Productivity Performance in the South Pacific Islands
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Edited by Satish Chand
Symbols used in tables

n.a. not applicable
.. not available
' zero
. insignificant
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Abbreviations

AusAID          Australian Agency for International Development
APEC            Asia Pacific Economic Cooperation
CGE            computable general equilibrium
CPI            consumer price index
DPM           Department of Personnel Management (PNG)
EU          European Union
EV           equivalent variation
GATT          General Agreement on Tariffs and Trade
GDP           gross domestic product
ILO          International Labour Organisation
ISO          International Organisation for Standardisation
MWB          Minimum Wages Board (Papua New Guinea)
OECD          Organisation for Economic Cooperation and Development
SPARTECA        South Pacific Regional Trade and Economic Cooperation Agreement
UNDP          United Nations Development Programme
VMP           values of the marginal product
Preface

This publication is the outcome of a conference held by the National Centre for Development Studies on 3 June 1997. I am grateful to Satish Chand for agreeing to undertake the editing of the conference papers for publication in this volume. He has been very ably assisted in this task by members of the publications staff of the Centre—Maree Tait, Marnie Griffith and Tracey Hansen—and I extend my thanks to them for their consistently fine efforts.

Raising productivity in the countries of the South Pacific is seen as extremely important to their economic growth and development. Because of past policies, particularly policies towards foreign aid—both in donor countries and in the South Pacific countries themselves—real wages are well above levels that will provide employment for most of the potential labour force and well above levels justified by labour productivity. This is so, even if all other impediments to investment were removed. As we have seen in Papua New Guinea, these other impediments to investment can be substantial. The labour market in Papua New Guinea has been effectively deregulated and real wages have fallen very substantially, but private sector employment has not increased.

But improving productivity, particularly labour productivity, must be one of the goals of any strategy to create a more favourable
investment climate. It is depressing to see that private, formal-sector jobs have hardly increased over the past decade or so in most South Pacific countries, while they experience fertility rates that are still relatively high. Migration is a safety valve for some countries. For others, this is not an option and the unemployed and the underemployed have to find sustenance in the agricultural sector or in the informal sector, whether in legal or illegal activities.

The National Centre for Development Studies is strongly committed to finding ways to improve productivity in the South Pacific countries. It believes that it is making an important contribution to this through its training of graduates from these countries. It also sees that it can make a contribution through research and discussion of ways to improve productivity. Hopefully, this volume is a step along this path.

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The island nations of the South Pacific, including Papua New Guinea, are different in all respects except for their common poor economic performance. Annual per capita growth in gross domestic product (GDP) has ranged between -1.8 per cent in Kiribati to 1.2 per cent in Western Samoa over 1970 to 1993 (Chand 1997). The future for these states is not very promising given rapidly growing populations which previously had relatively easy access to the labour markets of Australia and New Zealand—but these privileges are likely to be wound down in future. Similar privileges to export markets in the industrial world via the South Pacific Regional Trade and Economic Cooperation Agreement (SPARTECA), the Lomé Convention between the European Union and African, Caribbean and Pacific countries and other country-specific bilateral trade agreements are going to diminish in value as trade barriers are lowered through the GATT and APEC process. Progress on the economic front in the States of the South Pacific will have to be sourced from within these countries rather than from abroad. Some, Papua New Guinea in particular, have significant potential for growth from exploitation of their natural resources. In contrast, a large number of the Pacific island countries have limited resources left to be exploited, hence any further gains in production will have to be sourced from improvements in total factor productivity. Even for countries which
have natural resources to exploit, growth from total factor productivity gains can be significant. This volume addresses this important issue of productivity performance in the South Pacific island economies.

We start with lessons from theory, then proceed to country-specific studies beginning with Papua New Guinea, Fiji and Tonga. In terms of country-studies this volume does not cover all of the South Pacific islands, but the lessons drawn from theory and the few country studies are applicable to the region as a whole. The longer term aim is to extend the coverage both in terms of theory and application.

Neil Vousden surveys the lessons from growth theory for small island states that aim to raise economic performance (Chapter 1). Vousden discounts smallness and isolation as insurmountable hurdles for growth by citing countries like Mauritius that have overcome these handicaps. The important lesson from growth theory, both old and new, is the crucial role of human capital accumulation and free markets in raising output and economic efficiency. Both of the above in the neoclassical model impact on the level of income, the transition between steady states could be stretched out such that in the interim growth effects would be realised. In so far as endogenous growth theory is concerned, human capital accumulation has permanent growth effects, but any such long-run effects are a bonus in the current context. The policy messages from this chapter include the freeing up of market forces to raise economic efficiency, the removal of impediments to investment, both domestic and foreign (the latter particularly important for inflow of technology and acquisition of human capital), and policy stability including security to private property so as to enhance private investment.

Theodore Levantis and Satish Chand explore the link between crime and low labour productivity in Papua New Guinea, arguing for a public sector role in curbing crime to allow growth of private-sector investment (Chapter 2). Such investments will generate employment, and entice people away from crime and into legitimate value-adding employment. A computable general equilibrium model is used to show that a 117 per cent increase in resources devoted to crime prevention will raise welfare to a maximum amount, equivalent to one per cent of GDP.

The link between labour market deregulation and employment in Papua New Guinea is explored by Theodore Levantis and George Fane who point out that the scenario for high wages was created by the Australian administration, and a result of advice from Australian trade union officials in particular (Chapter 3). The Minimum Wages Board,
according to Levantis and Fane, pushed wages above equilibrium levels in the formal sector exacerbating the unemployment problem with 1991 private sector employment 5 per cent lower than the corresponding figure for 1971.

Paul McGavin presents a strong case for building a national productivity culture in Papua New Guinea (Chapter 4). The role of institutions and the government in particular, is stressed.

Chapter 5 is the first of two chapters in this volume on Fiji. Satendra Prasad provides a general overview on productivity and performance in Fiji, moving on to consider the reasons for the low productivity of the Fijian sugar and garment industries. A number of policy recommendations are made to reverse the deteriorating productivity trends in the economy. For example, Prasad argues that security of land tenure for sugarcane farmers is crucial in raising productivity in the sugar industry. Within the garment sector, the challenge according to Prasad, is to maintain the supply of skilled labour at competitive wage rates. The challenge for the total economy is to restore private sector confidence to enhance long-term investment in skill acquisition and infrastructure. Another challenge for the Fijian economy is the deregulation of its labour market, a difficult task in the context of strong labour unions.

Ecì Nabalarua addresses the issue of employee motivation in the public sector as a source of productivity growth (Chapter 6). Nabalarua attributes the low commitment of Fijian public sector employees to the low degree of industrialisation of the economy, and the benevolent work culture propagated by several interest groups in the country.

Michael Hess looks at the constraints to productivity in Tonga (Chapter 7). Hess takes a management perspective to productivity with particular focus on human resource development issues. Hess attributes the lack of vocational training as one constraint to productivity. Another constraint is the lack of transparency between rewards and effort in the labour market, due to cultural factors. The preconditions to increased efficiency are a trained and motivated workforce—neither of these are present in the current context. The success of Tongans in overseas labour markets is used as evidence to support the claim that labour market reform at home can lead to productivity improvements.

Growth in the long term with the given resources can arise only from improvements in productivity. The island nations of the South Pacific lag behind the rest of the world both in levels and rates of productivity growth. The chapters in this volume investigate some of
the reasons for this deficiency and explore means of rectifying the identified deficiencies. The studies presented here are by no means exhaustive, it is only the beginning of the long road ahead.

Finally I would like to thank the contributors for their papers, Maree Tait, Marnie Griffith and Tracey Hansen for their assistance in proofreading and copy editing of the manuscript, Ron Duncan for encouragement and support, and AusAID for their financial support. I hope your efforts are not in vain.
The Pacific island economies present a unique economic challenge. These countries, most of them rich in natural resources, continue to experience per capita rates of growth significantly below most of their trading partners and below other similar small countries elsewhere in the world such as Mauritius. This situation is the outcome of consistently low productivity growth and capital accumulation combined with high levels of population growth. In some, failure to absorb a rapidly growing workforce threatens economic and social problems of crisis proportions. In the others, although the situation is less alarming in the short run, the long-term future is bleak unless changes are implemented to enhance growth performance.

The literature on the theory of economic growth offers many insights into the growth process. Indeed, the proliferation of theoretical and empirical research which has accompanied ‘new’ theories of endogenous growth offers a whole new menu of determinants of growth, including prescriptions for activist industry policies to promote growth. In seeking answers to the special problems of the Pacific island economies from this body of theory, the policymaker is entitled to be confused. Many of the models are ad hoc, focusing on some aspect of the growth process which the author thinks is important and/or neglected by previous theories. Moreover,
attempts to test the new theories empirically have been few, partly because the models include variables (such as knowledge) which are difficult to measure. A body of theory on which 'the dust has not settled' provides a shaky foundation for real-world policy formulation. Fortunately, it is possible to distil certain key elements which are common to most growth theory, avoiding unresolved controversies while acknowledging some of the more recent developments. To this end, I provide a brief survey of the main elements of this literature, including the main empirical tests. This is then used as a basis for the second half of the chapter which analyses specific policy issues relevant to labour productivity and growth in the Pacific island economies. In particular, the following are discerned as areas in which progress can be made.

- Human capital accumulation and acquisition of frontier technology are two necessary components of productivity growth. Increased foreign investment provides a relatively low-cost means of acquiring both via technology diffusion. Thus, consideration should be given to identifying policies which will create a more favourable climate for foreign investment.

- The low growth rates in the Pacific islands may also be partly attributed to conditions in the countries' labour markets. Reduction of unemployment will yield increased short-term growth. Low levels and growth rates of labour productivity also present scope for longer-term improvement. In countries where there are significant labour market distortions, policies to reduce these distortions should be considered while making allowance for cultural factors.

- One disincentive to greater investment is the system of land tenure which is primarily traditional/communal ownership, but without widespread adoption of long-term leasehold. This creates problems of access and security of tenure for investors, discouraging new capital formation. A move towards a system of legally-sanctioned private property rights would promote growth by reducing investor risk. Labour productivity would rise for two reasons: (i) increased capital accumulation would raise the average and marginal product of labour; (ii) more secure property rights would increase the return to effort and so may cause worker and managerial effort to rise.
Although the small island economies exhibit a high degree of openness to trade, in the sense that their total merchandise trade is a high percentage of GDP, their import-competitive sectors continue to be sheltered from foreign competition with effective *ad valorem* import duties ranging from 10–40 per cent. There are several ways in which increased trade is thought to promote growth and these are discussed. Further trade liberalisation is seen to be another means of breaking the link between income and population growth. In particular, such liberalisation is often seen as a 'back-door' means of securing labour market reform.

**Theories of growth**

In the past decade, a number of new models of economic growth have been developed in response to perceived inadequacies of the existing neoclassical paradigm. Much has been made of the 'new growth theory'; however, in many ways it differs only slightly from its predecessor. To see this, it is worth enumerating the features common to all growth models. First, they all incorporate a produced 'accumulable' factor, which is some durable input whose stock increases over time—it may be physical capital, human capital, technical knowledge or something else. Second, if an increase in the productivity of the inputs producing the accumulable factor occurs at some point of time, there will be an increase in the rate of accumulation and the growth of output in subsequent periods. A key difference between the neoclassical and endogenous growth models is how long this increased growth lasts—in neoclassical growth theory, the increase in the growth rate eventually converges to zero whereas in endogenous growth theory the increase can be permanent. The source of this difference between the two models is their assumptions about the income share of the accumulable factor. If this share is low, as in the neoclassical model, any given increase in, say, capital, in one period does not yield such a large increase in production of capital, thus dampening the accumulation process causing it to converge. If the share is high, as in the endogenous growth models, then any increase in capital inputs will yield a larger increase in production of new capital, causing the accumulation process to continue for longer, possibly indefinitely, in which case permanent growth effects are possible. Third, all models allow for ongoing technical change.
However, in the neoclassical model, this is exogenously given, whereas endogenous growth models attempt to explain or ‘endogenise’ technical change.

Although the relationship between the two classes of models is so simple, the predictions and policy implications of the alternative approaches can differ widely. In particular, the simple business of increasing the income share of capital can involve the assumption of increasing returns and/or externalities, features which are attractive to those who wish to argue for an activist industry policy. Because the models are still so poorly understood by policymakers and because the interventionist message is so tempting to politicians and interest groups, it is important to consider the details of the various models and assess their empirical relevance.

The Neoclassical Model

The Solow-Swan neoclassical growth model has proved a remarkably resilient tool for both economic theorists and policy advisers (Solow 1956). It has the advantage of the best theories: it is extremely simple, yet captures the main features of a dynamic economy. Briefly, it assumes a single output, produced using labour and capital in a constant-returns-to-scale technology with diminishing, and eventually exhausted, marginal returns to each factor. The single output may be used for either present consumption or investment in accumulation of capital. A constant, exogenously given, ratio of savings to income is commonly assumed but can be endogenised without affecting the results. The model predicts that long-run growth rates of per capita income will equal the (assumed) exogenous rate of technical progress. Changes in savings rates or government policies will affect the levels of the steady-state output and capital stock but will have no long-run effect on the growth rate. If all countries experience the same rate of exogenous technical progress, then they will all converge to a common growth rate over time. Countries exhibiting differences in savings behaviour, institutions, cultural norms, government policies, and so on may be expected to have different levels of steady-state GDP and different capital-labour ratios but their long-run growth rates would all be anchored to the common rate of technical progress.

Critics of the neoclassical model have pointed out that: (i) its prediction that countries’ growth rates will converge conflicts with the observed persistent, wide disparities in national growth rates; (ii) its results contradict the notion that a country can grow faster if it saves
more or if its government pursues better economic policies; and (iii) it does not actually explain growth, the only permanent growth in the model being due to exogenous technical change.

Attempts to resolve these apparent shortcomings of the neoclassical model took several forms. The first was a more careful analysis of what is meant by ‘convergence’ and the circumstances in which it might be expected to occur. The second approach was concerned with extending the definition and role of capital in the model to give a better fit to the data and open the possibility of policy-sensitive long-run growth. The third line of attack was to endogenise the technical progress parameter which drives growth in the Solow model and provide a more complete theory of the growth process. This part of the literature, which constitutes the bulk of so-called endogenous growth theory has attracted the most attention, not least because much of it provides a new rationale for activist government policy. However, as will be argued below, there are good reasons to be cautious in using this new class of models as a basis for policy formulation.

**Convergence**

In its simplest form, the convergence hypothesis states that growth rates are negatively related to national income—poor countries grow more rapidly than rich countries. Because this hypothesis is not supported by data based on a heterogeneous sample of countries, it could be argued that the neoclassical model does not adequately account for the full range of growth experience in the real world. On the other hand, the simple convergence hypothesis is more likely to be supported when tested on data from a set of similar countries or regions (OECD countries or the states of the United States). This suggests that the discrepancy in the wider sample of countries may be due to differences in steady-state income levels. If the time taken to approach this steady state level is relatively long, then cross-country variation in growth rates may simply reflect variation in transitional growth rates as countries adjust to different steady-state (long-run) levels of income (Mankiw 1995; Sachs and Warner 1995a). Such an interpretation would not only allow the neoclassical model to account for disparities in rates across countries, it would also allow national savings behaviour and institutional and policy parameters to affect growth (via their effect on the long-run steady-state level of income). Barro and Sala-i-Martin (1992) define conditional convergence to be
convergence by each economy to its own steady state. The hypothesis that an economy grows more rapidly the more it is below its steady state turns out to be supported by a range of studies (Barro and Sala-i-Martin 1995).

The importance of the share of capital

Despite this helpful re-interpretation of the Solow model, it has another empirical shortcoming: the differences in levels of per capita income which it predicts are much lower than those actually observed. Moreover, given the usual income share of capital (about one-third for the United States), the rate of convergence to the steady state is more rapid than indicated by empirical studies. These problems were addressed by Mankiw, Romer and Weil (1992) who show that the predictions of the neoclassical model yield a much closer fit to the data if capital’s share is approximately twice its usual value. They estimate that this may be reasonably accomplished if the definition of capital is widened to include human capital. A large increase in the share of capital means that changes in savings and productivity parameters have greater leverage on the final steady-state level of income because each increase in the capital stock causes a larger increase in output (and investment) the larger is the weight of capital in the production function. This also means that the adjustment to the long run will be more protracted and, indeed, closer to observed transition times. Thus, incorporating human capital in this simple way enables predictions of the modified neoclassical model to yield a reasonable approximation of the data.

Endogenous growth models I: externalities to capital

An alternative to expanding the definition of the capital stock is to assume that there are externalities to capital. Then, as capital accumulates, the real share of capital consists of the direct payment to owners of capital plus the indirect returns to other factors via a positive capital externality. The basic idea developed by Romer (1986) is that when a firm accumulates capital, it adds not only to its physical capital stock but also to its stock of technical knowledge, an example of ‘learning-by-doing’. However, unlike physical capital, a firm’s knowledge is a public good and so there are knowledge ‘spillovers’ or positive externalities which cause the economy-wide effect of a firm’s capital accumulation to be greater than the effect of the increased physical capital on the firm’s own production. Thus the aggregate
share of capital for the economy as a whole is greater than the conventionally measured payments to owners of capital. Unfortunately, these spillovers are difficult to measure and they would need to be very large indeed if they are to double capital’s share of income. Nevertheless, models of this type and more reduced-form models in which capital’s share (at least in the part of the economy which produces new capital) is simply assumed to be one—so-called ‘AK’ models—provide the simplest example of the class of endogenous growth models developed in the late 1980s and early 1990s. These models represent a polar case in which capital’s share is large enough (unity in the ‘AK’ models) to enable economies to grow perpetually with no convergence to a long-run steady-state level of income. This also seems at odds with empirical studies which suggest that countries typically make 2 per cent of the adjustment to their steady state each year and move halfway towards their steady state in 35 years (Mankiw 1995, Barro and Sala-i-Martin 1995:Chapters 11–12).

Endogenous growth models II: explaining technical change

Because the rate of technical change is taken to be exogenous in the neoclassical model, a number of growth economists have tried to open the black box and provide a theory of how technology changes over time. Because this element of the model is now being endogenised, the term ‘endogenous growth’ has been applied to this new theory. Although there is now an extensive literature characterised by a large range of very specific (and frequently ad hoc) models, it is possible to provide a fairly simple classification of the main approaches and results. A common feature of all these models which links them with the concerns of Mankiw, Romer and Weil (1992) is that they all represent different ways of rationalising a much higher aggregate share of the accumulable factor (such as capital) than in the simple neoclassical model.

Learning-by-doing models. This class of models is typified by that presented in Lucas (1988). Lucas assumes two sectors in the economy, a ‘high-tech’ sector (for example advanced manufacturing) and a traditional sector (for example agriculture). Each sector uses two factors of production, unskilled labour, which can move freely between sectors, and sector-specific human capital. To capture the basic idea of learning-by-doing, human capital in each firm is assumed to accumulate at a rate proportional to the allocation of labour to the sector, a process which is external to the firm but internal
to the industry, so that individual agents do not take into account the effect of their own labour allocation decision on human capital accumulation. The high-tech sector is assumed to have a higher intrinsic rate of learning-by-doing than the traditional sector and so is identified as the high-growth sector—if workers are moved from the low to the high-tech sector, the increase in the growth of the high-tech sector will more than offset any fall in the rate of growth of the other sector, yielding a net increase in the economy's rate of growth. The model yields long-run growth rather than convergence to a finite level of output. Moreover, the externality associated with human capital accumulation is seen by some as providing a reason for government policies such as tariffs or subsidies which shift resources towards the high-tech sector, promoting human capital accumulation in that sector and increasing the economy's rate of growth. In a trading economy, such intervention would have the potential to change the economy's long-run comparative advantage from the low-tech to the high-tech good.

**Differentiated intermediate goods.** In this class of models, which have been analysed by Romer (1990), Rivera-Batiz and Romer (1991) and Grossman and Helpman (1991) firms produce a final good using a factor such as labour and several intermediate goods which may, for convenience, be thought of as different types of capital. The production process for the final good is such that there are increasing returns to the number of varieties of intermediate good available and used. An imperfectly competitive research and development sector produces designs for new intermediate goods. Since all researchers have access to the existing knowledge which is assumed proportional to the number of existing varieties, the number of new varieties designed in any one period is assumed proportional to the number of existing varieties. Thus, when one researcher designs a new good, he adds to the body of knowledge available to all researchers, increasing the marginal product of all researchers in producing new designs and increasing the rate of growth of final output. This spillover or externality is central to the growth process in these models and, as in the Lucas learning-by-doing model, provides a rationale for government intervention; in this case a subsidy to research and development to stimulate production of new input varieties and permanently increase the rate of long-run growth.

A variant on this horizontal innovation framework is the 'quality ladders' (or vertical innovation) model of Grossman and Helpman
(1991), in which there is a single intermediate good used in final good production at any point of time, with a new variety replacing the existing variety if it is of a higher quality. This model yields similar results to the differentiated inputs case discussed above with the important difference that a new input replaces rather than augments previous inferior quality inputs. Despite this difference, the basic mechanism of growth is similar. The state of knowledge is embodied in the blueprint for the latest and best variety and this knowledge is available to all. The higher the quality of the latest variety, the more knowledge is available to researchers trying to design something better. This spillover from the last design adopted provides a rationale for subsidy of research and development similar to that offered by the ‘variety-of-inputs’ model.

**Empirical evidence for endogenous growth models.** Endogenous growth theory initially appeared to offer a convincing explanation of why growth experience differed so widely across countries. It provided a framework in which national economies could achieve perpetual growth per capita, but did not preclude growth rates converging for some countries. It also provided a channel for savings propensities, national institutions and government policies to have permanent growth effects rather than merely transitional effects as in the neoclassical model. It encouraged economists to think more systematically about the underlying determinants of technological change. Finally, it offered a new set of reasons for government to use trade and industry policy to promote growth actively by encouraging resources to move into ‘high-growth’ sectors.

Although this theory has encouraged economists to think more deeply about the growth process, there are serious doubts about its relevance. Empirical tests consistently reject the scale effects which are at the heart of the ‘spillovers’ models of Lucas, Romer, Grossman and Helpman and others. These models assume increasing returns to scale in the sector which produces the accumulable factor, be it blueprints for new goods, human capital or physical capital. This means that accumulation, and hence growth rates, will be increased when the scale of the sector producing the accumulable factor increases and, in most cases, when the scale of the economy as a whole increases. For example, in the differentiated inputs model of Romer (1990) and Grossman and Helpman (1991), growth is faster the larger the scale of the research and development sector. In the Lucas two-sector model, the growth rate is an increasing function of the scale of the ‘high-tech’
sector. In both these classes of models, it is also true that, *ceteris paribus*, larger economies grow more rapidly than smaller ones. However, there is no convincing evidence for scale effects in growth. At the very simplest level, the hypothesis that larger countries grow faster is clearly rejected by the data. More sophisticated econometric tests of aggregate and sectoral scale effects have also found scale to be insignificant as a source of growth (Backus, Kehoe and Kehoe 1992; Chand and Duncan 1997; Chand and Vousden 1995).

Another implication of increasing-returns models is that permanent changes in government policy can have permanent effects on the growth rate. However, this is at odds with the time series evidence on growth rates for the United States over the last 100 years. As noted by Jones (1995), despite large and permanent changes in certain policy parameters over the period, United States growth rates have exhibited no persistent changes.

Beyond the general empirical shortcomings of endogenous growth theory, it should be remembered that the theory is essentially concerned with growth via development of a ‘high-tech’ sector with knowledge spillovers. This limits its applicability to Pacific island economies which are primarily agriculture and service economies with relatively small manufacturing sectors (manufacturing constitutes less than 10 per cent of GDP) with limited scope for the sort of spillovers captured in the endogenous growth models. Such economies do stand to benefit from development of their own human capital in conjunction with diffusion of foreign technology. However, that is readily accommodated and understood within the simpler framework of the neoclassical growth model.

**Government intervention and endogenous growth**

Beyond the lack of empirical support for endogenous growth theory, there is a further problem facing any policymaker tempted by its interventionist message. Because the models typically employ *ad hoc* functional forms and assumptions and because many of the variables are difficult to measure (for example knowledge, research and development externalities, learning-by-doing), using the models as a basis for policy setting is fraught with risk. As Lucas notes in his influential paper ‘[i]n the model, “picking winners” is easy. If only it were so in reality!’ (Lucas 1988:31). Incorrect policy settings based on bad estimations of a bad model have the potential to do enormous
harm to any economy, particularly small, undiversified economies such as those in the Pacific islands.

A related point is that even if one can confidently identify an intervention which will permanently increase growth, there is no guarantee that the policy in question is good for the economy. Indeed, endogenous growth economists have been quick to point out that higher growth rates do not necessarily correspond to higher welfare. To see this, suppose that a Pacific island government sees a particular industry (for example a high-tech fishing industry) as potentially ‘high-growth’ and that a high permanent subsidy is required to shift resources into this sector. In general, the distortion created by this subsidy results in a high economic cost in all periods—the ‘static’ effect of the subsidy is a permanent fall in the level of income in all periods. However, by channelling resources into the high-growth sector, the subsidy will also fuel growth, lead to a higher growth rate in perpetuity so that, as time passes, the higher GDP resulting from growth will more than offset the static loss of GDP from the subsidy. Thus, there are net short-term losses to the economy to be weighed against longer term gains. Whether the economy gains in present value terms will then depend on its relative valuation of the present and the future as measured by its discount rate. In theory, it is always possible to fuel growth, but at what cost? There are numerous examples (the former Soviet Union for one) where the costs of subsidising growth are huge and not necessarily confined to the short term. In fact, the weight of evidence is that government interference in resource allocation does not even have beneficial growth effects. Sachs and Warner (1995a) classify 117 countries from the Heston-Summers data set according to whether they satisfy two basic criteria for market-oriented economic policies: security of private property rights and open international trade. Their results are striking. For the group of 88 poor countries in the sample (those with 1970 GDP below US$4,000), of the 12 countries that satisfy both criteria, none achieved low growth (defined as less than 2 per cent per annum) while 10 achieved ‘fast growth’ (more than 3 per cent per annum). Of the 76 countries that failed both criteria, only 7 achieved fast growth while 51 experienced slow growth. Thus the probability of a country which pursues anti-market policies achieving a high growth rate is only 9 per cent (7/76) while there is a zero probability of a country which follows sound market-oriented policies falling below a 2 per cent growth rate, and an 83 per cent (10/12) chance of such countries achieving fast
growth. Viewed in this way, and uncontaminated by the statistical problems associated with many cross-country regressions, there is a clear message here for all governments of developing countries and for Pacific island economies in particular. Adherence to sound market-based policies is a safe means of ensuring high growth. Without such policies, the prospects of a growth rate above 2 per cent are poor.

