tackle development of human and social capital, institutional development, service delivery, and wealth creation (IRC Annual Report, 2010).

In contrast, government instability threatens any tax-reform policies. Politically fragile states face the difficulty of trying to avoid hurting politically powerful interests. Therefore, they experience constraints on their ability to act without fear or favour when attempting to increase efficiency and effectiveness (Bird, 2008).

Several factors can help limit the abuse of political power, including educated voters in a democratic environment, a free press, and a strong and accountable public administration. Such control has an *ex ante* effect on policy formulation by elected incumbents. Compliance can be maintained by reassurance provided by the government (Levi, 1988). To build reciprocal compliance, a stock of social capital must be created and maintained. People react to the way they are treated by the authorities (Tyler, Casper and Fisher, 1989); thus a stock of social capital or trust can be built by allowing taxpayers to vote on the way taxes are spent.
Evidence indicates that, the more taxpayers are able to participate in the political decision-making process by popular rights, the higher the level of tax morale. The more this “reciprocal contract” is based on trust, the more this trust in turn will increase the moral costs of behaving illegally (Torgler, 2005). When possibilities for participation are lacking, citizens feel powerless and dissatisfied with the system, and therefore less inclined to comply (Alm, Jackson and McKee, 1993). The formulation of laws through active involvement of the people increases willingness to cooperate and to act in accord with the decided rules (rule obedience). When citizens are more involved in establishing rules, they have a stronger sense of obligation (Kidder and McEwen, 1989; Cialdini 1989; McEwen and Maiman, 1986; Lempert, 1972). Legitimacy is essential to guarantee rule compliance (Tyler, 1990a,b; 1997).

Analysis of institutional factors reveals issues related to ethnic tension (see upper right
graph in Figure 8.12). Small, multi-ethnic states such as PNG are constantly faced with issues of political legitimacy. Violence in political life influences government legitimacy (acceptability). A democratic and decentralised structure that takes into account heterogeneity within both regions and the population may help to reduce turbulence. Strathern (1993, p.42) stated that one of the issues for PNG is that “the national government, inheriting the colonial state apparatus in 1975, was not initially equipped with any automatic legitimacy in the people's eyes … From the point of view of the people, then, new institutions have to earn such legitimacy or acceptance through the benefits they offer, and in practice such benefits are often channelled through personal networks of patronage that take on a local aura of influence quite separate from that of the state itself”.

Figure 8.14: Tax evasion and institutional quality (International Country Risk Guide)

Next, we analyse whether a correlation exists between institutional quality and tax evasion, in order to understand the consequences of institutional quality. Figures 8.14, 8.15, and 8.16 report statistics on corruption, law and order, quality of bureaucracy, and government stability.
The four tax-evasion proxies are negatively correlated with institutional quality. In other words, higher institutional quality is correlated with lower tax evasion. All the correlations are highly statistically significant. In most cases, law and order has the highest correlation with institutional quality, followed by quality of bureaucracy, corruption, and government stability. We conducted 12 simple linear regressions that each use a single institutional variable as the independent variable. The results indicate that these variables explain between 10.5 percent and 63.9 percent of the total variance of the variable tax evasion. A reduction in corruption by one unit reduces tax evasion by 6–8 percent.

The next set of figures (Figures 8.17, 8.18, 8.19) depict internal and external conflict, democratic accountability, and ethnic tension. Again, all correlations are statistically significant. Internal conflict shows the strongest relationship with tax evasion throughout all tax-evasion proxies, followed by democratic accountability. Clearly, PNG’s position relative to other countries indicates room for improvement that would deliver beneficial results.
Figure 8.16: Tax evasion and institutional quality (International Country Risk Guide)

Source: data from Schneider et al. (2010)

Figure 8.17: Further institutional quality factors (International Country Risk Guide)

Source: tax evasion estimate of Alem and Embaye (2013)
Figure 8.18: Further institutional quality factors (International Country Risk Guide)

Source: tax evasion estimate of Elgin and Öztunali (2013)

Figure 8.19: Further institutional quality factors (International Country Risk Guide)

Source: Schneider et al. (2010)
Next, we look at the Quality of Governance indicators (Figures 8.20, 8.21, 8.22). Again, all the correlations are statistically significant and reasonably high. The factors showing the highest correlations are rule of law, control of corruption, and government effectiveness.

Figure 8.20: Quality of Governance indicators

Source: Alm and Embaye (2013)
Figure 8.21: Quality of Governance indicators.

Source: Elgin and Öztunali (2012)
8.3 Expenditures and Income Inequality

Understanding tax compliance requires a solid grasp of the dynamics and issues involved.
on the expenditure side, as evidenced by the institutional matters discussed previously. One of the key challenges in PNG is that the population is mostly rural and highly fragmented. In general, the level of urbanisation affects the costs of tax administration, including the ability to provide taxpayer services and conduct tax-enforcement activities. For example, a low level of urbanisation makes monitoring of tax compliance more expensive, which could lead to lower tax compliance. While particularly applying to direct taxes, generally tax compliance depends on whether taxpayers perceive that the government is providing benefits to them in return for the taxes paid.

This reciprocal relationship gives rise to the issue of fiscal decentralisation. International evidence indicates that fiscally self-reliant and sustainable financial authorities at the provincial and local level are valuable and valued. A more decentralised system of government tends to be more responsive and better able to meet taxpayers’ needs and preferences (Oates, 1972); and a more efficient and responsive government at all levels may result in an increased willingness to contribute (Bird et al., 2005). Torgler et al. (2010) found a negative relationship between local autonomy and the size of the shadow economy. Fiscal decentralisation restricts the ability of a government to act as a leviathan that exploits tax bases and increases public spending, because taxpayers can select jurisdictions with lower levels of expenditures and taxes. Furthermore, jurisdictions can compete among themselves to keep taxes and expenditures low (Brennan and Buchanan, 1980).

Figure 8.23: Total expenditures in PNG in relation to other countries

![Figure 8.23: Total expenditures in PNG in relation to other countries](image)


The PNG 2014 Budget Strategy Paper highlighted the importance of continuing to increase funding for the education sector. Fee-free education, funding for vocational education, and ensuring that teachers can handle the increased demand are recommended. Moreover, PNG is clearly attempting to tackle current problems through increased funding
for the health sector and the goal of efficient expenditures that accompanies higher levels of provincial funding. Encouragingly, the guiding principles of the Medium Term Fiscal Strategy 2013–2017 aim to improve the transparency of spending agencies in expenditure reporting and public accountability. The report notes that poor practices in management and service delivery within agencies continue to limit improvements. Overall, Figure 8.23 shows that PNG’s total expenditure as a percentage of GDP is high (also in relation to the average expenditure of Asia–Pacific countries).

Inequality in the distribution of wealth and income affects public views about the ability of the fiscal system to tackle the social objectives of fairness, social justice and redistribution (Bird et al., 2005). Income inequality may be associated with political instability. For example, less privileged groups may choose undemocratic instruments to improve their situation (Alesina and Perotti, 1996). High income inequality reduces trust in institutions and, eventually, lowers tax compliance. Highly unequal distributions of income can also lead to low levels of solidarity within a society.

Figure 8.24: Income inequality in PNG

Source: Solt, Frederick, 2009 and own calculation for OECD average.

Regarding income inequality, a Gini coefficient of more than 60 percent is problematic. As demonstrated in Figure 8.24, inequality is a key issue in PNG; also, income inequality is apparently increasing, and PNG’s relative performance is poor. In other words, poor people are relatively poorer and rich people are relatively richer in PNG. Figures 8.25 and 8.26 illustrate the correlations between income inequality and tax evasion, and between income inequality and tax performance: a higher level of income inequality is correlated with more tax evasion (positive correlation) and a lower tax performance (negative correlation) The correlations are statistically significant in all four scatter plots.
For the reasons outlined above, the reduction of income inequality should be high on the agenda of the PNG Government. Targeting expenditure can partially achieve this aim (Bird
and Zolt, 2005). Ensuring equitable provision of public services to all citizens through increased spending on those with low incomes (Bird and Zolt, 2005) should generate positive side effects of tackling tax evasion and improving tax morale. In addition, these policies will reduce the incentives to move into the informal sector, because the proportion of income taxes levied on wages earned is linked to the incentive to supply labour to the shadow economy (Bird and Zolt, 2005). Thus, allocative distortions should be addressed. High income inequality also produces problems in terms of raising adequate revenue via taxes in a fair and efficient manner (Bird and Zolt, 2005).

8.4 Tax Mix and Tax-Paying Conditions

The revenue system of PNG has been criticised as too dependent on direct taxes (Bird, 1989a). For the historical development of the direct versus indirect taxation ratio for PNG, see Figure 8.A.1 in the Appendix to this chapter. The figure demonstrates a tendency for PNG’s relative share of direct taxes to be higher than the Asia–Pacific average. However, it is still below the OECD average. Unsurprisingly, there are some limitations to the efficacy of direct taxation when a high proportion of the population is extremely poor. When conducting reforms, there is often scope for simplifying the rate structure or reducing exemptions in order to broaden the tax base, because exemptions are often linked to items that are not relevant to poor people (Heady, 2001). A degree of uniformity of taxes is useful if the capacities of the tax administration have reached their limit. In addition, the greater opportunities for tax evasion in developing countries arguably require that income-tax rates are reduced below those of the developed world (Heady, 2001).

However, lower tax rates are not always linked to higher tax compliance (ie. reduced tax evasion and tax avoidance). The costs incurred by taxpayers seeking to evade or avoid taxes need to be considered (marginal benefits and costs). For example, a tax cut increases after-tax income and an individual’s net income, which may increase the incentive to invest in risky activities such as tax evasion (Keen, Kim and Varsano, 2008). Thus, the evidence regarding the impact of tax rates on tax compliance is mixed (Andreoni et al., 1998).

