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Pacific Islands Development Program

ECONOMIC REPORT No. 5

INDUSTRIALIZATION IN PAPUA NEW GUINEA: UNREALIZED POTENTIAL?

by
P.A. McGavin
John Millett

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Distributed by
University of Hawaii Press
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2840 Kolowalu Street
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December 1992

Pacific Islands Development Program
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Library of Congress Cataloging-in-Publication Data

McGavin, P. A. (Paul A.), 1943-
Industrialization in Papua New Guinea: unrealized potential? / by P. A. McGavin, John Millett.
p. cm.
"December 1992."
Includes bibliographical references.
ISBN 0-86638-156-2: $10.00
1. Industry and state—Papua New Guinea. 2. Papua New Guinea—Industries. I. Millett, John, 1936- . II. Title.
HD3616.P373M35 1993
338.09953—dc20 93-2630
CIP

Distributed by
University of Hawaii Press
Order Department
2840 Kolowalu Street
Honolulu, Hawaii 96822

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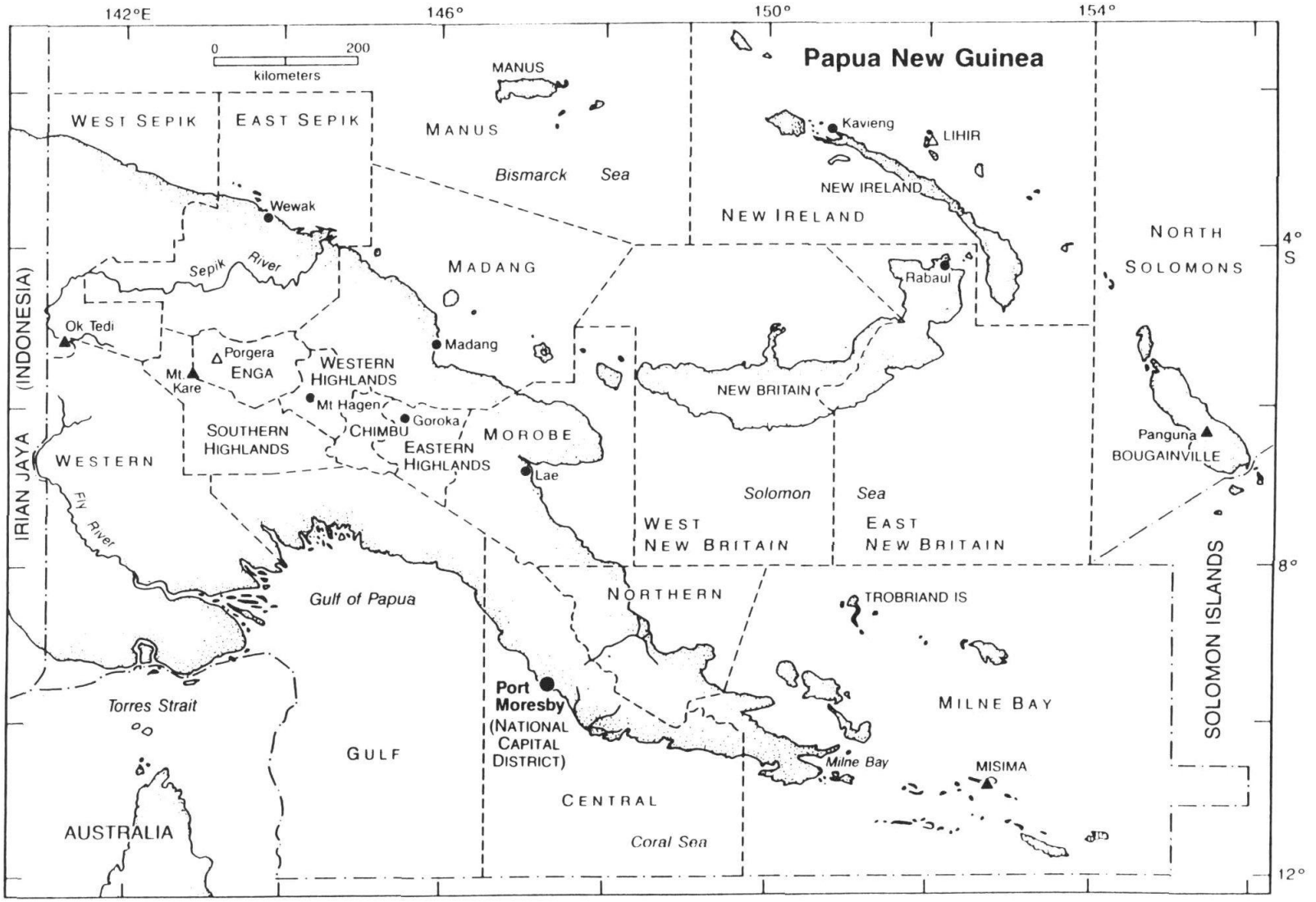
Foreword

This report is the fifth in a series of country reports relating to the Pacific island economies. The series is intended to fill the existing gap of available material about economic performance, policy, and prospects in the region. Because the economic survey reports issued by international agencies often have a restricted circulation and are not in the public domain, this PIDP series is designed to improve the awareness of the economic problems and circumstances facing the Pacific island countries today.

Sitiveni Halapua
Director
Pacific Islands Development Program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NORTHERN
TROBRIAND IS
8°
SOLOMON ISLANDS
Port Moresby
(NATIONAL CAPITAL DISTRICT)
MILNE BAY
Torres Strait
GULF
Milne Bay
MISIMA
CENTRAL
AUSTRALIA
Coral Sea
12°
▲ Mine
△ Prospect

Executive Summary

Papua New Guinea has a record for establishing announced and stable public policies that provide a predictable policy environment for private sector development, and that provide recognition that the greatest scope for economic growth and employment growth lies with the private sector. The recent *Industry and Trade Development Action Plan* sustains this record, and concentrates attention on providing the *preconditions* that will be conducive to the development of manufacturing activities. The present paper affirms this perspective, while providing certain balancing perspectives.

The economic efficiency viewpoint that informs the strategy of the *Industry and Trade Development Action Plan* is used to caution against expansion of a "barrage of incentives" that undoes this viewpoint. A practical difficulty encountered in adhering to reform policies is that reforms do not achieve discernible impact simply in moving *toward* improved efficiency. Reform policies bring discernible impact only as cumulative change is achieved that brings *actual* international competitive advantage for Papua New Guinea. This may take time.

This time may be shortened by strategic use of mineral resources development in providing opportunities for achieving the required degree of change. This required change may be assisted by the management of mineral resources development so as to minimize exchange rate and public expenditure effects that are harmful to other sectors. Especially important is the direction of surpluses from mineral resources development to infrastructural and human capital formation—thereby reversing harmful domestic relative price effects on other sectors. The key institutional means for achieving this enhancement is the direction of public accruals of mining surpluses into Development Trust Funds.

Thus, the enhancement of broad-based development of both rural and secondary industry (including manufacturing industry) through mineral resources development depends upon certain conditions. Chief among these is the quarantining of public surpluses accruing from mineral resources development in Development Trust Funds (national, provincial, and local area). This quarantining is part of a process that helps minimize harmful relative price effects on other sectors. But the main purpose of this quarantining is to increase the implementation strength for channeling these surpluses to physical infrastructural and human capital development at several levels (national, provincial, and local areas).

Fiji, having achieved success in export-oriented job creation in manufacturing, provides a useful comparison for assessing the extent to which Papua New Guinea is approaching the achievement of comparative international competitiveness.

Finally, the establishment of a policy environment that opens-up possibilities for industry development creates conditions where this *can happen*, but does not ensure that it *will happen*. The economic opportunity that private sector development creates occurs through a practical testing of comparative international competitiveness. Governments help create conditions for secondary industry development. Markets give practical test of the creation of economic opportunity. Going the route of private sector development also involves accepting the discipline of market evaluation of efficient economic choice.