What theory should policymakers trust?

Endogenous growth theory as it stands has not stood up well to empirical testing. Moreover, the theory is still developing and it would be foolish to use it as the basis for experiments on real economies. Fortunately, there are a number of elements which are common to both old and new growth theory which provide a solid basis for policy formulation. The first point is that, in its simplest form, endogenous growth theory is really just the neoclassical growth model with an infinite convergence time so that the economy grows forever rather than converging to a steady-state level of output and capital. Because the convergence time in the neoclassical framework is now estimated to be about 70 years (Barro and Sala-i-Martin 1995; Mankiw 1995) this should not be a point of great concern. If an economy can achieve higher transitional growth, that is higher growth for more than 60 years, it will be as good a result from the viewpoint of current generations as permanently higher growth. Second, the growth outcome for the economy is better, ceteris paribus, the higher the level of factor productivity in the sector that produces accumulable inputs such as physical and human capital. In the neoclassical model this means a higher long-run level of output and thus a higher transitional growth rate whereas in the endogenous growth models it will mean a permanently higher growth rate. Thus, in either theory, anything which increases the level of factor productivity in the part of the economy that produces an accumulable factor will increase growth. In particular, the statement that savings behaviour, institutions and policy cannot affect growth rates in the neoclassical model is only true beyond the lifetime of most currently alive individuals. Improved permanent factor productivity growth will of course increase the rate of long-run growth in all models. This points to a simple policy rule: change the institutions and government policies which are responsible for a country's factor productivity and factor growth being low relative to other countries and higher growth should follow.
Growth and natural-resource-rich economies

A common feature of many economies in this study is their relative abundance of certain natural resources. This might be a source of pessimism given the observation that many resource-rich economies such as Russia and Venezuela have had extremely poor growth while natural resource-scarce economies such as Switzerland, Korea, Taiwan and Japan have experienced rapid growth. In cross-country regressions Sachs and Warner (1995b) find a significant negative association between natural resource wealth and growth over the period 1970–89. Such observations have led a number of economists to explore the hypothesis that there is some intrinsic aspect of natural resource abundance that leads to reduced growth. Several theories have been offered to explain such a phenomenon. Matsuyama (1992) uses an endogenous growth model of an economy with two sectors, agriculture and manufacturing. Manufacturing is a sector with learning-by-doing as in the Lucas model. This makes it the high-growth sector so that anything (such as an abundance of land) which attracts resources into agriculture reduces learning-by-doing in the high-growth manufacturing sector and retards long-run growth. In the light of the reservations about such a framework offered it is difficult to find this rather elegant explanation convincing.

Another, related explanation, is based on the ‘Dutch Disease’ model used to explain the effects of resource booms in the 1970s. A large and growing resource sector causes a real appreciation of the currency and thus causes sectors such as manufacturing to contract. If the manufacturing sector is characterised by positive spillovers and has a higher natural rate of growth than the other sectors then the shrinkage of that sector may be seen as causing the economy to grow below its optimal rate.

A more likely explanation, implicit in Olson (1982), is that the presence of rents makes resource-rich countries more prone to wasteful rent-seeking behaviour, sometimes institutionalised in the form of inefficient labour market arrangements (such as short work hours and restrictive work practices). There is some further empirical support for this in a recent paper by Graham (1995) who incorporates interaction terms in a cross-country regression using the Barro and Lee data set. Graham’s findings are illuminating. Among the explanatory variables, he finds strong and significant interactions between mineral-fuel resource rents (as a measure of natural resource
dependence) and a number of policy and political variables. In particular, he finds a significant interaction between mineral-fuel rents and government consumption, with the negative effect of government consumption on growth being more pronounced for mineral fuel-dependent economies. Mineral-fuel exporters are also found to derive a greater boost to growth from openness to trade. This leads Graham to conclude that the negative relationship between mineral-fuel rents and growth of per capita income is highly dependent on the policy mix of the economy suggesting that ‘the negative resource dependence-growth relationship is not an iron law’ (Graham 1995).

Finally, his study finds a significant interaction between political instability and resource rents, providing some support for the view expressed above that the poor growth performance of some resource-dependent economies may be due to the growth-retarding effects of rent-seeking behaviour. In common with Sachs and Warner (1995b), Graham finds no significant effect for terms-of-trade volatility on the growth rate, in contrast to the popular view that fluctuating commodity prices are an impediment to growth for resource-based economies. Although Graham’s analysis is concerned with rents associated with mineral fuel deposits, his results are in line with what the theory would predict for resource rents generally.

A general conclusion to be deduced from this literature is that the growth rates of resource-rich economies are more sensitive than resource-scarce economies to political factors and government policies. Thus, for such economies, it is even more crucial to get the institutions and policy settings right. This is particularly true for the economies being considered in this study. When the policies are right, there is good evidence that economies with a relative abundance of natural resources can achieve high growth rates regardless of country size (Indonesia and Tunisia to take a large and a small example). Moreover, there does not appear to be any substance to the fear that a resource-abundant country which pursues its comparative advantage and, say, specialises in agricultural products, will permanently lock itself out of growth via manufactures—the cases of Tunisia and Malaysia are good examples of countries which were able to move from primary products to manufacturing when their comparative advantage changed and did not suffer a ‘growth penalty’ as a result.
Technology diffusion, foreign investment and human capital formation

One clear and unambiguous message from all of the empirical studies of growth is the importance of a growing skilled workforce. Whether such human capital accumulation has the sort of spillover effects assumed in the endogenous growth literature is unimportant—growth accounting estimations indicate that human capital growth will be an important factor in income growth whatever the mechanism (Mankiw, Romer and Weil 1992; Barro and Sala-i-Martin 1995). In addition, country-by-country analysis indicates that countries with low growth performance also exhibit a very low rate of growth of human capital. However, the implication seems to be that a growing pool of human capital is necessary for growth but not sufficient (Russia being a good example of a country with a highly educated workforce but dismal growth performance). Since a relatively high proportion of the workforce in the Pacific island economies is unskilled it is tempting to advocate increased education spending as a solution. Unfortunately, things are not so simple. Recent World Bank research has produced two disturbing conclusions which suggest that the ability of education spending to promote growth may be limited in the absence of other policies. In the first of these studies, Pritchett (1996a), empirical analysis of new data sets shows that growth in educational attainment per worker has had no significant positive effect (and possibly a weak negative effect) on output per worker. In the second study, Pritchett (1996b) shows that public investment in many developing countries is frequently inefficient in creating public capital and so is not necessarily a source of increased economic growth.

These two results may well be linked. If those being educated are mainly going into jobs in the public sector where investments are unproductive, then increasing education expenditure may not be translated into higher growth. This is a good example of how human capital accumulation may not lead to economic growth. There are two lessons here. First, mechanisms have to be found to improve the quality and performance of public investment. Second, where it is feasible, the investment activity may be transferred to the private sector.
In addition, increasing the stock of human capital will have no effect (other than increasing government spending on education) unless there is also an increase in the demand for skilled labour. In most economies in the study, there is limited employment for the more highly educated part of the workforce, leading to emigration of skilled workers. This has been the case in Fiji, for example, which has recently experienced a high rate of emigration of such workers. Clearly, the policy framework must not place impediments in the way of business creating employment for a skilled workforce.

Foreign investment represents an important solution to both sides of this problem. On the one hand, foreign companies create a demand for skilled labour. On the other hand, they provide a low-cost means of training labour as well as a conduit for diffusion of foreign technology. Countries wishing to acquire superior foreign technology have three options: they can engage in their own research and development; they can imitate state-of-the art foreign products and processes; and they can obtain the technology via international spillovers from multinational firms. For a small economy, the first of these options is the most expensive, followed by the second with the third option the lowest-cost means of 'catching up' to the world's best. The foreign investment route facilitates human capital formation (and employment) as well as transferring important knowledge to the economy as a public good, thus increasing factor productivity.

It is therefore important that governments wishing to promote growth should try to reduce cultural, institutional and policy impediments to a healthy inflow of foreign investment. In the case of the Pacific islands, the impediments are many and include excessive government regulations, reluctance to admit foreign investment and skilled foreign workers combined with unpredictable government treatment of multinationals, wages which are high relative to productivity, and insecure property rights.

**Property rights**

There is strong evidence that a clearly defined legal regime of secure property rights is institutionalised by most countries when they reach a certain stage of development (Feeny 1988). There is also evidence that countries which have not made property rights secure in this way have generally experienced some difficulty in attracting foreign investment and have not been able to achieve, or at least sustain, high productivity performance in the South Pacific islands.
growth. The Pacific island economies are a good example of this, combining a cultural predisposition towards common rather than private property with limited government commitment to security of land tenure for private agents. For example, in Fiji 83 per cent of land is in traditional ownership while for Papua New Guinea the figure is 97 per cent. In the Kingdom of Tonga, all land is owned by the King with each citizen guaranteed a piece of land. In each of these cases, trade in land titles is illegal.

The sort of institutional change associated with a move to a system of secure property rights over land is typically the outcome of a political process. A common property regime is sustained as a self-reinforcing equilibrium in which the gains to individual agents from claiming more property for their own use are outweighed by the cost of disruption if others do the same (Rapaczynski 1996). This equilibrium is disturbed when the value of land increases beyond a certain point and disruptive conflicts occur or the government bows to political pressure from influential interest groups for the state to implement an enforcement mechanism. When the gains to the participants exceed the potentially large fixed costs of introducing a legal system of private property rights, such a system is implemented. A range of factors influence the demand for and supply of institutional change. In this case, the demand for change is increased by anything which increases the demand for land, thus driving up land rents. Thus, improvements in a country’s terms of trade, new technology which raises the marginal product of land, income growth, emergence of alternative income-producing uses for the land and increased foreign investment may all be expected to increase the demand for secure property rights.

On the other side of the political market, the supply of a secure private property rights regime by the state will also depend on a number of factors. The supply of institutional change will be larger, the lower the cost of introducing the change, the greater the private stake of policymakers, the greater the dependence of the ruling group on support from foreign firms. Supply of this change will clearly be reduced if the ruling group believes in, or gains financially from, a common property regime.

Whatever the outcome, it is clear that ultimately a system of legally sanctioned private property rights can only be implemented and sustained if the constituency is prepared to accept it or at least there is not widespread violent opposition to it. Moreover, experience in a
number of countries tells us that such a system will usually be implemented as the growth process proceeds. This suggests that one approach to encouraging emergence of secure property rights is to remove the other impediments to market activity—liberalise trade, remove capital restrictions, simplify access for foreign investors, deregulate the labour market. Such policies will for a while promote higher growth. This growth will increase the opportunity cost of land and increase the pressure for an institutional change with respect to property rights.

The problem with this *laissez-faire* approach is that political markets are known to be imperfect. Policymakers are subject to political capture by the most highly organised pressure groups and the same forces which induce governments to underprovide imported goods (via trade restriction) may induce them to underprovide secure property rights. Thus, there may be a case for economists to pressure the government to reform the property rights regime before it would be otherwise inclined to. However, in the case of the Pacific island economies, there is a further complication. The cultural attachment to traditional ownership (which has reversed some private property regimes implemented by colonial powers) creates a strong bias against a move to private tradeable property. Given this strong cultural affinity with common ownership, it is unclear whether the best course is to urge the state to take a stronger line in changing the property rights system or whether it would be more prudent to create the other conditions for a market-based economy to flourish and allow the property rights regime to evolve. It is certainly important that the state should not itself contribute to insecurity of property rights by leaving open the possibility of seizure of assets of foreign companies.

**Labour markets**

There are three aspects of labour markets that affect growth in the Pacific islands. The first is the high levels of unemployment which are endemic in all of these economies. This means that each economy is operating well below capacity and has scope for growth to move it out to its own production frontier. The second and related problem is the presence of minimum wage floors, either in the form of a legislated minimum or a high reservation wage in the private sector. The third and perhaps most serious problem is the low level of labour productivity in most sectors throughout the region. Low labour
productivity reduces the long-run steady state level of GDP and so reduces growth rates for the foreseeable future.

Because the high rates of unemployment may be remedied by increasing the demand for labour, it is tempting to advocate government spending on employment programs. However, this would be the incorrect response for two reasons. The first is the obvious one that numerous growth studies have found high government consumption expenditure to be negatively related to growth. The second is that the poorly devised governance structures in the public sectors result in incorrect incentives for workers and managers leading to higher public sector wages and lower worker effort than in the private sector. Because the public sector tends to be large, this puts upward pressure on the reservation wage of a worker entering the private sector and also drives up the minimum working conditions which workers are prepared to accept in the private sector. An expansion of the public sector to accommodate existing unemployed workers will exacerbate this problem, driving up wages and reducing worker productivity in both sectors of the economy. It will not offer any permanent solution to the unemployment problem but will in fact make matters worse by retarding growth (increased public sector borrowing requirement, higher interest rates reducing private capital accumulation) and creating fewer employment opportunities for a growing workforce in the future.

In many cases Pacific island economies have attempted to ensure minimum living standards for workers by implementing legislated minimum wages. This will clearly aggravate the employment problem. However, as McGavin (1997) has noted, the legal minimum wage may not always be the binding constraint. Because of 'subsistence affluence', the reservation wage tends to be high in any case. This view is supported by the experience in Papua New Guinea where wage deregulation in 1992 did not result in any significant fall in wages in Port Moresby below the previous legal minimum.

Two reasons for low labour productivity have already been noted: a large public sector with a suboptimal governance structure and a strong culturally determined preference for leisure. Another factor in at least two cases may be labour unions. Although unions do not play an important role in most Pacific island economies, both Fiji and Papua New Guinea have a high proportion of unionised workers outside the subsistence sector. As well as bargaining for higher wages, unions also bargain for better working conditions for their members.
These frequently take the form of longer breaks, less on-the-job monitoring of performance, higher manning ratios, and so on. The phenomenon of such ‘effort bargaining’ has recently received attention in the labour literature (Andrews and Simmons 1995) and provides another rationale for reduced worker productivity. The ability of unions to bargain for lower worker effort may be reduced by import competition so that a more liberal trade regime may provide a back-door means of increasing worker productivity in unionised industries. In the majority of cases where unions are absent, some productivity improvement can be expected by a contraction of the public sector (reducing its effect on the reservation wage), an improvement of governance structures in the public sector, increased import competition and, in the longer term, a better educated workforce.

It should be noted that higher productivity is not without cost. When individuals work harder, they are giving up valuable leisure time. Correct growth accounting should ideally allow for the loss of wellbeing due to reductions in leisure and increased job stress. Growth is not just about producing more goods and services but also about a better way of life. It is therefore essential that the attractive elements of the way of life in the Islands be preserved. However, some change is essential if the present combination of high population growth and low productivity growth is not to lead to economic decline and social disruption.

**International trade**

The literature on international trade and growth suggests a number of ways in which trade liberalisation can affect growth. Many of these effects are based on the increasing returns models of Romer, Grossman and Helpman and others and must be treated with caution until more empirical support can be found for these models. A common effect, often referred to as the integration or scale effect, is based on the expansion of the size of the market which occurs when two economies start trading with each other—producers now can sell their products to the foreign market as well as the domestic market, leading to an increase in the scale of their output. If this increase in scale occurs in a high-growth sector (one with increasing returns and spillovers) then the economy’s growth rate will increased as discussed. A bilateral reduction in tariffs would yield a similar effect. There are two good reasons to ignore this effect in the present study. First, the empirical
support for scale effects in growth is poor. Second, this effect is not attainable through any form of unilateral trade liberalisation. It relies on reciprocity and a bilateral view of the gains from trade. For small open economies there are good reasons to focus on the growth effects of unilateral rather than bilateral trade reform. First, there are strong arguments why unilateral trade liberalisation has favourable growth effects for small countries. Second, domestic vested interests frequently use non-liberalisation by trading partners as an excuse for deferring domestic liberalisation altogether. It is therefore important that the growth-enhancing effects of unilateral reform be emphasised.

Another common effect, sometimes referred to as the allocation effect is typified in the Lucas model (see also Grossman and Helpman 1993). In fact this is really just a sectoral scale effect, referring to the change in growth which is induced when trade shifts resources between sectors. If resources move from the low-tech sector to the high-tech sector in the Lucas model, the growth rate increases. Although both unilateral and bilateral changes in tariffs can, in theory, produce this outcome, its empirical relevance is dubious in the present context because it also is driven by increased scale. Other effects emanating from the endogenous growth literature are primarily concerned with the effect of trade on development of new goods and processes and are of more relevance to industrial countries which are technology leaders than to the Pacific island economies.

To find important causal links between trade and growth, it is therefore necessary to look beyond the endogenous growth models for effects that operate in the absence of spillovers and increasing returns. This area is relatively unexplored, but a number of possibilities seem relevant to the Pacific island economies.

As a general point, international trade increases the exposure of an economy to market forces and ultimately exerts pressure on it to make its own institutions and policies more compatible with market activity and discipline. Opening an economy up to international trade changes the relative prices faced by domestic producers and consumers and can put upward pressure on land rents, increasing the political pressure for increasingly valuable land to be subject to a legal system of private property rights (Feeny 1998). This is an important pre-requisite for growth in the Pacific island economies.

Increased import competition can also serve as a ‘back-door’ means of reforming labour markets. While there is disagreement among empirical economists about the size of the effects (Richardson
a wide range of theoretical models predict that increased exposure to imports will increase unemployment and reduce domestic wages. In models with labour market distortions and bargaining over work practices, trade is generally thought to induce increased labour productivity by reducing the 'size of the cake' that firms and workers are bargaining over (see Campbell and Vousden 1995) although the likely size of such an effect in the Pacific island economies is unclear. While the increase in labour productivity will tend to increase growth, trade liberalisation is not a perfect substitute for labour market reform. It must be accompanied by direct deregulation of the labour market if unemployment is to be contained.

Protection of domestic industries tends to reduce labour productivity for another reason. A tariff often reflects a government’s commitment to protect an industry. If the industry knows that this is the government’s objective and that the tariff is designed to ensure the industry’s viability (sometimes called ‘made-to-measure protection’), then the industry will tend to ‘cost-pad’ in much the same manner as a regulated industry (Tornell 1993). As a result, protected firms will tend to be characterised by overstaffing and inefficient work practices. In this environment, removal of protective barriers will drive up labour productivity.

It is also worth mentioning a rather different effect of trade which works through the increase in the variety and/or the quality of products available through increased trade. Availability of this more attractive menu of goods may cause workers’ preference for income relative to leisure to increase and thus drive down their reservation wage. This will drive down wages generally and may be an important effect in economies such as those in the Pacific islands where import barriers have been traditionally high.

As a final point it should be observed that growth in Pacific island economies will generally be increased by the reduction in the cost of imported inputs when trade is liberalised (Lee 1993). This will facilitate factor accumulation and growth in much the same way as an increase in the productivity of labour.

Growth and inequality

One concern which is sometimes voiced when governments undertake market reform is that the reform process may lead to a significant increase in inequality. Aside from an innate social preference for a
more equal distribution of income, increased inequality has potential
to impede growth for several reasons. The first is that very large
increases in inequality may lead to high levels of social conflict which
will threaten the very workings of the society with grave implications
for economic growth (Venieris and Gupta 1986; Persson and Tabellini
1994; Benhabib and Rustichini 1996).

Second, an increase in the incomes of the poor will increase
savings ratios. Third, there is evidence that reduced inequality leads to
increased investment in education and faster human capital
accumulation (Birdsall, Ross and Sabot 1995). Certainly several cross-
sectional studies suggest a negative association between inequality
and economic growth (Alesina and Rodrik 1994; Persson and Tabellini
1994; Clarke 1995). However, these studies tell us nothing about
causation. A more recent time-series study by Deininger and Squire
(1996) finds no significant relationship between growth and inequality,
although this is probably because the measured changes in inequality
over time turn out to be very small. On the other hand, this study does
establish a significant positive causation from growth to a reduction in
poverty.

Thus, there is reason to be optimistic about the effects of the reform
process on inequality. On the one hand, there is little evidence to
suggest that economic reform systematically leads to any large
permanent increases in inequality. On the other hand, there seems to
be strong evidence to support the view that the growth which
normally accompanies reform will raise the real incomes of the poor,
thus mitigating likely social conflict outcomes. Of course, short-term
shifts in income distribution can create political pressures which, if
handled badly, can disrupt or reverse change. For this reason, it is
important that safety net programs are in place to lessen the impact of
change on displaced workers, and so on. The adjustment process will
also be less painful and subsequent productivity growth more assured
if the workforce meets certain minimum standards of education.
Equality at a low level of education is a poor basis for productivity
growth. Thus, universal primary school education should be a priority
in the allocation of public funds (notwithstanding the reservations
expressed about more ambitious education programs). With these
qualifications, increases in labour productivity resulting from the
policy changes recommended will overcome short-term problems in
income distribution and raise the incomes of the lower-paid workers
over time.
Policy conclusions

Although endogenous growth theory has contributed to our understanding of many aspects of the growth process, particularly by directing attention to the determinants of technical change, empirical tests suggest that it has some way to go before it offers a model of growth which can be used with assurance for policy formulation. The safe course is to use an extended form of the neoclassical model incorporating human capital as an input and try to identify institutional and policy changes which will increase long-run steady-state productivity and income and hence promote higher rates of transitional growth for the following 60–70 years. For the case of the Pacific island economies this end is best served by improving the operation of labour markets, removing impediments to foreign investment, reducing import barriers and encouraging the implementation of a legally-sanctioned system of property rights in land. This last objective would be best served if enforcement by the state is accompanied by other market-based reforms which would over time increase political pressure for such institutional change to occur. Such changes would be expected to increase the level and rate of growth of factor productivity as well as increasing the supply of, and demand for, human and physical capital.

There is strong evidence to suggest that if the appropriate market-based policies are in place, then high growth will follow while the prospects of achieving high growth without such policies are poor indeed. The Pacific island economies require a large policy shift in most of the areas mentioned if they are to escape the potentially dire consequences of the combination of high population growth and low productivity growth.
Notes

The author is grateful to Ron Duncan and Chris Manning for helpful comments on an earlier draft of this paper.

1 Eighteen of the 135 countries in the data set are omitted because of missing data.

2 See Barro and Sala-i-Martin (1995).

3 See Chand and Duncan (1993) for a more formal model of the demand for secure land access.

4 See Feeny (1988) for a discussion of the experiences of Thailand, Burma and the Philippines. These examples show how long a process is involved in moving from a system of communal ownership without land tenure rights for individuals to a system with such rights.

5 There are at this stage no studies of this issue for developing countries.

6 Several of the island governments are highly dependent on trade taxes for revenue. Where there is no other viable tax base, this may be inevitable. But it has to be recognised that freeing up trade will mean finding alternative tax sources and that such reforms will take time to implement and may be politically unpopular.

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The nexus between crime and productivity in Papua New Guinea

Satish Chand and Theodore Levantis

Crime raises the costs of doing business, in turn lowering labour and total factor productivity. Shift work and intensive use of capital and equipment in a climate of high crime is not possible; the consequence being low productivity of both factors of production. This chapter provides a brief survey of the extent of crime; then proceeds to consider the reason for the crime problem in Papua New Guinea, and finally suggests policy options in combating crime.

Papua New Guinea is renowned for its crime and has thus acquired a reputation as being an undesirable country to visit. The country is shunned as a tourist destination despite its natural endowments being comparable to neighbouring tourist destinations such as Fiji and Indonesia—Fiji has more than 20 times as many tourists as Papua New Guinea. Prospective businesses are deterred from establishing in Papua New Guinea due to the high risk of crime-related losses and the high security costs that are necessarily incurred. Despite these disincentives to investment, Papua New Guinea attracts significant amounts of foreign direct investment, almost all of which is directed to the extractive sector to capitalise on the rich mineral resource endowments of the country. The returns from such investments must be sufficient to offset what may be thought of as the crime premium.

Crime in Papua New Guinea is particularly disturbing due to its brutal nature. Violent robberies, pay-back murders and rape are
regularly reported in the daily newspapers. Though crime is present to some degree throughout the country, violent and property crime is endemic in the urban centres—Port Moresby and Lae in particular. Given the extent of crime in Papua New Guinea and the detrimental impact of this crime on GDP and growth, a social cost-benefit analysis of increased outlays on controlling crime is important. Becker (1968:170) observes that ‘...crime is an economically important activity or “industry”, notwithstanding the almost total neglect by economists’. This claim is highly relevant to present day Papua New Guinea.

The extent and cost of crime in Papua New Guinea

As an indication of Papua New Guinea’s crime problem, Levantis (1997a) conservatively estimates the annual property crime rate in Papua New Guinea’s urban centres at 33,000 incidences per 100,000 population—double that of neighbouring Australia—and the violent crime rate at 2,000 crimes per 100,000 population—ten times that of Australia and six times that of Fiji. Since the latter is a Pacific nation of similar culture and level of development, Papua New Guinea’s reputation as a nation overwhelmed by crime and violence appears well earned. Based on field surveys in Port Moresby, Levantis also found that 14.8 per cent of the urban workforce engaged in crime as their primary source of income. In 1995 as a percentage of GDP the losses to victims by way of theft amounted to 2 per cent (Table 2.1).

<table>
<thead>
<tr>
<th>Direct losses</th>
<th>(K’000)a</th>
<th>Per cent of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thefts (transfers to criminals)</td>
<td>114,464</td>
<td>2.0</td>
</tr>
<tr>
<td>Private expenditure on security</td>
<td>49,602</td>
<td>0.8</td>
</tr>
<tr>
<td>Public expenditure on law enforcement</td>
<td>106,411</td>
<td>1.8</td>
</tr>
<tr>
<td>Total direct lossesb</td>
<td>270,477</td>
<td>4.7</td>
</tr>
</tbody>
</table>

\(a\) 1 kina equivalent to approximately US$0.72.

\(b\) Total direct losses exclude the value of direct losses by victims of vandalism or violent crimes.

Private expenditure on security for protection against crime was a further 0.8 per cent of GDP and this was despite public expenditure on law and order amounting to 1.8 per cent of GDP.1 In aggregate, the direct financial cost of crime for 1995 was 4.7 per cent of GDP. Over and above these financial penalties are psychic costs incurred by victims of crimes due to violence or vandalism.

Besides these direct costs of crime, there are repercussions from crime that reverberate throughout the community, resulting in substantial external costs. For example, as crime increases, so does fear and anxiety in the community. As Sah (1991: 1, 272) argues, ‘[c]rime and the fear of crime have a deep negative impact on the well-being of individuals and societies’. In the urban centres of Papua New Guinea, fear of attack has restrained population mobility, particularly after dark. For these reasons, the high incidence of crime gives an unpleasurable aspect to living in Papua New Guinea’s urban centres. Crime’s impact on fear, anxiety, and freedom in the community therefore represents an important cost, quantification of which in monetary units is difficult.