The decision whether to comply with taxes depends upon incentives introduced by the tax system (Alm, Bahl and Murray, 1990). In general, the tax mix between indirect and direct taxation has important consequences, not only for macroeconomic stability or income-distribution disparities, but also for tax compliance and the risk-taking of entrepreneurs (Martinez-Vazquez, Vulovic and Liu, 2010). Analysing data on 116 countries from 1990 to 1999, Martinez-Vazquez et al. (2010) observed that the average ratio of direct to indirect taxes has increased, with more pronounced effects in developed countries than in developing countries. They found that a 10 percent increase in the direct-to-indirect tax ratio reduced economic growth and inflows from foreign direct investment by 0.37 percent and 0.57 percent, respectively. On the other hand, the same increase in the tax ratio reduced economic volatility by 0.15 percent and income inequality by around 1 percent. However, the equalisation effect depends on the size of the tax system. Equalisation requires a threshold of the tax-to-GDP ratio of 0.29. Thus, tax systems with a low tax performance struggle to reduce income inequality through tax policies. PNG, however, has been able to achieve this threshold in the past. Nevertheless, recommendations over the past few decades have mostly called for less emphasis on a redistribution of welfare through the tax system. Goals of revenue adequacy, economic neutrality, and simplifying the tax system to match admin-
istrative capabilities are recommended (Thirsk, 1991).

Regarding tax rates for corporate income, a clear evaluation of the advantages and shortcomings of applying different rates to companies of different sizes is required. The evaluation should consider that there are sectoral differences in, for example, costs of tax compliance and access to capital markets (e.g., systemic disadvantage for small businesses). However, heterogeneity of tax rates may also distort competition between firms of different sizes and may provoke undesirable actions, such as splitting a firm into smaller units to benefit from lower taxes. Bird (2008), for example, recommends the following for tax incentives: “eliminate them. Despite their continuing popularity almost everywhere, tax incentives are usually redundant and ineffective” (p.9). We analysed the tax-paying conditions in PNG by investigating all the Paying Taxes reports between 2007 and 2014, which form part of the World Bank’s Doing Business project. This framework examines all the taxes that are paid by companies to develop country rankings as a method of understanding the ease of paying taxes. It uses several indicators — the number of tax payments, the time required to comply (the number of hours per year), and tax costs (e.g., the total tax rate) — as a measure of the tax burden borne by the businesses. Detailed discussions of the variables are provided in the reports.

Figure 8.27: Ranking of PNG for paying taxes

![Graph showing ranking of PNG for paying taxes over the years 2007 to 2014.](image)

Note: Data from PwC (2007-2014).
For Figure 8.27, we calculated the ranking ratio of PNG in relation to the number of countries. The figure shows two ratios, one that incorporates only 24 Asian and Pacific countries (upper graph) and one calculated for the total (188) number of countries (lower graph). The values range from 0 to 1; lower values are linked with better performance. PNG obviously performs quite well across all the proxies analysed, indicating that PNG offers a good environment in which businesses pay their taxes.

8.5 Tax Administration

As Bird (2008, p.14) points out, “the best tax policy in the world is worth little if it cannot be implemented effectively”. A weak tax administration is regarded as a major cause of the prevalence of endemic tax evasion in most developing countries (Thirsk, 1991). Tax reforms that help to increase tax compliance require not only a clear perception of the problems and the support of all the decision makers (political and administrative), but also an administration that is not overwhelmed. Investing more in training and upgrading the level of administrative performance is crucial. The PNG 2011 Annual Report of the IRC points out that revenue collection has been constrained and operates below optimum levels because of insufficiencies in both staff and the scale of operations (p.36). Exceeding administrative limits can result in poor compliance and widespread evasion (Thirsk, 1991). The recommendation then is clear: investment must be made in improving administrative capability. As Bird (2008, p.14) points out, an “administration that is unfair and capricious may bring the tax system into disrepute and weaken the legitimacy of state actions”.

There must be support for good administrative practices at the political level (Bird, 2008). A growing economy and state and increased public demand require an administration that is more market and customer focused, service oriented, open, and efficient (Torgler and Murphy, 2004). For example, the Australian Tax Office (ATO) strategy of becoming more focused on service, customers, quality, transparency, and process improvement (Job and Honaker, 2003) has apparently led to increased tax morale (Torgler and Murphy, 2004). The ATO was among the first tax administrations in the world to implement a new client-based organisational structure (the client-based model assigns staff members to units that focus on specific groups of customers, eg. salary and wage earners, small-business income-tax payers, and large-business income-tax payers). Torgler and Murphy (2004) discuss the advantages of such a strategy: tax administrations can better match their enforcement and educational programs to the compliance patterns of different groups (Vehorn and Brondolo, 1999). A client-focused approach increases trust among taxpayers, because they are more likely to feel that their needs are being considered in the regulatory process.

Another interesting case study is that of Japan (discussed in Torgler, 2004b), which had to be reorganised after World War II. In 1949, the National Tax Agency was established and a self-assessment system for the principal taxes was introduced, which signalled trust in taxpayers (Okada, 2002). In 1948, around 70 percent of taxpayers who were required to fill out tax returns either made mistakes or had not filled out the returns at all; tax delinquency exceeded 40 percent (Usui, 2002). Continual reforms helped to improve tax compliance. The tax agency has made great efforts to provide the public with tax information via television, radio, internet and newspapers, and by distributing pamphlets and booklets. Every November it organises a “Know-Your-Tax” program, with round-table discussions and essay competitions for students about taxation (Okada, 2002). Through this range of
activities, the Japanese tax administration now successfully interacts with taxpayers. If taxpayers make obvious errors, they are informed and the result of the examination explained to them. Thus the tax administration in Japan tries to be fair to the taxpayers. In addition, training programs were promoted in close consultation with academics. Also, salaries in tax administration were made comparable to salaries in the private sector, and slightly higher than those of officials in other government departments (Okada, 2002). This approach helped in hiring and retaining highly competent employees. Torgler (2004b) observed that Japan has high tax morale when compared with the morale of most other countries within Asia.

Of course, every conceivable policy design cannot be implemented by any tax administration (Bird, 2008). However, technical improvements such as new computer systems for tax administration, as well as integrating and matching data with other agencies such as the Investment Promotion Authority (see 2014 Budget Strategy Paper and IRC Annual Reports) are positive steps. The tax administration must be able to identify and bring new taxpayers into the "tax net"; however, constructing a better tax administration requires time (Bird, 2008).

Figure 8.28: Tax administration autonomy and tax performance

We now take a closer look at some of the features of the tax administration in PNG and compare these features with those of other countries. We also use the Alm and Embaye (2013) proxy to explore whether these features are correlated with tax performance and tax compliance. To account for the development through time, we work with average tax-performance and tax-compliance variables. A comparative analysis is essential to provide policy guidance, and we employed excellent data provided by Araki and Claus (2014) to conduct our investigation. In PNG, the tax administration is not officially affiliated with the Ministry of Finance. This should guarantee a higher level of autonomy and therefore less political interference in the day-to-day operations of the administration, and perhaps allow more freedom to implement organisational reforms (eg. in auditing processes or investment in communication technology; Araki and Claus, 2014). PNG, Australia, New Zealand and Singapore have the most autonomous revenue bodies of 22 tax adminis-
trations in the Asia–Pacific region that have been ranked according to five categories of authority: to design internal structure; to allocate budgeted administrative funds across administrative functions; to set staffing levels and mix of staff; to hire and dismiss staff; and to negotiate levels of staff pay. PNG’s tax administration is granted autonomy in all five categories, which allows PNG to respond adequately to rapidly changing internal and external environments. Figure 8.28 demonstrates how autonomy of tax administration is related to tax performance. An index of administrative autonomy (0 to 5) is based on the five autonomy factors above. If a country is autonomous in all categories, it receives a value of 5. The figure shows a (statistically significant) positive correlation between the index and tax performance.

The internal organisation of PNG’s tax administration follows a function-based structure (for an overview see Araki and Claus, 2014; or IRC Annual Reports). In practice, this means that the structure of departments and divisions is based on business functions. There are two major streams. The taxation wing, under the Commissioner for Taxation, responsible for collecting taxes; managing debt, policy and advice; and conducting tax audits. The services wing, under Commissioner for Services handles information and communication technology, and corporate and legal services, and houses the Office of the Commissioner. Internal audit and integrity is also part of the Commissioner Services. The advantage of this structure is the ability to focus on a particular business process while dealing with different types of tax. However, tax administrations have recently started to work within a segment-based model, because sometimes different approaches for different taxpayer categories can lead to better outcomes (Araki and Claus, 2014). Countries such as Australia, China, Japan, the Republic of Korea, New Zealand and Thailand have implemented this system. PNG would need, for example, a unit for large taxpayers in order to set up a segment-based system.

Figure 8.29: Population-to-offices ratio

Source data: Araki and Claus (2014, p.21)
An analysis of office networks calculates the population per office (Figure 8.29) or the land area per office (Figure 8.30) to measure the density of the tax-office network. PNG is in the mid range for population serviced per office (0.37 cf. median of 0.355; Figure 8.29). However, each office has to service a large geographical area (Figure 8.30) — only Australia and Mongolia have higher values. Hence, limitations of staff capacity may require addressing.

Figure 8.30: Area-to-offices ratio

The tax administration of PNG needs to understand that these ratios are important, because there is a very strong correlation between the staff-to-population ratio and tax compliance (Figure 8.31); a better staff-to-population ratio substantially reduces tax evasion. Similarly, there is a positive correlation between the staff-to-population ratio and tax performance (Figure 8.32). PNG’s tax effort is good and appears as an outlier in Figure 8.32. However, PNG could probably further increase its tax performance through a better staff-to-population ratio.

Araki and Claus (2014) explored the correlation between the number of staff members and population size. They clearly demonstrated a strong correlation between the number of staff members and population size (Figure 8.33). Relative to the size of PNG’s population, the tax administration appears understaffed. Moreover, PNG has a relatively small revenue body; only Brunei Darussalam and the Maldives have smaller revenue bodies.
Figure 8.31: Staff-to-population ratio and tax evasion

Note: Data from Araki and Claus (2014) and Alm & Embaye (2013). Correlation coeff. is -0.602**.

Figure 8.32: Staff-to-population ratio and tax performance

Note: Data from Araki and Claus (2014) and WDI. Correlation coefficient is 0.602***.
The quality of the office network is closely linked to the quality of human-resource management. As Araki and Claus (2014) point out, human-resource management is vitally important for operational and organisational effectiveness, especially as rapid changes in
the environment (e.g. increased globalisation and transactions) produce a growing demand in terms of service delivery and law enforcement. When Araki and Claus (2014) compared the total population with the number of fulltime equivalent (FTE) employees in tax administration, PNG had the second highest value (19.943); only India’s value was higher (Figure 8.34), again suggesting PNG has capacity issues in tax administration.