Introduction

This paper considers alternative development strategies in Papua New Guinea, and suggests ways that mineral resources development may be used to expand the potential for broad-based development, including development of manufacturing industry.

Trade-offs involved in efficiency

In the context of contemporary Papua New Guinea, the most favorable development path is one that provides the most absorption of under-utilized labor services per unit of investment (per thousand or per million kina). This may involve expansion of natural resources extraction and exports by Papua New Guinea, allowing the importation of more goods and services that are more cheaply produced overseas. This choice of course involves risks and social costs. Recognizing these makes clear that efficient choices are not simply ones of maximization of measured wealth or incomes.

Risks. Increasing the proportion of domestic production that is exported and of domestic consumption that is imported increases the "openness" of the economy—and exports and imports become a larger proportion of total product. Command over market goods and services may increase, but be more subject to changes occurring in the international economy. This riskiness may increase where more openness involves increased concentration on the production of few commodities—such as copper, gold, and oil. As international supply of and demand for these few commodities change, and as prices and quantities of exports correspondingly change—this also increases the vulnerability of the domestic economy to international economic changes.

Social factors. Concentration of economic development in extractive industries (such as mineral resources) may also present a range of other difficulties such as the following:

- on-going development (say, where a mine-life may be only 20 years, or less);
- environmental degradation (where alternative resource uses may be disrupted, or even impossible); and
- restricted generation of wage jobs.

Thus, a certain path of development may offer higher command over market goods and services—but may also involve greater risk in variability in economic outcomes, *and* be considered socially inferior from a variety of viewpoints (such as consequent small job growth). (But see later development of this analysis.)

Sectoral impacts from choices—revaluation

Any path of development involves sectoral impacts of choices. Where mineral resources development brings increased *net* earnings of foreign exchange, the rate of exchange between international and domestic currency may be expected to increase (that is, kina appreciation or revaluation to occur). This induces complex changes in other sectors (see Gregory 1976).

From the viewpoint of import-competing sectors, kina appreciations operate like tariff reductions, because imported goods and services cost less in kina. From the viewpoint of other export sectors, the effects of kina appreciations differ where exports are priced in kina and where they are priced in foreign currencies. Manufacturing exports priced in kina convert to higher foreign currency prices, and are less competitive in international markets. Rural exports priced in overseas currencies yield lower kina values for domestic producers. Changes in other sectors also reflect induced domestic relative price effects that occur where prices rise for scarce domestic inputs (such as transport services and skilled labor services).

Countervailing impacts also occur. Mineral sector growth increases demand directly and beneficially for internationally-competitive domestic production (such as steel fabrication in manufacturing and vegetable produce in rural production). Mineral sector growth may directly contribute to improved infrastructure such as roads and communications, with net beneficial impacts on rural development. Increases in net foreign exchange earnings from mineral resources development have a strong link to funds that are available to governments for investment in human capital formation and in formation of physical infrastructure capital—with favorable impacts on other sectors.

Thus, one path of development (such as mineral resources development) necessarily has implications for other paths (such as agriculture or manufacturing), and involves impacts that may work against the development of alternatives. The vigorous agricultural growth on Bougainville following development of the Panguna mine may be taken as a case for finding favorable net impacts from mineral resources development. The complexity of impacts must be recognized, and practical means for increasing favorable influences on other sectors must be targeted.

Finding the right balance

The "right balance" is not easy to find, and necessarily involves making comparative value-judgments—and reasonable citizens may differ in their judgments. The important thing is to search for *balance*. No environmental change and no development, or concentrating on only agricultural development with a much lower rate of economic growth, are examples of extremes that most people will consider to be inferior.

Assessment of *risk* is also involved in the search for balance. Realized outcomes may differ from expected outcomes, and introducing assessment of risk allows choice of a more robust strategy that embraces a mix of activities designed to minimize the likelihood of failure. That is, finding a right balance involves choosing a mix that gives reasonably stable increases in standards of living and increases in labor market opportunities so that the experience of economic and social change is such that people judge favorably the economic and social development of the nation. Making such a favorable judgment involves finding economic policies that support efficient and robust economic outcomes.

Role of industrialization

Economic policy formulation is thus wide in scope, and involves complex and often qualitative judgments between alternatives. This paper focuses on certain aspects of economic policy—those that are closely related to industrialization. In this context, industrialization refers to manufacturing processes that transform inputs so as to add value to the product. The question then is the role of and the scope for value-adding through manufacturing in Papua New Guinea economic development. This involves sketching the present situation in ways that point toward more favorable choices.

Level and Structure of Manufacturing

Data inadequacies

The National Statistical Office (NSO) has recently reduced its publication lag (e.g., NSO 1990a, b, c). It nevertheless remains true that analysis of the Papua New Guinea economy is often handicapped by poor and untimely data availability—and this particularly impinges upon the analysis of this paper.

Poor product growth for Papua New Guinea

Although there have been ups and downs since independence from Australia in 1975, the Papua New Guinea economy has shown poor growth performance, little growth in formal wage employment, and little change in per person product. Table 1 shows per person product in constant kina values for the formal economy as K9,968 at 1975 and K9,879 at 1988 (prior to the closure of the Panguna mine of Bougainville Copper Limited (BCL)). Data for detailed disaggregation are not available, and deduction of output estimates for the public and for mining sectors derives rough estimates of per person product for the formal non-mining sector. Table 1 shows greater variability in estimates of per person product for the non-mining market sector, but the

Table 1. Product per person for the Papua New Guinea economy, 1968-89 (constant 1983 prices)

Year	Formal sector	Formal non-mining market sector
1968	6,676	3,603
1969	6,528	3,662
1970	7,106	4,458
1971	8,012	5,557
1972	8,427	4,455
1973	9,390	3,461
1974	9,866	5,400
1975	9,968	5,828
1976	9,777	5,560
1977	8,713	5,046
1978	9,527	6,055
1979	9,385	6,359
1980	8,392	5,921
1981	8,584	5,972
1982	9,128	6,791
1983	9,501	7,154
1984	9,212	6,989
1985	9,416	7,084
1986	9,684	7,384
1987	9,845	6,522
1988	9,879	5,972
1989	9,244	6,527

Source: McGavin (1991a:112, 114, Tables 4A.1, 4A.3).

overall picture of little change remains—with per person product estimated at K5,828 for 1975 and at K5,972 for 1988.

Poor fixed capital formation for Papua New Guinea

Reductions in fixed capital formation after independence and poor subsequent investment recovery partly explain this poor performance (Table 2). Non-mining market sector gross fixed capital formation has recently slipped in share of fixed investment in Papua New Guinea (Table 3), but the small share for manufacturing has remained roughly constant. Physical and human infrastructural investment by governments has declined. Blyth (1988:14) shows the share of government spending on transport to have fallen from 7.1 percent in 1980 to 4.9 percent in 1986, and Blyth (1991:11) shows real expenditure per person on health and on education to have declined between 1978 and 1990 by 20 and 35 percent respectively. The government's *Industry and Trade Development Action Plan* announces that government capital ex-

Table 2. Gross fixed capital formation, 1968-89 (constant 1983 prices)

Year	Kina, millions
1968	339.3
1969	364.3
1970	686.1
1971	1002.2
1972	813.6
1973	395.8
1974	372.5
1975	428.4
1976	315.5
1977	357.0
1978	388.9
1979	450.3
1980	508.2
1981	521.0
1982	615.1
1983	633.3
1984	510.0
1985	387.1
1986	442.9
1987	433.1
1988	544.2
1989	550.9

Source: McGavin (1991a:116, Table 4A.5).