In the course of a crime of larceny, external costs by way of damage to property or person inevitably occur. Businesses not only have to wear losses due to theft but are required to provide substantial security costs to try to protect themselves from criminal activity. As a specific example, a hire company in Port Moresby reported that on average each of their cars gets stolen four times a year. The danger of operating at night makes double shifts, and hence intensive use of plant and equipment, impractical. Accordingly, only if a business is particularly lucrative will it operate in Papua New Guinea and so overcome these impositions on costs and efficiency. Thus, external costs due to loss of potential output will be very large though very difficult to measure.

Private sector activity in urban Papua New Guinea has been stagnant over the last thirty years. Whereas urban population increased four-fold between 1968 and 1995, formal employment opportunities have remained virtually static (Figure 2.1). Papua New Guinea is locked in a low growth trap where unemployment and crime is on the rise while business activity is stagnant or declining.

Besides the implications for the supply of output there are also consequences of crime for demand, in particular, the demand for tourist services and the flow-on effects to production that tourism brings. The seemingly enormous potential for development of the tourist industry is
unrealised, basically due to crime. A proposed trek across the Kokoda trail, a visit to the Sepik River, or a drive to the highlands is inevitably preceded by desperate warnings and tales of woe about previous tours from the locals. One cannot understate the impact this has had on production.

Figure 2.1  Papua New Guinea: trends in urban population and formal employment, 1986–95

![Graph showing trends in urban population and formal employment, 1986–95.](Image)


The causes of crime in Papua New Guinea

According to the economic theory of crime (see Becker 1968), a person will engage in criminal activity so long as there are expected net gains to utility. Extended to Papua New Guinea, the above logic states that the environment must be such that there are superior opportunities in crime relative to those available elsewhere. One of the causal factors is undoubtedly the high level of surplus labour in urban centres. According to the 1990 Census the level of surplus labour in Papua New Guinea’s urban centres was around 30 per cent and has likely
worsened since then. It is a usual theoretical and empirical finding in the economics of crime literature that surplus labour is a particularly strong causal variable in the incidence of crime (see Yamada et al. 1993 and Benson et al. 1992). Like most developing nations, Papua New Guinea is without a social security system and so the lack of 'legitimate' employment opportunities forces people to seek alternative sources of income. The informal sector, home to many workers in Asia, is undeveloped in Papua New Guinea. This may be due to two reasons. First, government regulation regarding informal business activity— inherited from Australia—is not conducive to such activity. The opportunities in street vending, for example, are severely curtailed by various government regulations (Lodewijks 1987). Second, the fixed costs of crime prevention are prohibitive for the operation of informal business, the majority of which lack economies of scale.

While the high rate of surplus labour is an important contributor to crime, Levantis (1997a) found that more than 70 per cent of those depending on illegitimate activities as a way of living were content in their activity and were not seeking formal employment. Clearly, the story goes beyond unemployment and points to the significant opportunities in crime. A feature of the crime sector of Papua New Guinea is the lack of deterrence. It is an occupational hazard of crime that there will be costs in the form of sanctions if caught. The lower the probability of being sanctioned and the weaker the sanctions the lower will be the expected costs and so the more attractive will crime be relative to legitimate forms of earning income. Whoever said 'crime does not pay' was probably not referring to crime in Papua New Guinea. In a study of the law and order problem in Papua New Guinea, Clifford et al. (1984) suggest 'crime may be the business with the best profits and the least risk'. The risk of being caught by the police is extraordinarily low. According to Levantis (1997a), the typical probability of being arrested for crimes of larceny is just over 3 per cent. Then there is the poor conviction rate, most often due to inefficiently prepared police prosecutions. In the event that one is unfortunate enough to be apprehended, convicted and imprisoned then there is no need to despair because there still remains a good chance of escaping the corrective institution. Gupta (1991) gives mention to the fact that 'the probability of escape or release from jail is high' and an examination of the case studies in Clifford et al. (1984) would lead one to quickly conclude that, in so far as security is concerned, Papua New Guinea's prisons are very much the antithesis of Alcatraz. Consider, for example,
that in mid-1993, there were 2,000 prison escapees at large (National Centre for Development Studies 1993), and to put this into perspective, the total prison population has hovered around 4,000. When all of these considerations are factored in, the expected probability of sanction for crimes of larceny is barely 1 per cent.

**Optimal expenditure on law and order**

A computable general equilibrium (CGE) model of Papua New Guinea developed by Levantis (1997c) is used here to assess the benefits of applying greater public resources to law enforcement and, in particular, to determine the optimal level of spending on law and order. The model is a static general equilibrium model structured in a way typical of the ORANI family of models (Dixon et al. 1982). As Dervis (1975:78) succinctly explains, this type of model is characterised by ‘...neo-classical production functions and price responsive demand functions, linked around an input-output matrix in a Walrasian general equilibrium model that endogenously determines quantities and prices’ (cited in Dixon et al. 1982:5).

Importantly, and essential for a CGE model of Papua New Guinea, crime is incorporated as a labour force activity and an industry. Further, external costs produced by crime are incorporated within the model. The model makes conservative estimates of the external costs due to property damage in the course of the performance of crimes and due to lost production opportunities. A conservative approach is necessary because the extent of lost production opportunities, while unambiguous in their enormity, will never be able to be determined accurately. Some reference to survey results of business costs and comparisons with Fiji are used in determining the extent of these costs. The difficulty of measuring the external costs due to psychic effects means that they are not considered in the model, so the results here can be considered as those pertaining to the lower bound.

Critical to estimating the impact of increasing expenditure on law and order is to provide an appropriate elasticity of the incidence of crime with respect to changes in law and order expenditure. Although there have been a number of attempts in the literature to estimate this elasticity, these are almost always applied to United States data. Lack of data prevents any reliable estimate being made for Papua New Guinea. In any case, estimating this elasticity is complicated by the fact that increases in crime are likely to be met by policy responses resulting in
increases in law and order expenditure. Law and order expenditure must therefore be endogenous in any econometric model. In his classic empirical study, Ehrlich (1973) used an appropriate simultaneous equation model as did Benson et al. (1992). If we average the results of the two studies we have an elasticity of the incidence of crime with respect to changes in law and order expenditure of -1.09.\(^3\) We consider it reasonable to say that law enforcement is less efficient and so less effective in Papua New Guinea than in the United States, and we want to be conservative in our estimates, a reasonable estimate to apply in the model is -0.5. This is less than the lower figure of -0.66 from Benson et al. (1992).

By iteration, we determine with the CGE model that it is optimal to increase expenditure on law and order by 117 per cent or to increase it to K194.6 million from its 1994 level of K89.6 million. A feature of the CGE model is its ability to determine an equivalent variation measure of the change in social welfare, and to disaggregate this measure into various components. Figure 2.2 shows the relationship between increasing expenditure on law and order and the equivalent variation. Naturally, as expenditure increases, the marginal benefits of increasing expenditure decrease, and so the relationship is concave. In increasing expenditure by K105 million, the net gain to welfare, as measured by the equivalent variation, increases by K68 million or 1.17 per cent of GDP. This result is contingent on the elasticity of crime used in the model. By iteration, it was found that the elasticity would have to be reduced to a very low -0.16 for a 5 per cent increase in expenditure on law and order not to provide a net benefit to social welfare. Unless it is believed that the impact on crime of increasing resources in law and order is this trivial, increasing expenditure on law and order would unambiguously improve social welfare.

In Table 2.2 we decompose the equivalent variation measure into various components. In particular, we focus on the effects on welfare of the re-allocation of unskilled labour resources and of changes in aggregate labour supply, the impact on welfare due to changes in markets subject to tax distortions, and the effect of increasing government expenditure on law and order. The unskilled labour market is subdivided into five sectors; the village and plantation sectors which are rural-based, and the urban formal, informal (legitimate) and crime sectors which are urban-based. There is no open unemployment in the model as all surplus labour is assumed to move into informal employment or crime.\(^4\) The labour resource re-allocation effects are the changes in
welfare of each sector given that the plantation sector is the numeraire. Put another way, the welfare result for each sector is to be interpreted as the change in welfare due to labour resources moving to, or from, the plantation sector, and changes in welfare occur because each sector is subject to distortions.

The urban formal sector is subject to a distorting wage for unskilled labour, and the informal sector wage is affected by Harris-Todaro style distortions. Consistent with the surplus labour model described in Corden (1974), it is assumed that village production is characterised by productive units comprising of a family or extended family where surpluses to production are shared, but only with those actually working the land. Persons who leave to find employment elsewhere lose their entitlement to the surplus. In this way, there is a distortion in village sector labour of the difference between the marginal and average products. A person engaged in crime receives a return for their efforts, but contributes nothing to production and in fact causes negative externalities. The distortion from the involvement of labour in crime is therefore substantial with the value of the marginal product negative due to these externalities.

**Figure 2.2** Papua New Guinea: the impact of law and order spending on welfare

![Graph showing the impact of law and order spending on welfare](image)

*Source: Authors' estimations.*
The net benefit to welfare due to the re-allocation of unskilled labour resources is substantial at 3.0 per cent of GDP (Table 2.2). This is by and large due to the reduction of labour resources in crime. In Table 2.3 we detail the movements in labour resources and see that the 117 per cent increase in expenditure on law enforcement causes a decline of nearly 32 per cent in those relying on crime as a way of living. The distortion in village labour means that the movement of labour resources into the village sector causes a decline in welfare of 0.08 per cent of GDP, while the movement of unskilled labour resources into urban formal employment sees a contribution to welfare of 0.04 per cent of GDP. The net negative impact on welfare of the change in aggregate skilled and unskilled labour supply is 0.02 per cent of GDP; however, a strong qualification to this result is that it is based on an assumption that the opportunity cost of leisure is zero. Another important contributor to welfare is the income tax component. This is due to the increased supply of skilled labour who are payers of income tax. The opportunity cost of increased government expenditure on law and order of K105 million is a cost to welfare of 1.82 per cent of GDP. Overall, the net welfare effect is a 1.17 per cent increase. The arguments so far have been based on static considerations.

Table 2.2  Papua New Guinea: decomposition of the equivalent variation at the optimal expenditure on law and order (1994 kina)

<table>
<thead>
<tr>
<th>Change (K'000)</th>
<th>Per cent of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labour resource re-allocation effects</td>
<td></td>
</tr>
<tr>
<td>Village sector</td>
<td>-4,735</td>
</tr>
<tr>
<td>Formal urban and mining sector</td>
<td>2,230</td>
</tr>
<tr>
<td>Informal sector</td>
<td>-175</td>
</tr>
<tr>
<td>Crime sector</td>
<td>173,629</td>
</tr>
<tr>
<td>Effect of a change in the labour supply</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-1,264</td>
</tr>
<tr>
<td>Impacts on welfare due to tax distortions</td>
<td></td>
</tr>
<tr>
<td>Production tax distortions</td>
<td>-360</td>
</tr>
<tr>
<td>Tax distortions on intermediate inputs</td>
<td>-902</td>
</tr>
<tr>
<td>Consumption tax distortions</td>
<td>-629</td>
</tr>
<tr>
<td>Income tax distortions</td>
<td>4,830</td>
</tr>
<tr>
<td>Effect of increase in government spending on law and order</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-105,000</td>
</tr>
<tr>
<td>Total equivalent variation</td>
<td></td>
</tr>
<tr>
<td>(sum of components)</td>
<td>67,625</td>
</tr>
</tbody>
</table>

Note: The labour resource re-allocation components are to be interpreted as the effects of labour moving between the respective sectors and the plantation sector—the plantation sector is the numeraire.

Source: Authors’ estimations.
Table 2.3  Papua New Guinea: impact on employment

<table>
<thead>
<tr>
<th>Employment levels</th>
<th>Change</th>
<th>Per cent change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Village sector</td>
<td>10,318</td>
<td>1.76</td>
</tr>
<tr>
<td>Plantation sector</td>
<td>-3,149</td>
<td>-5.72</td>
</tr>
<tr>
<td>Formal urban and mining sector</td>
<td>3,896</td>
<td>13.26</td>
</tr>
<tr>
<td>Informal sector</td>
<td>982</td>
<td>3.68</td>
</tr>
<tr>
<td>Participation in crime</td>
<td>-17,185</td>
<td>-31.95</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employment levels</th>
<th>Change</th>
<th>Per cent change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plantation sector</td>
<td>-1,483</td>
<td>-14.31</td>
</tr>
<tr>
<td>Formal urban and mining sector</td>
<td>2,936</td>
<td>2.31</td>
</tr>
</tbody>
</table>

Source: Authors’ estimations.

Attacking crime with a ‘big push’ of resources

Three complementary means of attacking the crime problem in Papua New Guinea are considered. First, labour market deregulation, allowing wages to adjust to supply and demand forces, will alleviate some of the unemployment. This is being done through labour-market reforms, including wage deregulation. Second, relaxation of regulations restricting informal sector activity would allow this sector to grow, helping to draw labour out of crime. But surplus labour is only part of the problem. Third, effectiveness of the law-enforcing mechanisms has to be improved. Of particular concern is the ineffectiveness of the police, the corrective institutions, and the legal systems. If an objective of the government is to reduce crime, then more resources will have to be devoted to these areas.

Organised crime in urban Papua New Guinea, Port Moresby in particular, has a sharp pyramidal structure (Harris 1988). The line workers who engage in theft and robbery do so on the instruction of their superiors. The employees in the organisation are highly specialised, those high on the hierarchy engage in disposal of items obtained by the line workers. The lower rungs of the crime industry are characterised by easy entry and exit, so the bottom rung of the pyramid is competitive. Alternative employment sources could entice workers out of the bottom rung, hence flatten the structure. The current pyramid organisation is difficult to break by law-enforcing agencies. A flatter pyramid would be easier for the police and the judiciary to infiltrate.
It is argued that outlays to curb crime have to be made in significant ‘lumps’ if a program of improved law enforcement is to be successful in achieving its goal. The current practice of increasing outlays in a piece-meal fashion may be ineffective in that forces within the economy gravitate towards a low equilibrium trap. Suppose the growth of business (both formal and informal) is the key to drawing labour from crime and hence to lowering of the organised-crime pyramid, but the business sector is prevented from growing due to the high costs associated with crime. Consider a scenario where unemployment rises, say due to population growth with stagnant employment opportunities (Figure 2.1). The increase in unemployment feeds into crime, which in turn will cause an increase in costs for business. This will further affect their viability and cause a contraction in the number of businesses which will again feed into unemployment and crime.

Consider a simple model to depict this predicament. In Figure 2.3 we plot the number of firms (N) against the growth rate of firms (N'), and assume the existence of multiple-equilibria as shown. Outlays that push the economy beyond NT number of firms (the T superscript is for threshold) will push the economy out of the low equilibrium trap, after which internal forces will cause the economy to gravitate to EH, the high equilibrium where N1 number of firms operate. As an example, putting a few more police on the street will make business at the margin profitable, hence attract a few fresh entrants. But these new entrants will only remain viable when the extra policing is present, the withdrawal of this outlay will cause exit of the new firms and push the number of firms back to N0. It is clear that in this scenario, small outlays on crime control are going to be effective in the short run and only until the resources are spent after which the economy reverts back to the low equilibrium, EL.

The low equilibrium is a trap in that it requires a ‘lumpy’ allocation to enable crossing of the threshold and hence movement to the high equilibrium, EH. The threshold here acts as a trigger point beyond which the private marginal benefit of getting a potential criminal off the street is more than the cost—arbitrage holds at EH. It is proposed that Papua New Guinea is currently in this low equilibrium trap.

The extent of expenditure required to reach the threshold is a negative function of the deterrence effect of crime. This threshold can be reached by raising crime deterrence and through encouraging private sector growth via direct incentives, the mix between these two determined by equalisation of the social returns from each. Within the
latter means, if areas could be designated where security was guaranteed by the public sector then firms may grow in numbers without further incentives. An alternate strategy may be to provide insurance against property damage and subsidies by the public sector for private provision of such services. Further to this, some coordination by the public sector to collect a nucleus of firms together may be necessary. The employment generation would have an externality on aggregate output beyond what is captured by the individual firm, hence the benefit of a coordination role of government.

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**Figure 2.3**  
Papua New Guinea: growth and number of small businesses

![Graph showing the growth and number of small businesses in Papua New Guinea](image)

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**Policy recommendations**

Already, 5 per cent of government expenditure goes to law enforcement, yet this study concludes that a substantial increase in resources for law enforcement is justified. The estimates from the CGE analysis are conservative.

An increase of 117 per cent, equivalent to K105 million in 1994 prices, in spending on law enforcement will therefore provide a net gain to social welfare of at least 1.4 per cent of GDP. If this amount of spending is sufficient to push the economy out of its low equilibrium trap and past the threshold then permanent gains will be realised.
Notes

1. Of the total of K106.4 million spent on law and order, K29.5 million was spent on prison operations and K76.9 million on police services.

2. Clifford et al., 1984 report that in 1983 just 55 per cent of cases brought before both the National Court and the district courts led to convictions.

3. This is based on the average of the following elasticities
   1. $\beta_1$ = elasticity of crime with respect to the probability of being caught
   2. $\beta_2$ = elasticity of probability of being caught with respect to police expenditure
   3. $\beta_3$ = elasticity of probability of being caught with respect to crime.

   We then determine our elasticity as $\sigma = \frac{\beta_1 \cdot \beta_2}{1 - \beta_1 \cdot \beta_3}$

4. This is consistent with survey findings in Levantis 1997a.

5. See Murphy, Shleifer and Vishny (1989) for an analogous application to industrialisation.

References


Labour market regulation in Papua New Guinea reached a new level in 1972 with the introduction by the then Australian administration of a Minimum Wages Board. On the advice offered by leading Australian trade union officials the Minimum Wages Board immediately took on an agenda of substantial increases in urban minimum wages. By 1975, real minimum wages had increased an extraordinary 118 per cent; over the same period, real minimum wages in the regulated rural sector increased just 2 per cent. After Papua New Guinea’s independence in 1975, and until 1992, policy of the Minimum Wages Board reverted to increases in minimum rates either partially or fully compensating for changes in the cost of living, and so real minimum wages declined slightly between 1976 and 1992. Whereas urban wages had been about 40 per cent above rural wages in the period 1968–71, the gap had reached 190 per cent in 1975, and was still over 170 per cent in 1992. Papua New Guinea also inherited institutionalised annual leave loadings, penalty rates, and fringe benefits, so that wages have made up only about 60 per cent of total labour costs in Papua New Guinea.

The consequences for output, employment and unemployment in Papua New Guinea in the two decades following the minimum wage rises of 1972–75 are consistent with the predictions of neo-classical
economics. Private sector urban regulated employment in 1971 was just over 95,000, but the impact of the subsequent hike in real wages saw this fall 17 per cent by 1974 to under 79,000 and recover little after that. Incredibly, by 1992, private sector employment in urban centres, at 90,000, was still 5 per cent below its level of 1971. Papua New Guinea’s experience of urban employment stagnation during these two decades contrasts starkly with the experience of neighbouring developing countries in the Asia Pacific region, where GDP grew with unprecedented rapidity in the 1970s and 1980s, and this rapid overall growth was associated with even faster rates of growth of urban employment and manufacturing output. Stagnation in private sector employment in Papua New Guinea has been in conjunction with high and persistent rural to urban migration which has led to growing concerns of underemployment and of social problems. Crime in particular has become severe. The proportion of the urban population with formal jobs roughly halved from 48 per cent in 1971 to 24.5 per cent in 1992, and Papua New Guinea’s notoriety for crime has exacerbated the lack of job opportunities by frightening off both foreign investment and potential foreign tourists.

An ordinary least squares regression of private sector urban regulated employment and real average weekly earnings for 28 annual observations in the period 1969–96 gave the following results

$$\Delta L_t = 2.57 + 0.0012t - 0.28\Delta W_t - 0.092W_{t-1} - 0.46L_{t-1}$$

$$\text{(2.75)* (0.68) (-1.77) (-1.83) (-2.66)}$$

(DW = 1.59; R² = 0.33)

$L$ is the natural logarithm of private sector regulated urban employment, the operator $\Delta$ indicates the change in a variable from the previous year; and $W$ is the natural logarithm of real average weekly earnings. The variable $t$ is time in years since 1968, which was included to proxy assumed trends in technology and the capital stock. DW is the Durbin-Watson statistic, which is between the upper and lower possible bounds for significance at the 5 per cent level; $t$-statistics are shown in parentheses under the respective coefficients; an asterisk indicates significance at the 5 per cent level.

The coefficients on the change and the lagged change in wages both just fail to be significant at this level; the point estimate of the long-run elasticity of private regulated urban employment with
respect to real earnings is 0.2. Since this elasticity is obtained from an aggregate regression of total skilled and unskilled regulated urban employment on average earnings, it cannot be directly compared with the results reported later using the CGE model, in which there are separate equations for skilled and unskilled employment.

The 1982 report to the Papua New Guinea government by Garnaut and Baxter (1984) argued that the early decisions of the Minimum Wages Board had resulted in levels of wage costs which were ‘far too high for internal balance’ (1984:98). Views such as these contributed to the Minimum Wages Board retracting its strong regulatory stance in the late 1980s, culminating in the sweeping reforms of the 1992 Minimum Wages Board determination. The urban minimum wage for newly hired unskilled adult employees was slashed from K61.60 to K22.96 per week. However, the Minimum Wages Board made it illegal for employers to reduce the nominal wages of adult employees who had been hired before the 1992 decision, and to compensate for recent price increases, the minimum wage for these continuing employees was increased from K61.60 to K62.83 per week.

The new minimum of K22.96 applied nationally across all rural and urban based employees and to 1997 has remain unadjusted. Except perhaps in very rare and exceptional circumstances, the new national minimum wage appears not to have been binding. In a survey conducted across Lae and Port Moresby in 1995 by Levantis (1997b) the lowest weekly wage recorded for any adult employee was K30. Nevertheless, the effects of wage regulation appear to have persisted long after 1992 with Levantis (1997c) in a survey of informal market activities finding that earnings in unregulated activities were still well below those in regulated activities. Of all those earning K62.83 per week (the minimum for workers hired before 1992) or less in regulated activities, Levantis (1997b) found that 31 per cent were earning exactly K62.83 per week. Firms in the regulated sector appeared to be faced by a de facto minimum wage for unskilled workers which was well above the new minimum of K22.96 per week, and also above the average wage of employees with comparable skills in the unregulated sector.

Given the well established surplus labour problem in Papua New Guinea’s urban centres it is perhaps surprising that employers did not grasp the opportunity given by the Minimum Wages Board to hire new labour at very much reduced rates. But there are a number of constraints to an employer’s ability to reduce wages—not least of which is the high reserve price for labour as demonstrated by average
earnings in informal activities, at K41 per week in 1995 (Levantis 1997c), well exceeding the national minimum. Another reason for the persistence of a de facto minimum wage is the desire to maintain harmonious labour relations and paying very different wages to workers doing the same jobs would have generated grievances and perhaps industrial unrest. These grievances would have also had negative implications for staff morale and loyalty—and perhaps given rise to insider-outsider type losses in efficiency. In effect, efficiency wages have been paid to newly hired workers so that their wages continued to exceed that available for comparable workers in the unregulated sector.

The average weekly wage of all those now earning K62.83 or less in the regulated sector in 1995 was K56.02. It is plausible to assume these workers would have been earning the minimum wage of K62.83 per week in the regulated sector in 1992, if they were able to find jobs in the regulated sector. In 1995 prices, the 1992 minimum wage of K62.83 corresponds to K79.48. From this we can roughly estimate that the average real wage in the regulated sector of members of this group was 41.9 per cent higher in 1992 than in 1995: the average nominal wage was K62.83 in 1992, but only K56.02 in 1995, and the price level was 26.5 per cent higher in 1995. We classify as 'unskilled' those workers who earned K62.83 or less per week in the regulated sector in 1995. All other workers are classified as 'skilled'. With this definition of unskilled workers, unskilled wages in the regulated sector would have been 41.9 per cent higher in 1995 had the Minimum Wages Board continued to fully index minimum wages.

The main objective of this chapter is to assess the effects on aggregate welfare, employment and wages in each sector, of restoring the pre-1992 minimum wage rate for unskilled workers. To do this we perform a simulation using a CGE model for Papua New Guinea where unskilled wages in the regulated sector are raised by 41.9 per cent in real terms.

A computable general equilibrium model of Papua New Guinea

The model used is taken from Levantis (1998). It differs from other single-period CGE models, such as the Orani model (Dixon et al. 1982), mainly in its explicit treatment of the labour market, the informal sector, and crime. It is based on full optimising behaviour; the
parameters of the behavioural relationships describing consumption and production were mostly derived from Vincent et al. (1991) and are documented in Levantis (1998).

The treatment of the skilled labour market is standard: the supply of skilled workers is assumed to be exogenous and the wage for skilled workers is assumed to adjust to equate demand to this exogenous level of supply. The unskilled labour market is modelled along the lines suggested by Harris and Todaro (1970), except that unregulated urban activities take the place of open unemployment in the Harris-Todaro model. In our tables, those engaged in these activities are classified as employed in crime, or in the ‘legal unregulated’ sector. In the Census these people would have mostly been classified as unemployed.6

The workings of the unskilled labour market can be explained by referring to the first column of Tables 4.1 and 4.2, which summarise the levels of employment and wages in the base situation (the actual situation in 1995). The average unregulated rural wage was taken to be the national minimum of K22.96 per week, whereas earnings for unskilled workers in urban areas averaged K56.02 per week in regulated activities, but only K40.57 per week in unregulated activities. Taking a weighted average across regulated and unregulated urban unskilled activities, gives average urban earnings of K44.70 per week. Average urban unskilled earnings are therefore 95 per cent above rural earnings, and it is assumed that this differential would persist even in the complete absence of labour market regulation. We model this difference by assuming that each unskilled worker can choose to supply either 1 unit of urban labour, or 1.95 units of rural labour.7 Labour market equilibrium then requires that the urban unskilled wage is 95 per cent above the rural unskilled wage.