The consequence of this staff allocation is demonstrated in Figure 8.35. Population per FTE staff is positively correlated with tax evasion. The graph indicates PNG needs to address this issue.

Figure 8.35: Revenue body staff allocation and tax evasion (full-time equivalent [FTE])

When investigating tax compliance, it is useful to analyse the specific work sections to which staff members have been allocated (Figure 8.36). For example, what proportion of staff works in the department for collection of tax debts? Of the countries analysed, PNG has the highest proportion (22.8 percent) of staff in debt collection, followed by the Kyrgyz Republic (22.1 percent) and Japan (21.2 percent).

The general work atmosphere of a country’s tax administration can be measured via staff attrition rates. High turnovers are costly in any industry. Of course, attrition rates are influenced not only by the work environment but also by a country’s economic situation, which affects the opportunity costs of staying in or searching for a job in tax administration. The attrition rate of employees in PNG’s tax administration is around 3.6 percent (Araki and Claus, 2014; Figure 8.37). This rate is below that of Australia (5.8 percent), and below the average of the countries reported (4.9 percent; median 3.8 percent), but is higher than that of China, Japan and Malaysia (1.3 percent), the Republic of Korea (2.1 percent), Mongolia (2.3 percent) and Hong Kong (3.4 percent).
With respect to human resources, tax administration in PNG needs to improve its ability to reward good performance. It also should introduce periodic surveys of staff satisfaction. These surveys are conducted in many countries (e.g., 61 percent of the countries studied by Araki and Claus [2014, p.26]).
Araki and Claus [2014] used periodic surveys); however, China is an important exception.

**Figure 8.38: Salary expenditures and tax evasion**

![Graph showing salary expenditures and tax evasion](image1)

**Figure 8.39: Expenditures on human resource management and tax performance**

![Graph showing expenditures on human resource management and tax performance](image2)

Next, we examine expenditure on tax administration, which is vital for a well-functioning tax administration and hence is an important factor when analysing the tax-compliance environment. The results indicate that Mongolia and PNG have the lowest staff costs as a percentage of total tax-administration costs. On the other hand, costs for human-resource management account for 5.7 percent (2011) of their budgets, which is a similar proportion to Australia (6 percent). Of the 13 countries examined, only the Maldives had a higher proportion (11.80 percent). Figure 8.38 demonstrates the (statistically significant) negative correlation between tax evasion and salary expenditure for tax administration as a percentage of total expenditure in 2011: higher expenditures were linked to lower tax evasion. Thus, this relationship is important when trying to reduce tax evasion. Expenditures on human-resource management as a percentage of all expenditures are also positively correlated with a better tax performance (Figure 8.39). In this respect, PNG and Australia both showed strong results.
PNG’s expenditure on tax administration as a percentage of net revenue collection is estimated at 0.47 percent — only Mongolia (0.22 percent), the Maldives (0.37 percent), and Myanmar (0.40 percent) have lower values (Figure 8.40). That is, the relative costs of administration are low, which could be seen as a positive indicator, or even as an efficiency proxy. However, there is a negative relationship between tax evasion and tax administrative expenditures (Figure 8.41). We observe that the values for tax administration expenditures as a percentage of GDP range from 0.06 percent (Hong Kong) to 0.26 percent (Tajikistan). PNG has a value of 0.11 percent. The mean of all countries is also 0.11 percent while the median is 0.09 (Figure 8.41). Again we observe a strong negative correlation between tax
evasion and tax administration expenditures (Figure 8.42). Thus, tax administrative expenditures should be taken into account when combating tax evasion, because higher tax expenditures are also correlated with higher tax performance (Figure 8.43).

Figure 8.41: Tax administrative expenditures in relation to revenue collection and tax evasion

Figure 8.42: Tax administrative expenditures as percent of GDP and tax evasion

Figure 8.43: Tax administrative expenditures as percent of GDP and tax performance
Regarding taxpayer identification and filing, employees in PNG are not required to register with the IRC if they have no sources of income other than their wages (Araki and Claus, 2014). Thus, only 0.3 percent of the population is registered. The age structure of PNG’s population (high proportion of young people) may also contribute to this low proportion. If only 0.3 percent of the population is registered with the IRC, does this reduce the ability to monitor taxpayers’ generation of income from other sources, thereby affecting the size of the shadow economy? PNG’s Information and Communication Technology Strategic Plan 2009–2012 is a step forward in improving the performance of the tax administration, in reducing costs for the tax administration and for taxpayers, and in improving interactions between the tax administration and taxpayers. An independent, in-house ICT system for the tax administration is crucial to ensure the agency’s flexibility in reacting to the variety of demands it faces.

The introduction of procedures for the electronic payment of tax is another important part ICT plays in tax reform. According to Araki and Claus (2014), PNG only allows payment via mailed cheques or in-person at the tax office. If this situation persists, attempts should be made to allow payment via phone or internet banking. As Araki and Claus (2014) note, carrying cash to the tax office is risky in itself; it also requires time and labour and is limited to business hours. An additional concern is that handling cash transactions in the tax administration invites corrupt activities. Electronic payments reduce the administrative costs for both the taxpayers and the tax administration and help to reduce corruption. For example, the Philippines has introduced a system whereby taxpayers can only make direct payments to the tax-collection officers if there are no authorised agent banks in their district (Araki and Claus, 2014). In-person payments at agencies such as banks and post offices should be encouraged to reduce the work burden on tax administration. Moreover, because young people are highly active on social media platforms, these platforms will become increasingly important for tax administration in PNG, especially with the demographic structure of the population.

Figure 8.44: ICT
Facebook, Twitter and YouTube. In the future, applications (apps) for cell phones could also provide valuable avenues through which the administration may attract the attention of (young) taxpayers. Telephony has rapidly expanded into rural areas of PNG (Watson, 2011), and mobile telephony is being integrated into day-to-day activities. Watson (2011) notes that this is “perhaps the first major change that has occurred in rural communities in PNG for decades” (p.286). Figure 8.44 shows that an improvement in ICT is positively correlated with higher tax performance.

Tax audits are a critical element of the tax administration’s handling of tax evasion. An analysis of the amount of additional tax and penalty raised by verification actions as a proportion of net tax collections indicates that PNG performs in the middle range (Figure 8.45), compared to the performance of other countries. This implies there is room for improvement, although such comparisons are problematic (Araki and Claus, 2014). The primary problem is that different tax administrations apply different definitions of audit or verification.

PNG’s tax administration seems to have substantial search and investigative powers, both in absolute terms and also in relation to other countries. For example, the tax administration can enter both business premises and taxpayers’ dwellings without taxpayers’ consent or search warrants (permitted in only 8 of 21 reported countries). Evidence suggests that more effort towards tax verification (as a percentage of net tax collection) is positively correlated with tax compliance and tax performance. However, it is essential the tax administration treats taxpayers with respect (Feld and Frey, 2002a,b); otherwise, a crowding out of taxpayers’ intrinsic motivation to pay taxes might occur (Torgler, 2007).

Figure 8.45: Tax verification activities

![Figure 8.45: Tax verification activities](image)
8.6 Conclusions

An understanding of tax compliance requires an understanding of all the interactions within the tax system. Changes in one part of the system influence other parts. Therefore, viewing the tax-compliance process as a living system may be beneficial (Torgler, 2014). We must observe and understand who/what interacts with whom/what, and the intensity of these interactions in a habitual network of communication. Moreover, working on compliance requires broad expertise. As Everest-Phillips (2008) notes: “Taxation’s state building importance necessitates comprehending politics, policy, administration, history, politics and economics along with the technical details of law, public administration, and business accountancy” (p.124).

Tax reforms should be a continual evolutionary process and a process of learning by doing, with continual adjustments and refinements (Thirsk, 1991). If capacity restrictions exist, it is helpful to keep the tax system simple, to broaden tax bases, and to make sure that the marginal tax rates are not too high and that expenditure considers redistribution strategies (Thirsk, 1991). Bird (2008) succinctly summarises what is required: “If the political will exists, the techniques needed for effective tax administration are not secret: have a clear strategy; keep it simple; treat taxpayers as clients; chase down defaulters; keep a tight check on corruption; and use available technology wisely” (p.15).

To gauge the effectiveness and desirability of a taxation strategy, regular surveys of both taxpayers and the tax administration should be conducted and the data combined with information from other initiatives. For example, the PNG Minister of National Planning has taken an important and positive step in launching the Household Income and Expenditure Survey. This survey covers all 19 provinces and will improve the ability of the PNG Government to assess the living conditions, standards and welfare needs of its population. It is important to understand what people want. Building public support requires knowledge about areas of public satisfaction and dissatisfaction.

Furthermore, detailed work using micro-data derived from tax audits of randomly selected taxpayers must be conducted. This work will deliver reliable estimates of both tax gaps and the individual components of the tax gap, based on taxpayer groups and types of income. The information gained is valuable for reforms of the tax system and tax administration (Fuest and Riedel, 2009).

We recommend that the tax administration of PNG evaluates the possibility of conducting field experiments in collaboration with academic researchers. Many tax administrations worldwide, such as those of Norway, Sweden, Denmark, Finland, the United States of America, Switzerland, Austria and Australia have either conducted or have recently launched field experiments on tax compliance. Examples of such studies are Slemrod et al. (2001), Blumenthal et al. (2001), Torgler (2004a, 2013) and Gangl et al. (2014). The use of experiments in social sciences has dramatically increased over the past 20 years. The conferral on Vernon Smith of the Nobel Prize in Economics (ie. a high degree of recognition and legitimisation) is an indicator that experimental instruments are regarded as scientifically important in the area of social sciences.

An experiment intentionally creates a controlled environment in which one can investigate how a specific change in one factor affects tax compliance by holding all other factors con-
stant. Only the focus variable is changed in a so-called treatment. Such experiments can help a researcher or a tax administration to discover how tax compliance can be increased. Most field experiments follow a similar formula: taxpayers are allocated into two groups, a group that is “treated” and one that is “not treated”. Taxpayers are monitored both before and after being treated. The allocation to these two groups is made through proper randomisation to ensure independence. Such purposeful control over the experimental environment and the information received by the participants means that any changes in behaviour can be attributed to changes in the experimental conditions. Treatments are implemented by the tax authority, thereby evoking real processes that allow observation of taxpayer behaviour in the usual environment where social and economic interactions occur; the taxpayers are unaware of being part of the field experiment (Torgler, 2004a).