Table 3. Gross fixed capital formation 1986-90. Total (K million) and shares (percent) by sector

	1986	1987	1988	1989	1990
Total	539.2	551.2	737.0	790.7	772.9
Shares					
Private non-mining	41.0	43.0	41.0	37.0	34.0
Manufacturing	4.2	4.4	3.9	4.0	4.2

Source: 1992 Budget Document Vol. 2, Table S1.4.

penditures will be increased and that expansion and maintenance of infrastructure will receive increased attention (PNG 1991:14, 31).

Unchanged manufacturing share

As shown in Table 4 the structure of the Papua New Guinea economy has undergone change. Prior to the closure of BCL Panguna, the gross domestic product (GDP) share of mining increased to 19.4 percent in 1988, while the share of government (included in community services) increased to 1985 and then decreased to 15.4 percent in 1988. Agriculture, etc., has decreased since 1984 to 29.4 percent in 1988. The proportional share of other components of GDP has remained stable. The share of manufacturing has until 1989 remained stable at about 10 percent.

Factories by type

The number of factories has changed little between 1984 and 1988 and has remained at about 700 (Table 5). About one-third of these are factories and workshops in other industries (such as construction) and about two-thirds are manufacturing establishments (Table 6). Of the two-thirds of factories that are manufacturing establishments, at 1988 most of these establishments fell within three product groups—food (32.5 percent), metals (26.4 percent), and wood (22.2 percent).

Table 4. Key sectors as a proportion of GDP, 1978-89 (percent)

		Agriculture							
Year	Manu-fact.	Market	Non-market	Mining	Con-struc.	Whole-sale	Trans-port.	Finance	Com-mun.
1978	9.5	20.9	14.3	10.4	3.7	9.3	5.6	4.7	11.3
1979	9.3	20.7	13.2	15.1	3.3	8.9	5.1	5.0	10.2
1980	9.5	18.4	14.7	13.2	3.8	7.9	4.6	8.2	10.7
1981	9.9	17.1	16.3	8.0	4.2	8.4	5.8	7.5	11.9
1982	9.4	16.0	16.4	8.0	4.7	8.1	4.2	10.0	12.2
1983	10.0	18.9	14.4	10.5	5.8	10.2	4.1	6.7	16.8
1984	11.0	22.6	13.9	6.6	4.9	9.8	4.5	6.8	16.6
1985	10.9	20.0	13.1	10.0	3.9	9.9	5.0	6.9	17.1
1986	10.0	19.3	13.1	12.9	4.1	9.5	5.1	5.7	16.9
1987	9.5	17.0	13.1	17.3	3.6	9.3	5.0	5.6	16.3
1988	9.4	16.8	12.6	19.4	4.2	8.9	4.8	5.5	15.4
1989	11.2	15.0	13.4	11.7	5.4	9.8	5.4	5.7	18.0

Note: Public authorities were reallocated from 1983, mostly to community, etc. (which includes government).

Source: Computed from NSO National Economic Accounts, Waigani.

Table 5. Number of factories by type, 1984-88

Year	Manufacturing	Factories in other industries	Total
1984	443	250	693
1985	464	241	705
1986	468	244	712
1987	439	235	674
1988	455	227	682

Source: NSO Secondary Industries, preliminary, 1988. Waigani:NSO.

Table 6. Distribution of factories by type, 1984-88 (percent)

Factory type	Year 1984	1985	1986	1987	1988
Manufacturing	(63.9)	(65.8)	(66.7)	(65.2)	(66.7)
Food	20.8	18.2	22.3	21.8	21.7
Metals	17.0	17.4	17.3	16.3	17.6
Wood	14.1	15.3	15.4	15.3	14.8
Other	12.0	14.9	11.7	11.8	12.6
Non-manufacturing	(36.1)	(34.2)	(34.3)	(34.9)	(33.3)
Wholesale and retail	18.5	17.2	18.0	18.3	17.9
Construction	10.2	9.8	10.8	9.4	8.7
Transportation and communication	4.6	4.4	4.2	4.5	4.4
Other	2.8	2.8	1.3	2.7	2.3
Total	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Source: Computed from NSO Secondary Industries, various issues. Waigani:NSO.

Employment and Wages

Employment

"The first thing to note in any analysis of labor activity in Papua New Guinea is the parlous state of statistical information" (McGavin 1986:12, 1991a:58). Data sources for manufacturing employment for Papua New Guinea are NSO *Secondary Industries* (available 1971-88), and *Census of Employment* (available 1984-86) and the Bank of Papua New Guinea (BPNG) index for manufacturing employment (available 1978-90) (and respectively reproduced in McGavin (1991a:248, 245-47, 76)). *Census of Employment* data show lower estimates of manufacturing employment than found in *Secondary Industries*, which includes non-manufacturing secondary-industry employment. Because *Census of Employment* estimates reconcile better with Census data (NSO 1988), McGavin (1986, 1991a) used *Census of Employment* data with the BPNG (revised) employment indices to generate estimates of manufacturing employment for 1978-90 (McGavin 1991a:74). These data are reproduced in Table 7 and show some recent growth in manufacturing employment, followed by a decline in 1990 to about 18,000 persons.

Minimum wages

Minimum wages for unskilled labor were K56.53 for a 44 standard hours week in 1990. Using the Consumer Price Index (CPI), this is a decline of about 11 percent on the 1975 level (McGavin 1991a:39, Table 1.3). Interpretation of relative wages data for Papua New Guinea occurs later under performance and policy analysis headings.

Table 7. Manufacturing employment 1984-90 by persons and percentage of formal market sector employment

Year	Persons	Percentage market sector employment
1978	15,415	11.4
1979	16,253	11.5
1980	17,729	11.3
1981	19,205	12.9
1982	17,071	12.3
1983	16,712	11.7
1984	16,533	11.4
1985	17,231	11.6
1986	17,151	11.2
1987	17,231	10.9
1988	18,467	11.2
1989	19,604	11.2
1990	18,188	11.1

Notes: See text for explanation of these data and McGavin (1991a:68-76, 245-49) for further explanation. Note that these data were not used in the construction of Table 10.

Source: McGavin (1991a:66, Table 2.4).

Paid rates

Surveys of paid rates were conducted for the Institute of National Affairs (INA) in 1986 and 1990. Coding of these results was on a skills basis (not industry basis) (Table 8). The 1990 earnings data show that paid rates equaled minimum rates for unskilled employees and for inexperienced semi-skilled female employees. Paid rates for sampled skilled non-trades employees were 140 percent of minimum rates, and for trades employees 130 percent of minimum rates (Table 9, column e). The prevalence of weekly hours of work less than standard weekly hours means that premiums are greater when assessed as hourly paid rates (McGavin 1991a:161, Table 6.8).

Table 8. Base wages per hour for citizen urban employees, August 1990

Job classification	Sex	Kina	Sample
Unskilled	M	1.44	293
	F	1.32	16
Semi-skilled non-trade	M	1.65	272
	F	1.55	116
Semi-skilled non-trade senior	M	2.43	36
	F	2.40	21
Semi-skilled non-trade supervisory	M	2.91	27
	F	3.12	10
Skilled non-trade	M	2.87	194
	F	3.16	162
Skilled non-trade senior	M	5.94	49
	F	4.44	23
Skilled non-trade supervisory	M	5.14	30
	F	6.60	10
Trade trainee	M	1.82	30
Tradesman	M	2.59	56
Trades senior	M	3.54	4
Professional trainee	M	4.10	10
	F	3.01	3
Professional	M	6.29	52
	F	4.46	10
Professional senior	M	10.16	14
Manager/executive	M	7.40	47
	F	4.19	10

Notes: M = male; F = female. The urban sample was drawn from Port Moresby and Lae (urban level 1 centers). Base pay is pay before overtime and incentives.