The basic Harris-Todaro structure of the unskilled labour market can be represented by the following equations in which \( w \) is the wage, \( L \) is the level of employment, and the superscripts \( r, R, \) and \( U \) denote the rural, regulated urban, and unregulated urban sectors respectively.8

\[
[1 + \alpha].w' = s.w^R + [1 - s].w^U \tag{1}
\]

\[
s = L^R(w^R)/[L^U(w^U) + L^R(w^R)] \tag{2}
\]

\[
L'(w') + [1 + \alpha].[L^U(w^U) + L^R(w^R)] = L \Sigma \tag{3}
\]
Equation 1 requires the weighted rural wage to equal the average urban wage; the parameter $\alpha$ is 0.95 in our model. The average urban wage is defined as the regulated wage multiplied by the share, $s$, of urban workers with regulated jobs plus the unregulated urban wage, multiplied by the share, $1-s$, of urban workers with unregulated jobs. Equation 2 defines the share of urban workers with regulated jobs in terms of the functions $L^R(w^R)$ and $L^U(w^U)$, which show how the demand for workers in each category depends on the wage for that category. Equation 3 requires the total demand for labour (with urban labour weighted to reflect its greater social cost than rural labour) to equal the total supply of labour, $L^E$. With the unskilled urban regulated wage, $w^R$, set exogenously by the Minimum Wages Board, these three equations determine the variables $w^R$, $w^U$, and $s$. In the CGE model, the three employment levels, $L^r$, $L^R$ and $L^U$ are not literally functions only of the three wage levels, $w^r$, $w^R$, and $w^U$. Rather, there is a derived demand for each type of labour in each sector, and the demands and supplies for the outputs of the various sectors are simultaneously determined.

We denote the values of the marginal product (VMP) of labour in the three sectors by $v^r$, $v^R$, and $v^U$. Let $dY$ denote the total value of all the extra physical amounts produced due to any small exogenous change in which the total supply of labour is kept constant. Note that $dY$ differs from the increase in the total value of output by excluding the revaluation effects of price changes. By definition

$$dY = v^r \cdot dL^r + v^U \cdot dL^U + v^R \cdot dL^R$$

(4)

$$0 = dL^r + [1 + ] \cdot [dL^U + dL^R]$$

(5)

If the wage in the rural sector is equal to the value of the marginal product of labour in the rural sector, then, multiplying both sides of Equation 5 by $v^r = w^r$, and subtracting it from Equation 4 gives

$$dY = [v^U - [1+\alpha]w^r] \cdot dL^U + [v^R - [1+\alpha]w^r] \cdot dL^R$$

(6)

Equation 6 provides a decomposition of the change in aggregate real output due to any arbitrary re-allocation of labour among sectors. The first of the two terms on the right side is the amount of labour drawn from the rural sector into the unregulated urban sector, $dL^U$, multiplied by the size of the ‘distortion’ in the unregulated urban sector, defined as the excess of the values of the marginal product of unregulated urban labour over its opportunity cost in the rural sector.
The second term on the right side of Equation 6 gives an exactly analogous expression for the regulated urban sector.

Equation 6 is a simplified version of the equation used to decompose the efficiency gains from labour re-allocation in the full CGE model. One complication ignored, but included in the full CGE model, is that within the rural sector a distinction is made between the plantation and the village sectors. The plantation sector wage is considered to be equal to the values of the marginal product of labour, but for village sector labour there is assumed to be a distortion because villagers who migrate are assumed to lose their claims to rents on family land.9 The decomposition of the welfare effects reported below for the full CGE model therefore uses the plantation wage as the opportunity cost of labour in defining the distortion in each other labour market, and omits the change in employment in the plantation sector (rather than in the whole rural sector) from the right side of Equation 6. The employment change terms in the amended version of Equation 6 should therefore be thought of as the amount of labour drawn from the plantation sector into each other sector.

It is assumed that the wage equals the values of the marginal product of unskilled labour in the regulated urban sector and within the legal part of the unregulated urban sector but due to labour market regulation, wages and values of the marginal products in the regulated sector exceed those in the unregulated sector. The distortion in the regulated sector, defined as the excess of the values of the marginal product of regulated labour over its opportunity cost in the plantation sector, is therefore equal to the regulated urban wage minus 1.95 times the wage in the plantation sector. The value of this distortion is K1,154 per employee per year. This is the direct efficiency gain of moving a worker from the plantation sector to the regulated urban sector. The direct impact on the value of output at constant prices of diverting a worker to the unregulated urban sector from the plantation sector is -K341.

Crime is included in the full CGE model as an unregulated urban activity and is the most important distortion not included in Equation 6. Consistent with the findings of Levantis (1997c) crime is considered an important labour market activity in Papua New Guinea.10 The values of the marginal product of criminal ‘workers’ is negative—for every one kina of net earnings of criminals, it is assumed that the victims of crime suffer a loss of (1 + θ) kina. The net earnings of each
criminal are assumed to be a decreasing function of the number of criminals, and the size of the criminal population is assumed to adjust to equate the net earnings per criminal to the wage in unregulated, legal, urban activities. The consumption of criminals is treated just like the consumption of other citizens, and the net earnings of criminals are therefore modelled as transfers, rather than waste. The difference between the costs of crime to its victims, and its benefits to criminals is treated as waste, and is referred to as 'the net external cost of crime'.

The first term on the right side of Equation 6 is actually decomposed into two terms, one for legal and one for criminal activities in the unregulated urban sector. The term for criminal activities is

\[ v_c - [1 + \alpha] w_r \cdot dL_c \]

here \( v_c \) is the values of the marginal product of each criminal and \( c \) is the increase in the number of criminals. Since each criminal has net earnings of \( w'U \), the values of the marginal product per criminal is

\[ v_c = -\theta(1 + \gamma).w'U \]

where \( \gamma \) (which is negative) is the elasticity of earnings per criminal with respect to the number of criminals.\(^{11}\) The time wasted by criminals in criminal activity is not part of the external cost of crime as defined above; rather, it is measured by the term \([1+\alpha]w'\).

**Measuring the welfare effects of wage regulation**

The results of the simulations using the CGE model measure the effects of an increase of 41.9 per cent in the real wage for unskilled, regulated, urban activities. This is our estimate of the increase needed to restore the minimum wage to its real level in 1992. In reporting the simulations, we distinguish three main situations, 'base' (B), 'regulated' (R), and 'equivalent' (E). These situations are defined as follows:

**Situation B ('base')**: the wage for unskilled workers in the regulated sector is K56.02 per week, as in 1995, and the consumer price index is at its actual level of 1995.

**Situation R ('regulated')**: the minimum real wage for unskilled workers in the regulated sector is increased by 41.9 per cent relative to situation B, so as to restore the real wage level of 1992. In adjusting the nominal wage, allowance is made for the endogenous effect of regulated wages on the consumer price index.\(^{12}\)
Situation E (‘equivalent’ in its effect on welfare to raising the minimum wage): the minimum wage for unskilled workers in plantations and in the regulated sector is held at the same level, in real terms, as in 1995 (that is as in situation B), but foreign grants received by Papua New Guinea are adjusted endogenously to make welfare equal to the level attained in situation R.

To avoid the misleading welfare effects which would arise in a one-period model in which government spending does not explicitly enter utility, net foreign assets and all real investment and real government spending are held constant. By definition, the required change in foreign grants received by Papua New Guinea between situations B and E is the equivalent variation (EV) of increasing the minimum unskilled wage by 41.9 per cent. Because increasing the minimum unskilled wage reduces welfare, the equivalent variation is negative. The two simulations reported in section 4 are (1) an uncompensated increase in the real wage, that is, a movement from B to R, and (2) a compensated increase in the real wage, a movement from E to R.

Useful insights into the sources of the welfare effects measured by the equivalent variation can be obtained by disaggregating the equivalent variation into its components. This is achieved by dividing the finite change into a large number of small changes, in each of which utility is constant, and applying the method of Harberger (1971) in each small change—the equivalent variation in any small change is equal to the sum across all distorted markets of the product of the change in the level of activity in that market and the size of the distortion. The distortion is defined as the excess of the marginal social benefit of the activity over its marginal social cost a definition which is consistent with classifying as ‘undistorted’ those markets in which whatever is bought and sold has a marginal social benefit equal to its marginal social cost. Tables 3 and 4 give the results of this disaggregation. Equation 6 provides a simplified version of how the welfare effects of labour market distortions are disaggregated into the amounts corresponding to the re-allocation of labour among sectors; additional effects (Table 3.5) also arise from changes in the levels of activities subject to distorting taxes.

Results

Tables 4.1 and 4.2 summarise the effects of re-introducing the minimum wage of 1992 on the rural and urban labour markets. The proportionate
fall in unskilled regulated urban employment is only about a third of the proportionate increase in the real wage, so demand for unskilled regulated urban labour is relatively wage inelastic. As a result, total earnings in this market are increased by the increase in the minimum wage. To offset the extra rents accruing to regulated urban labour, the unregulated urban labour force increases by more than the reduction in the regulated urban labour force, and so correspondingly, the unskilled rural labour force falls. The actual fall in rural employment is just under 3 per cent, the proportionate falls in village and plantation employment are roughly equal. The fall in rural employment is matched by an increase of 9,000 workers in the total urban labour force. A further 5,000 workers are displaced from the regulated urban sector, and so 14,000 workers are drawn into the unregulated urban sector. Of these, about 1,000 find their way into legal informal employment, the remaining 13,000 take up crime as a way of living.

### Table 3.1 Papua New Guinea: simulated changes in wages

<table>
<thead>
<tr>
<th>Situation</th>
<th>B Base (K/week)</th>
<th>E Welfare equiv. of R (K/week)</th>
<th>R High min. wage (K/week)</th>
<th>Increase B to R (per cent)</th>
<th>Increase E to R (per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unskilled nominal wages</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban, regulated</td>
<td>56.02</td>
<td>55.64</td>
<td>79.42</td>
<td>41.8</td>
<td>42.7</td>
</tr>
<tr>
<td>Urban, unregulated</td>
<td>40.57</td>
<td>40.41</td>
<td>37.13</td>
<td>-8.5</td>
<td>-8.1</td>
</tr>
<tr>
<td>Urban, average</td>
<td>44.70</td>
<td>44.51</td>
<td>45.83</td>
<td>2.5</td>
<td>3.0</td>
</tr>
<tr>
<td>Rural</td>
<td>22.96</td>
<td>22.86</td>
<td>23.54</td>
<td>2.5</td>
<td>3.0</td>
</tr>
<tr>
<td>Unskilled real wages (1995K)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban, regulated</td>
<td>56.02</td>
<td>56.02</td>
<td>79.49</td>
<td>41.9</td>
<td>41.9</td>
</tr>
<tr>
<td>Urban, unregulated</td>
<td>40.57</td>
<td>40.68</td>
<td>37.16</td>
<td>-8.4</td>
<td>-8.7</td>
</tr>
<tr>
<td>Urban, average</td>
<td>44.70</td>
<td>44.81</td>
<td>45.87</td>
<td>2.6</td>
<td>2.4</td>
</tr>
<tr>
<td>Rural</td>
<td>22.96</td>
<td>23.01</td>
<td>23.56</td>
<td>2.6</td>
<td>2.4</td>
</tr>
<tr>
<td>Memo items</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPI, base = 100</td>
<td>100.0</td>
<td>99.33</td>
<td>99.91</td>
<td>-</td>
<td>0.6</td>
</tr>
<tr>
<td>Wage ratio, urban:rural</td>
<td>1.95</td>
<td>1.95</td>
<td>1.95</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Notes:** The three situations B, E, and R are described in the text. Numerical estimates are taken from Levantis (1997a).

The distribution of skilled (and semi-skilled) employment between the urban and plantation sectors is affected little by the simulation. Since unskilled employment in the regulated sector is less than a quarter of total employment in the regulated urban sector (29,400 out of 127,100 workers in the base situation), the 16.9 per cent fall in unskilled urban employment in the regulated sector is accompanied by a fall of only 3.2 per cent in total regulated urban employment. It is interesting to compare this result with the actual change—urban private sector formal employment in 1992 was 4.3 per cent lower than in 1995. Employment therefore increased after the reforms of 1992 reversing the fall in employment between 1972 and 1992.

### Table 3.2  Papua New Guinea: estimated effects on employment of wage regulation

<table>
<thead>
<tr>
<th>Situation</th>
<th>B Base</th>
<th>E Welfare</th>
<th>R High min.</th>
<th>Increase B to R</th>
<th>Increase E to R</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>('000s)</td>
<td>('000s)</td>
<td>('000s)</td>
<td>(per cent)</td>
<td>(per cent)</td>
</tr>
<tr>
<td>Number of unskilled workers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban, regulated</td>
<td>29.4</td>
<td>29.4</td>
<td>24.4</td>
<td>-16.9</td>
<td>-16.9</td>
</tr>
<tr>
<td>Legal, unregulated</td>
<td>26.7</td>
<td>26.5</td>
<td>27.3</td>
<td>2.3</td>
<td>3.1</td>
</tr>
<tr>
<td>Crime</td>
<td>53.8</td>
<td>54.2</td>
<td>67.2</td>
<td>25.0</td>
<td>24.1</td>
</tr>
<tr>
<td>Urban, unregulated</td>
<td>80.5</td>
<td>80.7</td>
<td>94.5</td>
<td>17.5</td>
<td>17.2</td>
</tr>
<tr>
<td>Villages</td>
<td>586.0</td>
<td>585.3</td>
<td>569.5</td>
<td>-2.8</td>
<td>-2.7</td>
</tr>
<tr>
<td>Plantations</td>
<td>55.1</td>
<td>55.4</td>
<td>53.9</td>
<td>-2.1</td>
<td>-2.8</td>
</tr>
<tr>
<td>Rural</td>
<td>641.1</td>
<td>640.7</td>
<td>623.4</td>
<td>-2.8</td>
<td>-2.7</td>
</tr>
<tr>
<td>Total unskilled</td>
<td>751.0</td>
<td>750.8</td>
<td>742.4</td>
<td>-1.1</td>
<td>-1.1</td>
</tr>
<tr>
<td>Total unskilled (weighted)</td>
<td>855.0</td>
<td>855.0</td>
<td>855.0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Number of skilled workers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>127.1</td>
<td>127.1</td>
<td>127.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Plantations</td>
<td>10.4</td>
<td>10.4</td>
<td>10.3</td>
<td>-0.4</td>
<td>1.1</td>
</tr>
<tr>
<td>Total skilled</td>
<td>137.5</td>
<td>137.5</td>
<td>137.4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total skilled (weighted)</td>
<td>295.9</td>
<td>295.9</td>
<td>295.9</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total skilled and unskilled</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban regulated</td>
<td>156.5</td>
<td>156.5</td>
<td>151.5</td>
<td>-3.2</td>
<td>-3.2</td>
</tr>
<tr>
<td>Urban unregulated</td>
<td>80.5</td>
<td>80.7</td>
<td>94.5</td>
<td>17.5</td>
<td>17.2</td>
</tr>
<tr>
<td>Rural</td>
<td>651.5</td>
<td>651.2</td>
<td>633.8</td>
<td>-2.7</td>
<td>-2.7</td>
</tr>
<tr>
<td>Total skilled and unskilled</td>
<td>888.4</td>
<td>888.3</td>
<td>879.8</td>
<td>-1.0</td>
<td>-1.0</td>
</tr>
</tbody>
</table>

Notes: The three situations B, E, and R are described in the text. Source: Authors’ estimates.
Table 3.3 shows the response of some other variables of interest. If the welfare effects of raising the minimum wage are not removed by adjusting foreign grants, that is in the movement from B to R, the CPI falls only by 0.1 per cent; with traded goods as numeraire, this means that the real exchange rate scarcely changes. Restoring the 1992 level of the minimum wage would reduce real GDP by 0.6 per cent; the bulk of this fall is accounted for by the displacement of labour from rural employment and regulated urban employment into crime. The values of the marginal product of labour in the two former activities is relatively high, whereas in crime it is negative. For an uncompensated increase in minimum wages (the movement between B and R), the absolute fall in real GDP is matched by an equal fall in real consumption; this occurs because government expenditure, investment, and the trade balance are held constant. The proportionate fall in real consumption is 1.4 per cent. In the case of a compensated increase in minimum wages (the movement between E and R), consumption stays constant in real terms and the fall in GDP shows up in a fall in net exports, financed by the increase in foreign grants needed to hold welfare constant. In all cases, net capital outflow is held constant by assumption.

Not surprisingly, the main welfare effects of raising minimum wages arise from changes in the unskilled labour market. The intuition behind these welfare effects is shown in Table 3.4, and the actual welfare effects are shown in Table 3.5. Column 1 of Table 3.4 shows the estimated earnings per week in each part of the unskilled labour market; column 2 shows the corresponding values of the marginal products of each category of unskilled labour. The earnings levels shown in column 1 are simply the averages of those in situations E and R of Table 3.1. Column 4 measures the annual average (in situations E and R) of the distortion in each labour market, defined as the excess of the values of the marginal product of that type of labour over its opportunity cost in terms of plantation labour.

By construction, this distortion is zero for plantation labour. It is large and negative for labour engaged in crime—most of the magnitude of the distortion in crime is due to the opportunity cost of labour in plantations. The large positive distortion for labour in the regulated urban sector arises because minimum wages artificially restrict employment in the urban regulated sector. Employment in the legal unregulated urban sector is inefficiently large because workers take unregulated urban jobs while searching for regulated urban jobs;
it is too high in the village sector because workers stay there to avoid losing their share of household rents.

Column 5 of Table 3.4 shows the absolute changes in each type of unskilled employment as a result of a compensated wage rise between situations E and R. Column 6 is the product of columns 4 and 5; that is, each employment change is multiplied by the corresponding average distortion between E and R. The items in column 6 therefore correspond to the terms on the right side of Equation 6, and their sum therefore corresponds to the increase in the value of output due to the reallocation of labour between situations E and R: the transfer of workers from villages, plantations, and high-wage, regulated, urban jobs into low-wage urban jobs and crime reduces output by an estimated K32 million. This is roughly equal to the actual fall in real GDP due to raising the minimum unskilled wage between B and R, or E and R.

Table 3.3  
<table>
<thead>
<tr>
<th>Situation</th>
<th>B Base</th>
<th>E Welfare</th>
<th>R High min.</th>
<th>Increase B to R (per cent)</th>
<th>Increase E to R (per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPI (base situation = 100)</td>
<td>100.0</td>
<td>99.3</td>
<td>99.9</td>
<td>-0.1</td>
<td>0.6</td>
</tr>
<tr>
<td>Real GDP (million kina)</td>
<td>5,709</td>
<td>5,706</td>
<td>5,675</td>
<td>-0.6</td>
<td>-0.6</td>
</tr>
<tr>
<td>Real consumption (million kina)</td>
<td>2,422</td>
<td>2,387</td>
<td>2,387</td>
<td>-1.4</td>
<td>-</td>
</tr>
<tr>
<td>Nominal consumption (million kina)</td>
<td>2,422</td>
<td>2,371</td>
<td>2,385</td>
<td>-1.5</td>
<td>0.6</td>
</tr>
<tr>
<td>Trade surplus (million kina)</td>
<td>906</td>
<td>938</td>
<td>906</td>
<td>-</td>
<td>-32</td>
</tr>
<tr>
<td>Foreign grants (million kina)</td>
<td>177</td>
<td>145</td>
<td>177</td>
<td>-</td>
<td>32</td>
</tr>
<tr>
<td>Net capital outflow (million kina)</td>
<td>1,083</td>
<td>1,083</td>
<td>1,083</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Notes: Consumption and GDP are measured after deducting goods wasted in crime. Investment and government expenditure, net of goods purchased by government and stolen by criminals, are held constant throughout in real terms. Net capital outflow is held constant at border prices. Foreign grants are held constant between B and R, but adjusted endogenously to keep welfare constant between R and E. Since relative and absolute prices change very little, real consumption is an almost perfect indicator of welfare, and the absolute fall in real GDP between E and R is almost exactly equal to the increase in foreign grants between E and R, and to the fall in consumption between B and R. In small changes these equalities would hold exactly, in large changes they hold only as approximations whose accuracy depends on the constancy of prices.

Source: Authors’ estimates.
Table 3.4  
**Papua New Guinea: distortions in the unskilled labour market**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Earnings p/w Average of E and R K/w (1)</th>
<th>VMP p/w Average of E and R K/w (2)</th>
<th>Urban/rural wt. (3)</th>
<th>Distortion Average of E and R K/yr (4)</th>
<th>Employment rise E to R (Table 3.3) '000s (5)</th>
<th>Emp. rise 'distortion E to R K'000/yr (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Situation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Units</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban, regulated</td>
<td>67.53</td>
<td>67.53</td>
<td>1.95</td>
<td>1,154</td>
<td>-4.98</td>
<td>-5,746</td>
</tr>
<tr>
<td>Urban, unregulated</td>
<td>38.77</td>
<td>38.77</td>
<td>1.95</td>
<td>-341</td>
<td>0.82</td>
<td>-280</td>
</tr>
<tr>
<td>Urban crime</td>
<td>38.77</td>
<td>-3.35</td>
<td>1.95</td>
<td>-2,531</td>
<td>13.04</td>
<td>-33,020</td>
</tr>
<tr>
<td>Village</td>
<td>23.29</td>
<td>14.81</td>
<td>1.00</td>
<td>-441</td>
<td>-15.76</td>
<td>6947</td>
</tr>
<tr>
<td>Plantations</td>
<td>23.29</td>
<td>23.29</td>
<td>1.00</td>
<td>-</td>
<td>-1.54</td>
<td>-</td>
</tr>
<tr>
<td>Total unskilled</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: The earnings data in column (1) are taken from Table 3.1. Except for crime and the village sector, the values of the marginal products in column (2) are assumed to equal the corresponding levels of earnings; the direct values of the marginal product of crime (i.e., excluding the value of the criminal’s own time) is conservatively estimated to be minus 8.6 per cent of earnings per criminal (see note 10). The value of the marginal product of village labour is assumed to be only 63.5 per cent of the earnings in this sector because of the ‘Manoilescu-effect.’ The weights in column (3) correspond to the [1 + a] weights in Equation 3; the estimate a = 0.95 in urban sectors is taken from the premium, noted in Table 3.1, of the average urban wage over rural earnings. The ‘distortions’ in column (4) are the values of the marginal products in column (2) minus those in the plantation sector, multiplied by the column (3) weights, and therefore correspond to the coefficients of the employment change terms on the right side of Equation 6. The employment changes in column (5) are taken from Table 3.3. Column (6) is the product of columns (4) and (5); each entry therefore corresponds to a term on the right side of Equation 6.

Source: Authors’ estimates.

Table 3.5 collects together our complete estimates of the welfare effects. The first part of the table shows the labour market effects. Column 1 reproduces the approximations derived in column 6 of Table 3.4, while column 2 gives the actual welfare estimates. In all, a return to labour market regulations and a minimum unskilled wage at the level of 1992 would cause a fall in welfare equal to 1.35 per cent of consumption. Of this, 0.01 per cent is due to changes in areas of the economy subject to tax distortions. The primary aspect of the loss in welfare is due to the diversion of labour resources into crime which contributes a loss in welfare of 1.38 per cent of consumption.

Clearly, the usual argument of raising minimum wages on equity grounds is flawed. The fortunate are those in urban formal employment,
and intervention to improve their conditions acts to reduce the number of fortunate in urban formal employment and increase the number of poor in the unregulated urban sector while reducing their wage. The previous minimum wage regulations caused the twin detriments of increased inequity and reduced economic performance. Re-imposing the pre-1992 conditions would not only be detrimental for economic performance, but would significantly reduce equity and would cause a substantial increase in the law and order problem.

### Table 3.5  Papua New Guinea: welfare effects of minimum wage regulation

<table>
<thead>
<tr>
<th>Gains in efficiency, E to R</th>
<th>Table 3.4—approx. K '000</th>
<th>Components of EV K '000</th>
<th>% of consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unskilled labour market distortions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban, regulated</td>
<td>-5,746</td>
<td>-5,569</td>
<td>-0.23</td>
</tr>
<tr>
<td>Urban, legal unregulated</td>
<td>-280</td>
<td>-296</td>
<td>-0.01</td>
</tr>
<tr>
<td>Urban, crime</td>
<td>-33,020</td>
<td>-32,636</td>
<td>-1.38</td>
</tr>
<tr>
<td>Village</td>
<td>6,947</td>
<td>6,756</td>
<td>0.28</td>
</tr>
<tr>
<td>Plantation</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total unskilled labour</td>
<td>-32,098</td>
<td>-31,745</td>
<td>-1.34</td>
</tr>
<tr>
<td>Tax distortions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production tax (including tariffs)</td>
<td>-132</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Imported intermediate inputs</td>
<td>-394</td>
<td>-0.02</td>
<td></td>
</tr>
<tr>
<td>Consumption taxes (including tariffs)</td>
<td>201</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Income tax</td>
<td>68</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total tax distortion effects</td>
<td>-257</td>
<td>-0.01</td>
<td></td>
</tr>
<tr>
<td>Equivalent variation</td>
<td>-32,002</td>
<td>-1.35</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:** column (1) gives the approximations derived in column (6) of Table 3.4, while column (2) shows the exact estimates from the CGE model. In deriving the column (2) estimates, the movement between E and R is divided into many separate small steps, within each of which the methodology of Table 3.4 and Equation 6 holds almost exactly; the differences between columns (1) and (2) arise because the magnitudes of each distortion vary throughout the movement from E to R, and the average of each distortion at E and R, which is used in Table 3.4 and column (1), is not identical to the average of the same distortion over all the steps between E and R, each weighted by the change at that step. As in Harberger (1974), each tax distortion effect in column (2) measures the tax wedge times the change in the corresponding tax base. The sum over all distortions in column (3) gives the equivalent variation of increasing minimum real wages from their level in B to their level in R. This, in turn, is equal to the increase in foreign grants between B and E. Column (4) expresses the items in column (2) as percentages of consumption in the base situation. Note that the equivalent variation is -1.35 per cent of consumption, which is approximately equal to the fall in real consumption between B and R (see Table 3.3).  
**Source:** Author's estimates.
Notes


2 Derived from McGavin (1991), Tables 1.2 and 1.3.

3 Before taking logarithms, both series were indexed to 100 in 1975. The observations for average weekly wage in 1993 and 1994 were missing; since anecdotal evidence suggests that real wages fell sharply at first, and then more gradually following deregulation in 1992, these observations were interpolated to give the following values for average weekly wage from 1992 to 1996, inclusive: 86.2; 75.7; 71.7; 66.2; 66.0. The interpolated values are indicated with asterisks.

4 This arises when the established workers (insiders) use various means to protect their position from new workers (outsiders). See for example Lindbeck and Snower (1986).

5 Had full indexation been maintained, the minimum wage would have been raised from K61.60 to K62.83 per week in 1992, and then kept at that level in real terms. Instead, the *de facto* minimum nominal wage for unskilled workers had fallen to K56.02 per week by 1995; and between 1992 and 1995, the CPI rose by 26.5 per cent. To restore the minimum wage to K62.83 in terms of 1992 prices would therefore have required an increase in real terms of 41.9 per cent: \( 1.419 = \frac{1.265 \times 62.83}{56.02} \).