The conduct of field experiments is a powerful test of the effects of different instruments on taxpayers in the real-world situation of paying taxes. Thus, the results are valuable in formulating practical advice on tax policy that is based on scientific evidence (Torgler, 2007). There is a variety of possibilities for experimental design. For example, a letter can be used to check whether taxpayers can be “nudged” to higher levels of tax compliance; the tax-auditing process can be evaluated and redesigned more efficiently. Gangl et al. (2014) studied firms that had just started operating, and explored whether close supervision through constant auditing in the first year helped to increase compliance.

However, we still have limited understanding about the optimal degree of supervision: too much supervision can, for example, crowd out compliance. It also worth exploring whether friendly and respectful communication with and treatment of taxpayers positively affects tax compliance. The implications of transparency, reduced uncertainty, and provision of information can also be investigated with field experiments. Similarly, increasing taxpayers’ knowledge about government activities requires more exploration, which can be done with field experiments. Numerous questions can be asked through conducting experiments. For example: What are the real effects of informing new taxpayers about tax issues of particular importance to them? How useful is preparing new taxpayers to be more compliant? What happens if assistance is improved? What are the consequences of marketing strategies (e.g., promotional videos, newspaper articles) in which common values, common successes and quality improvements are portrayed and communicated to the taxpayers? What happens if large, compliant taxpayers (e.g., firms) and famous people are showcased in the media, communicating reasons to be honest taxpayers?

Successful tax administrations are friendly, respectful and work for the common good while also apprehending hard-core tax evaders. Feld and Frey (2002a) investigated a dataset of tax authorities’ behaviour in Switzerland (26 cantonal tax authorities). They found that tax authorities of cantons with more direct participation rights treated taxpayers more respectfully and were less suspicious if taxpayers reported low incomes than were the authorities in cantons with less direct democracy. Concurrently, however, non-submission of tax declarations attracted heavier fines. Feld and Frey (2002b) argue that tax morale is supported, or even increased, when tax officials treat taxpayers with respect. Conversely, morale is reduced when the administration considers taxpayers as individuals who have to be forced to pay the taxes: “The feeling of being controlled in a negative way, and being suspected of tax cheating, tends to crowd out the intrinsic motivation to act as an honourable taxpayer and, as a consequence, tax morale will fall. In contrast, if the tax official makes an effort to
find out the reason for the error by contacting the taxpayer in an informal way, the taxpayer will appreciate this respectful treatment and tax morale will be upheld” (p.4). Feld and Frey divide respectful treatment by the tax administration into two components: transparent and clear procedure; and respecting taxpayers’ character. Their empirical analysis shows that treating taxpayers respectfully reduces tax evasion.

In general, tax administrations need to think about alternative mechanisms beyond deterrence in order to encourage tax compliance. In the past few years many tax administrations have moved away from command-and-control instruments for deterring noncompliance toward positive encouragement for compliance — emphasising “the ‘carrot’ for compliance rather than the ‘stick’ for noncompliance … This insight is especially important because, from the tax collection standpoint, it is extraordinarily expensive to arrange an enforcement regime so that, from a strict cost–benefit calculus, noncompliance does not appear attractive to many citizens” (Slemrod, 1992, p.7).

Feld, Frey and Torgler (2006), for example, recommend placing more emphasis on rewarding honest taxpayers. Instead of raising the relative cost of not paying taxes, the instrument of rewards increases the benefits of paying taxes. The advantage of rewards is that they are perceived as supportive (Nuttin and Greenwald, 1968). Actions perceived as supportive tend to “crowd-in” intrinsic motivation. Rewards change the relative prices such that paying taxes becomes a more attractive alternative than evading taxes. However, so far we do not know whether the effect is big enough to identify empirically. We have limited knowledge about the type (eg. direct monetary payments, such as participating in a lottery offering a sizeable sum of money, or receiving various kinds of gifts) and the size of the reward that could positively influence tax compliance. For example, Alm, Jackson and McKee (1992) found in a laboratory experiment that lotteries work well as a positive reward for compliance. An interesting avenue for research is to test with a field experiment whether firms react positively to nonmonetary rewards. Feld et al. (2006) recommend that the tax office issue a certificate for “good” taxpayers. Firms receiving this recognition could then capitalise on their improved reputation and image. This could generate several categories of positive externalities, such as receiving more favourable conditions on the capital market or an increase in customers’ trust in the firm’s products.

According to the so-called slippery slope framework (Kirchler, 2007; Kirchler, Hoelzl and Wahl, 2008), high degrees of tax compliance can only be maintained through high levels of trust or power, with the impact of one dependent on the level of the other. A downward spiral occurs when trust and power are at an intermediate level “because trust in the authorities is already undermined [and] monitoring and audits are seen as signals of a ‘cops and robbers’ attitude on behalf of the tax authorities and create even more distrust” (Kirchler, 2007, pp.205–6). Several recent studies based on experimental and survey data provide empirical support for this slippery slope framework (Wahl, Kastlunger and Kirchler, 2010; Kastlunger et al., 2013; Kogler et al., 2013). The results obtained in this study also support such a framework. Improving institutions by enhancing law and order, government stability, voice and accountability, and by reducing corruption, should be high on the agenda. Rose-Ackerman (1999, pp.227–9) provides valuable suggestions for reforms that tackle corruption:

1. Simplify the tax laws to reduce bureaucratic discretion and to reorganise the bureaucracy to improve oversight and incentives for good performance.
2. Take a hard look at regulatory laws to see which ones can be eliminated or simplified, or require improved enforcement: “Many countries have both pointless business regulation that generates bribes and ineffective regulations in socially beneficial areas” (pp. 227–8).
3. Costly, large-scale, state-sponsored infrastructure projects encourage inefficient actions. Cancel projects of inappropriate scale and design and improve procedures for project approvals.
4. Improve the checks and balances in a political system as a background to other reforms.
5. Tackle problems of policy and institutional structure.
6. Conduct civil service reforms. Civil servants require decent base salaries relative to the private sector; reforms should establish effective incentives to induce officials to be honest and perform efficiently.
7. Institute reforms that improve existing institutions such as courts, or create new bodies such as independent inspectors general or anticorruption commissions. A country requires credible institutions capable of hearing complaints and enforcing the law.
8. Fundamental changes require the commitment from the top of government: “Only structural changes in the underlying corrupt incentives built into the operation of government can accomplish credible change” (p.229).

A more legitimate and responsive state is probably an essential precondition for a more adequate level of tax compliance, while a more efficient tax administration also provides the foundation for increased tax compliance and better tax performance. Improving the governance structure and the tax administration are essential to guaranteeing a successful, long-term and sustainable tax-compliance strategy.

References


Alm, J., Jackson, B. R. and McKee, M., 1993. ‘Fiscal exchange, collective decision insti-


Appendix to Chapter 8

Figure 8.A.1: Direct versus indirect tax ratio

Note: Direct taxes include income tax, payroll tax, social security contributions, and property tax; indirect taxes include taxes on goods and services, taxes on international trade, and a variety of other taxes. Source: Martinez-Vazquez et al. (2010).
9.1 Introduction

During the past few decades, one of the primary concerns of tax research has been the search for an understanding of why people pay taxes. The main focus of this endeavour has been to find ways to increase tax compliance by moving beyond the deterrence strategies that use a “stick” or an economics-of-crime approach. To use an analogy from medicine, the research is looking for a way of preventing the disease rather than trying to treat the disease once established.

The obvious and often suggested policy implication of the enforcement approach is that enforcement matters because it can affect the financial considerations that motivate — at least in part — an individual’s compliance choices. This conclusion has been valuable. However, we must recognise that this approach also presumes that an individual pays taxes because — and only because — of the economic consequences of detection and punishment for evasion (Torgler, 2011).

One of the pioneering researchers in the area of the psychology of taxation made the following point more than 30 years ago: “it could be that tax evasion is the only channel through which taxpayers can express their antipathy … we can be confident in our general prediction that if tax attitudes become worse, tax evasion will increase” (Lewis, 1982, pp.165, 177). Before Lewis, Spicer and Lundstedt (1976) stated that the choice between tax compliance and evasion is not only made on the grounds of sanctions but also on the grounds of a set of attitudes and norms. Earlier pioneering work on tax morale was conducted in the 1960s and 1970s by German scholar Günter Schmölders (1951/1952, 1960, 1962, 1970).

It is true that individuals care about financial incentives and that they may gamble by attempting to evade taxes, but it is wrong to assume that individuals pay taxes solely because
they fear detection and punishment. Convincing evidence indicates that tax morale — the intrinsic motivation to pay taxes — strongly influences tax compliance (e.g. Torgler, 2001, 2005a; Alm and Torgler, 2006; Alm, Martinez-Vazquez and Torgler, 2006; Torgler and Schneider, 2007, 2009; Dulleck et al., 2012). If tax morale is so important, we need to understand the factors that shape this morale in order to derive policy implications.

This approach may also be positive from a cost–benefit perspective: preventing the disease of tax evasion may be cheaper than treating it ex post. However, encouraging tax morale may be more than a prevention tool; it could be a key tool in moving from a bad tax-evasion equilibrium towards a better equilibrium. Thus, we should contemplate how to facilitate a positive “snowball” effect. Frey and Torgler (2007) showed empirically that, if people perceive others as more compliant, their own tax morale increases. Lewis (1982, p.144) convincingly argues that there is a “tax subculture, with its own set of unwritten rules and regulations. Thus I am more likely to evade not only because I have friends who, I know, have got away with it (so why shouldn’t I?) but also because evasion is ethically acceptable among my friends … Furthermore, ‘no friends of mine can be criminals’ … ‘What’s good enough for fine, upstanding citizens like Fred Bloggs, John Doe, Donald Campbell, Herman Schmitt and Hans Anderson is good enough for me’”. Hence, tax morale is shaped by social interactions (Frey and Torgler, 2007), as are tax decisions (Fortin, Lacroix and Villeval, 2007). The importance of social interactions has also been covered in the crime literature (e.g. Kahan, 1997).

Historically, Hayoz and Hug (2007) noted that many nations have failed to improve tax compliance because they focused entirely on coercion and repression without encouraging voluntary compliance. Hayoz and Hug emphasise that, therefore, nations “are weak with regards to their political capacity to rely on voluntary compliance” (p.9).