Table 9. Base wages and urban level 1 minimum wage by sex, August 1990 (kina per week)

Pay Classification (a)	Sex (b)	Base wage (c)	Minimum wage (d)	(c)/(d), percent (e)	Sample (f)
General laborers	M	55.90	54.88	102	293
Class 1	M	64.30	60.00	107	272
	F	60.01	60.00	100	116
Class 3	M	96.81	68.95	140	36
	F	95.07	68.95	138	21
Class 5	M	105.74	81.03	130	56
Class 6	M	143.97	87.10	165	4

Source: McGavin (1991a:160-1, Table 6.6, 6.7).

Industry Performance

Finance and Planning data

Published data on output values and value-added are available to 1988 from *Secondary Industries 1988, Preliminary* (NSO 1990a). Millett (1990:87, 125) suggests that output per person has followed a "flat trend." The subsequent availability of data for 1987 and 1988 (NSO 1990a) suggests a conclusion of *declining* trend in productivity per person employed in secondary industries.

The 1989 Submission of the Department of Finance and Planning to the Minimum Wages Board (DFP 1989) uses the gross domestic expenditure deflator to derive estimates from *Secondary Industries* data for real total output and real value-added. Dividing these by *Secondary Industries* employment data derives estimates of real output per person employed and of real value-added per person employed in secondary industries.

These estimates are updated and reproduced as Table 10 and show for 1979-88 an average annual growth in secondary industry output as negative 1.6 percent, and in secondary industries value-added as negative 1.8 percent. Given the growth in secondary industry employment (McGavin 1991a:248, Table A19), it is not surprising that the negative growth is magnified for per person estimates. For 1979-88 the average annual growth in real output per person employed is estimated at negative 4.2 percent, and for real value-added per person employed at negative 3.7 percent per year (Table 10).

The CPI deflator was used in DFP (1989) to estimate real wages per person employed in secondary industries, which show for 1979-88 an annual average growth as negative 2.5 percent. That is, for Papua New Guinea secondary industries taken as a whole, reductions in productivity have tended to exceed reductions in labor rewards. Over a nine-year period estimated real value-added per employee has *declined* by 3.7 percent a year, while real compensation per employee in secondary industries has declined by an average 2.5 percent a year. That is, an average annual divergence between measured per person productivity and measured per person employee compensation of 1.2 percent. This divergence indicates the *deteriorating basis* for further increases in wages for manufacturing employees unless there is a *significant reversal* in the productivity performance of Papua New Guinea secondary industry.

Market structure and performance

A combination of higher-than-competitive factor prices and lower-than-competitive scale of production may quickly lead to exhaustion of possibilities for domestic manufacturing production. This may have occurred with development in Lae during the 1960s and early

Table 10. Output, value added (total and per person), and employee compensation secondary industries, 1978-88 (constant 1983 prices)

Year	Real total output (k mill)	Real output per worker (kina)	Real value added (k mill)	Real value added per worker (kina)	Real yearly wages per person (kina)
1978	401.3	20,187	200.9	10,103	1,879
1979	430.0	18,108	176.2	7,041	2,754
1980	454.2	17,779	188.9	7,395	2,868
1981	411.3	15,877	173.4	6,695	2,579
1982	354.1	12,828	158.7	5,747	2,518
1983	377.7	13,516	165.2	5,913	2,510
1984	408.3	15,026	178.1	6,555	2,525
1985	402.4	14,795	181.4	6,672	2,632
1986	371.7	12,426	168.2	5,623	2,467
1987	378.0	12,475	167.6	5,531	2,355
1988	361.0	11,797	146.8	4,797	2,164
Annual average growth (%)					
1979-88	-1.6	-4.2	-1.8	-3.7	-2.5

Notes: Employment and output data are from NSO (1990b), and earlier issues. Output is deflated using the gross domestic expenditure deflator (NSO) (1977=100). Wages and salaries are deflated using CPI (NSO) (1977=100).

The different annual average growth rates reported in McGavin (1991a:110) were drawn from the DFP source. Those reported above were computed by Dr. M. Sturton of PIDP. The data for 1978 stand apart from the rest of the series and are not used in computing average annual growth rates.

Sources: DFP (1989, Table 6:31), updated using NSO sources.

1970s. The existence of trade restrictions suggests that the post-primary sector expanded too much, rather than too little. Recent amalgamations and rationalizations such as those of Steamships-NGI followed by the inclusion of Collins & Leahy and the closure of the ACI packaging plant in Lae are signs of adjustment toward a more efficient market structure. One may expect further exits if announced trade liberalizations are implemented (for example, in poultry and pork).

Absence of specific indicators

In the absence of recent specific data, it is impossible to elaborate further about industry performance for Papua New Guinea. Productivity estimates for Papua New Guinea are possible only on a broad sector basis (McGavin 1991a: Chapter 4). For the recent period prior to the closure of the Panguna mine (1985-88) annual *overall* productivity growth for the Papua New Guinea formal economy is estimated at 1.6 percent. This compares favorably with Organization for Economic Co-operation and Development (OECD) countries (1.5 percent), but poorly with Asian newly-industrialized-countries or NICs (4.4 percent). In terms of international comparison, the performance of Asian NICs would seem the most relevant (Table 11). Estimates that follow

Table 11. International comparisons of yearly productivity growth for selected years 1970s and 1980s (percent)

Period (a)	Nation(s) group (b)	Productivity growth Per person (c)	Multi-factor* (d)
1979-85	Papua New Guinea	0.1	0.9
1985-88		1.6	1.7
1979-85	Asian NICs	4.3	5.0
1985-87		4.4	10.0
1979-85	Australia	2.1	1.4
1985-88		0.4	0.4
1979-85	OECD	1.6	1.8
1985-87		1.5	1.2

Notes: *See notes in source for explanations of multi-factor estimates.

Source: McGavin (1991a:127; Table 5.1).

DFP (1989) suggest a 1978-88 annual average decline of 3.7 percent in real value-added per worker for *secondary* industries (Table 10).

Relative wages

The proportions of non-agricultural wages for selected South-East Asian countries to Papua New Guinea urban wages are shown in Table 12. Korea, Hong Kong, and Singapore have higher minimum rates. But for all countries shown, paid rates for non-agricultural wages are substantially lower than for Papua New Guinea. Paid wage rates are only about 20 percent of Papua New Guinea rates in Indonesia, Malaysia, and Philippines (countries less affected by recent industrialization). The newly industrialized nations of Korea, Hong Kong, and Singapore have paid rates about 60 percent of Papua New Guinea rates. The appropriate counterfactual for international comparison of wages is critically considered in McGavin (1991a: Chapter 6). On a crude measure, the data make clear the pressing need for high productivity in Papua New Guinea if manufacturing enterprise is to be competitive with international competitors, especially from South-East Asia.

Table 12. International comparison of weekly non-agricultural wages, 1985-86 (percent)

Country	Average paid rates
Indonesia	17.9
Korea	67.4
Hong Kong	60.0
Malaysia	21.9
Philippines	15.3
Singapore	61.9

Source: McGavin (1991a:128, Table 5.2), using DFP sources.