6 According to the 1990 Census, 29.3 per cent of the urban workforce were unemployed. The Census form left respondents to decide how to define unemployment; and a survey by Levantis (1997c) of those who regard themselves as being 'unemployed' argues that most of those recorded by the Census as being unemployed are actually engaged in activities undertaken for pay or profit in the unregulated sector; if all such people are excluded, the revised level of unemployment is only 4.6 per cent. Since the crowding of workers into unregulated activities artificially depresses their earnings and productivity, these workers can more accurately be described as being 'underemployed', rather than 'employed' or 'unemployed'.

7 In the case of skilled workers, it was estimated from relative wage data that each unit of urban labour was equivalent to 2.2 units of rural labour.

8 In these equations, round brackets ( ) are used to denote functional forms; square brackets [ ] are used to collect terms which are multiplied or divided.
This effect, which was first described by Manoilescu and was subsequently analysed by Nurkse (1957) and others, acts as a subsidy to village employment. In the CGE model it is assumed that the values of the marginal product of village labour comprises only 64 per cent of earnings per person in villages, and that rents on household assets comprise the remaining 36 per cent. The resulting distortion in the village sector, defined as the direct efficiency gain due to moving a worker to it from the plantation sector, and therefore measured as the VPM of labour in the village sector minus the wage in the plantation sector, is -K441 per person per year (Table 3.4). Such a shift would leave the worker as well off as before, but would make other family members better off by the amount of the rents transferred, assumed to be K441 per year.

Levantis (1997c) found that nearly 15 per cent of the urban workforce in Papua New Guinea in 1995 relied on crime as the main source of income, and the average cash earnings from criminal activities was just under K38 per week.

Let T denote the-net-of-waste total earnings of all criminals. Since \( y \) is the elasticity of earnings per criminal with respect to the number of criminals, the increase in T per extra criminal is therefore \((1 + y)w_u\). Waste (defined as the total cost of crime to its victims minus T) is assumed to be \( \theta T \), where \( \theta \) is a constant; therefore the marginal waste per criminal is \( \theta(1 + y)w_u \). Using estimates derived from the Report on Law and Order in Papua New Guinea by Clifford et al. (1984), Levantis (1997a) obtains \( y = -0.35 \) and \( \theta = 0.14 \).

Since the exchange rate is assumed to be held constant throughout, and since most goods are assumed to be tradable, the effect on the price index is very small; and because an increase in regulated unskilled wages results in a fall in the nominal wages of skilled workers and of unskilled workers in the urban unregulated sector and because the prices of non-tradable are relatively sensitive to the wages of these groups an increase in the nominal regulated wage of unskilled workers actually reduces the consumer price index very slightly.


Because of the difficulty in assessing the full extent of the external costs of crime, the model takes a conservative approach taking account of only a small component of the total—hence external costs of crime as measured by the model are relatively small.
References


Building productivity culture in Papua New Guinea: changing labour market roles for government

P.A. McGavin

Achieving improvements in the delivery of public services, improving the use of abundant rural resources, addressing supply-side constraints, and achieving expansion in quality and quantity of labour skills, requires sustained commitment by governments to constant and consistent scrutiny of public policy influences on labour market outcomes—so that these are assessed in terms of policy significance for achieving broad-based, sustainable and internationally-competitive development for Papua New Guinea. Government labour market policy is traced from early regulation, through transition toward Independence, and post-Independence—with a focus on the implementation of the 1992 Minimum Wages Board Determination. This analysis assesses attempts at building a national productivity culture and practical ways quickly to increase labour skills for Papua New Guinea. Recent losses of fiscal control by the Papua New Guinea government have caused reversals in gains made. There is a need for re-assertion of incipient improvements following the 1992 Minimum Wage Board decision and for another start at re-building a productivity culture in the delivery of government services and in the contribution of government to public understanding of productivity improvement in Papua New Guinea.
Government and labour market policy and regulation

Early regulation

Indigenous production in Papua New Guinea is highly localised. As in 1884 when British annexation of the Eastern part of the main island of New Guinea and the adjacent Coral Sea islands occurred, production continues overwhelmingly to occur in local-area agricultural societies where land is held under local customary property rights. From early days, there was considerable variability by area in the intensity of land use. Plantations were developed in areas of relatively low-intensity land use that were suited to the production of tropical agricultural export commodities. A key production problem for plantations was the securing of an adequate and reliable labour supply. Local communities in areas contiguous to plantations typically needed available labour to sustain customary agricultural production, and were disposed to withdraw labour services from plantations according to the priorities of these local communities—priorities that differed from the priorities of foreign plantation interests.

From 1906 in Papua, and 1914 in New Guinea, and from 1946 in the combined Territory of Papua New Guinea, early Australian administrations were concerned to regulate the recruitment of indigenous persons for fixed-period plantation work. Fixed-period, rather than 'casual', labour contracts were preferred by plantation interests because of the prevalence of quitting by indigenous employees once 'target incomes' for the acquisition of desired market products were achieved. Various Native Labour Ordinances governed the system of contract plantation labour (the 'indenture' system), and regulated the length of the indenture, food and accommodation, termination payments, and penalties for breach of contract. The first legal minimum wage for the combined Territory of Papua New Guinea was determined by the Native Labour (Wages and Employment) Ordinance of 1946. Under this ordinance, the indenture system was replaced by an 'agreement' system with civil penalties for breach of contract. The minimum wage specified minimum accommodation, clothing and equipment, daily rations, and K1.50 per calendar month, with a proportion of the cash payment deferred until the end of the contract. The ordinance was revised in 1950 to provide for weekly monetary payment for casual workers of K3.30 for a five-and-a-half-day week of 44 hours ('casual' here meaning not employed for a contract period of a specified number of years). Thus, by
the end of the 1950s, the transition to a cash wage was well under way (McGavin 1991a:31f).

**Transition toward independence**

At the time of the major wage enquiries of 1970—the Cochrane Report and the Isaac Report (Territory of Papua and New Guinea 1970a,b)—the rural minimum cash wage was K1.00 per week and, with imputed cash values for non-cash components, was estimated at K4.83 per week on an inclusive cash plus in-kind basis. During the preceding years, the growth of urban labour markets led to widespread disregard of ordinances, since employers were prepared to pay more than minimum rates. In 1961 the Administrator promulgated an urban cash award wage of K6.00 per week (McGavin 1991a:32). These developments led the Administration to introduce the *Industrial Relations Ordinance* 1962 and the *Industrial Organisations Ordinance* 1962, providing for industrial councils of employers and employees, the institution of boards of inquiry, setting-up of compulsory conferences and arbitration tribunals for the resolution of industrial disputes, and procedures for registering industrial organisations.

The Cochrane Report counselled against the adoption of a contemporary Australian system of compulsory arbitration, and proposed a tripartite board comprised of representatives of employers, employees, and government, with an independent chairman (Territory of Papua and New Guinea 1970a:176f). This recommendation was implemented by amendment of the *Industrial Relations Ordinance* and the first Minimum Wages Board was constituted in 1972.

After considering ‘the problem of a living wage through the basis of needs’, the Cochrane Inquiry concluded ‘in the end it is the ability of the economy to sustain a particular level of [wage] expenditure that decides the matter...’ (Territory of Papua and New Guinea 1970a:59). The 1972 Minimum Wages Board rejected this position, and expressed the ‘primary principle’ of achieving a ‘family wage’ (Minimum Wages Board 1972:15), with the minimum urban wage increasing from K8.00 to K11.50 in September 1972 and to K13.80 in September 1973. Thereby, wage determination in Papua New Guinea was shifted to an Australian-style ‘needs’ basis. This shift was reinforced by the 1974 Minimum Wages Board that determined a ‘needs’ basis minimum wage of K25.80 for level-1 urban centres as of July 1975 (Minimum Wages Board 1974:4:7). In addition, the 1974 Minimum Wages Board applied a
12.5 per cent loading to the rural minimum wage as a partial move to a ‘family wage’ (Minimum Wages Board 1974:3:3). The 1974 Minimum Wages Board also institutionalised the then Australian practice of ‘indexation’, and established six-monthly automatic cost-of-living minimum wages adjustments (Minimum Wages Board 1974:3:9).

During the prelude to Papua New Guinea independence, wages policy became partly an instrument of incomes policy, thereby weakening its employment policy effectiveness. With this, there occurred large increases in minimum wages that were determined along Australian quasi-judicial lines and that were locked-in by contemporary Australian-style wages indexation. An inappropriate and inflexible wages policy that was detrimental to economic growth and development was set in place (Minimum Wages Board 1992:37).

**Independence to 1997**

During the period between 1975 and 1992, triennial Minimum Wages Board determinations provided 15 adult and 3 non-adult wage minima, covering rural and youth minimum wages, and urban adult and youth unskilled minimum wages, and minimum urban wages for skill classes 1 to 6—with urban minima separately set for level-1 and for level-2 urban centres (McGavin 1993a:80). Until 1992, Minimum Wages Board determinations also stated formulae for automatic adjustment of wages with reference to the consumer price index (CPI) over the three-year life of the determination. Wages indexation has varied between indexation by the full movement in the CPI, ‘full indexation’, indexation of a proportion of the movement in the CPI, ‘partial indexation’, and indexation up to certain percentage changes in the CPI, ‘plateau indexation’. Respective Minimum Wages Board determinations have provided base-level wages and adjustment formulae that have found corresponding application in public sector wages determination.

Minimum Wages Board determinations for unskilled employees set base-level wages for formal sector employment. The use of variable piece rates and daily task quotas, or ‘marks’, in rural formal sector employment allowed an implicit deregulation of rural wages that was regularised in the 1989 Minimum Wages Board Determination (Minimum Wages Board 1989:121). The nature of non-formal markets means that conditions of employment outside regulated or formal markets reflect the interaction of supply and demand for market labour services. The presence of lengthening queues for unskilled or low-skills
formal market employment leads to selection by quality—and resultant wide disparities between formal and informal sector wages (McGavin 1991a:167). At least since 1986, market rewards for skilled labour services have generally exceeded wage minima and have reflected skills scarcities (McGavin and Gill 1987:20; McGavin 1991a:161).

The 1992 Determination of the Minimum Wages Board marks a clear shift in perspective from viewing wages policy as an incomes policy (or as an uneasy mix of incomes and employment policies), to viewing wages policy as chiefly an instrument for labour market policy. Whereas the unskilled adult minimum wage for level-1 centres had been 2.7 times the rural unskilled adult minimum wage (McGavin 1993a:80), the 1992 Minimum Wages Board found no valid basis for earlier skills differentials or grading of urban centres (Minimum Wages Board 1992:38,67). For newly-recruited employees, a national minimum adult rate was set at the then existing rural adult minimum rate of K22.96 a week, and a national youth rate for persons aged 16–21 years, inclusive, was set at 75 per cent of the adult minimum. The Determination included a once-only 2 per cent increase effective 18 September 1992 of the 18 minima covering existing employees, but made no provision for indexation (Minimum Wages Board 1992:4). This was described as ‘part of the transition process toward deregulation and collective bargaining between employers and employees’ (Minimum Wages Board 1992:66). Anything above the minimum wage is subject to negotiations between employers and employees and their respective industrial organisations, and is to be based on productivity (Minimum Wages Board 1992:62,67). On 11 November 1996 at the suggestion of the then responsible Minister, the National tripartite Consultative Council discussed whether or not to reconvene a Minimum Wages Board, and appointed a committee comprising employer and union interests headed by the Secretary of the Department of Industrial Relations to consider the issue. Instead of recommending a reconvening of a Minimum Wages Board, the committee presented a Memorandum of Understanding dated 3 October 1997 that was crafted as a Supplementary Agreement to the 1992 Minimum Wages Board Determination, and proposed the notification of this in the National Gazette, so that it would have the status of a ‘Common Rule’ Agreement. This Memorandum of Agreement was adopted at the 23 October 1997 meeting of the National Tripartite Consultative Council, and provides for a 7.5 per cent increase of the National Minimum Wage from K22.96 a week to K24.68 a week. The
notification in the *National Gazette* was 6 November and the new National Minimum Wage was effective at that date.

So far, efforts again to convene a Minimum Wages Board have been resisted and the 1996 Budget states that the government intends to uphold the 1992 deregulation of wages (Papua New Guinea 1995:50).

**Contemporary roles for government in labour market policy**

Implementing possibilities opened up by the 1992 Minimum Wages Board determination

Where wage regulations are reduced, rapid adjustment of wages seems unlikely. Production systems adjust over time to regulatory frameworks, and quality selection and on-job skills formation mean that wages of existing employees (called labour market ‘insiders’) may be maintained even where effective competition from job-seekers (labour market ‘outsiders’) is increased as a result of deregulation of conditions of employment. Even for non-formal sector employees, rapid wage reductions should not necessarily be anticipated (McGavin 1993a:3). This is because these ‘unskilled’ people have social skills that are developed through job tenure and have reputations for reliability, that also give them ‘insider’ advantages that are not had by ‘outsiders’. Over time, however, deregulation should lead to wages adjustments, and 1995 survey data from Levantis (1997a:103–6, 1997b) gives evidence of downward flexibility in wages, including nominal wages.

It is important that the influence of government policy on wage deregulation should not be seen in itself as a sufficient labour market policy response. Because of ‘insider’ advantages, job growth through lower wages is first likely to occur through formal-sector recruitment of new employees who are not much in competition with existing employees (such as employing security guards instead of contracting-out security services), or by the expansion of informal-sector firms (such as expansion of ‘trade stores’ into more sophisticated retailing activities). Often this employment growth will not be captured in survey data that uses out-of-date sample files that do not include new firms or sample files dominated by formal-sector firms. Some Papua New Guinea observers did not anticipate that employment indicators for Papua New Guinea should show weak indications of gains in employment since the 1992 Determination (McGavin 1997:72, 1997b:11). Expansion of employment at lower wages depends, however, on ‘other things remaining constant’ (on *ceteris paribus* assumptions).
The period since the gazetting of the 1992 Determination has been one during which investment in greenfields mineral and hydrocarbon resources exploration has ground to a halt (McGavin 1994a:xiii), with serious repercussions for the Papua New Guinea economy, and where fiscal mismanagement has harmed national economic performance. Estimates of responsiveness to changes in real wages such as those made by Zeitch et al. (1993) and Levantis (1997) set other things constant. Noting this, deterioration of employment outcomes, in the face of reductions in nominal or in real wages for new recruits to the labour market, is to be expected where other key determinants of employment are contracting. Levantis (1997:235) estimates that urban unskilled formal sector employment at 1995 was 16.9 per cent higher than would have been the case in the absence of wage adjustments following the 1992 Determination of the Minimum Wages Board.

But recent government policy and the strategy of the 1992 Minimum Wages Board Determination is not simply one of employment expansion at lower wages. Indeed, that is not at all the thrust of the Determination. Rather, the 1992 Determination promotes a strategy for employment expansion through productivity improvement that adds value to market labour services, and thereby shifts-out the demand for market labour services, leading to increases in wage employment. The key instrument for productivity improvement as proposed in the 1992 Minimum Wages Board Determination is workplace reform (McGavin 1993b:66). In publicising the 1992 Minimum Wages Board Determination, the Employers’ Federation of Papua New Guinea stated, ‘[t]he Employers’ Federation strongly recommends that members introduce [consideration of] productivity or performance criteria’, and declared, ‘we are all going to have to go through a learning process’ (Employers’ Federation of Papua New Guinea 1992). The Federation has subsequently conducted training sessions for members to promote understanding of workplace productivity improvement and its implementation. Ways further to foster developments of this kind are expanded during discussion of the role of the National Training Council.

The Government of Papua New Guinea has used the 1992 Determination as an occasion to further workplace reform for government employees. The Department of Personnel Management successfully negotiated with the Public Service Association a new three-year agreement that provided for 1993 salary increases of 3 per cent effective 1 January 1993 (of which 2 per cent was backdated to 1 July 1992), conditional on the acceptance of a performance based salary
structure for public sector employees. The 1994 agreement provides for a further 3.3 per cent increase available through individual performance appraisal.

The three-year agreement achieved by Department of Personnel Management in 1993 has clearly broken the linking, inherited at independence, of public sector wage increases with CPI increases. Grade increments now form part of the negotiated public service wage increases, and these grade increments are dependent on satisfactory individual performance appraisal. This performance appraisal involves closer scrutiny for those who move beyond the mid-points of grade structures. Under conditions of normal staff turnover, wage increases that are in part achieved by grade increments become partly self-funding (because retiring employees are replaced by base-grade employees), while enhanced delivery of public services as a result of performance appraisal gives rise to increases in the overall product value of public sector services. That is, productivity is raised and product unit costs are reduced. Improved public service productivity has the potential for substantial direct impact on national productivity, since government is the largest employer in Papua New Guinea. Public service employment is about a quarter of total wage employment, about a third of private or market sector employment, and about 60 per cent of private sector employment exclusive of agricultural wage employment (McGavin 1993a:82f, 1993b:74).

**Building national productivity culture**

The three-year 1993 Performance Based Salary Structure agreement provides for annual review and negotiation, and includes ‘productivity performance’ (as yet undefined) in the agenda for negotiations. It is still early days in the development of a public sector productivity culture in Papua New Guinea, and it is essential that the motivation for change be sustained and/or renewed and that systems of sanctions and rewards to enhance public sector performance be strengthened and further developed (McGavin 1992b, 1993a). An important change that is likely to promote the success of these developments has been the extension in most departments of contract employment down to Assistant Secretary level, with accountability written into fixed-term contracts, and with employment rewards better reflecting market conditions. Work is being undertaken, and should be pursued, in the identification and the use of work performance indicators as a means of achieving productivity gains. These
developments increase and help to maintain the impetus for sustaining the ‘top-down’ management input into the productivity enhancement process within the public sector. This kind of ‘accountability’ in public sector employment should probably be extended from Assistant Secretary, or branch level, down to Director, or work unit, level.

The Minimum Wages Board recommendation that ‘the government should convene a national conference of major industrial groups to devise a national productivity index to be used in wage adjustments at enterprise and/or industry level’ (Minimum Wages Board 1992:72) was taken-up by Department of Personnel Management sponsorship of a conference on national productivity measurement. Even if a national index based on marginal value improvements could be constructed (and this is doubtful), it would be inappropriate to use to determine wage increases—because marginal values differ greatly across sectors and occupations (McGavin 1993a:9f,93f; UNDP/ILO 1992:47). The public service conference seems to have clarified these measurement difficulties, and to have highlighted the newness of value-added concepts to Papua New Guinea, and particularly to public sector activity. Fostering a significant cultural change in public sector employment has commenced. The tacit approval involved in the change to a Performance Based Salary Structure and the new awareness and climate for change requires sharper definition and understanding of key concepts for improved and sustained implementation of productivity improvement. The Employers’ Federation of Papua New Guinea has been pushing for the formation of a National Productivity Council (McGavin 1991a:207).

The Performance Based Salary Structure and associated changes in government employment in Papua New Guinea have the potential to increase the product value of public services, and thereby to contribute to lower product unit costs, to improvements in national economic performance, and to growth in wage jobs. The start made in the public sector in creating better appreciation of productivity improvement notions, and in better appreciation of key concepts for the implementing of productivity improvement, points to the need for cross-fertilisation between the private or market sector and the public or non-market sector in the development of a national productivity culture. A significant role could be played by the National Tripartite Consultative Council. This Council was created by the Industrial Relations (Amendment) Act 1990, with membership drawn from key economic Ministers and six representatives each from the Employers’ Federation.
of Papua New Guinea and industry associations, and public and private sector unions (recently specified as including the Public Service Association and the Trade Union Council). The National Tripartite Consultative Council functions include the improvement of workplace relations; interchange between government, employers, and employees; implementation of results of interchange between the parties; and the promotion of harmony between citizen and non-citizens in Papua New Guinea businesses. The sad fact, however, is that the National Tripartite Consultative Council did not meet until 1996, when three meetings occurred. As noted earlier, significant agenda discussions in 1997 between employer and employee representatives were delayed while awaiting responses from the responsible Minister who convenes National Tripartite Consultative Council meetings.

The National Training Council that was legislatively established in 1991 with the purpose of developing and implementing the National Training Policy (Papua New Guinea 1989). Legislation in 1993 also established an Institute of Public Administration with a charter that includes the provision of training courses relevant to the private sector. The long-standing Apprenticeship Board, after a period of apparent inactivity, has been re-activated through a joint project of technical and financial support funded by AusAID and the Papua New Guinea government. The National Training Council became active during 1993. Three meetings of the National Training Council were conducted in 1994 and another three in 1995. Meetings were scheduled for the National Training Council Overseas Training Committee and for the National Training Council Accreditation Committee. Firm policy guidelines have been established covering courses delivered by distance delivery methods (including those imported from overseas), and interim registration has been endorsed for 23 private training institutions to conduct training in Papua New Guinea. A major development includes the engagement of a consultant in management and staff development as part of a Public Sector Training Project funded by the World Bank. Agreement has been reached between the National Training Council and the Internal Revenue Commission for the Council to screen all training programs prior to recommendation to Internal Revenue Commission for Training Levy exemptions. The National Training Council has established regular reporting practices to the Minister; sustained the activities of the Accreditations Committee that carries responsibility for ensuring that the programs of training institutions meet National Training Council standards; and is
finalising a 1996–2000 corporate development plan for the Council. These experiences suggest the criticality of Secretariat leadership. Legislative changes to the National Tripartite Consultative Council have been suggested to change government representatives from Ministers to Heads of Departments, but this could be achieved under existing legislation by recourse to the Alternatives clause.

The success of National Training Council compared with the inactivity until 1996 of the National Tripartite Consultative Council shows that under existing administrative arrangements an energetic secretariat director can achieve change, but the system itself lacks an adequate governance structure to ensure sustained effective operations. This suggests the need for different administrative structures that provide both incentives and sanctions to support the interests of stakeholders. The Secretariat model successfully used by the Government Regulations Advisory Committee during the early 1990s provides an alternative model. Secretariats located outside the public service structure and retained on a fee-for-service basis are more likely to be effective. Such secretariats are more likely to provide a governance structure that allows public sector, government, and private sector interests to ensure that accountability is maintained, and that the momentum of activity answers the commitment to achieving change by the multilateral parties that must be engaged in building a national productivity culture with a strong and sustained emphasis on human skills formation and development.

Vigorous implementation of the functions outlined in the National Tripartite Consultative Council charter by a restructured Secretariat would contribute to the process of building understanding of the processes of productivity enhancement and consensus about its achievement. Fostering institutional development of this kind is a key role for governments in building a national productivity culture, and is a key contribution to be made by responsible government ministers and departmental heads.

**Practical ways to increase skills quickly**

Increasing human skills in Papua New Guinea involves big cultural changes, and big institutional changes in primary, secondary, and tertiary education (McGavin 1991b,c,d, 1992a, 1995). These changes take time. The best avenue for quick results is to improve on-job delivery of skills formation in both private and public sectors. Mobilising and sustaining this possibility requires a restructuring of the Secretariat of
the National Training Council along lines just argued for the National Tripartite Consultative Council Secretariat. It is highly desirable that the Secretariat for the National Training Council be located outside the public service and operate on a fee-for-service basis that gives effective governance to public sector, government, and private sector stakeholders. Public funds from the 1 per cent Training Levy introduced in 1990 (if necessary, supplemented from general revenues) should be dedicated to resourcing the activities of a restructured National Training Council.

The objectives of a restructured National Training Council have been argued in McGavin (1990) as promoting enterprise human capital formation. Skills formation that occurs within enterprises ('on job') is to be viewed as investment to which both employers and employees contribute. The 1992 MWB Determination of single national minimum adult and youth wages for labour market entrants set at previous rural minimum rates now makes possible low 'training-wage' job offers by urban formal sector employers. The possibility of 'training wages' allows an effective split of training costs between trainee employees and training employers. Thus, the 1992 MWB Determination now makes possible a practical implementation of the economics of enterprise-based human capital formation in Papua New Guinea.

A restructured National Training Council that is adequately resourced from public funds and has an effective governance structure should be expected to achieve significant changes in employer perceptions about the possibilities for quickly achieving increases in investment by trainers and trainees in on-job human skills formation in both private and public sectors. Such a restructured National Training Council should make significant contributions to the promotion of increased enterprise human capital formation to

- improve the evaluation of training programs by employers and employees
- achieve better integration of training programs and localisation policies
- improve location decisions between in-house and out-house training, and on-job and off-job skills formation
- help to identify and to choose appropriate training, and the use of appropriate technologies in training
- facilitate the construction of training modules
- promote the close tying of training with on-job use of new labour market skills
• foster the integration of training programs with employee placement policies
• assist in the diffusion of transferable best-practices in training from overseas firms and training and business councils to Papua New Guinea situations (for example through cooperation with the Australia-Papua New Guinea Business Council)
• encourage appropriate pooling of training facilities and programs
• promote the reform of schooling to improve the foundations for enterprise-based training (McGavin 1990).

Such a restructured National Training Council offers the possibility for promoting training as an integral part of best-practice business activity that can give a fillip to the quick increase in the delivery of labour market skills for private and public sector employment in Papua New Guinea. Provided that this fillip is well-managed, these developments in enterprise-based skills formation could, in part, become self-sustaining and spontaneous developments, and thereby achieve real inroads that relieve constraints on development and employment growth that arise from limited and inadequate labour market skills.

Support for institutional development to service national policy analysis

Papua New Guinea has benefited from international development policy experience through the policy advice of multilateral agencies and through the negotiation of development cooperation programs with donor countries (including Australia). In-country analytical capacity nevertheless remains important for effective government policy formulation and public policy implementations that are appropriate to Papua New Guinean goals and priorities.

Labour policy advice shifted in the 1980s from the Department of Labour to the National Planning Office within the Department of Finance and Planning. It next moved to the Manpower Planning Unit within that Department, with analysis of and advice on overall labour market policy being formulated within the General Economic Policy Branch of Department of Finance and Planning. With the creation of Treasury, and National Planning and Implementation as separate departments, a Human Resources Unit was located in the Department of Planning and Implementation (now the Office of Planning and Implementation). The limited capacity for labour
policy advice has thus been weakened by diffusion of and instability in organisational structures. The shortage of capacity for advanced policy advice in Papua New Guinea suggests the wisdom of maintaining the location of most economic policy advice and analysis within a Department of Finance and Planning, and preferably not in a manpower-planning-type unit with mechanistic and formal sector labour market perspectives. Alternative in-country critical advice should come from analysis published by centres outside the public service, such as the National Research Institute and the Institute of National Affairs, and these institutes maintain active research publication programs. The Submission to the 1992 Minimum Wages Board by the Government of Papua New Guinea, prepared in Department of Finance and Planning, shows significant development in in-country policy advice capacities. Further development of research and analytical capacities for labour market analysis should be targeted for institutional development within a Department of Finance and Planning. It is important that assistance in institutional development and technical assistance be of an ‘appropriate technology’ kind that meets Papua New Guinean needs and possibilities.