In summary, the finding that tax morale matters means that improving tax morale is a desirable policy instrument to complement the usual enforcement options (Torgler, 2011). In this analysis, we therefore investigate closely the implications of political capacity for tax morale. If a tax administration or a government is serious about sustainably increasing or maintaining tax compliance, they cannot neglect tax morale. Enacting policies based on “shortcuts” that do not consider the complexity of the decision processes around tax compliance may have serious consequences. We argue that investing heavily in understanding tax morale in Papua New Guinea (PNG) may have a significant pay-off: such understanding could lead to a far more sustainable future for PNG.

9.2 The Institutional Architecture and Governance Quality

Humans are (on average) moral beings. However, until now our understanding has been limited on the foundation of experiencing moral costs when faced with both minor and major decisions about whether to comply with rules or norms. Moral costs act as a disincentive to evade taxes. Neuroscientific evidence now indicates that taxpayers experience moral costs and that such moral costs have a positive impact on tax compliance (Dulleck et al., 2012).

In Chapter 8 (Increasing Tax Compliance in Papua New Guinea), we demonstrated a ro-

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1 For a more detailed discussion of the aspects discussed here see, in particular, Torgler (2011) and, to some extent, Torgler (2007).
bust relationship between tax evasion and institutional or governance quality. Do such institutional conditions directly shape tax morale? Some evidence on this topic is available, including detailed studies in European countries (Frey and Torgler, 2007; Torgler, 2005b). In this study we used the latest available data on tax morale, recently released by the World Values Survey (WVS) (Wave 6, 2010–2014), to explore how institutional and governance conditions matter. In addition, we also looked at the impact of income inequality and ethnic fractionalisation. In our previous report, we provided a detailed discussion about why institutions and governance matter. To avoid repetition, here are the key points in a nutshell: The position of the political equilibrium reflects the balance of political forces and institutions (Bird, Martinez-Vazquez and Torgler, 2006). Taxes are the price paid for government services and taxpayers are generally sensitive to the way the government uses tax revenues. Therefore, taxpayers perceive their relationship with the state not only as a relationship of coercion, but also as one of exchange. If citizens perceive that their interests (preferences) are properly represented in political institutions and that they receive an adequate supply of public goods, their identification with the state increases along with their willingness to pay taxes. In contrast, an inefficient state in which corruption is rampant will spawn citizens with little trust in authority and thus a low incentive to cooperate. Citizens feel cheated if they believe that corruption is widespread, their tax burden is not spent well, their government lacks accountability, and that they are not protected by the rules of law. In other words, a more encompassing and legitimate state increases citizens’ willingness to contribute.

Here, we employ the latest WVS Wave 6 to explore empirically whether trust matters. There is already substantial evidence demonstrating that vertical trust (trust between taxpayers and the state) is extremely important (Torgler, 2007; Frey and Torgler, 2007). Positive actions by the state improve taxpayers’ tax morale and their commitment to the tax system. If the state acts in a trustworthy way, taxpayers are more willing to comply with taxes. Our focus is on trust in the government. For example, Hanousek and Palda (2004), using eastern European data, found a positive correlation between tax evasion and the perceived government services based on the taxes paid.

In general, the tax culture has a substantial effect on the style of enforcement efforts (Cummins et al., 2009). In our first report on PNG, we observed that the tax administration is crucial to the understanding of tax compliance. Evidence from studies in the US and Turkey (Torgler et al., 2008) indicates that, at the micro (individual) level, positive attitudes towards the tax authority (e.g. how taxpayers rated tax-administration jobs, their honesty and fairness, and their helping and information behaviour) and the tax system significantly increases tax morale. The statement by Smith (1992) is also worth considering: “cycles of antagonism between the tax administration and the taxpayer might begin to break with a positive concession by the administrator” (p.226). He suggested that a respectful and fair treatment of taxpayers produces respect for the tax system and thus leads to cooperation.

In Chapter 8, we discussed the studies by Feld and Frey (2002a,b), which found that institutional conditions (level of direct democracy) influence how tax authorities behave. These authors stressed that tax morale is supported or even increased when tax officials treat taxpayers with respect and is reduced when the administration considers taxpayers as individuals who have to be forced to pay taxes. Their empirical analysis showed that treating taxpayers respectfully reduced tax evasion. Alm and Torgler (2006) analysed data from
Europe and the US and found that the highest tax morale was observed in the US and Switzerland, two countries with very strong democratic traditions. Using Swiss survey data, Torgler (2005b) also found that a higher level of direct democracy leads to higher tax morale. Several studies on voting and tax compliance (e.g., Alm, McClelland and Schultze, 1999; Feld and Tyran, 2002; Torgler and Schaltegger, 2005) have used experimental methods to demonstrate that voting on tax issues has a positive effect on tax compliance.

The link between local autonomy and tax morale and tax compliance has been also analysed (Torgler, Schneider and Schaltegger, 2010). The advantage of smaller structures in tax policy is that citizens’ preferences are better served than in a framework in which a uniform tax system is designed for a population with heterogeneous preferences. One of the strengths of a decentralised system is greater transparency between the tax system and the public services received. Blankart (2002) showed that taxes are comparable to prices in some sense, especially at the local level.

In general, the political process is often biased toward instruments that provide fast responses. This bias is partially driven by the (short) election cycle, and the resulting pressure on politicians to be re-elected. However, sustainability requires a long-term vision. Therefore, we should explore whether tax morale can change quickly, perhaps within one or two election cycles. The literature so far indicates that this is indeed the case.

In a quasi-natural experiment investigating German reunification over different periods (Feld & Torgler, 2007; Feld et al., 2008), we observed a strong convergence of tax morale in East and West Germany within a short time. This quasi-natural experiment provided valuable insights for an analysis of tax morale because many factors can be controlled (similar factors in East and West Germany were a common language, similar education systems, and a shared cultural and political history after the Second World War and before the separation). Consequently, an East–West German comparison has a methodological advantage over cross-country studies. The study could observe how taxpayers adapted to a new institutional environment. When the Iron Curtain fell, former citizens of the German Democratic Republic were exposed to the West German system, including the social welfare state, the tax system and the set of formal and informal rules. Feld et al.’s (2008) findings indicated that tax morale converged rapidly after the reunification in Germany. Although tax morale was significantly and substantially different in East and West Germany in 1990, the regions’ morale did not differ significantly in 1999. Within 9 years, the tax-morale values had converged, due in particular to a significant change in the level of tax morale in the former Republic.

Martinez-Vazquez and Torgler (2009) investigated the development of tax morale in Spain, because the country had undergone fundamental changes in the public sector since its transition to a democratic system after the death of General Francisco Franco in 1975. Their results indicated that during the post-Franco period Spain successfully designed general institutional reforms. These reforms included reforms in tax policy and tax administration that significantly increased tax morale — although some deterioration in morale occurred between the 1995 and 1999–2000 observations. Alm, Martinez-Vazquez and Torgler (2006) conducted a study on Russian data during the years 1991, 1995 and 1999 to examine how tax morale changed during the tumultuous events of the 1990s. Overall, in the first years of the transition, Russia did not succeed in designing tax systems, tax administrations, and other government structures and institutions (especially improved delivery of public services) that helped to maintain tax morale. Even so, tax
morale improved from 1995 to 1999. As discussed in our first report, improvements in the tax administration can positively influence tax morale over time (Torgler and Murphy, 2004).

In this study, we used the same institutional proxies as those used to investigate tax evasion. For clarity, we briefly report here a discussion of the variables analysed in our first report. The first variable measuring institutional quality is derived from data in the International Country Risk Guide (ICRG). The ICRG specifically focuses on factors that affect private foreign-investment decisions (see Knack, 1999). The rating comprises 22 variables in three subcategories of risk: political, financial and economic. We focused on the political risk component, measured by BUREAUCRATIC QUALITY, CORRUPTION, DEMOCRATIC ACCOUNTABILITY, GOVERNMENT STABILITY, LAW & ORDER, and INTERNAL or EXTERNAL CONFLICT. A higher number of points indicates a lower potential risk; therefore, higher scores are correlated with higher quality institutions and governance.

We also employed the Quality of Governance Index introduced by Kaufmann, Kraay and Mas-Mastuzzi (2003) as another proxy for governance and institutional quality. It allowed us to focus on several factors similar to those used to understand tax compliance in the previous chapter (this volume). In broad terms these include:

1. Process by which governments are selected, monitored and replaced:
2. Capacity of the government to effectively formulate and implement sound policies:
3. Respect of citizens and the state for the institutions that govern economic and social interactions:

All estimated scores lie between –2.5 and 2.5, with higher scores corresponding to better institutions (and governance outcomes).

We also looked at the role of national pride. Macintyre and Torgler (2014) explored in detail the theoretical and empirical relationship between national pride and compliance. Their results

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1 Institutional strength and quality of the bureaucracy: “High points are given to countries where the bureaucracy has the strength and expertise to govern without drastic changes in policy or interruptions in government services. In these low-risk countries, the bureaucracy tends to be somewhat autonomous from political pressure and to have an established mechanism for recruitment and training. Countries that lack the cushioning effect of a strong bureaucracy receive low points”.

2 Assessment of corruption within the political system. Lower scores indicate “high government officials are likely to demand special payments” and that “illegal payments are generally expected throughout lower levels of government” in the form of “bribes connected with import and export licenses, exchange controls, tax assessment, police protection, or loans.”

3 Measures the level of responsiveness of a government to its people.

4 Assessment of the government’s ability to carry out its declared program(s), and its ability to stay in office (subcomponents: government unity, legislative strength and popular support). The “law” subcomponent measures the strength and impartiality of the legal system, while the “order” subcomponent is an assessment of popular observance of the law.

5 Assessment of the political violence in a country and its actual or potential impact on governance (subgroups: civil war/coup threat, terrorism/political violence, civil disorder).

6 External conflict is measured as “an assessment of the risk to both the incumbent government and inward investment. It ranges from trade restrictions and embargoes, whether imposed by a single country, a group of countries, or the whole international community, through geopolitical disputes, armed threats, exchanges of fire on borders, border incursions, foreign-supported insurgency, and full-scale warfare”.