Industry Policies

Incentives

Hughes (1984: Chapter 6) remains a useful reference on the costs and benefits of incentives for promoting manufacturing. The caution about "a barrage of incentives" (1984:81) seems relevant to an assessment of the incentive policies proposed by the government in *Industry and Trade Development Action Plan* (1991: Chapter 4). This *Plan* recognizes that "several incentive schemes have been rather unsuccessful and ... some of them [are] more or less defunct" (PNG 1991:34). Wisely, the position is taken that "industrial investments will be left for the private sector and the government will minimize its interventions in the form of direct investments" (PNG 1991:13). The *Plan* also promises that financial incentives granted to enterprises certified by the recently-established Investment Promotion Authority (IPA) will be "performance based" and be "extended to enterprises based on their performance with respect to employment generation, exports, utilization of domestic resources, development of remote areas ..." (PNG 1991:36). In applying these promises, the Department of Trade and Industry will need to heed Hughes (1984:82), and ensure that the "costs and benefits [of incentives are] evaluated in a sufficiently robust way to stand up to public scrutiny."

Tariffs

Customs duties are imposed on all imports other than basic food items (such as rice and tinned fish). Five basic rates prevail: 5 percent on a range of agriculture, fishing and manufacturing inputs, 9 percent on most machinery, construction materials, manufacturing inputs, and basic imports; 25 percent on trucks, buses, motor vehicle spare parts, and outboard motors; 30 percent on imports of a kind which are now being made or are capable of being made in Papua New Guinea; and 50 percent on imports of luxury goods (including televisions and light utility vehicles). Cars are subject to special duty rate of 75 percent (Millett 1990:101). (See later for recent tariff reforms.)

Subsidies

The *Industrial Development (Wage Subsidy) Act* of 1984 is intended to promote employment in the manufacture of new products. Wage subsidy payments last for five years from the commencement of operations. For each citizen employee the firm is paid a proportion of the minimum wage relevant to that area. In the first year the proportion is 40 percent, declining to 30 percent, 20 percent, 15 percent, and 10 percent in subsequent years. Papua New Guinea (1991:37) notes that "very few companies have utilized this scheme" and proposes amendments that widen eligibility. The Papua New Guinea Taxation Office reports that since 1984 a total of nine firms have applied for the wage subsidy (personal communication). Only five remained opera-

tional in 1990 employing about 240 citizens, most in only two firms. The average subsidy cost per remaining job subsidized is about K2,000. To 1990 none of the firms has been sufficiently profitable to pay company tax. Case study evidence suggests that in few, if any, cases has the wage subsidy been of crucial importance (Chattrabhuti 1991).

Accelerated depreciation

A wide range of business activities—including manufacturing—are allowed accelerated depreciation in the year of purchase of new assets with a life of over five years. A wide range of business activities—including manufacturing—may claim against these assets accelerated depreciation in the first year of 20 percent of cost (in addition to normal depreciation allowable). Manufacturers installing industrial plant may claim further accelerated depreciation (not exceeding assessable income after allowable deductions or depreciated value of plant—whichever is less) (Millett 1990:97-98). Millett (1990:108) reports Taxation Office estimates taxation expenditures on accelerated depreciation for industrial plant at K1.3m for 1988 and K2.6m for 1989.

Special deductability for taxation

The *Industry and Trade Development Action Plan* reports that "the double deduction for export market development costs and the income tax exemptions of certain export incomes, have been less [than] successful, and will be reviewed with a view to making them more efficient" (PNG 1991:35). (What is here meant by "efficient?)" The *Plan* also notes that the scheme for double deduction of certain staff training costs has been used extensively and "this incentive has been reinforced by the introduction of the 2% training levy in combination with the right to offset it against actual incurred training costs" (PNG 1991:36, PNG 1990, McGavin 1990).

Recent changes—GRAC

The Government Regulations Advisory Committee (GRAC), dormant since it reported to the government in 1985, was revived under the 1990 structural adjustment program. Comprising equal participation from government and private sector representative organizations, the Committee is chaired by the Governor of the central bank (the BPNG) with INA acting as secretariat. The reform agenda of the Committee was outlined as follows in the 1992 budget:

- *Investment deregulation.* A shift in foreign and domestic investment from control to promotion to be implemented by the newly-established IPA.
- *Land deregulation.* This includes access to alienated land, leasing and selling land and facilitating land transfer.
- *Non-citizen activities.* Streamlining work permit procedures for non-citizens on the basis of a list of restricted occupations.

- *Price control.* Removing price controls and subsidies over the medium-term to long-term.
- *Import restrictions.* Removing quantity restrictions (quotas) and bans and replacing these by tariffs.

Full implementation of GRAC recommendations involves resolution of underlying tensions between the desire to open-up and expand the economy for material benefit, and the desire to retain ownership and control.

Exchange Rate Policy

Divergent perspectives on recent devaluation

The particular significance of exchange rate policy and divergent analytical perspectives require exploration before turning to policy implications for improved efficiency. The respective authors have taken different perspectives on the January 1990 devaluation, with McGavin (1991:140, 199-93) favorably assessing devaluation and Millett (1990:90-93) expressing skepticism. The re-emergence of minerals as the medium-term leading sector reduces the likelihood of further kina devaluation and raises the prospect of future kina revaluations. This section brings a unified perspective.

Mining

Major mining interests in Papua New Guinea are multinational. Development costs in terms of machinery are incurred in foreign currencies. Mineral export earnings are denominated in foreign currencies. The kina exchange rate mainly affects the calculation of royalties payable and accounting profits from which taxes and dividends to Papua New Guinea shareholders are paid. To a large extent, therefore, multinational mining companies are shielded from the impact of exchange rate changes. Domestic production and income units are not shielded.

Rural producers

Marketed rural production in Papua New Guinea is predominantly directed to overseas markets and rural income recipients are not shielded from the impact of exchange rate changes. With a lower rate of international exchange, world prices for agricultural commodities yield a higher domestic price which gives higher incomes and should induce increases in supply. The intervention of Papua New Guinea commodity stabilization funds may mean that rural producers may experience no increases in incomes or lagged and smaller increases in incomes. But command over market goods and services (whether imported or with significant import content) are reduced with devaluation. Further, under current price-support arrangements the domestic price did not rise with devaluation. Consequently, reduced real incomes may lead to reduced rural cash cropping—thus compounding reductions in rural market incomes.

In respect of largeholder development, devaluation as a price change designed to attract resources into export and import-competing production does not overcome factor market rigidities that arise from the conflicting property rights of capital development by largeholders and customary property rights that are held over 97 percent of land in Papua New Guinea.

Subsistence farmers grow cash crops in order to finance enhanced consumption, mainly through imports. Therefore, import purchasing-

power of incremental rural incomes is the key determinant of export cash crop expansion. The exchange rate has only a subdued effect on this. According to Garnaut et al. (1983:9), the early period of currency appreciation in the late 1970s caused a small and temporary negative effect on the incomes of village exporters that may have been offset over the period as a whole by lower levels of "inflation tax" on village wealth. In view of the restraint of domestic demand and wages during 1990, the 10 percent devaluation of January 1990 has probably caused a modest improvement in the profitability of plantations and the welfare of smallholders (at a given set of world prices for commodity exports).

It would, however, be difficult for producers to discern this directly, since the impact of the devaluation has been combined during 1990 with marked fluctuations in world commodity prices and with changes in payments of bounties to export crop producers (Elek 1991:29). Decline in export tree crops output is recent (for example, coffee output grew by 9 percent a year during the second-half of the 1980s). The 1990 devaluation could not significantly arrest the impact of recent decline of the export tree crop sector—new plantings were hit by increased development costs without offsetting revenue increases, and operating costs rose while producer support prices did not rise.

Urban producers

Urban wage-earners face higher prices for imported goods and services, reflecting reduced real national incomes, that—over time—favor substitution toward domestically-produced goods and services. In the short-term, the organizational strength of urban employees and the tightness in the skills market (due to localization policy with underinvestment in human capital formation) seems likely to frustrate the reduction in real wages involved in the desired reallocation of resources.

While the economy waits for the medium-term expenditure-switching effects of a devaluation to stimulate production of tradeables, the urban market workforce uses its political and market clout to raise wages in the short-term, thus frustrating the adjustment process and making devaluation inflationary rather than reallocative.