Responsibility for labour market statistics shifted in 1982 from the Department of Labour to the National Statistical Office within Department of Finance and Planning (now within the Office for National Planning and Implementation). The backlog in the updating of sample files, in data processing, and in statistical publications still had not been cleared, and was again transferred to the Department of Industrial Relations in 1996. The opening sentence of McGavin (1986:12) ‘the first thing to note in any analysis of labour activity in Papua New Guinea is the parlous state of statistical information’ remains apposite in 1997. This statement remains valid—despite the efforts of staff of the National Statistical Office and the Office of the Director of National Census, in the face of the limited resources at their disposal, and the recent publication of a collation of labour statistics (Department of Industrial Relations 1997). There continues to be a great need to develop the effectiveness and efficiency of national statistical collections, processing, and publication. The Bank of Papua New Guinea through its Quarterly Economic Bulletin remains a significant source of up-to-date data that has improved in quality and has maintained timeliness in publication. The results of surveys conducted by the Employers’ Federation of Papua New Guinea and published in their Newsletter also provide
useful and timely supplementary employment indicators. The shortage of capacity for statistical collection and processing in Papua New Guinea suggests the wisdom of maintaining the location of government statistical services (including national labour market data) within the National Statistics Office. Support for institutional development of the National Statistics Office within a Department of Finance and Planning would greatly enhance accurate and timely policy analysis of the Papua New Guinea economy and labour market.


Need for governments to push 'big picture' labour market analysis and maintain key strategies for improved outcomes

Even with inadequate statistics, certain 'big picture' issues stand out in labour market analysis in Papua New Guinea, and call for correspondingly big policy responses. Four 'big picture' issues are of note.

Reversing inefficiency and ineffectiveness in the delivery of public services. Despite recent gains the general inefficiency and ineffectiveness in the delivery of public services in Papua New Guinea means that a large proportion of resources available to governments are directed to non-rural outlays, and these urban services are delivered at high unit-costs. Improvements in effectiveness and efficiency in the delivery of government services allows resources to be released from the bureaucratic industry in Waigani and other urban centres, while increasing resources for rural development and reducing the unit cost of urban inputs into rural production. Production and employment in rural Papua New Guinea suffers from the high cost of urban domestic inputs—such as high-cost wholesale and retail distribution of imports, and high-cost government police, schooling services, and general public administration. Since prices for rural products are set in
international commodity markets, reductions in unit costs of urban inputs improves the profitability of rural production, and thereby directly contributes to the expansion of rural employment. Since about 85 per cent of the population is rural, policies that help the expansion of rural jobs must take top priority.

**Utilising abundant resources for rural development.** Papua New Guinea is relatively abundantly endowed with land and human resources for rural development. Research that improves understanding of the reasons for deterioration in rural export commodity production in Papua New Guinea, and how to reverse this requires support. The key role of women in rural development and means to improve women’s involvement in export crop production also requires research. Expansion of production in rural commodity exports means growth in jobs that use skills that are relatively abundant in Papua New Guinea. As argued in McGavin and Millett (1992:31), the cost in terms of human and physical infrastructure investment involved in expansion of jobs in rural industries is far less than the infrastructural investment cost involved in expansion of urban jobs (such as through the expansion of manufacturing industry). It is thus crucial that Papua New Guinea governments understand that for given resources devoted to human and physical infrastructural development (McGavin 1994a), more jobs can be generated through rural development than can be generated through urban development. Recent industry policy developments have taken policies enunciated in the *Medium Term Industry and Trade Development Action Plan* (Papua New Guinea 1991:38) in inconsistent directions that reduce employment growth. The virtual import bans that were introduced to support the establishment of a clinker cement plant and a mackerel canning plant in Lae are examples of high-cost urban job creation. Such policies quickly lead to increased costs of urban inputs into rural production, and quickly reduce the purchasing power of rural producers and wage-earners. These inconsistent developments in industry policy highlight the case that governments can increase rural jobs at much lower cost per job than occurs with policies that favour the creation of urban jobs. Resources that are directed to increasing human and infrastructure capital in rural areas lift rural productivity. Manning (1993:116) and (1994:137) has argued that governments can achieve increases in rural productivity at substantially less costs than increases in urban productivity. Increases in rural productivity lift the wages at which labour resources are drawn.
Figure 4.1 Papua New Guinea: village-based and non-village-based productivity improvements to reduce unemployment and increase wages

Notes: Village-based productivity improvements lift the market labour supply function as rural-based activities improve non-wage prospects. Non-village-based productivity improvements lift the market labour demand function as market-based activities improve wage prospects. Wage unemployment is reduced. 'Reservation wage' is the wage at or below which labour remains in village-based or informal sector production. Increases in village-based rural labour productivity increase the reservation wage (from \( r_1 \) to \( r_2 \)), and reduce measured wage unemployment shown as \( d_1m_1 \) to \( d_1m_2 \) under regulated wage conditions (\( rw_1 \)). Increases in both village-based and non-village based labour productivity reduce measured wage unemployment to \( d_2m_1 \) under regulated wage conditions. Reduction in regulated wage \( rw_1 \) achieves further reductions in measured wage unemployment (provided these unemployment-reducing effects are not offset by demand-reducing efforts as a result of economic downturn causing D1 to shift leftward). With D1 and S1 the market-clearing wage is \( w_f \). With improvement in village-based labour productivity, the market-clearing wage is shown as increasing to \( w_x \), and with improvements in village-based and non-village based labour productivity, the market-clearing wage is shown as increasing to \( w_y \).
from informal to formal sector activities and from mainly rural to mainly urban locations. This argument is illustrated in Figure 4.1 in the increase of ‘reservation wage’ from \( r_1 \) to \( r_2 \) and in the contraction in measured formal sector wage unemployment from \( d_1m_2 \) to \( d_1m_1 \).

**Addressing supply-side constraints in jobs growth.** Expansion of rural employment is also important because population densities to arable land vary greatly by province and within provinces in Papua New Guinea. Customary land ownership generally does not allow transfer of land property rights. With the cessation of tribal warfare, including warfare over land claims, the expansion of rural employment depends on the expansion of export commodity production that is managed by communities that are relatively well-endowed with arable land, and using wage labour from communities that are relatively well-endowed with arable land and using wage labour from communities that are relatively well-endowed with arable land for rural production. So, for example, expansion of production of export crops outside Simbu province achieves low-cost creation of wage jobs for Simbu people while easing pressure on land in Simbu province; reduces urban-rural migration and the growth of unemployed low-skilled urban populations; and allows expansion of otherwise supply-constrained output in areas of relative under-utilisation of arable land.

**Expansion in quality and quantity of labour skills.** The unfavourable effect of high urban minimum wages on rural-urban drift in Papua New Guinea was significant in the 1992 Minimum Wages Board decision for a single national minimum wage for adults and a single national minimum wage for youths (Minimum Wages Board 1992:44). There is a continuing need for curriculum development at both primary and secondary levels to increase skills and enculturation for enhancing agricultural development and for growth in agricultural jobs (McGavin 1991d). Despite the apparent inappropriate focus on urban labour market skills in existing school curricula, the fact remains that skills that are used intensively in urban labour markets in Papua New Guinea remain in short supply. The understandable policy of accelerated localisation of employment (and employment of foreigners is almost entirely urban employment) necessarily sharpens these skill shortages. Localisation has also contributed to inappropriate extensions to citizens who gain localised jobs of employment rewards that are appropriate to the fixed-duration employment of persons from overseas—with resultant increases in costs and curtailed growth in these jobs.

Regulation of differential conditions of employment for citizens and non-citizens will not adequately address this problem. Organised urban labour must be expected first to represent the interests of those...
who already have jobs (‘insiders’), and not first the interests of those who seek jobs (‘outsiders’). This ‘insider’ influence on labour market outcomes is best countered by public policies that increase the quality and quantity of the supply of citizen labour skills. The first need is for expansion in quality and in quantity of citizen labour market skills. It is not price regulation (in this case, through the regulation of conditions of employment) that will best contribute to reducing the cost of labour skills in Papua New Guinea. It is expansion of supply (both quality and quantity) that will most contribute to lowering the high cost of skilled and mainly urban labour services in Papua New Guinea. Expansion of human resources development through quality education and training (off-job and on-job) thus remains critical for overall labour market policy in Papua New Guinea (McGavin 1990, 1991a:199f,210,224).

**Summing up**

It is wrong analysis to assume that labour costs will fall rapidly through deregulation of minimum wages. High wages reflect high costs of living and shortages in quality and quantity of human skills. Policies that reduce the cost of government services (which mostly are urban labour services) also reduce domestic input costs for rural producers who face internationally-determined product prices.

Policies that promote rural development generate more jobs per kina spent than do policies that promote urban jobs. Policies that promote rural employment allow people with skills in rural production to locate in areas where expansion of rural output is otherwise constrained by labour shortages among customary landowners.

The labour market policy issues confronting the Papua New Guinea governments are quite major. Unless this is recognised, difficult policy decisions will not be grasped and pursued, and inappropriate policies that retard development and job growth will eventuate. An essential contribution of government to labour market development in Papua New Guinea is that these ‘big picture’ issues be constantly and consistently promoted. This calls for consistent commitment to building a national productivity culture through sustained government support for the activities of a National Tripartite Consultative Council and a National Training Council with governance structures that achieve answerability to stakeholders’ interests in enhancing productivity change.

Promoting these ‘big picture’ labour market improvements in Papua New Guinea calls for sustained budgetary and policy commitment to
quantity and quality improvement in human skills through appropriate education and through appropriate on-job training. It also calls for sustained budgetary commitment so that public resources are directed to uses that most contribute to job growth per kina spent—which mainly means the direction of resources to rural job growth.

Achieving these aims requires sustained commitment by governments to constant and consistent scrutiny of public policy influences on labour market outcomes in terms of their policy significance for achieving broad-based, sustainable, and internationally-competitive development in Papua New Guinea. This is a major task requiring strong, consistent, and sustained commitment in order that lasting results may be achieved.

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Productivity challenges in Fiji’s sugar and garment industries

Satendra Prasad

The productivity development discourse in Fiji has been affected by a variety of political, institutional and economic factors. Several of these are quite unique to Fiji. This paper discusses key factors that shape the productivity discourse and provides some pointers for the enhancement of Fiji institutional capacities for productivity development. These assessments are made with specific references to Fiji’s main manufacturing sectors—sugar and garments.

It is argued that in vulnerable developing island states, productivity improvements require strong social consensus and stable institutional environments (World Bank 1995). Because long-existing consensual institutional arrangements have been fractured, and confidence in the market-coordinating capacities of various state agencies reduced, productivity programs have been held back in spite of the high priority given to them by the government. This level of priority is exemplified in Fiji by the declaration of 1997 as the ‘year of productivity’ and the adoption of a national productivity charter by its social partners (Government, the Fiji Employers Federation and the Fiji Trades Union Congress) and the establishment of a national productivity movement (Fiji Government 1995). These initiatives are backed by a macroeconomic policy environment conducive to the promotion of competitive growth (World Bank 1991; Fiji 1995). Combined, these
factors provide a setting that is at least theoretically favourable to productivity building across the economy.

In spite of such initiatives, productivity development in Fiji has had very mixed successes. Significant improvements in productivity have been confined to a relatively small number of export-oriented manufacturing enterprises and finance sector institutions (World Bank, 1995). By discussing the sugar and the garment sectors in greater detail, it is demonstrated that social and economic factors have held back productivity development. While, in response to the rapid changes in the global environment both sectors have begun to implement medium-term productivity improvement strategies, they still face a variety of institutional and non-institutional constraints.

Fiji’s efforts to promote productivity growth have had even lesser impact in the small and medium-scale enterprise sectors. However, it is more difficult to make generalised observations about these sectors because of the complexities associated with size, product, ownership, location and other variations. For example, while labour productivity has been generally higher in multinational companies, wide differences exist within them at the same time (Chandra 1996). Fiji needs to deal with the productivity challenge in this sector much more seriously than it has done because its long-term economic prospects depend on growth in the small and medium-enterprise sectors. It is imperative therefore that the productivity framework that applies to this sector more specifically is developed by policymakers in Fiji.

The national productivity setting

An economic overview relevant to discussions about productivity needs to take account of three issues. First, Fiji’s post-independence development experience to 1987 is characterised by a strong commitment to a mixed economic developmental strategy, high levels of state intervention, and the development of selective export industries to reduce dependence on the traditional mainstays of sugar and tourism. Second, the short-term impact of the military coups of 1987 have required painful responses to restore stability. Third, structural adjustment and restructuring programs have been implemented since 1987. Industrial development, employment creation and productivity growth to a large extent have been shaped in distinct ways by the variations and shifts in the policy environment associated with these contexts.
In spite of a generally favourable economic policy environment after 1991, productivity development has been generally dismal. One of the more significant elements of the present socio-political context that has contributed to this poor performance has been the continuing lack of business confidence. At the same time, productivity development has been constrained by the lack of confidence in government capacities. Frequent shifts in policy, regular change of administrative heads and excessive political intervention in public administration have affected the corporate environment. Business confidence has also been undermined by major financial scandals in the National Bank of Fiji and emerging problems in other financial institutions. Fiji is also experiencing dramatic demographic changes. Its population composition has changed rapidly as a result of the continuing lack of confidence by its Indo-Fijian population and high levels of emigration (Bureau of Statistics 1997). Both the rapid skill depletion and shrinking of the entrepreneurship base that have resulted have had undesirable consequences for productivity development as well as for industrial development strategies.

Another issue that affects the productivity discourse in Fiji is the institutional setting for productivity-related institutions. While economic policy formulation has remained a core function of the Central Planning Office, its direct role in developing productivity agenda is poorly established. This is further worsened by its weak links with industry bodies and institutions such as the Fiji National Training Council, and the Fiji Institute of Technology.

Moreover, the focus given by the Fiji National Training Council to productivity issues in Fiji is often narrowly concentrated on enabling International Organisation for Standardisation (ISO) certification and promoting quality improvements for a relatively small number of enterprises. Its training initiatives rarely connect to the broader regional and global issues that affect industry. Additionally, while tertiary institutions such as the Fiji Institute of Technology have begun to focus greater attention to productivity issues, their programs have been undermined by the slowdown in recruitment by large employers such as the Public Works Department and the Fiji Sugar Corporation. Because recruitment cutbacks by such public sector organisations are likely to continue, the industry-specific skill upgrading programs provided by institutions such as the Fiji Institute of Technology and the Fiji National Training Council are at some risk.

There were some hopeful signs that the increased foreign direct investments that resulted from trade liberalisation after 1991 would
have positive impacts on productivity. It was generally anticipated that investments in new sectors would contribute to a diffusion of improved work practices and thereby help improve productivity (Fiji 1995). There have been mixed results on this front.

The institutional productivity discourse and agenda have also been open to external influences. Fiji's productivity discourse has been strongly affected by developments in Singapore and Japan (Prasad 1997). Their productivity frameworks have been the subject of comprehensive discussions locally particularly by its tripartite labour market institutions (Probert 1995; Singh 1995). The challenge for Fiji is to create an institutional setting that supports learning from international experiences and translating them into practical programs at the enterprise level.

The productivity challenge in Fiji's sugar sector

Sugar has dominated commercial agricultural activity throughout Fiji's colonial and post-independence history. The sugar industry as a whole is currently worth approximately F$280 million; approximately 12 per cent of GDP. Sugarcane farming accounts for more than 40 per cent of the total agricultural sector, while processing accounts for almost 30 per cent of the manufacturing sector. This industry provides direct employment for more than 25 per cent of the economically active population. Farming is done on more than 22,000 mainly small-holder farms that average 4.2 hectares in size. Sixty per cent of farmers produce less than 150 tonnes of cane per year, while 24 per cent produce less than 50 tonnes of cane a year. Sugarcane is processed by the Fiji Sugar Corporation, in which the Fiji government owns 70 per cent of shares.

Uncertainty surrounding the expiry and renewal of land leases is an urgent issue confronting Fiji's sugar industry. The majority of the 30,000 leases administered by the Native Land Trust Board on behalf of indigenous Fijian land-owning groups are under sugar cultivation. Insecurities concerning the renewal of leases affect investments in the farming sector, and therefore productivity development.

It is now widely accepted that significant improvements are necessary in the cultivation, harvesting, transportation and processing sectors of the industry. The industry rapidly expanded in the 1970s. But this expansion was also associated with increasing inefficiencies in the farming sector. The problem of declining efficiency was worsened by three interrelated factors. First, payment systems are based on the
quantity rather than the quality of cane produced. Second, the level of burned cane being harvested has been growing. This reduces the sugar content of cane and lowers mill efficiency in sugar extraction. Third, as a consequence of transport, mechanical problems and scheduling problems Fiji has high cut-to-crush times. Some 40 per cent of cane takes more than 24 hours to crush, reducing the sugar content of the cane. Productivity in the industry has also been affected by the increasing use of unimproved planting material, weakened research and extension support systems, emerging labour shortage in the farming sector, declining investments in rail and milling sectors, and an unfavourable industrial relations environment (Prasad and Lodhi 1997).

An even more urgent problem facing the industry is the impending decline of sugar prices as a result of changes in Fiji’s main European markets. Sugar prices in the EU market are determined through the EU-ACP (Asia, Caribbean and Pacific) Sugar Protocol. Because the Sugar Protocol is unlikely to survive beyond 2010, Fiji’s sugar industry needs to be able to become competitive at the world market price of sugar (Prasad and Lodhi 1997).

In Fiji, policymakers have long recognised that in the longer term the country needs to develop an internationally competitive sugar industry. However, attempts at restructuring have been frustrated by the problems of distance from markets, a complex system of land ownership, complex interest group pressures and weakened institutional capacities. Nevertheless, major initiatives aimed at efficiency improvements in both the milling and farming sectors have been undertaken over the past decade with mixed success. The industry has also faced the additional problem of expansion of farming into lower grade lands generally located outside the traditional sugar regions. This was an outcome of the higher prices obtained as a result of the preferential prices.

Rather than expanding the area of cane cultivation in order to boost production, restructuring at the farm level aimed at improving yield and productivity is likely to involve a gradual concentration of farm enterprises into larger units. Productivity improvements on farms with a larger scale of operations may be secured through a transition to semi-mechanised harvesting, improved cultivation methods and improvements in harvesting and transportation of cane. However, these processes would also have unfavourable social consequences. Fiji also needs to use preferential trade to develop a range of sugar byproducts. This will help the industry deal with employment adjustments that result from labour productivity initiatives. The displacement of farmers,
reduction in the level of employment, and land concentration are all likely to affect rural poverty and inter-communal harmony (Prasad and Lodhi 1997). Thus a balance between productivity improvement and the social and equity outcomes of productivity-related reforms will be necessary in any restructuring program if it is to be sustained.

In spite of a favourable trading environment, productivity gains during the lifetime of the Sugar Protocol in both the milling and farming sectors have been dismal. For example, cane yield in Fiji is still low by comparison with Fiji’s nearest ACP competitor, Mauritius with 52 and 72 metric tonnes per hectare respectively (Chand and Abello 1997:7). Yield per hectare has been declining by 0.6 per cent annually over the past two decades (Sugar Commission of Fiji 1997). Uncertainties about land lease renewals have also affected the turnover of ratoons having an adverse impact on yield. A tightening of credit to sugar farmers has also held back productivity. There is also anecdotal evidence that a growing shortage of casual and harvesting labour has led to some decline in farming standards.

The impacts of these are compounded by growing inefficiencies in the milling sector. Inefficiencies in the milling sector are derived from the depletion of skilled personnel, a relatively long crush season, and industrial disputes. Gradual declines in the sugar extraction ratios have also resulted from a gradual lengthening of the cut-to-crush times and increases in the volume of burnt cane.

The milling sector faces one further important obstacle. For historical reasons, the transportation of cane by rail has remained in the hands of the millers. Investments in rail tracks and trains have fallen behind required levels (Davies 1997). However, the railway system remains fully funded by the Fiji Sugar Corporation—even though its share from the total sugar proceeds has declined from 40 per cent in 1970 to an average of 27 per cent. Major new investments in both the milling and transportation sectors will therefore be required to affect productivity.

**The 2020 productivity challenge for Fiji’s sugar industry**

Fiji sugar industry institutions have now begun to respond to the productivity challenge presented by the impending demise of the Sugar Protocol.¹ The industry’s 1997 strategic plan notes that

restructuring the sugar industry to a globally competitive ‘best practice culture’ will require a sustained effort to increase sugar per hectare efficiency from existing tonnage by 20 per cent, raising farm
productivity by growing up to 20 per cent more cane per hectare, raising mill capacity by 15 per cent to cater for the additional farm production and lowering farm and mill production costs by 15 to 20 per cent (Sugar Commission of Fiji 1997:7).

A far-reaching reform program reflecting these goals is presently being operationalised by industry institutions. This is the first time that Fiji sugar industry institutions have rallied behind a common reform agenda. It is also significant that the reform project has the support of both the government and opposition parties.

Several features of this productivity program are outlined here. The first involves the costs of reform. The Sugar Commission of Fiji has found it difficult to locate appropriate sources of funding for the reform program. For example, its proposals for upgrading the milling and rail sectors are estimated to cost F$80 million. Only half of that cost could be realistically derived from within the industry. It is difficult to price and co-ordinate the cultivation segment of productivity plans for a number of reasons. First, the amalgamation of very small holdings into larger units requires the support of growers, land-owning communities and of government. Moreover, the alteration of harvesting arrangements requires a review of a collective agreement between grower institutions and the Fiji Sugar Corporation. Besides the costs involved, these reforms will thus also involve consensus building and prior agreement of the affected parties. Finally, farm level efficiencies will depend on capital investments in cane supply road upgrading, improvements to drainage, and in the turn-over of aged ratoons among others. Commercial credit has been squeezed quite dramatically. For example, commercial bank advances to the sugar sector had declined from F$82 million in December 1994 to F$46 million by June 1996 (Bureau of Statistics 1996:49). It is unlikely that the commercial sector will provide the resources that are so necessary for efficiency improvements in that sector. Much therefore depends on the Fijian government’s ability to subsidise productivity measures through the channelling of a sugar export tax into the industry institutions. Its ability to impose such a tax however remains to be seen, especially as Fiji is likely to prepare for fresh general elections early in 1999. Moreover, it is unlikely that the already overexposed public sector financial institutions such as the Fiji Development Bank and the Fiji National Provident Fund will be able to support adjustments in the industry in the present environment.

Restructuring also depends on the ability of sugar industry institutions to manage the process of change. Already, sugar industry
institutions have played a marginal role in the vital land lease discussions on which so much rests. Grower and Fiji Sugar Corporation relations remain strained. These factors are likely to constrain the implementation of reforms in the cultivation sector. Moreover, many growers feel a sense of alienation, as a result of being unable to secure new leases, or influence the terms under which new leases are to be given to them. This contributes to an environment that is less receptive to reform.

No where is the productivity agenda more exposed to contestation than by the potential opposition of unions. Trade union and Fiji Sugar Corporation relations are presently at a low ebb. It is estimated that the industry will need to shed approximately 25 per cent of its present workforce. Such a level of dislocation is likely to result in further industrial disputes. Industrial disputes have already taken a high toll on productivity. Both the Sugar Commission of Fiji and World Bank attribute the greatest blame for productivity decline to industrial disputes and wage settlements in the sugar industry. But this perception is faulty given that wage settlements in the industry had been set by national wage guidelines during the decade of the tripartite forum (Chand and Abello 1997) and by a dispute settling machinery that was quite perceptive to the commercial realities of the sugar industry after wage controls were lifted in 1992. However, the 1997 industrial dispute amplifies how strained relations between the main sugar industry union and the Fiji Sugar Corporation has become. This is likely to affect the reform program. The 1997 dispute arose from the Fiji Sugar Corporation’s inability to respond favourably to relatively modest and below inflation wage claims by the general workers union on account of the cost of restructuring. A four-week campaign by the Fiji Sugar and General Workers Union had a debilitating impact on sugar harvest and manufacture early in the 1997 season. This dispute may recur even more strongly in 1998 wage rounds. In order to create support for reforms, organised labour will need to be more closely included in both the formulation and implementation of reform agendas. The productivity agenda therefore clearly needs to be underwritten by an improvement in the prevailing industrial relations climate.

Fiji’s sugar sector directly affects national politics and inter-ethnic relations. Industrial turbulence has immediate consequences for non-sugar sectors, as well as for inter-communal harmony. A settlement of the worrisome constitutional divisions provides a favourable
environment for the implementation of a far-reaching reform program. In spite of this, reform programs are likely to remain contested, as the 1997 Fiji Sugar and General Workers Union strike amplifies. It is widely recognised within the industry that the unsettled problem of land leases could hollow out the precarious social consensus that currently exists. Competing pressures arising from the reform process could also undermine the productivity consensus. It is anticipated that any re-introduction of an export tax on sugar (to deduct some proportion of the preferential income and target it towards productivity improvements) will be severely contested, particularly by political parties that will compete for grower votes in the crucial elections that will follow the implementation of the new constitution in early 1998.

But the implications for the national economy arise from other considerations as well. First, it is evident that improvements in milling and farming sectors will have to be subsidised by the state. This is worrisome given the weaknesses in Fiji's public finances. Moreover, sugar is not the only sector that will require state support to deal with the challenges posed by a changing global economy. The other main employment sector, the garment industry also faces similar problems.

**Productivity issues in Fiji's garment and textile sectors**

The productivity challenge in Fiji's tax free garment and textiles sector is no less intense than sugar. In spite of the grave challenges that this sector faces as a result of global changes, it continues to lack a framework for reform. The garment and textile sector has emerged as the single largest employment sector after sugar. At the end of 1996, the sector comprised more than 110 enterprises and it employed over 10 percent of the total wage and salaried workforce. Unlike sugar, the garment industry has generally witnessed significant productivity improvements since 1990 (Chandra 1996), but these are unevenly spread across the sector and are likely to be eroded by the impending changes in the external trading environment such as the unwinding of the advantages associated with SPARTECA.

The key contributors to rapid productivity growth in this sector were competition particularly for generalised system of preferences quotas, enhanced skill formation and deepening through industry training institutions and improved product certification (World Bank 1995). In spite of these favourable trends, this sector still relies excessively on a continuation of the tax free preferences and preferential market access.
available under SPARTECA, Generalised System of Preferences and the Lomé Convention. Like sugar, a very small fraction of Fiji’s garments and textile sector products are openly traded and the productivity agenda in the garment sector is driven by unfavourable external considerations.

There is wide agreement that improvements in productivity in the garment and textiles sectors of the economy have resulted from improvements in labour productivity (Chandra 1996). But in order to sustain improvements in productivity, the industry requires stable export outlets. This is problematic given the progressive unwinding of preferential market access. The impending expiry of the 13-year tax free concessions has also retarded the development of a longer term productivity agenda. Both the advantages that derive from SPARTECA and the tax-free concessions begin to expire early next decade.