7 See also Kaufmann, Kraay and Mastuzzi (2003, 2004).
indicated that government activities or expenditures that encourage national pride are, as they stress, money well spent. Previous studies have also demonstrated that national pride positively affects tax compliance (for an overview, see Torgler, 2007).

In addition, we explored the impact of income inequality, which is a crucial issue in PNG. As we established in the first report, income inequality is correlated with higher tax evasion and lower tax performance. Furthermore, income inequality may be associated with political instability and lower levels of trust in institutions, and possibly with less solidarity within society. We also investigated the phenomenon known as fractionalisation. Using cross-country analysis, the results of our first report indicated that ethnic tension is a problem. To deepen our understanding, we analysed data provided by Alesina et al. (2003) on ethnic, linguistic and religious fractionalisation. The measurement of language fractionalisation is based entirely on data from the Encyclopaedia Britannica (2001), which reports the proportion of languages spoken (classified as mother tongue) based on countries’ census data (a total of 1055 linguistic clusters for 201 countries). Data on religious fractionalisation were also derived from the Encyclopaedia Britannica (2001) (294 religions, 215 countries). Finally, ethnic fractionalisation, the main variable in the study by Alesina et al. (2003), is a combination of linguistic and racial attributes. They used various sources (Encyclopaedia Britannica [2001], CIA World Factbook, Minority Rights Group International, the Ethnologue Project) and contacted some countries directly to obtain the relevant data necessary for the study on ethnicity. They found that, contrary to religious fractionalisation, ethnic and linguistic fractionalisations are associated with negative outcomes on quality of governance. Based on these results, the authors argue that religious fractionalisation is a sign of a more tolerant, free society (Figure 9.1).

Figure 9.1: Fractionalisation and tax evasion

Source: Alm and Embaye (2013)
The results shown in Figures 9.1, 9.2 and 9.3 agree with the findings of Alesina et al. (2003). The correlation between tax evasion and ethnic fractionalisation is positive and statistically significant using each of the three tax-evasion proxies discussed in Chapter 8. In contrast, there is a negative correlation between religious fractionalisation and tax evasion, but this is only statistically significant for the tax-evasion proxy used by Alm and Embaye (2013). The correlation between language and tax evasion is never statistically significant.

Figure 9.2: Fractionalisation and tax evasion.

Source: Elgin and Öztunali (2012)

9.3 Empirical Findings on Tax Morale
As mentioned, we used the newest wave of the WVS released on 8 April 2014. Several studies have used the WVS to generate a proxy for tax morale (for an overview, see Torgler, 2007). The WVS is a worldwide investigation of sociocultural and political change that collects comparative data on people’s values and belief systems. The WVS builds on the European Values Surveys, first carried out from 1981 to 1984. The WVS surveys assess people’s

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1 For a discussion of how tax evasion has been measured see Chapter 8.
basic values and beliefs and have been carried out in about 80 societies, representing more than 80 percent of the world's population. This large dataset therefore permits cross-country comparison of people's tax morale that is based on representative national samples. To assess the level of tax morale, we worked with the following question:

"Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between: … Cheating on tax if you have the chance". The question leads to a 10-scale index of tax morale with two extreme points, "never justified" and "always justified".

The ten-point scale was recoded into a four-point scale (0, 1, 2, 3), with the value 3 representing "never justifiable". The values 4–10 were integrated into the value 0 due to a lack of variance.

This is a common approach in the tax morale literature (e.g. Torgler, 2007).

Figure 9.3: Fractionalisation and tax evasion

However, using a single variable is also problematic and has been discussed in previous studies (for an overview, see Torgler 2011). Nevertheless, because it is an important consideration, we briefly discuss it here. In general, extracting data only from one question in the WVS reduces
problems of complexity inherent in the construction of an index, especially regarding the measurement procedure or a low correlation between the items.\textsuperscript{1} Even so, one should recognise that there are some good reasons to use a multi-item index instead of a single question to measure tax morale.\textsuperscript{2} Tax morale is probably a multidimensional concept, which may require a multi-item measurement tool, as in psychometric studies. In this context, our single-item measure has some disadvantages (Lewis, 1982; Jackson and Milliron, 1986). For example, it may be difficult for a single-item measure to adequately capture the interrelated facets of tax morale. Also, a single-item measure may be adversely affected by random errors in measurement. Further, the advantage of a multi-item index is that errors tend to average out, therefore producing a more reliable measure. Compared to a single-item measure, a multi-item index probably provides better score reliability by pooling together information that the items have in common. A multi-item tool also increases validity by providing a more representative sample of information about the underlying concept, and increases precision by decreasing score variability (for an index study, see Torgler, Schaffner and Macintyre, 2010).

Figure 9.4: Tax morale in Asia–Pacific countries and beyond

We employed commonly used control variables in the tax morale regression; for example, age structure (dummies; reference group: aged below 30 years), gender, marital status (reference group: single), employment status (dummy for self-employed), and socioeconomic condition (reference group: lower socioeconomic class). We thought age might be particularly interesting in this analysis because PNG has a relatively young population structure: 55 percent of the pop-

\textsuperscript{1} For a discussion of the shortcomings and advantages of survey data in relation to other approaches, see Torgler (2007).

\textsuperscript{2} For example, Kirchler (1997, 1999) uses several items to measure tax morale. He confronted subjects with various scenarios, in which a fictitious individual overspends/underreports income on a tax return. After reading the scenarios, subjects could express their disagreement with or acceptance of tax evasion.
ulation is aged 25 years or younger and only 7 percent is older than 55 years.

In summary, we have analysed a large database covering 41 countries and between 44,051 and 52,067 people (see Appendix, Table 9.A.1 for the list of countries). We first present a descriptive analysis indicating the differences in tax morale between Asia–Pacific countries and other countries (Figure 9.4). Although we were not able to explore data for PNG directly, nonetheless, results from the local geographic region to which PNG belongs may be relevant for PNG. In general, we observed that the results are skewed to the right (large numbers of individuals report that tax evasion is never justified — more than 60 percent; Figure 9.4). A two-sample Wilcoxon Rank-sum test indicated that the difference between Asia–Pacific countries and all other countries was statistically significant. Thus, tax morale appears to be lower in Asia–Pacific countries than in all other countries ($z = 2.362$). However, this result only offers information about the raw effects, not the partial effects. Thus, a multivariate analysis provided further insights.

Table 9.1: Tax morale and governance (International Country Risk Guide)

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<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
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<th>(7)</th>
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<td>(2.17)</td>
<td>(1.63)</td>
<td>(1.32)</td>
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<td>0.186***</td>
<td>0.190***</td>
<td>0.206***</td>
<td>0.191***</td>
<td>0.203***</td>
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<td>(22.68)</td>
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<td>(1.94)</td>
<td>(1.98)</td>
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<td>(0.76)</td>
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<td>-0.033*</td>
<td>-0.007</td>
<td>-0.034*</td>
<td>-0.011</td>
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<td>Working class</td>
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<td>0.027</td>
<td>0.027</td>
<td>0.036*</td>
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<td>(1.33)</td>
<td>(1.32)</td>
<td>(1.76)</td>
<td>(0.76)</td>
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<td>Upper- and lower-middle class</td>
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We first report the outcomes of Ordinary Least Squares (OLS) regressions. We decided to run OLS regressions in order to report the beta/standardised coefficients and therefore to clearly observe the relative strength of the different variables. In other words, standardised coefficients display the results using a unified metric, namely, standard deviation units. This is particularly useful for policy analysis. Tables 9.1 and 9.2 present the results using the International Country Risk Guide (ICRG) and Quality of Governance data. The results are striking. All the institutional variables are statistically significant at the 1 percent level. The beta coefficients indicate that governance factors have a strong impact in comparison to that of the other variables included in the specification. For example, specification 1 in Table 9.1 indicates that a decrease of one standard deviation in corruption leads to an increase of 0.124 standard deviations in tax morale. Comparing the different specifications from Table 9.1, we observe that corruption has the strongest influence on tax morale, followed by the quality of the bureaucracy, and democratic accountability.

In Table 9.2, government effectiveness exerts the strongest effect, followed by rule of law and voice and accountability. After controlling for several variables, Asia–Pacific countries again show levels of tax morale lower than those of the countries in the reference group (all others). This result indicates potential for improvement in tax morale in the Asia–Pacific region through tax and policy reforms. Another striking result is the strong effect of national pride throughout all estimations. The relative effects are quite significant (strongest in Table 9.1). Thus, a better understanding of the factors driving national pride could help to achieve better cooperation within a society. Confidence in the government is also positively correlated with tax morale. However, the variable is not significant throughout all specifications. One reason could be that some of the institutional or governance variables catch part of the effect of trust in the government. Other variables had the expected correlations; for example, age is positively correlated with tax morale, and the quantitative effect increases for higher age categories. This feature could have particular implications for PNG as a country with a young population. The challenge is to find ways of increasing tax morale among young people. Females have higher tax morale than males do, and married people report a higher level of tax morale than singles do. In addition, economic status is negatively correlated with tax morale. Surprisingly, there is a trend for self-employed people to report, ceteris paribus, higher tax morale, but the coefficient was not always statistically significant.

Table 9.2: Tax morale and governance (Quality of Governance indicators)

1 Conducting ordered probit models to deal with the ranking information of the scaled dependent variables hardly changes the results.