Manufacturers

The small and fragmented Papua New Guinea market for manufactures tends to divide between protected domestic production and predominantly-imported manufactures. Almost all manufacturing production in Papua New Guinea is directed to the domestic market (Millett 1990:4). The BPNG, which reports exports quarterly, does not distinguish manufactures. NSO statistics do not include a "manufactures" classification, and Papua New Guinea (1991:18) describes these as "insignificant at present." Data on export of manufac-

tures from Papua New Guinea for 1976-88 found in Asian Development Bank (ADB 1990:262-63) show K6 million for 1988—which is about one-half of one percent of 1988 exports.

Manufacturers as a group of domestic producers face increased prices for imported inputs following a devaluation. Over time, however, domestic manufactures face benefits from import substitution, because price-effects from devaluations impact upon the total product price of imported manufactures with which domestic producers compete. Manufacturing exports denominated in kina would be cheaper in international markets and—because more competitive—may be expected to expand. Manufacturing exports denominated in foreign currencies would increase in kina values, returning higher kina incomes and inducing expansions. With tariff and other protection constant, devaluations squeeze profits by quickly increasing imported input costs, and enhance profits through increases in market shares that occur over time.

Differing impacts of appreciation

It follows that appreciations resulting from recovery and growth of mineral exports have divergent effects.

As multinational income units that purchase significant portions of inputs in foreign currencies and sell outputs in foreign currencies, mining companies may be relatively unaffected by exchange rate changes. These changes may impinge mainly upon royalty and tax payments (for example, kina royalties would be reduced if they are determined *ad valorem*).

Appreciations operate with a lag to reduce the kina values of rural output that is priced in foreign currencies (as is mostly the case) and operate with little lag to reduce the prices of imported inputs. Since revaluation impinges negatively upon the *whole* of output earnings in kina of rural exports and positively on only *part* of the kina input costs, net impacts of appreciations are *negative* for rural incomes.

For urban income recipients, appreciations reduce kina prices of imported goods and services and have a *positive* net influence on real urban wage incomes.

Manufacturers face reduced kina prices for imported inputs with appreciations, but also face greater domestic price-competition from imported finished products—suggesting the prospect of reduced market share and diminished import-replacement. That is, manufacturers directing kina-priced products to domestic markets are *disadvantaged* by appreciations. Manufacturers directing kina-priced products to international markets are also *disadvantaged* by appreciations, since these

imply increased prices in foreign currencies and reduced international competitiveness for Papua New Guinea manufactured products.

Thus an appreciating-currency scenario favors urban wage earners, who have disproportionate political influence. But it impacts unfavorably upon both rural and secondary-industry producers, and does not foster broad-based development.

Policies for Improved Efficiency

Policy context

The key policy is the complex overarching one of providing a civil order that is conducive to social and economic development. Particular policies that are now surveyed should be viewed in the context of and as interacting with institutional and political development. Favorable interaction with overall development involves "finding the right balance."

Minerals as a medium-term leading sector

The leading role of mining in the Papua New Guinea economy received a sharp setback with the closure of BCL Panguna. The very low agricultural export prices and associated declines in agricultural investment do not suggest agriculture as a leading sector in the medium-term. But the large under-utilized land stock and the high ratio of employment to investment that characterize agricultural development makes it a potential leading sector that offers socially-desirable broad-based incomes distribution.

New mining developments (including Ok Tedi, Misima, Porgera, and Kutubu) are now or shortly will be earning foreign exchange and contributing to government revenues to an extent that may offset the impact of agricultural decline and the closure of BCL Panguna (Parsons and Vincent 1991:13f). The re-emergence of mining as a leading sector raises the possibilities for this sector being utilized in new ways that contribute to broad-based development—including manufacturing development. Bringing this about however requires several changes in policy perspective that are now considered.

Containing effects of minerals development on exchange rate

Papua New Guinea at present adopts a fixed or pegged nominal exchange rate policy. Mineral resources extraction places stresses upon the domestic economy as a result of additional demands (such as for transportation and skilled labor services), and through providing additional public revenues that translate into additional expenditures at national, provincial, and local area levels. The resultant increases in domestic prices in the face of a fixed exchange rate mean that domestic prices rise relative to world prices—and appreciation in real-exchange-rate terms occurs (even where the nominal rate of foreign exchange remains pegged).

Mineral resources development that re-establishes the pattern before the closure of BCL Panguna will be viewed favorably by urban wage earners who seek higher wages rather than expansion of wage employment, and will be attractive to governments that seek unearned incomes from mining in order to maintain high government consump-

tion and inefficiency in the delivery of public services. But this conservative or *status quo* path is one of *high risk*. It provides no basis for growth in wage jobs or for broad-based development. Some means of containing the exchange rate effects of mineral resources development are required.

One possibility that should be explored is to provide for large-scale multinational mining companies to undertake certain accounting in foreign currencies (rather than in kina). Where inward and outward flows of foreign currencies are equal, this implies that the unit of account has no net effect on the resulting rate of foreign exchange. This may be more the case during the development phase of mining activity. During the operational phase, however, the adoption of a foreign unit of account could mean that operating surpluses would be accumulated by multinational corporations in foreign currencies (thereby reducing net foreign currency inflows to Papua New Guinea), and thus reducing the tendency to appreciation or revaluation of the nominal rate of exchange of kina against foreign currencies. Off-shore quarantining of net foreign exchange surpluses from mineral resources development may thereby dampen their short-term effects on the kina exchange rate. Because mining corporations are mainly interested in earnings in foreign exchange, incentives for corporate subversion of foreign exchange accounting procedures are weak. Moreover, the procedure is already practiced to a limited extent.

Containing effects of minerals development on government

Perhaps the strongest argument, however, for designating a foreign currency or foreign currencies for accounting by multinational mining corporations is that this strengthens the quarantining of public claims on mining surpluses—since taxes and royalties, profit shares, and compensation payments accrue to Development Trust Funds (national, provincial, and local area). This quarantining then links to strategies for using public claims on surpluses from mineral resources development for purposes of broad-based development at several levels (national, provincial, and local), and thereby minimizes the use of these surpluses for consumption purposes that support the *status quo*. New institutional forms are needed for containing the harmful effects of mineral resources development in funding unreformed government activity.

National Development Trust Fund

The institutional form proposed is a National Development Trust Fund administered by the Bank of Papua New Guinea under revised Mineral Resources Stabilization Fund legislation. Such a National Development Trust Fund would contain the influence of mineral resources development on government general revenues, and allow control of disbursement solely for developmental programs. Where resources for development programs (whether physical or human) are procured from overseas, these resources would be procured from

designated program funds in foreign currencies. Where resources for development programs (whether physical or human) are procured within Papua New Guinea, funds would be made available at going international rates of exchange between foreign currencies and kina. No direct transfers to government general revenues should occur, and the whole of public funds accruing from mineral resources developments should be directed to development purposes at several levels—local, provincial, and national. Thereby, public rents from mining would be dedicated to development programs, and would be unavailable for consumption.

Put simply, the objective should be to retain mineral resources rents off-shore until they may be beneficially absorbed at national, provincial, and local area levels. The Fund should have the analytical expertise to quantify the term "beneficially absorb" and the executive clout to translate analysis into appropriate expenditure outcomes. Fuller treatment of these proposals for containing the harmful effects of mineral resources development on the exchange rate and on government activity is found in McGavin (1993).