It is estimated a productivity improvement of the order of 25–35 per cent will be needed over seven years to maintain the industry’s share of the Australasian market (Fiji Employers’ Federation 1995). However, unlike sugar, diversity (in terms of size, product, ownership and location) in the industry makes it difficult to coordinate and implement a national productivity strategy. Moreover, because entrepreneurs shuffle the selection of advantages that come from the many preferential arrangements, the scope for pursuing a long-term restructuring agenda is less well laid out.

It is broadly accepted that the garment sector will need to focus on securing greater wage competitiveness, securing a supply of skilled employees as well as developing Fiji brand/quality images among selected suppliers and distributors (Chandra 1996; World Bank 1995). The prevailing wages structure in manufacturing overall also imposes comparative disadvantages for the garment sector in relation to its competitors in Southeast Asia. Manufacturing wages in Fiji are higher than those in Thailand and Malaysia, for example. At the same time, labour productivity is lower (World Bank 1995).

A low wage strategy for enhancing international competitiveness is problematic for Fiji. In the post-SPARTECA period, it is unlikely that Fijian enterprises will be able to compete with lower wage, volume producers in China, Indonesia and elsewhere for the Australasian markets. Fiji’s garment sector will therefore need to take a broader view of reform than it has done thus far, and develop a more co-ordinated productivity response than has been possible thus far (Fiji 1995).

The productivity challenges in Fiji’s garment sector are likely to involve two key factors. First, government and policy support
institutions need to develop a framework to enable manufacturers to make the transition towards high value-added products while the benefits of SPARTECA, Generalised System of Preferences and Lomé are still favourable. Second, entrepreneurs need to be assured that the skill-deepening programs necessary to make this transition will be sustained during the transition period. These require a rapid resolution of many of the institutional and non-institutional constraints to productivity development.

**Developing an enabling productivity environment**

A key challenge for post-liberalisation Fiji remains the need to restore private sector confidence (World Bank 1995:2). Because of the continuing lack of private sector confidence, especially in the small and medium-scale sector, 'adjustment fatigue' has been aggravated. A non-discriminatory approach to private sector investment has meant that state resources, incentives and support have become too diluted to have a strong impact on productivity in any one sector. Continuing anxieties about land tenure have also inhibited private sector confidence. As a result entrepreneurs prefer to invest in short-term corporate strategies. Such strategies often drive high levels of capital transfers, erode productive capacities and restrain technological modernisation. The garment sector exemplifies this paradox very well.

A number of other institutional factors continue to constrain productivity development. One glaring institutional shortcoming is the dispersed nature of institutions that relate to productivity building. Overlapping institutional responsibilities, and the absence of sectorally targeted strategic programs often result. Institutional dispersion also means that the productivity discourse is too dispersed to have a strong impact on prevailing corporate or labour attitudes at both the national level and enterprise levels. This situation is not helped by the absence of centralised labour market data that can support the formulation of productivity policies. It is important that a coordinated approach be developed that relates both to the actual experiences of enterprises and that takes account of the pertinent changes in the global/regional environment.

In the development literature much attention is now focused on the enabling environment for productivity growth. A critical feature of this environment relates to the regulatory framework of labour markets. As part of Fiji’s structural adjustment, significant labour market reforms
have already been introduced; including changes to the *Industrial Association’s Act 1991*, *Trade Union Regulations Act 1991* and *Trade Disputes Act 1991* and 1992. These changes have restricted the scope for direct industrial action, reduced the scope for bargaining by industrial associations and imposed tighter balloting procedures on industrial actions. Labour market reforms have generally promoted flexibility in Fiji’s labour market and avoided outright union hostility. An International Labour Office (1997) report concludes that the labour market reforms of 1988–92 are generally favourable to productivity growth but it was unclear what impact further reforms in the regulatory framework would have. Some of the factors that inhibit productivity growth lie beyond Fiji’s regulatory framework and are highlighted below.

The first is an absence of a coordinated approach to human resource development in Fiji, in spite of severe labour market shocks experienced over the past decade. Fiji’s labour markets will continue to experience a large outflow of skilled/professional persons, increasingly reflecting labour market considerations in recipient countries. Second, institutions that improve labour force skills cannot be sustained on the narrow base provided by a relatively small proportion of full-fee paying students. Comprehensive strategies need to be developed in consultation with industry. Industry-specific training needs to be accommodated within an overall training framework. The absence of labour market data also weakens labour force strategies.

Wage settlements have also affected productivity development. The deregulation of labour markets in 1992 weakened industry level settlements in a number of sectors. By 1997, the labour market reforms of 1992 had gradually worked their way through the industrial relations system. Wage fixing had become visibly more decentralised, although the level of differentiation in the public sector was less significant (International Labour Organisation 1997). Over the past few years, the tripartite Labour Advisory Board has been considering replacing the 13 separate minimum wage awards with a national minimum wage floor. The likely impact of such a transformation on productivity and employment remains to be seen.

The connections between cultural factors and managerial behaviour also need to be better understood. Reddy (1995:34) concluded that ‘indigenous Fijian cultural factors were generally non-supportive of managers, management, and business based on conventional models of business, management and capitalism’. But this overlooks the cultural constraints on entrepreneurship within the Indo-Fijian and Fiji’s
‘other’ communities. It has been quite apparent that Fiji has relied too closely on a very thin segment of its population for its entrepreneurial energies. This needs to be expanded and the constraints to its expansion need to be better understood.

While cultural factors do constrain productivity improvements, or impose a social cost on business, they need not be seen as restrictive. Cultural factors can be aligned to obtain specific goals in the market sectors. Cultural factors appear to have a disproportionate impact when other enabling institutions for a market economy are weak. By focusing too much on cultural factors, the desirable level of emphasis on accountability, transparency in procedures, and enhanced institutional capacities has not been achieved.

This is not to deny the unfavourable impact of cultural factors on productivity. Clearly, cultural pressures have eroded efficiencies in Fiji’s public services (World Bank 1995). Public sector productivity improvements have been constrained by the high turnover of ministers, permanent secretaries and department heads over the past few years. At the same time, the impact of interest groups and political bargaining on public service delivery remains an area of concern. Staff redundancies have periodically led to intense industrial unrest. These often occur in direct contravention of established industrial relations processes. Because some disputes require political settlements, it has often been difficult to coordinate and implement the necessary reforms. For example, the Fijian Government was unable to implement its initial restructuring program for the National Bank of Fiji following its recent debacle. The price it paid was a F$250 million bail out. A prolonged industrial dispute, interest group pressures, and intense political bargaining all served to weaken the corrective interventionist capacities of institutions such as the Reserve Bank of Fiji and the Auditor General’s office in this case. Fiji needs to critically assess both its institutional setting as well as understand the impact of social/cultural practices on productivity, if productivity building measures are to have higher chances of success.

Conclusion

Fiji’s Prime Minister observed that

Productivity in Fiji still remains a concept—a concept that is generally welcomed by some employers for reasons of greater efficiency, competitiveness and profitability, but viewed with suspicion by others because of the apparent misconception...It is clear...that the concept of
productivity as an economic development strategy in Fiji has...fallen short of expectations. However, the absence of a definite national policy on productivity and resource support for it must be seen as the greatest drawback. It is apparent that efforts to promote productivity in Fiji and obtain its general acceptance as a viable and dynamic economic strategy, have been frustrated by the absence of a national strategy (Rabuka 1995:5–6).

But a well thought through productivity strategy can only go so far. It will need to be delivered by institutions that have been hollowed out as a consequence of a number of influences over the past decade.

Events of recent years suggest strongly that Fiji needs social and political deregulation as much as economic deregulation...In economics the benefits of deregulation depends on a crucial mechanism of free competition in markets which resolves alternate bids for supply and demand into an economically efficient equilibrium price and quantity. A critical question is: how does a society learn, socially and politically, when its public economy decisions go wrong? (Narsey, quoted in Chand and Naidu 1997:132).

Those who will frame the productivity policy debates in Fiji need to reflect carefully on the macro-institutional weaknesses that have become so glaring in Fiji over the past decade.

The two sectors that are scrutinised in detail have amplified a wider concern that Fiji may be wasting favourable opportunities for productivity building. Over the remainder of this decade, favourable external factors can contribute to stabilising the reform programs the sugar and garment sectors of Fiji's economy. Early into the next decade Fiji will have lost the security of favourable external trading environments. It is conceivable that Fiji might also lose a supportive political environment domestically if the productivity challenge is not translated into policy with a much greater sense of urgency.

Note

1 These include the Sugar Commission of Fiji, Fiji Sugar Marketing Company, Fiji Sugar Corporation, the Sugar Cane Growers Association and the Sugar Industry Tribunal.
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Divided loyalties in the workplace: a case of employee motivation in Fiji

Eci K. Nabalarua

With mounting pressure aimed at increasing deregulation in the Fijian economy for greater economic growth, strategies of public sector reform with an emphasis on enhanced productivity, continue to face an uphill battle in the area of human resource management. In an attempt to understand the behavioural tendencies of workers in a partially industrialising economy and its impact on anticipated productivity level, I address some of the issues facing the use and difficulties of employee motivational strategies as tools for enhancing productivity in economic development with a particular emphasis on motivation in the workplace of the Fiji public sector.

The proposition on which this study has been based asserts that Fiji's industrialising experience has led to the development of a benevolent work culture which in turn has resulted in the emergence of an acquiescent workforce that ultimately influences the degree to which public management systems are able to maximise worker potential for greater economic growth. In the context of this discussion, a benevolent work culture is defined as a system of norms and values that emphasise feelings of happiness and goodwill as being the pervasive philosophy that guides organisational behaviour and human relationships in the workplace. The notion of an acquiescent workforce may be described as a categorical manifestation of employee behaviour that displays willingness and acceptance in the workplace.
The initial interest for this concern emerged from two directions. The first stems from a Fijian managerial perception of the worker as being 'lazy' and the second has its origins in the argument that the particularities of the Fijian context which have resulted in the emergence of such worker stereotypes, are better redressed through a greater commitment to human resources management. It is being suggested that by placing human resource management at the centre of reform initiatives, there is a greater possibility of developing viable alternatives to enhancing governing capacities in situations where traditional orthodoxy has failed in terms of service delivery.

Whilst these two conceptual strands have formed the basis of discussion, on a broader level they illustrate two basic assumptions underlying the linkages between productivity and economic development. The first is that while economic development implies change and growth through productivity, the latter is only achievable when there is a motivated workforce in place. The second assumption states that change is necessary and in practical terms is brought about by people in organisations who change the way they do things. Inevitably this means that while there is a willingness to change, the capacity to implement these changes is an equally crucial component in this process if strategies aimed at raising productivity levels for accelerated economic growth are to be achieved.

An overview of work motivation and industrialisation

The relationship between work motivation and industrialisation is portrayed in a comprehensive study on *Industrialism and Industrial Man* undertaken by Kerr, Dunlop, Harbison and Myers (1960). One of the main conclusions that these scholars put forward with regard to the nature of an industrial workforce is that the level of commitment of workers is determined by the level of industrialisation in society. If it is accepted that this is so, then it may be argued that since Fiji is a partially industrialising economy, so one may expect to see a partially committed workforce in place.

The notions of work and motivation as it is currently perceived and practiced in the Fijian workplace have emerged as a result of the experiences of a British colonialism and a form of British industrialism. While the value orientations of this political legacy have been imparted through an institutional arrangement of 'divide-and-rule', the associated policies of economic development were equally nurtured.
through the establishment of a network of key interests who control and direct economic activity in the country. Although these stakeholders have evolved in many forms their key functions have essentially remained unchanged. In Fiji’s case these stakeholders are the state as the ultimate manager of economic development, the employers as owners of capital, trade unions as representatives of workers and, playing prominent and influential roles alongside these core interests, the more senior and prominent chiefly families as the perceived custodians of indigenous interests and the Church as the ‘watchdog’ of common basic societal values espousing equality and justice.

While the actual role of the workers themselves as providers of labour are assumed in this stakeholding network by those who purport to promote, manage, control, represent and protect the broader interests of economic development, the end result has lacked a consistent commitment of legal and institutional support towards restructuring initiatives that have the potential to maximise human resources fully for greater economic growth. If this orchestrated show of strength had initially set out to achieve some measure of control and economic order, it has certainly succeeded in cultivating an overwhelming respect for authority which in turn has shaped the emergence of benevolence and acquiescence in the work environment.

If one were to link the particularities of the Fijian experience to the broader discourse on work and motivation, there are two thematic issues in the latter which have implications for economic growth in this developing market economy. They are the notion of work and the degree of applicability of work motivation theory. While it is not possible to enter into a more comprehensive discussion of these issues at this stage, the following highlights are sufficiently placed in illustrating the underlying basis of the main arguments for this study.

The early anthropological studies of traditional and non-market based economies (Malinowski 1922; Evans-Pritchard 1940) make reference to the tradition of work as it was perceived and practiced in these societies. In essence, the fusion of work into the cosmology of society itself, meant that as traditional societies became exposed to the forces of change through the process of industrialisation, the structures and normative frameworks that provided the basis for the unit(s) of production were challenged and reshaped to meet the new demands and needs of a changing society. So while in non-market cultures, people do not see their ‘productive’ roles as being separate from their social environment, it has been concluded that in such societies, the
individual's role in work is basically determined by their standing in all spheres of life (Applebaum 1984:3–12). So rather than the nature of work determining the human relations at work, it is the nature of social relations manifested in the kinship networks in society which determines why, how and with whom work is conducted.

In the context of a partially industrialising economy like Fiji, Applebaum's (1984) view would be particularly relevant where the motive to work to fulfill a range of communal obligations within the social network, are perceived as part of the core components of an economic necessity that is aligned with and conducive to the norms of maintenance and existence in the community (Ravuvu 1987). This implies that the motive to work is multifaceted incorporating an interdependent relationship between social and economic values. In addition it is also possible to assume that the kinds of motives that determine employee behaviour in the workplace are partially influenced by the individual's interpretation of his or her status in the social order as perceived in the normative framework of their respective community. Of equal significance is the fact that this process of interpretation is a dynamic activity which evolves and redefines itself within the myriad of social groupings that individuals align themselves with, as they periodically traverse both the subsistence and non-subsistence sectors of the developing market economy (Chandra 1996).

While the notion of work in predominantly non-market oriented societies has tended to reflect this feature, studies of work in more market oriented communities have tended to reflect a more individual position. It has been suggested however, that 'as far as industrial workers are concerned, the concept of workers' needs varies in different schools of thought, depending upon the assumptions and values that are taken for granted' (Hirszowicz 1981:75). Perhaps the strongest influence on management practice has been the scientific management approach which argues that workers are almost exclusively motivated by monetary rewards. The model of 'economic man' underlying this school of thought suggests that

since economic incentives are controlled by the organization, man is essentially a passive agent to be manipulated, motivated and controlled by the organization (Hirszowicz 1981:75).

Although counter arguments to this rationalist model of economic man were reinforced by the findings of the famous Hawthorne experiment in highlighting the importance of group norms on individual behaviour,

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in the workplace, it has been pointed out that despite the criticisms of scientific management being economic-oriented and fairly mechanistic in nature, it predominates managerial practises because it encapsulates the very essence of capitalist production (Hirszowicz 1981:255), which is deemed to be in line with the pervasive sense of economic rationalism that forms the basis of the capitalist spirit.

So whilst it can be seen that in non market-oriented societies, work is fused with all other spheres of life, in market-oriented economies, work is isolated from these activities and situated on a particular plane within its own order of necessity. When that happens, it is given its own rhythm which might be inconsistent with the rhythm of work in traditional societies. It is given its own timeframe which is inconsistent with the nature of work and time in traditional societies. And now, it is enumerated and recompensed on the basis of gratification systems which place greater emphasis on the solo effort as compared to the in-group performance of the individual in traditional societies.

While the partially industrialising nature of its economy illustrates the coexistence of an old order and the new, the range of dualistic modes associated with this economic scenario would significantly influence the extent to which work motivation thinking may be used as a strategic tool for maximising the contribution of human resources to economic growth. If the notion of work in a partially industrialising economy is influenced by the norms and belief systems of a pronounced social tradition, then the highly transient nature of a workforce which participates in and is regulated by the codes of existence in both the traditional subsistence and modern sectors, is bound to reflect itself in worker behaviour and attitudes in the workplace and ultimately, in lower productivity. Linking this to the level of management systems requires an acknowledgement and recognition of the shifting levels of worker commitment in this transitional phase of economic development.

The Fijian managerial perception of the ‘lazy worker’ is steeped in a history of colonial perceptions and practices. Thompson’s (1967) work, *Time, Work-Discipline, and Industrial Capitalism* is particularly relevant in this respect. His general arguments on the nature of time as seen in the distinction between ‘natural’ time (governed by the sun) and ‘industrial’ time (governed by the clock, and manifested by the factory or plantation hooter), provide significant insights into the extent to which these new work habits, featuring strong elements of self-discipline and self-regulation, are internalised into a normative framework that is steeped in newly acquired expectations and notions.
of work. While the inherent logic in this form of British industrialism may have been relevant for defining the parameters of the new work regime, there is an inherent assumption that this ‘new’ environment ought to be distinctly separate and insulated from the employee’s social (or home) environment.

In linking this to the Fijian situation it may be argued that this view of British industrialisation may have had some influence in shaping colonial expectations of industry and work. It may also explain part of the rationale behind the system of divide-and-rule and the subsequent importation of a whole workforce to meet the labour requirements of a young plantation economy. In doing so, this colonial notion of laziness has latched on to the perception and practices of labour-management relations in post-colonial management systems. The stigma associated with this form of paternalism has resulted in stereotypes of the indigenous Fijian as a potential ‘lazybones’ and the Indo-Fijian as typically ‘industrious’. While past generations may have silently shouldered this impositioned view, the systematic loss of face experienced by both ethnic groups in due process has impacted significantly on the culture of benevolence that currently permeates the workplaces of contemporary Fijian society.

Having examined the implications of work for economic growth in Fiji, an overview of motivation theory will highlight the established orthodoxy in the field and the extent to which the particularities of context has a determinative impact on the replication of ideas for socioeconomic change. The two schools of thought which form the basis of work-motivation thinking and which have subsequently influenced the development of new directions in the field are ‘content theories’ and ‘process theories’. While content theories focus on what motivates the individual at work (see Maslow 1954; McClelland 1961; Herzberg 1966; Alderfer 1972), process theories pay special attention to how the component variables are interrelated with an emphasis on the actual process of motivation (see Vroom 1964; Locke 1968; Porter and Lawler 1968).

Generally speaking, the trend in the development of motivation theories has shifted from an early emphasis on an inward-looking prescriptive approach to a more systems-oriented emphasis of the later developments in the field. The diagnostic nature of these new approaches (see Aungles and Parker 1988; Huo and Steers 1993; Brewer 1994), reflect a growing recognition that current experiences of economic growth have a significant impact on changing labour demographics and
a changing work environment, which in turn influence individual effort and performance. So while organisational behaviour in general, and motivation in particular is subject to so many local factors, an exclusively macro focus is likely to completely miss the relevant details that mark the exceptional qualities of motivation in the workplace.

The first issue arising from these insights into work motivation theory is that the dominant theoretical constructs have a significantly western bias, with a tendency towards a context that is directed at the promotion of free enterprise with a concomitant societal norm of individualist ethics. The concern that immediately comes to the fore revolves around the question of applicability of these industrial economy scenarios to developing economy contexts. This is an area commentators have struggled with since Kerr et al. (1960) applied the convergence thesis to employment relations in the late 1950s. The weakness of this approach, which sought to extrapolate the American experience internationally, lay in its lack of recognition of the particularities of national experience (Hess 1986).

If one were to follow the basic arguments of convergence theory, then there is a possibility of applying the basically ‘western’ theories of work motivation to the Fiji context. This might be particularly possible because of Fiji’s conscious decision to seek to emulate western models characterised by attempts to rejuvenate stagnating and slow economic growth through trade, and the recognition by policymakers that national economic policies need to be more compatible with global market arrangements. It could be expected that this will eventually result in varying degrees of institutional reform and greater interdependency amongst the various groups that directly control economic activity in Fiji.

Along the lines of convergence theory, it would be assumed that as Fiji moves towards increased industrialisation, the application of these western-based constructs in a non-westernised context would no longer be a central issue, as the industrialising system attains a level of compatibility with older industrialised nations in the mainly developed countries. While there is a logic to such an argument, it is simplistic. The theoretical literature reveals work motivation as a highly complex area even in western societies with their relatively long history of wage labour, technological innovation and market-oriented production. It seems likely that this complexity would increase rather than decrease, in situations of economic development where social relations in general and work relations in particular, may be expected to be affected by non and even anti-capitalist rationalities and tendencies (Hess 1990:2). This is
especially so in the case of Fiji where the partially industrialising state of its economy seems to reflect a particularly semi-permanent state of economic dualism.

The Euro-American view of placing great emphasis on individual performance, contradicts the broader communalistic notions of individual existence in a developing dualistic economy like Fiji. This is further accentuated by the underlying assumption of work motivation theories that the problem of low motivation is principally an individual problem that exists in isolation from the broader societal context. Where social psychologists have argued that low motivation is a problem that is best addressed at the individual level, industrial sociologists counter this and state that it is a structural problem that requires a reconstitution of institutional processes. The dualistic modes of existence in a developing market economy like Fiji imply that unless motivational strategies in the workplace are cognisant of the varying degrees of dualistic lifestyles of its employees, then the traditional management dogma of employing an economically rationalist position, will continue to fall short of anticipated outcomes directed at achieving enhanced productivity.

This concern has in some way been alluded to by scholars writing on industrialisation who point out that the various constraints faced by an industrialising society constitute major dilemmas of economic growth and as such will have far-reaching implications for the extent to which productive human resources can be maximised (Hirszowicz 1981:21-2). In particular, it is possible to see motivational approaches in management theories, which were largely developed in the United States, as an expression of the extreme individualism, self-interest and even masculinity so characteristic of American culture (Sievers 1994:18). The implication is that despite the generic nature of work motivation theory and its attempts to maintain an element of universality, its applicability and degree of success in any context will be largely determined by the cultural parameters of the host society. The status of work motivation in the big economic picture varies considerably even amongst developed market economies, and may be expected to do so even more between those with a predominantly European background and those coming from a non-European context.

The Fijian context

There are several key features of Fiji’s developmental process which are particularly relevant: the nature of Fiji’s industrialising process; the
policy changes of the post-coup years after 1987; and the uniqueness of
the societal context into which all these features emerge and interact.
Although these features are inextricably linked in a mutually
reinforcing and complex relationship, a brief discussion on each
attempts to provide issues of relevance to this focus on employee
motivation.

There are two significant features of Fiji’s industrialising process.
The first relates to historical trends and the second to current processes.
Fiji’s industrialising experiences from a historical perspective are well
documented in the different fields. When viewed within the framework
of key stakeholders and their impact on the control and direction of a
developing market-oriented economy, these studies include the economic
implications of a divisive system of administration reflected in policies
of divide-and-rule (Spate 1990), the British colonial interpretation of a
Fijian orthodoxy (France 1968), relationships between ownership and
production (Plange 1985; Bain 1988), the role of the state (Sutherland 1992),
the experiences of indenture (Lal 1986), and labour-management
relationships in the early plantation period of a colonial economy
(Leckie 1990a, 1990b), portray how the dominant institutional interests
through the colonial administration, employers, unions and the chiefly
system utilised various strategies in ensuring that their interests were
being protected and propagated amidst a well orchestrated structural
arrangement that catered for the labour requirements of a developing
colonial economy.

In terms of current moves to rejuvenate the stagnating economy,
policymakers and planners now recognise that the stereotyped myth of
industrialisation as being a non-viable development strategy for small
economies is a non-issue. The experiences of other small economies like
Mauritius and the ‘Asian Tigers’ are proof of the potential that may be
achieved in pursuing this strategy of economic growth (Chandra
1996:47). In accepting this line of thinking it follows that as the process
of industrialisation continues to shape and direct the thrust of a
developing system of market-oriented production, the transformation
reflected in this transitional state of development is

bending and shaping the lives of men (and women) into new channels;
a view particularly related to the roles of the managers and the
managed in new societies (Kerr et al. 1960:2).

So while industrialisation has a determinative impact on human
motivation in general, it also has a particular impact on work motivation.
The current economic policy orientation of Fijian governments in the post-coup years after 1987 provides a second aspect of background to this study. In general terms these policies have been characterised by a move away from a heavily regulated protectionist stance, to one of deregulation and a more open economy. This change is seen in policies that promote export-led growth, support and incentives for export-oriented foreign investment, an incremental reduction of direct State participation and control and, the pivotal role given to the private sector in the development process as the government 'has embarked on a program of privatisation or corporatisation of its extensive commercial interests' (Forsyth 1996:2).

The implications of these trends for human resource management in general and employee motivation in particular have not been made explicit in policy documents. In fact it appears that economic growth that is expected to emerge naturally, is a result of the anticipated progression in restructuring and reform. Nonetheless it seems likely that issues of maximising employee contribution to productivity will gain greater prominence. This appears to be particularly likely in public sector organisations where restructuring will inevitably require a move from the traditions of public personnel culture to a more strategic use of human resources in the achievement of organisational goals aimed at greater productivity. In this respect, employee motivation assumes a significant role as a strategic tool for maximising worker potential.

The third feature of Fiji's developmental process which is relevant for this study on employee motivation is the nature of Fiji's socio-cultural context. Although it is not possible to detail a broader coverage of this issue here, it is worth noting here that the uniqueness of context as a determining factor in the industrialising process of any society has been widely acknowledged. In the case of Fiji, the norms and values of the workforce in a context of economic dualism have been shaped by the influences of a fairly centralised system of bureaucratic authority, chiefly leadership in an indigenous social order, a tokenistic form of multiculturalism which overlies a distinct separation of the two main ethnic groups, and a politically sensitive and fragile situation currently recast in the processes of constitutional reform. In this context an emphasis on employee motivation is particularly relevant because of the need to understand employee attitudes, if a strategic role is to be successfully assigned to human resources in overall organisational or indeed national growth strategies. So while in essence, the context for economic growth in Fiji constitutes a range of circumstances that
directly impact upon employee behaviour in the workplace, an overview of the public sector attempts to illustrate the significance of this particular focus.

**Why the public sector?**

Whilst there may have been initial doubts in my mind as to the viability of this particular research interest, these have been gradually superseded by an obligation to impart an informed layman’s perspective on the state of play in the Fijian workplace. It is hoped that through this process of sharing, confidence, self esteem and pride in public service will be gradually restored amongst managers and employees in the workplace of public sector agencies. Although in general terms the particularities of the Fijian context affect organisations in both the public and private sectors, there are certain aspects of the public sector which make it particularly relevant for establishing this interest here.