2 For a discussion of the reasons for an age effect in the area of compliance (in particular, corruption), see Torgler and Valev (2006).
<table>
<thead>
<tr>
<th>Dependent variable: Tax morale</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
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<tr>
<td>Confidence: government</td>
<td>0.023***</td>
<td>0.048***</td>
<td>0.023***</td>
<td>0.030***</td>
<td>0.026***</td>
<td>0.007</td>
</tr>
<tr>
<td></td>
<td>(3.60)</td>
<td>(7.31)</td>
<td>(3.64)</td>
<td>(4.59)</td>
<td>(4.10)</td>
<td>(1.17)</td>
</tr>
<tr>
<td>National pride</td>
<td>0.185***</td>
<td>0.178***</td>
<td>0.179***</td>
<td>0.175***</td>
<td>0.187***</td>
<td>0.188***</td>
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<tr>
<td></td>
<td>0.113</td>
<td>0.109</td>
<td>0.109</td>
<td>0.107</td>
<td>0.114</td>
<td>0.115</td>
</tr>
</tbody>
</table>

Quality of Governance Indicators

| Control of corruption          | 0.128***|         |         |         |         |         |
|                                | (22.11) |         |         |         |         |         |
| Voice and accountability       | 0.149***| (24.58) |         |         |         |         |
| Government effectiveness       | 0.167***| (23.48) |         |         |         |         |
|                                | 0.134    |         |         |         |         |         |
| Regulatory quality             | 0.156***| (22.53) |         |         |         |         |
| Rule of law                    | 0.145***| (23.49) |         |         |         |         |
|                                | 0.137    |         |         |         |         |         |
| Political stability            | 0.099***| (14.54) |         |         |         |         |
|                                | 0.082    |         |         |         |         |         |
| Asia–Pacific                   | -0.182***| -0.104***| -0.219***| -0.164***| -0.185***| -0.120***|
|                                | (-11.91) | (-7.29) | (-13.93) | (-11.02) | (-12.19) | (-8.02) |
| Age group/gender               | -0.068   | -0.039   | -0.081   | -0.061   | -0.069   | -0.045   |
| 30–49 years                    | 0.094***| 0.094***| 0.094***| 0.099***| 0.091***| 0.107***|
|                                | (5.31)  | (5.31)  | (5.33)  | (5.61)  | (5.13)  | (6.06)  |
| 50–64 years                    | 0.198***| 0.198***| 0.197***| 0.205***| 0.191***| 0.220***|
| ≥65 years                      | 0.253***| 0.250***| 0.255***| 0.267***| 0.246***| 0.297***|
|                                | (11.24) | (11.15) | (11.41) | (11.95) | (10.94) | (13.22) |
| Female                         | 0.087***| 0.087***| 0.085***| 0.087***| 0.086***| 0.087***|
|                                | (7.32)  | (7.35)  | (7.20)  | (7.31)  | (7.29)  | (7.29)  |
| Marital status                 | 0.037    | 0.037    | 0.037    | 0.037    | 0.037    | 0.037    |
| Widowed                        | -0.030   | -0.034   | -0.021   | -0.030   | -0.026   | -0.083***|
|                                | (-1.02) | (-1.18) | (-0.72) | (-1.02) | (-0.90) | (-2.85) |
In Table 9.3 we explore the impacts of fractionalisation and income inequality. Here the results are highly statistically significant, with all three fractionalisation proxies negative. This contrasts with the results on tax evasion, where the proxies were only negative for ethnic fractionalisation. When analysing tax morale, the strongest effect occurs with language fractionalisation. These results do not necessarily mean that fractionalisation is a bad thing; rather, that institutional conditions need to respond to the heterogeneity within a society. Local autonomy and decentralisation might be a good tool through which to tackle this issue; countries such as Switzerland have a good track record in dealing with, for example, language fractionalisation.

Table 9.3: Tax morale, fractionalisation and income inequality

<table>
<thead>
<tr>
<th>Dependent variable: Tax morale</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence: government</td>
<td>0.004</td>
<td>0.017***</td>
<td>0.003</td>
<td>-0.019**</td>
</tr>
<tr>
<td></td>
<td>(0.73)</td>
<td>(2.91)</td>
<td>(0.45)</td>
<td>(-2.11)</td>
</tr>
<tr>
<td>National pride</td>
<td>0.191***</td>
<td>0.185***</td>
<td>0.169***</td>
<td>0.183***</td>
</tr>
<tr>
<td></td>
<td>(23.14)</td>
<td>(22.91)</td>
<td>(20.56)</td>
<td>(15.82)</td>
</tr>
<tr>
<td>Fractionalisation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnic</td>
<td>-0.174***</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: * P < .1, ** P < .05, *** P < .01; t statistics in parentheses; beta coefficients in italics.
| Language | -0.697*** (-26.75) | -0.127 |
| Religion | -0.253*** (-10.39) | -0.053 |
| Gini coefficient | -0.008*** (-6.58) | -0.045 |
| Asia-Pacific | -0.034** 0.005 0.039*** 0.091*** (-2.50) (0.56) (2.72) (5.19) | -0.012 0.002 0.014 0.035 |
| Age group | | |
| 30–49 years | 0.121*** 0.118*** 0.129*** 0.151*** (7.42) (7.28) (7.90) (6.06) | 0.059 0.049 0.054 0.063 |
| 50–64 years | 0.234*** 0.225*** 0.254*** 0.318*** (12.93) (12.59) (14.07) (11.89) | 0.083 0.080 0.091 0.117 |
| ≥65 years | 0.350*** 0.339*** 0.383*** 0.445*** (16.98) (16.78) (18.61) (15.18) | 0.100 0.097 0.109 0.137 |
| Female | 0.091*** 0.092*** 0.090*** 0.095*** (8.22) (8.40) (8.11) (5.95) | 0.039 0.039 0.038 0.041 |
| Marital status | | |
| Widowed | -0.077*** -0.050* -0.081*** -0.068* (-2.86) (-1.89) (-2.99) (-1.79) | -0.016 -0.016 -0.017 -0.015 |
| Divorced or separated | -0.069*** -0.057** -0.063** -0.115*** (-2.64) (-2.19) (-2.39) (-3.09) | -0.014 -0.012 -0.013 -0.026 |
| Married | 0.023 0.037** 0.020 0.038 (1.41) (2.33) (1.23) (1.57) | 0.009 0.015 0.008 0.016 |
| Employment status | | |
| Self-employed | 0.021 0.035** -0.023 -0.043 (1.17) (2.00) (-1.31) (-1.40) | 0.006 0.009 -0.006 -0.010 |
| Social class | | |
| Working class | 0.013 0.042** 0.034* 0.004 (0.63) (2.10) (1.67) (0.13) | 0.005 0.017 0.013 0.002 |
| Upper- and lower-middle class | -0.029 0.004 -0.006 -0.022 (-1.52) (0.22) (-0.29) (-0.63) | -0.012 0.002 -0.002 -0.009 |
Finally, we look at income inequality. Similar to the results reported in Chapter 8 for tax evasion, income inequality is problematic. Inequality reduces tax morale, indicating that the willingness to comply with the tax system is affected by such a structure.

### 9.4 Conclusions

“We collect taxes to help build PNG” appears on the cover page of the 2011 Annual Report of the PNG Internal Revenue Commission. In the act of collecting taxes, it is important to remember the moral dimension of complying with society’s rules. Tax morale is a key factor that shapes tax compliance in various societies and cultures. We found strong empirical evidence for the proposition that governance and institutional quality matter. Failure to provide adequate institutional quality is punished with lower tax morale. Unfortunately, the WVS did not include, or has not yet released, data for PNG in its recent wave. We recommend that the tax administration of PNG conducts surveys on a regular basis, using the Taxpayer Opinion Survey (TOS) as a guide. This survey, conducted in the US in the late 1980s, collected information on a broad set of taxpayers’ opinions, including the tax system, the tax administration, tax evasion and tax morale. Unfortunately, few researchers have used the TOS (see, however, Smith, 1992; Sheffrin and Triest, 1992; Forest and Sheffrin, 2002; Tongler et al., 2008; Tongler, Schaffner and Macintyre, 2010) and the survey was discontinued after 1990. In addition, we recommend that the PNG tax administration uses a panel dataset to monitor tax morale on a yearly basis, thereby tracking the same taxpayers over time. This approach would offer the opportunity to assess how taxpayers react to internal and external shocks and changes. Other countries already conduct similar monitoring, for example, the German Socioeconomic Panel (GSOEP), the British Household Panel Survey, and the Household, Income and Labour Dynamics in Australia (HILDA) Survey. In addition, we recommend the introduction and application of field experiments as an investigative instrument (see Chapter 8). Such controlled field experiments would allow scientific analysis to determine which instruments shape tax morale, and the effectiveness of those instruments. In addition, policies could consider how social learning influences tax morale.

The policy implications of our results are no secret. However, they require some willingness to change, along with constant, daily determination and the cooperation of decision makers throughout the entire government structure, and beyond. A more legitimate and responsive state appears to be an essential precondition in generating tax morale. Citizens feel cheated if corruption is widespread, if their tax burden is not spent well, and if they are not protected by the rule of law. Therefore, taxpayers should be involved wherever possible in the political process, which increases identification with the state’s institutions and counteracts noncompliant inclinations.
However, governments should not concentrate solely on tax reforms to increase tax morale and tax compliance; the tax administration should search for measures that improve government effectiveness, voice and accountability, rule of law, and quality of the bureaucracy, and that reduce conflicts (internal, external and ethnic tensions) and income inequality. Governance provides the foundation for a stable tax system. Tensions due to fractionalisation can be reduced via institutional design (e.g. increasing local autonomy). In addition, quite simply, reciprocity matters. A respectful and fair treatment of taxpayers will be reciprocated by respect for the tax system and thus lead to cooperation. A solid law-and-order structure should efficiently target the hard-core and malicious tax evaders. An efficient tax administration uses compliance management and risk control, and structures the application of enforcement discretion in the right place and at the right time. Strict policies should mainly target dishonest taxpayers. Treating other taxpayers as responsible people reduces incentives to be opportunistically noncompliant (Frey, 1997). The 2011 Annual Report of the PNG Internal Revenue Commission states the values of the IRC: “We foster fairness, respect, professionalism, honesty and openness”. Applying these values on a daily basis throughout the entire government will sustainably foster tax morale in PNG.

References


FinanzArchiv, 59:504-528.