Tariff reform

Since the major revision in 1986, further changes have been made in the import tariff schedule. Between 1986 and 1990 these changes raised and lowered the basic rate and increased the "protective" rate from 25 to 30 percent. Since 1990, under the structural adjustment program, quantity restrictions have been converted to tariffs, as the first stage in a proposed general phasing-out of trade protection. The 1992 budget deleted bans on imports of eggs, natural honey, wooden doors, and matches, and deleted quotas on plywood and laundry soap. These were replaced with tariffs at protective levels afforded by previous import-restriction arrangements (in the case of poultry products of K3.50 kg and eggs of K5.00 kg, and plywood and wooden doors, *ad valorem* tariffs of 200 percent (1992 Budget documents: Vol.2, 36).

Import duties on inputs to agriculture, fishing, forestry, manufacture, and tourism were reduced to zero and partly offset by a 3 percent excise on manufactured products introduced in the 1991 budget. Administrative problems caused substantial revenue losses compared with anticipated collections (Saun 1991:172). Accordingly, a planned extension in 1992 of manufactures subject to excise duty has been deferred.

This experience highlights the tension between considerations of efficiency and simplicity in revenue-raising. There should follow a commitment to the automatic reduction of the various tariff levels by 10 percent a year of existing tariffs until a common base customs tax of, say, 10 percent applies for all imports. A low uniform duty on all im-

ports other than a well-defined group comprising vehicles, fuel, alcohol, tobacco, and "luxuries" attracting high duty rates would simplify collection without reducing economic efficiency. Particular export sectors that provide extensive low-income employment (but cannot contribute to government revenue and be internationally-competitive) could be directly subsidized through the budget.

Exemptions from customs tax for mineral resources developments have been removed and an "average duty" rate now applies (PNG 1991:16). Applying some premium to this average duty rate could obviate public expense involved in the proposed revived operation of the inter-departmental Goods and Supplies Monitoring Committee (PNG 1991:27f).

Running counter to tariff reform (and, indeed, to overall microeconomic reform and to the general thrust of the *Industry and Trade Development Action Plan*) is the first project of the government under the *Plan*—a joint-venture with a Korean firm to import cement clinker for grinding and packaging in Papua New Guinea. In the original proposal the price of cement has been set contractually to give a 15 percent after tax return on sales, and the government has guaranteed all of the debt finance of the joint-venture which also provides for a ban on the importation of cement. These conditions are contrary to the structural adjustment convenants of Papua New Guinea with the International Monetary Fund (IMF), and at the time of writing the government is engaged in renegotiation with the joint-venturers. Not surprisingly, the project has been controversial and has generated opposition from different quarters, in and out of government.

Nevertheless, despite reviewing the project and its ramifications, the government seems determined to proceed, with the letting of an almost K1 million project management contract at the close of 1991. Jarrett (1991:20) estimates the subsidy cost per job created at between K37,000 and K56,000 (or 6 to 9 times the job-subsidy cost in the sugar industry). The sugar import ban is to be lifted as debt levels of the monopoly supplier fall, and the timing has now been pushed-out to 1993 (1991 Budget documents).

Linkages between mining and other activity

All recent mining developments have been negotiated through a Development Forum process and much effort is now devoted to building links with local economies and communities near mining enclaves (see pro-forma Mining Development Contract, clauses 5, 12, 13 (DME 1990)). The Development Forum process needs to find continuing expression as a means of inducing mining companies more actively to pursue the building of links with the domestic economy at several levels—local, provincial, and national. It is critical that mining companies should look out of their enclaves and not view the environment

in which they operate as "given." The success and stability of the mining activity depends upon success in fostering the domestic economic, social, political, and cultural environment at several levels (McGavin 1993). In respect of manufacturing, this process of active engagement could find expression in cooperation with Department of Trade and Industry advisors who explain to local tenderers who fail to meet company contracting requirements their shortcomings in respect of price, quality, or timeliness of delivery, and in suggesting ways that these may be remedied (PNG 1991:27f).

Land policy

Millett (1990:38, 47, 111, 120) highlights the problems of land shortages, uncertainty of tenure, and the slow pace of implementation of reform. These problems are surmountable but require concerted effort (Cooter 1989). Recent mining developments have involved huge transaction costs in forming land-use contracts. High rentals or leasehold charges and high transaction costs are a major inhibition for smaller enterprise development. A concerted approach to the land issue in Papua New Guinea forms part of the framework or context reform that supports policies for broad-based economic change and development.

The government recently articulated a land resources policy (PNG 1991:29) that includes an industrial center in Lae and feasibility studies for centers in Port Moresby, Highlands, and island localities (PNG 1991:95), and in 1991 appropriated K6 million for the Land Mobilization Program (PNG 1991:87). Hughes (1984:79) observed the frequency with which public-funded industrial estates fail, and the proposal for the Industrial Centres Development Corporation to seek private sector joint venture capital (PNG 1991:30) may inject necessary business acumen to avoid wasteful "development."

Education and workplace skills formation

Quantity and quality expansion of education in Papua New Guinea remains a high priority and progress in implementation of policy reform remains slow (McGavin 1991b). The formation of the National Training Council may foster increased appreciation of workplace skills formation in Papua New Guinea (McGavin 1990). Concerted efforts at education reform are essential for expanding the human capital base of Papua New Guinea, for providing skills requisite for effective enterprise-based human capital formation, and for favorably influencing national productivity. This reform also is a critical part of the framework or context reform that supports policies for broad-based economic change and development.

Development assistance from overseas

Overseas development assistance is preponderantly government-to-government and little involves non-government organizations (NGOs) that are intimately involved with the developmental process. There is a need to widen the scope, perceptions, and operation of in-

ternational development assistance so that it more effectively relates to the so-called private sector development. Overseas development assistance should increasingly focus on strengthening the process of institutional reform (that sometimes involves reform of earlier and pre-independence systems). Reform in the context and framework in which business is conducted is foundational for private sector development (Millett 1990:129). Initiative for consultative involvement of NGOs in overseas development policy and assistance for institutional reform may need to come from within Papua New Guinea, since overseas governments (responding to political sensibilities) display a reluctance openly to involve the overseas private sector in development policy and assistance programs. Noteworthy in this context is the recent understanding reached between the United States and Papua New Guinea governments for the United States Agency for International Development (USAID) to support private sector activity in Papua New Guinea directly.

Wages policy and industrial relations policy

The government's *Industry and Trade Development Action Plan* recognizes that Papua New Guinea labor costs as related to productivity inhibit labor-intensive private sector development (PNG 1991:4f). The data of Table 12 suggest the need for decreases in real average non-agricultural formal-sector wages of the order of 40 percent to bring Papua New Guinea average paid rates into line with rates in New Industrial Countries (NICs). The last two Minimum Wages Boards have pointed to the need for change in the *Employment Act* 1981 that prohibits piece-rates for non-agricultural work (McGavin 1991a:39). McGavin (1991a) argued the need for wages deregulation. But these changes are chiefly linked with workplace reforms to raise productivity. Allowing time for adjustment, employment growth is possible through greater wages flexibility. But larger gains are possible through the effects of productivity improvements increasing the demand for market labor services (McGavin 1991a: Chapter 6).

Focus on international competition

Most of the discussion so far has concentrated on improving employment and performance in manufacturing that is directed to the domestic market. For reasons already argued, these changes would also improve prospects for international marketing of Papua New Guinea manufactures. Many commentators have expressed skepticism about the possibilities for internationally-competitive manufacturing in Papua New Guinea (for example, Millett 1990:32, 93, 126). The recent Fiji experience suggests that conditions should be created where this skepticism can be put to practical test. A 10 percent increase in wage jobs in Fiji between 1988 and 1990 was concentrated in three areas: manufacturing (71 percent), construction (17 percent), and transport and communications (13 percent). Most manufacturing employment growth was in tax-free-factory (TFF) jobs, which alone accounted for about 65 percent of 1988-90 growth in wage employment.