On a regional level, the implications for policy and further research arising out of such a study are vast and hold great potential for further expansion in this field. Fiji, along with other South Pacific states, is often described by commentators as suffering from low labour productivity, and whilst for most of these small island economies, human resources are the only real resources yet to be fully utilised, it is important that the public sector as a (the) major employer, be staffed by employees who are sufficiently motivated, so as to ensure a level of productivity that is conducive for economic growth. Given the importance of human resources in development, a study of this nature holds great potential in laying an intellectual framework for developing comparative insights amongst other South Pacific island states which, like Fiji, are also experiencing problems of low motivation and low productivity amongst employees in the public sector.

On a national level, while the core of the civil service comprises a little over 40 line agencies of government currently administered in a fairly centralised system, there are between 25 and 30 statutory bodies that together with the civil service make up the public sector. A major determinant here is the fact that the current system of administration is a reflection of a colonial legacy, in which the policies and procedures for implementation are hampered by the existence of restrictions embodied within the legal and administrative framework of the Westminster model. This organisational heritage runs counter to those
macro-level policies aimed at deregulating the economy. The latter have resulted in a growing expectation and indeed pressure from the private sector, the employers’ federation and even from within the ranks of Cabinet itself (Fiji 1994a), for a more efficiently managed public service.

Whilst it may be expected that the effect of the latter would ultimately impact upon the broader management culture of other organisations that come under the umbrella of the public sector, it is less certain what effect these trends will have on perception and interpretation amongst employees in the public sector. In particular, issues on which a gap in management and employee perceptions appear likely include service in and for the public interest, issues of public and private choices, the expectations of government as an employer and, the expectations inherent within the public client and public servant relationship. Yet it will be public sector employees upon whom the burden of implementing changes will fall. Their attitudes will be vital to the success of reform.

As it is a key provider of goods and services in the Fijian economy and, as the largest employer in the formal wages and salaries sector, ‘total public sector employment has grown from around 8,000 in 1970 to 29,5000 accounting for almost forty per cent of paid employment’ (AusAID 1995:31). As such, changes for the public sector may also be seen as having a crucial impact on the wider agenda of moves to the more market-responsive framework of a market-oriented production system. A further level of complexity in the challenges of developing human resource management policies in development management initiatives needs to be added because of the existence of economic dualism. So while the issue of work motivation may have considerable potential as a strategic economic tool aimed at developing and maintaining commitment levels of a partially industrialising workforce that are considered feasible to sustain the anticipated growth in a developing economy like Fiji, simplistic solutions are unlikely to work.

In terms of developing an human resource management framework, work motivation is an extremely important area of concern that is under-rated, taken for granted and often relegated a peripheral and non strategic role in the operational framework of mainstream management functions. That this is more so in the public rather than the private sector makes it even more important that the issue of low motivation be addressed in a more systematic way in the public sector. When linked to the current demands for public sector reform, work motivation as an aspect of human resource management, has a particular relevance to
the dynamics of dualistic modes of existence characteristic of developing market economies in the South Pacific. In this respect, a study of this nature has the potential of developing strategies that may bridge the 'old' structures of post-colonial administrative systems with the new more innovative public management systems required for good governance and development which draw much of their inspiration from private sector practice (Yntema 1993).

While the particularities of context in a partially industrialising economy like Fiji have a direct impact on individual behaviour in the workplace, the various cultural dimensions that exist within the framework of organisational systems illustrate a microcosm of the broader environment which has the potential of being effectively addressed through collective action at micro level. These cultural dimensions include; the culture of silence, the culture of subservience, the culture of 'face' and the culture of kin. While these cultural phenomenon are commonly reflected in employee behaviour in organisations operating in both public and private sectors, it is likely to be more pervasive in the workplaces of the public sector because of the close affiliation between the state and public administration. So while the state impacts upon the operations of the private sector in a fairly general way, it is to the workplaces of the public sector that the value orientations of a system of governance filters into more readily.

In saying this it is worth noting that in the public sector, the key interest groups that direct and control productivity in the workplace are; in the case of statutory bodies, the board as representative of the state's economic interest, and inclusive of all government line agencies, senior management as initiators of policy and controllers of organisational resources and, trade unions as representatives of workers' interests. The highly unionised nature of the public sector and the existence of this stakeholding network at micro-level implies that there is a potential basis for reconstituting a consultative framework that may be better suited to addressing the particularities of a changing work environment in a situation of socio-economic change.

On a personal level, the challenge of managing divided loyalties is partly linked to the intellectual challenge of dismantling and demystifying the current intellectual myopia that perpetuates stereotypes and misconceptions regarding Pacific islanders' notions of, and attitudes to, work; a challenge that has emerged from dual concerns. The first of these is that while the development literature has paid lip service to the role of human resources, the reality of explaining
public sector management in Fiji has been influenced significantly by the historical specificities of a British colonial experience and the associated norms of British industrialism reflected in the dominant benevolent work culture and an equally acquiescent workforce. The second being that much of the management commentary and practise(s) assumed that indigenous employees and indeed public servants are ‘lazy’ by nature, with a tendency towards ‘irrational’ and ‘unproductive’ behaviour. While both issues seemed important, neither were well explained by the stereotypes. So while the answer lies in a systematic study of employee motivation, of equal importance is the development of a more informed perspective secured from within the Fijian viewpoint, on this issue of work motivation.

**Future directions**

Having examined some of the issues of employee motivation that are particular to the Fijian context, the following conclusions illustrate some key findings that hold significant implications for future directions in research and policy in this field. The first of these is that the level of motivation is directly linked to the level of commitment of the workforce, which in turn is determined by the level of industrialisation. So while Fiji is a partially industrialising economy, one may expect a partially committed workforce in place. Second, work motivation is largely influenced by external factors and cannot be effectively managed through a sole emphasis on intrinsic factors.

The degree of partial commitment of Fiji’s workforce means that the nature of workers’ attitudes and behaviour will be influenced by strong external factors that are often beyond the powers of management to control. The third finding is linked to the notion of development semantics. In the Fijian context the distinctively dualistic base has a determinative influence on the perception and practice of work and motivation. This being the case, western notions of ‘rational’ and ‘productive’ behaviour would need to be sensitised to the particularities of existing production and knowledge systems in partially industrialising contexts, if strategies like motivational techniques aimed at enhancing productivity in the workplace are to be effectively utilised.

With regards to the universal rule of applicability in management concepts a note of caution is offered here. While it may be argued that the generic nature of motivation as a management concept is generally applicable to organisational systems in all sectors, its actual relevance
will be largely determined by an understanding of the particularities of context in which employees exist. For policymakers and public sector managers in the Fijian economy, the degree of success in utilising work motivational thinking as a strategic tool of economic development depends on a number of factors. The first lies in an open acknowledgement that divided loyalties and partial commitment to work in a developing system of market-oriented production are real issues that exist in the workplace which needs to be appropriately addressed. Having recognised this, management systems can no longer claim ignorance by taking things for granted in the area of employee behaviour as a variety of training modules in the field can easily restructure and revamp human resource management requirements for respective agencies.

The second suggests that amongst employees, the need to be equipped with a level of confidence and expertise that would enable them to cope with the conflicting expectations and demands of work as it is perceived and practiced in a partially industrialising framework of economic dualism, implies a level of knowledge and skills that are responsive to the dynamics of labour demographics in this changing economic environment. It is particularly more significant and more urgent amongst workers in the public sector who in the context of authoritarian-style administrative frameworks, see themselves in public offices which are closely associated with the custodianship of public interest. So while productivity has traditionally been equated with the private sector, its emphasis through a greater and more strategic human resource management component in the public sector would provide more viable alternatives for maximising human resource potential that currently marrs productivity levels in the workplace of public sector agencies.

Whatever the outcome, the one obvious factor that has emerged in this focus on the Fiji public sector is the need for greater consultation between the key stakeholders who direct and control economic activity in the workplace. In the Fijian context these are management, union representatives in the workplace and the employees themselves. Consultative processes that exclude any one of these parties at any stage of reform are bound to face delays in the implementation of any proposed initiatives aimed at enhancing workplace productivity. It serves us all with a reminder that the human factor in any productivity formula is an equally significant component in this process which can be effectively addressed through an increasing human resource management emphasis in strategic management functions.
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This chapter is concerned with the contribution of employment to achieving the aims of economic development in Tonga. In particular, it takes a management perspective and identifies human resource constraints impacting on the productivity of labour in Tonga. It does not attempt to measure productivity in terms economists will find familiar but simply attempts to see how human resource difficulties affect the contribution of employees to the objectives of the organisations in which they work. In theoretical terms this may be seen in two major areas. The first is the capacity and willingness of employees to work effectively. The second is the ability of managers to motivate and structure the effort of employees to maximum effect.

**Employment in Tonga**

In a general sense employment in Tonga needs to be understood in the light of a long history of organised production and exchange. Tonga’s major natural resources are in its fertile soils and the vast area of both shallow and deep sea within its national boundaries. Like capital, however, neither land nor sea produce economic benefit without the application of the mental and physical resources of the human population. The ‘adaptive and devoted manpower’ of the Tongan
people (Latu 1991:5) formed the basis of a traditional economy capable of producing 'lavish surpluses', to support a non-productive aristocracy and non-consumable craft production (Campbell 1992:225). This did not, however, translate into a universally high standard of living with villagers experiencing periods of famine, for instance in pre and post-Pacific war decades.

In the modern era this relative affluence has continued. In terms of basic social development indicators Tonga compares favourably with nations with similar GDP and income levels. With a GDP per capita level of US$1,630, Tonga is in the lower middle income bracket of nations (Asian Development Bank 1997:224). By orthodox economic measures, however, Tongans are considerably better off than other Pacific islanders (World Bank 1994:228). The growth rates in the early 1990s were strong with GDP per capita averaging annual growth of 6.9 per cent (Asian Development Bank 1994:15). In the middle of the decade, however, this trend has stalled with GDP growth rates falling from around 4 per cent to 2.6 per cent in 1995 and 1.6 per cent in 1996 (Asian Development Bank 1997:161). The major contributing factors were a fall in squash prices and subsequent under production. ADB projections envisaged a recovery in 1997 with greatly increased production, improved quality and a slight rise in prices. Tourism was also expected to continue its improved performance.

Such macroeconomic indicators are, however, inadequate in themselves in establishing the potential of employment as a creator of wealth through productivity and as a distributor of wealth through job opportunities. The extent to which economic activity reflected in the general indicators creates job opportunities depends heavily on the way in which the activity is organised, the level of technology employed and the structure of ownership. In the case of Tonga understanding the relationship between levels of economic activity and job opportunities is further complicated by the definition of 'employment' used with so much economic activity taking place outside the framework of formal work arrangements (Hess 1996:3–4).

In terms of measures of productivity it may be possible to calculate value-added production as the difference between total inputs at each stage of production and total outputs for various sectors as Johnson has done for the late 1980s and early 1990s (see Table 7.1). The result will be the realisation of the dominant performance of agriculture in other than drought years.
While agriculture is a good absorber of labour there are two problems which make it a poor prospect as an employment generator for Tonga. The first is that many of those for whom agriculture is the major economic activity work without formal employment arrangements either on their own behalf or with relatives. The second is that many permanently employed Tongans also engage in agricultural activity to supply their own needs or to supplement their cash income. In terms of productivity agriculture is also a poor prospect in Tonga where limited supplies of land and capital mean that an increase in labour absorption will result in a lowering of productivity.

Given the record of agriculture as an employer internationally it is hardly surprising to find that it has little impact on labour absorption in Tonga. Of more concern is the performance of those areas with the potential for higher levels of employment generation. In particular manufacturing has been severely limited by capital and market conditions. The result is that successful operation of particular enterprises seems to be only possible for a brief period in which capital conditions are favourably affected by government incentives or market access is gained by a combination of temporary factors. With a few exceptions, manufacturers have not continued to operate beyond, or even to the limit of, the application of tax and other incentives.

This dismal picture is not, however, the totality in terms of factors impacting on the prospects for and productivity of employment. If we step back from the demand side and look at the supply for a moment some encouragement may be gained from Tonga’s indicators of social wellbeing. Tongans live longer than the average for lower middle income countries (World Bank 1994:228; Khalidi 1994:29). Primary

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Table 7.1 Tonga: real percentage changes in value added by sector (per cent)

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<tbody>
<tr>
<td>Agriculture, forestry and fishing</td>
<td>3.9</td>
<td>-4.5</td>
<td>9.7</td>
<td>5.0</td>
<td>6.2</td>
<td>3.3</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>10.5</td>
<td>-3.8</td>
<td>-10.0</td>
<td>0.8</td>
<td>2.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Construction</td>
<td>-2.4</td>
<td>-7.8</td>
<td>-15.4</td>
<td>-11.7</td>
<td>2.5</td>
<td>2.0</td>
</tr>
<tr>
<td>Services</td>
<td>-0.6</td>
<td>0.4</td>
<td>7.0</td>
<td>0.8</td>
<td>2.0</td>
<td>2.8</td>
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health care indicators show extremely high levels of access to safe drinking water, medical treatment, and availability of medicine (all 100 per cent), which are reflected in the 70 per cent decline in child mortality rates recorded over the last three decades (Khalidi 1994:30). More sophisticated measures such as persons per hospital bed and persons per physician are well above average for both the region and the national income level. Even more impressive are the statistics on nutrition which show Tongans having daily protein and calorie in-takes which compare favourably with those of much richer nations (Asian Development Bank 1994:12). Concerns that the overall standards of services are declining and that western health problems—heart disease, alcoholism, and so on—are increasingly balancing this picture.

While such general social indicators help in establishing the physical capacity of a population for employment, education may be seen as being equally central to the creation of direct opportunities for employment. Schooling is also a major determinant of the capacity and willingness of employees having a significant impact on both the specific skills and the general orientation towards work with which potential employees enter the labour market. Here again Tonga is well off with primary (39.5 per cent) and secondary (55.8 per cent) school completions above average and a resultantly high literacy rate. By contrast the percentage of tertiary level attainment (1.5 per cent) is disappointing (Tonga 1993:115). There may also be a question mark over the orientation to work with which Tonga’s school leavers enter the labour market.

Of greater concern in terms of employment, however, is the general nature of the education offered to Tongans. While literacy and numeracy may be a sufficient preparation for entry into the lower levels of public sector administration, it is more specifically targeted occupational training which has been seen as the key to creating the skilled workforce required to attract investment. For this reason, the difference between general education and vocational training has become entrenched in the human resource orthodoxy of advanced market economies, with the former being seen as insufficient from the viewpoint of both individuals seeking work and employers seeking skilled labour (Phillips 1987:149–50). At an official level the need for action in this area has long been recognised in Tonga. In 1975, the Department of Labour prepared a survey of labour needs on Tongatapu for incorporation in the 3rd Five Year Plan (Tonga 1975). The needs-based assessment has been repeated in greater detail in subsequent
planning exercises and has spawned several major reports by foreign experts associated with the ILO/UNDP interest in employment in the Pacific region in general. It is not the intention here to offer a detailed critique of these efforts. Instead, attention is focused on the performance of the Tongan economy in response to the two decades of calls for more attention to vocational training as a means of supplying the workforce with the skills that would make them attractive to employers.

In statistical terms at least, teacher training has been a successful area of occupationally oriented training. In 1992 there were 223 students enrolled in Tonga’s single teachers’ college. This represented a 90 per cent increase over the preceding five-year period (Tonga 1993:113). With an even gender distribution this must rank as a considerable success in terms of both equity and efficiency arguments associated with national level human resource development planning. It must be noted, however, that this training is closely linked with a career path in the area of employment which has been most successful in terms of its sustained growth—the public sector.

This success is not replicated in terms of more general occupationally-oriented training. Statistics for technical and vocational course enrolments are particularly alarming with wild fluctuations indicating the lack of a consistent approach to this fundamental area. In 1991–92, for instance, enrolments in these courses declined from 811 to 358. The lack of systematic attention to technical training and the orientation of schooling combine to produce a generally well-educated population, but one which lacks the specific skills to partner capital in commercial development and whose normative attitudes to work do not reflect a market orientation. International experience (Wan et al. 1989) and the views of aid donors (Bilney 1994) regarding the centrality of human resource development are reflected in the rhetoric of planning documents but not in the practice of either public or private sector management.

While there have been minor efforts to improve the capacity of the workforce, the question of the willingness of employees to expend effort in their jobs seems to have been almost entirely limited to the rhetoric of planning documents and courses attended by senior, or at best middle-ranking, public servants. So while the Ministry of Labour was reporting from the early 1970s on the need for greater attention to motivation, its stated view at the time that wage levels need to reflect and stimulate productivity does not seem to have found any reflection in subsequent employment practice. Even more seriously its warning that lack of appropriate reward stimuli will ‘eventually...cause many
people to work at a depressing half-time’ (Tonga 1974:3) is echoed as current fact in the anecdotal evidence of managers.

Human resource theory based upon international experience establishes a strong link between training needs and human resource management practices designed to improve the motivation of employees. A major difficulty for organisations operating in a Tongan environment is the fundamental role of merit and perceptions of equity involved in such basic management functions as recruitment, promotion and the monitoring of performance. In each instance these practices rely for their success on the perception that there is a link between employee performance and reward. This link becomes problematic where social or indeed organisational hierarchy is so entrenched that the merit of individuals counts, or is seen to count, for less than their social position. Anecdotal evidence indicates that attitudes rooted in Tongan culture impact on management practices breaking the nexus between effort and reward acting as a disincentive to employee performance.

Organisational hierarchy may operate in a similar fashion. Within the Tongan public sector the insights of the new public management have been slow to have an impact. So the structure and employment practices continue to reflect a traditional bureaucratic orientation with the observation of rules and procedures taking precedence over the assessment of organisational and individual performance. The lack of an incentive structure means that public employees can work at the ‘depressing half-time’ without loss of entitlements and possibly without loss of prospects.

The implications of this for the economy can be seen vividly in the crude statistics which show a public sector growing in numbers and cost. In 1996 personnel costs accounted for 46 per cent of total government expenditure. In 1997 this is projected to increase to 51 per cent (Asian Development Bank 1997:162).

In theory the Government of Tonga continues to be committed to reducing the size of the public sector. In practice this can be achieved only through more efficient operation. The point of this chapter is that the preconditions for greater efficiency—a well trained and highly motivated workforce, employed in organisations which are managed for performance—do not seem to be present.

The prospects for improving employment and productivity

Whatever commentators and planners might have hoped for, there are only two areas in which employment of Tongans has shown sustained
growth. The first is in the provision of services, largely located in Tonga’s public sector, but also significantly represented in private sector finance and tourism enterprises. The second is in overseas labour markets. In both cases the chances of increasing or even maintaining levels of employment depend upon productivity improvement. Locally, improved skills and motivation of employees are necessary to attract foreign investment into the private sector and to provide improved services at less cost in the public sector. Internationally Tonga’s migrant workers need improved skills to maintain their success in increasingly competitive overseas labour markets.

In terms of its prospects for employment growth, Tonga’s public sector is not merely the major source of local employment, it also sets the standard for management practices throughout the national economy. So if, for instance, public sector employment is characterised by a high wage/low performance regime rather than by a commitment to the efficient delivery of high quality services, this will certainly have a negative impact in other areas of employment. Internationally, public sector reform has aimed to make public sector organisations purveyors of best practice, with savings in national budgets, increases in the quality of service and a practical example for private sector management and employees being amongst the achievements claimed for such reform. As far as Tonga’s public sector employment is concerned, continued growth seems likely and necessary in terms of maintaining current rates of labour absorption. However, such a trend will be threatened by budgetary realities if that growth does not incorporate increases in efficiency, productivity and effectiveness with changes to how Tongan public servants work being a major factor. Clearly more research is required to be definite about policy recommendations in terms of necessary changes in public sector employment. It would, however, be fair to say that the effectiveness and efficiency principles of the new public management are yet to receive sector wide attention in Tonga.

In the local private sector, despite some recent and projected growth (Asian Development Bank 1997:161), tourism must be seen as an underachiever in terms of its potential. Not only is it outstanding amongst service sector areas in terms of bringing money into an economy, but also its labour-intensive nature has made tourism particularly attractive to governments seeking to encourage economic development through higher levels of employment. In this regard,
Tonga’s failure to make serious inroads into the international market requires attention. The lack of international-standard facilities and the failure to capitalise on the natural beauty of the country clearly need to be addressed at a policy level. It seems that the most likely source of progress here would be an agreement between the government and a large international tourist company to develop and promote enclave style facilities which would bring tourists into the country. Internationally, examples of success in this area include Fiji and the Maldives.

The range of jobs generated by successful tourism industries is extremely wide but relies on a basic approach of giving service. International practice includes examples of both private and public sector provision of training to produce the specific skills and the general commitment required for success in this area. Tonga appears unlikely to attract the level of international investment required without making a commitment to the development of the necessary human resources. The high general levels of education and health in the community, however, give Tonga a substantial base from which to launch such an effort.

The current and historical success of Tongans in the overseas labour markets also demands close attention. The importance of these earnings in terms of overall national economic activity may be seen in the increase of net transfers from 3 per cent of current account receipts in 1991 to 12 per cent in 1996 (Asian Development Bank 1997:162). In fact this measure possibly continues to reflect the undervaluing of remittances of overseas workers, which in addition to cash amounts include quantities of re-saleable goods (Brown and Connell 1993) not to mention building materials and goods for domestic use which are difficult to quantify. Anecdotal evidence points to the importance of these non-cash remittances as well as access to medical and educational services outside of Tonga for families of migrant workers.

Further anecdotal evidence from managers of enterprises in Sydney which employ Tongans sees them compared favourably with other migrant groups in terms of their English language abilities and their willingness to learn and work hard. The Sydney Tongan community’s rate of unemployment also seems to be considerably less than that of other migrant groups (Hess 1996:11). It seems likely that this is also the case in Los Angeles and Auckland where continued Tongan migration has historically been attributed to success in the local labour market (Ahlburg 1991:29).
All of this argues for the continued potential of migrant employment as an important factor in Tonga’s economy. It would be wise, however, not to presume that this current success will continue without efforts to improve the skills of these workers. Additional attention at the level of secondary education to the skills needed in these labour markets would therefore seem worthwhile. In particular the inclusion of basic education in areas such as commerce and legal studies may help orient young Tongans towards a labour market ethos conducive to continued success in the overseas situations and also helpful in terms of increasing productivity at home.

Such a skills-based approach would seem to have greater potential in terms of improving access than policy based on attempts to gain bilateral agreements. The latter would be fraught with political problems and in any case seem unnecessary. In practice the market will decide who is employable and who is not regardless of international agreements. The large number of Tongans who overstay their formal visas but continue to find favour in the eyes of employers indicates that those market realities are operating in favour of Tongan employees. Exactly why this is so calls for further research. So too do the effects of spatial risk diversification evident in the practices of Tongan families which place members in both overseas and local labour markets.

In any case at both local and international labour market levels increased skills-based training will improve the attractiveness of Tongans as employees. This ought to begin at school with a move in senior years to more specific training with an emphasis on technical and commercial skills. There is also urgent need for attention to industry specific training such as that provided by the Maritime and Polytechnical Institute. German aid funds provided the source of initial capital expenditure and the Ministry of Education meets the running costs for trade and short courses of particular relevance to this industry. A similar approach would have potential for tourism with the possibility of training being provided in the off-season.

Some clear lessons may be drawn for overall labour policy from international experience. It is noticeable that those nations that have achieved high levels of economic development have also been characterised by labour force commitment to productivity. The ‘East Asian miracle’ (World Bank 1993) is not just a miracle of policy or even of management. It is also a miracle of labour and employment relations. Labour policy has played a vital part in the achievement of this most spectacular economic growth with the emphasis on the
development of a committed workforce willing and capable of partnering capital in the achievement of economic development. It involves a new approach to the development and management of human resources which regards workers and their skills as a key variable in the achievement of better economic performance. It is fair to say that this human resource management approach has had little impact on management in Tonga or indeed the Pacific island nations generally. Rather than focusing on the positive contribution human resources can make both to the efficiency of particular organisations and through this to the achievement of goals of economic development, labour policy in Tonga has emphasised the role of labour demand and the need to create more jobs. The consequence of this approach is that the attention of those concerned with labour issues has been drawn to population growth projections and the creation of jobs to absorb the increasing numbers of school leavers on the one hand and the performance of overseas labour migration on the other. An approach centred on maximising the contribution of existing human resources to economic growth has greater potential for addressing the productivity issue which is seen as being central to an understanding of labour constraints to development.

Such an approach would also be able to accommodate the difficulties mentioned above in how ‘employment’ is defined. If the orthodox definition of work in return for cash payment is accepted, clearly much work which creates wealth in Tonga is excluded. This work—typically in agriculture and traditional handicraft production—does absorb much labour but its product is not measurable in orthodox economic terms. Ironically, as Tongan communities overseas become larger and more wealthy the demand for and price of the handicraft products of this work has increased. Thus this non-employment finds a growing market for its product. This is clearly an area that would repay further research but is beyond the scope of this study.

**Conclusion**

Tonga faces major difficulties in respect of productivity on both sides of the employment bargain. In respect of employees the neglect of technical and in-service training results in a workforce lacking the capacity for improved performance. In respect of management the lack of incentive structures provides little positive motivation for employees.
De-motivational factors include status rather than merit-oriented attitudes and are particularly evident in public sector employment where management practices encourage jobs to be regarded as sinecures in which performance is of relatively minor importance.

On the other hand the spectacular performance of Tongans in overseas labour markets shows a potential capacity and willingness as workers not always evident within national employment structures. This surely indicates that there are considerable gains to be made from reforming those structures.

A skilled and committed workforce is clearly part of the package which is vital to attracting investment, maintaining access to overseas labour markets and sustaining levels of public sector employment. The acquisition of occupationally-oriented skills needs to be part of school education and should also be the subject of industry-specific training. Workforce commitment on the other hand will only come from management practices which motivate employees to use their skills productively. In addressing this issue of maximising the contribution of labour to the production of goods or services the emphasis needs to be as much on the training of management as it is on the training of labour.

Note


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Productivity performance in the South Pacific islands
The island nations of the South Pacific, including Papua New Guinea, are different in all respects except for their common poor economic performance. This book addresses the issue of productivity performance in the South Pacific islands with case studies from Papua New Guinea, Fiji and Tonga, and draws lessons from theory that are applicable to the region as a whole.

*Productivity Performance in the South Pacific Islands* grew out of the June 1997 seminar on Productivity Growth in Papua New Guinea and the South Pacific held at the National Centre for Development Studies, the Australian National University. It is part of ongoing analysis of development in the Pacific island countries supported by the Australian Agency for International Development (AusAID).