### Appendix to Chapter 9

**Table A.9.1: Countries investigated**

<table>
<thead>
<tr>
<th>Country</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>New Zealand*</td>
</tr>
<tr>
<td>Armenia</td>
<td>Pakistan</td>
</tr>
<tr>
<td>Australia*</td>
<td>Peru</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>Philippines*</td>
</tr>
<tr>
<td>Belarus</td>
<td>Poland</td>
</tr>
<tr>
<td>Chile</td>
<td>Romania</td>
</tr>
<tr>
<td>China*</td>
<td>Russian Federation</td>
</tr>
<tr>
<td>Colombia</td>
<td>Singapore*</td>
</tr>
<tr>
<td>Cyprus</td>
<td>Slovenia</td>
</tr>
<tr>
<td>Ecuador</td>
<td>South Korea*</td>
</tr>
<tr>
<td>Egypt, Arab Rep.</td>
<td>Spain</td>
</tr>
<tr>
<td>Estonia</td>
<td>Sweden</td>
</tr>
<tr>
<td>Iraq</td>
<td>Thailand*</td>
</tr>
<tr>
<td>Japan*</td>
<td>Trinidad and Tobago</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>Tunisia</td>
</tr>
<tr>
<td>Lebanon</td>
<td>Turkey</td>
</tr>
<tr>
<td>Kyrgyz Republic</td>
<td>Ukraine</td>
</tr>
<tr>
<td>Malaysia*</td>
<td>United States</td>
</tr>
<tr>
<td>Mexico</td>
<td>Uruguay</td>
</tr>
<tr>
<td>Morocco</td>
<td>Uzbekistan</td>
</tr>
<tr>
<td>Netherlands</td>
<td></td>
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</tbody>
</table>

*Note: Countries selected on the estimations with the highest number of observations; * = Asia–Pacific countries.*
Table A.9.2: Summary statistics

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<th>Variables</th>
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<th>Mean</th>
<th>SDev</th>
<th>Min</th>
<th>Max</th>
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<td><strong>Quality of Governance indicators</strong></td>
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<tr>
<td>Control of corruption</td>
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<td>0.274</td>
<td>1.177</td>
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<td>Voice and accountability</td>
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<td>1.058</td>
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<td>Government effectiveness</td>
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<td>Rule of law</td>
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<td>Corruption</td>
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<td>Democratic accountability</td>
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<td>1.651</td>
<td>1.5</td>
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<td>Law and order</td>
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<td><strong>Solt (2009)</strong></td>
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<td>Gini coefficient</td>
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<td>35.124</td>
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</tr>
</tbody>
</table>

Note: Obs = number of observations, Sdev = standard deviation, Min = minimum value, Max = maximum value, ICRG = International Country Risk Guide.
The two papers on tax compliance and tax morale presented at the Symposium are excellent in many respects. They are very well-written, comprehensive and very rigorous. A good example of that rigour is found in the analysis of the shadow economy: rather than relying on one study (often the case in such analyses, and potentially misleading), the authors use a combination of three studies (Elgin and Oztunali; Alm and Embaye; and Schneider et al) to triangulate outcomes and show key trends of relevance to Papua New Guinea.

The authors also correctly stress the importance to a country such as Papua New Guinea of moving away from the deterrence, command and control models that have often dominated in the past and towards models more capable of reinforcing the norms of voluntary compliance: making it easy for those who wish to comply and providing plausible and effective deterrence to those who do not.

In addition, the analysis of the impact upon compliance of factors such as corruption, other institutional factors, tax administration etc is excellent throughout.

In terms of moving the papers forward, the authors may wish to consider the following points:

**Definitions**

It may be appropriate to include, early in the first paper, working definitions of what the authors understand by taxpayer compliance. For example, McKerchar and Evans¹ adopt a relatively non-contentious definition, based upon OECD models, which suggests compliance involves appropriate taxpayer notification and registration, return filing, correct reporting and accurate and timely tax payments. Other definitions abound.

It might also be appropriate for the authors briefly to consider different forms of non-compliance. Not all non-compliance is intentional – the complexity of tax systems, the logistical difficulty of complying and various other factors may lead to some tax leakage through unintentional non-compliance.

Tax effort

In the Introduction to the first paper the authors identify “tax effort” as being a key aspect of increasing tax compliance in Papua New Guinea, and use the ratio of tax collection to GDP as an indicator of that tax effort. However, using the share of taxes in GDP as a measure of comparing the tax burdens of different countries is one dimensional and is only meaningful when those countries have similar economic structures and levels of income. Factors such as macroeconomic, demographic and institutional constraints also affect how efficiently taxes can be collected. It is these factors that determine a country’s tax capacity, and these factors are very relevant to Papua New Guinea.¹

Thus, another (two dimensional) method of measuring the taxation performance of countries may be via the tax effort index, which has been developed by economists at the World Bank. This index relates the actual tax revenues of a country (as measured by the share of taxes in GDP) to its tax capacity.² It undertakes a more sophisticated empirical estimation process using a regression methodology based upon the impact of such variables as: macroeconomic factors (the income level of a country, its GDP, trade openness, agricultural contribution); demographic factors (the growth rates of the population and its age dependency); and institutional governance quality (based upon bureaucracy and corruption indices). When the tax effort index exceeds one, that country is considered to have a “high tax effort”. This means that the country fully utilises its tax base to increase tax revenues, indicating there is little scope or potential to raise further tax revenues.³ The use of tax effort and actual tax collection benchmarks allows the ranking of countries into four different groups and can provide insights as to how reform in such countries might take place by reference to tax capacity and tax revenues collected.

The four possible rankings, based upon the work of Le et al,⁴ are:

- low tax collection and low tax effort;
- low tax collection and high tax effort;
- high tax collection and low tax effort; and
- high tax collection and high tax effort

The figure below shows the classification of selected countries based on their tax effort and tax collection.⁵ Interestingly PNG is top of the countries in the high tax collection and high tax effort category.

---

² Le et al, above n 4.
³ Ibid p. 7.
⁴ Ibid.
⁵ Adapted from Le et al, above n 4, p. 25.
Classification of selected countries based on tax efforts and tax collection

<table>
<thead>
<tr>
<th>Classified 1994-2009</th>
<th>Tax effort</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Tax Collection Low</td>
<td>37 countries including China, Ethiopia, India, Indonesia, Japan, Mexico, Thailand and the US</td>
</tr>
<tr>
<td>Tax Collection High</td>
<td>20 countries including Bulgaria, Estonia, Germany, Latvia, Russia, Spain, Switzerland and Turkey</td>
</tr>
</tbody>
</table>


Le et al suggest that tax reform in countries which fall in the high tax collection and high tax effort category (such as Papua New Guinea) should not focus on revenue, but should “rather aim at raising the efficiency of tax collection, including reducing tax-induced distortions and improving the business climate through further rationalizing the tax regimes, rebalancing the tax mix and simplifying administration procedures. Any further improvements in the quality of governance (lower corruption or higher bureaucratic quality) can increase the efficiency of the tax system of this group of countries”

If this analysis is sound, it will clearly have implications for attempts to increase compliance in Papua New Guinea.

Outcomes

Whilst the papers were generally excellent on diagnosis (the factors that may impact upon compliance and morale), they were not always so strong on remedies at the practical level: in other words, what can the Inland Revenue Commission do about improving tax compliance in the context of Papua New Guinea? The authors may wish to consider strengthening this aspect of the papers.

Tax paying conditions

Finally I note that the authors briefly consider the impact of “tax paying conditions” on tax compliance. I am a little concerned that it only uses a somewhat imperfect metric (the business-driven PricewaterhouseCoopers (PwC) Paying Taxes ranking, developed as part of the World Bank/International Finance Corporation’s Doing Business Project). The ranking is intended to measure the ease of paying taxes in different countries over time. It is con-
fined to taxes and mandatory contributions imposed by all levels of government (federal, state/province or local) on medium-sized companies. The PwC Paying Taxes ranking is an arithmetic mean of the percentile rankings of each of the three indicators: total tax rate, time taken to comply with tax laws (hours per year) and number of payments per year. The PwC database currently covers values of the above three indicators for a large number of countries (increasing from 175 in 2005 to 189 in 2014) over a number of years (from 2005 onward).

While the PwC Paying Taxes ranking provides a convenient way for international comparison, its usefulness as an indicator of ease of paying taxes (or tax compliance costs or tax system complexity) appears to be limited for a number of reasons. First, the focus on medium-sized companies restricts the usefulness of the PwC Paying Taxes ranking, particularly because the definition of medium-sized companies appears to be arbitrary. The majority of businesses in most countries are small businesses, while it is the large companies that may be of interest to international investors. Second, the total tax rate, however calculated, is more an indicator of tax burden rather than of tax compliance burden. Third, the time taken to comply with tax laws and number of payments are clearly inadequate to capture the whole of the tax compliance burden. In particular, the omission of the costs of external tax advisers may bias the numerical results obtained. And finally, the statistical validity of the PwC approach and results is also a matter of concern. Little information has been provided about its sampling procedure in each country under study. It is not clear how the PwC investigators deal with such issues as random and representative samples, non-response bias, etc.

I do wonder, therefore, how useful this metric may actually be, and whether it constitutes a sufficient basis upon which the authors build their conclusion that “it is evident that PNG performs quite well across all the proxies analysed, indicating that PNG offers a good environment for businesses to pay their taxes.” However, it may be that there are no sensible alternative metrics that are available (in the absence of, for example, compliance costs studies in the PNG context). But if the metric is to be used, perhaps there does need to be some caveat attached to its use.

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2 Ibid at p. 140.
The papers presented in this volume examine a number of changes proposed for the PNG tax regime. The main changes recommended concern the multiplicity of taxes, the fiscal burden for those who pay the taxes, and the high levels of tax avoidance and evasion in the country. Although discussions about the need to update the tax system recognise various key elements for a future taxation system in PNG, there are two important points to consider.

First, for a country such as PNG that depends on the inflow of capital and skills from abroad, the influence of the tax system on this inflow is obviously of great importance. The tax policy adopted should therefore be based on two major considerations: (1) the tax structure should favour capital inflow, because PNG currently cannot offer the attractions of large, confirmed deposits of minerals, oil and gas in favourable locations, due to the challenging terrain and the unavailability of infrastructure; (2) the net earnings of all enterprises should be taxed at uniformly low rates, both to help assure the viability of the enterprises once established and to increase Treasury’s revenue stream. If tax rates remain high by international standards, and are accompanied by tax holidays and exemptions to favoured enterprises, the Treasury will receive less revenue.

Second, the tax burden in PNG is high by international standards; increasing the burden will make the PNG economy even less attractive to international investors. Therefore, the desired increase in revenue should not be secured by any (substantial) increase in the proportion of total revenue taken in tax. Rather, revenue should be increased by (1) the elimination of tax breaks — a tax system full of tax exemptions in place for many years is undesirable; and (2) the expansion of revenue-generating activities, which will lead to increases in tax collections, GST yield, and import and excise duties.

Although the papers presented in this volume contain sensible options for tax reform, it is the Tax Review Committee’s prerogative to select which recommendations (if any) to submit to the government. In turn, the government has the prerogative to accept or reject the committee’s recommendations for tax reform.