About 91 percent of growth in Fiji TFF jobs were in garment manufacture. This employment growth is now drawing-in Melanesian Fijians, and in 1991 ethnic Fijians are estimated at up to 25 percent of recruitment for TFF employment. Thus employment growth for ethnic Fijians is dominated by manufacturing production for *export* (McGavin 1991). What can be said about the relevance of Fiji export-led job growth for Papua New Guinea?

Relevance of Fiji Lessons for Papua New Guinea

Papua New Guinea minimum wages compared with Fiji

Minimum hourly wages in Fiji TFF garment manufacture are F$0.85 (US$0.57), while average paid rates are F$1.00 (US$0.68) (McGavin 1991:11f). Minimum level 1 urban hourly rates for *standard* weekly hours in Papua New Guinea are K1.28 (US$1.35) (McGavin 1991a:264). Since minimum rates are paid rates for low-skilled *formal* sector employment, using average 1990 exchange rate conversions derives paid hourly wage rates in Papua New Guinea that are about twice Fiji paid rates.

Papua New Guinea informal sector rates compared with Fiji

Indigenous informal sector employment appears more significant in Papua New Guinea than in Fiji, and the larger indigenous markets typically include home-made clothes—particularly women's blouses (the *meri blaus*, an intricately-sewn smock). McGavin (1991a:166, Table 6.12) reports preliminary research for October 1990 on hourly earnings for a variety of informal sector activities in Port Moresby and reports average hourly earnings of K0.54 and for *meri blaus* makers and sellers an average hourly net earnings rate of K0.66. This evidence suggests that Papua New Guinea urban *informal* earnings in garment manufacture are about 121 percent of Fiji *formal* minimum earnings in garment manufacture. Once one allows for the lack of intensity in hours worked in Papua New Guinea informal sector employment (McGavin 1991a:170), it seems likely that urban Papua New Guinea labor is available for unregulated formal sector wage employment at *lower* cost per product unit than those applying in Fiji. This follows where formal-employment labor is used more-intensively in productive activity but paid at about the same hourly rate as that earned in less-intensive informal sector activity. In respect of the ready availability of low-skilled urban labor of the kind mostly used in garment manufacture—and contrary to common opinion—Papua New Guinea in 1991 appears to be *more* advantageously placed than Fiji (where there is higher urban labor absorption).

Papua New Guinea skilled wages compared with Fiji

For skilled labor, however, the comparison is not favorable. Skilled non-trades labor in Papua New Guinea earns about 140 percent of the urban level 1 minimum rate, while skilled trades labor earns about 130 percent of its minimum (McGavin 1991a:161, Table 6.7). Whereas the highest minimum hourly rate specified by the 1991 Building Trades Wages Order for Fiji is F$1.54 (US$1.04), the minimum urban level 1 hourly rates for *standard* weekly hours for experienced tradesmen in Papua New Guinea is K1.84. (US$1.93) (computed from McGavin 1991a:263, Table A39, McGavin 1991: Table 9). That is, the Papua New Guinea hourly minimum wage for tradesmen is about 186

percent of the minimum for trades skills in Fiji. But, as seen above in Table 9, skills shortages in Papua New Guinea mean that paid rates are mostly well above minimum rates (Millett 1990:88).

Impact of Australia/ New Zealand tariff reforms

Success in gaining access to Australia and New Zealand and other markets for manufactured products from Papua New Guinea (and other insular Pacific nations) critically depends upon whether the tariff advantage gained through the South Pacific Regional Trade and Cooperation Agreement (SPARTECA) as well as the Papua New Guinea/Australia Trade and Commercial Relations Agreement (PATCRA) *is greater than* the cost disadvantages (especially labor cost disadvantages), in comparison with production in nations not covered by SPARTECA/PATCRA.

Contemporary tariff reforms in Australia and New Zealand have reduced and involve scheduled further reductions in tariffs for textile, clothing, and footwear. These industry reforms thus squeeze the competitive advantage offered by SPARTECA/PATCRA to Papua New Guinea and other insular Pacific nations. It follows that expansion of garment and other manufacturing industry employment for these nations increasingly depends upon two conditions:

- restraining the growth in labor costs per hour, and
- increasing labor productivity.

That is, establishing, maintaining, and expanding garment and other export-oriented manufacturing employment in Papua New Guinea (and other Pacific nations) is possible only where reductions in labor costs per product unit compensate for the effects of increased competition from Asian and other producers that occurs as Australian and New Zealand levels of protection are reduced.

Absence of Indian demonstration effect

Fiji benefits from the entrepreneurial experience of the Indian Fijian population, and from the demonstration effect of greater work intensity of Indian Fijians. Papua New Guinea lacks the advantage of this demonstration effect in developing the work and entrepreneurial ethos of export-oriented factory production. The Tongan case study McGregor (1989) shows, however, that appropriate training arrangements can compensate for this. The single mass-production garment factory in Papua New Guinea (in Madang) operates using Australian management, and directs about 90 percent of output value to the Australian market.

Design advantage of Papua New Guinea

One area where Papua New Guinea has a distinct advantage is in print design. Papua New Guineans show a decided aptitude for creative graphic design, and the design quality of screen-print fabrics produced (at present in small quantities) in Papua New Guinea is

marked by originality. This artwork is quite outside the tropical stereotype of Hibiscus-with-Waving-Palms, and seems to offer unexploited possibilities for high-price niche markets. Creating these possibilities requires entrepreneurial flair and market networks. This is an example of how overseas development assistance could usefully be directed through NGOs—such as project support for liaison and marketing by an overseas art-fabrics house.

Cultural diversity

Despite tensions between Ethnic and Indian Fijians, one nevertheless notices a more unified civil order in Fiji than one observes in Papua New Guinea. Urban populations of both races are mostly fluent in three languages (Fijian, Hindi, and English). Ethnic Fijians like Tongans share a largely common culture. The standard of English fluency in urban Papua New Guinea seems markedly less than in Fiji, and the shared sense of civil order seems less developed than in Fiji. These observations give emphasis to introductory remarks about the key importance of providing a social and institutional context that is conducive to social and economic development. The implementation of this involves reform of schooling to improve language (especially English) and numeracy competencies, and to inculcate shared values of civil society; and reform of police administration to ensure impartiality of treatment of all citizens before the law, etc. The cultural changes that are involved imply a reduction of *wantokism* (favorable discriminatory treatment of persons from the same language group), and increased identification with the larger civil society of Papua New Guinea.

Key significance of single "shop front"

Exemption provisions in Fiji law mean that all the provisions available from late 1988 through TFF provisions were *already in place*. What was achieved with the changes under the Fiji Trade and Investment Board (FTIB) was only a marked *simplification* of the conditions for expanding and for establishing export-oriented business in Fiji. Instead of dealing with a variety of government departments and agencies with complexity of laws and delays in approvals—a single and streamlined agency (FTIB) handled all these functions (a kind of "one-stop-shop"). SPARTECA giving access to Australia and New Zealand markets provided occasion for take-up of FTIB promotion of production in Fiji for export.

Millett (1990:78) and Papua New Guinea (1991:35) describe a range of exemptions and complex incentives similar to those available in Fiji that are available in Papua New Guinea—and Millett concludes that "business visitors find that they have to talk with many government departments and agencies [and] are often unable to get clear answers to their questions ..." Papua New Guinea also comes under SPARTECA—as well as PATCRA, but these have not generated the exports intended (Millett 1990:116, 126). The implications are that

Papua New Guinea needs vigorously to implement the GRAC recommendations, and to create a situation where the IPA effectively acts to fulfill the functions that its name implies.

Special zones

McGavin (1986:107) suggested special economic zones as offering particular possibilities for circumventing minimum wages regulations. Millett, fearful of increased urban drift, has expressed reservations. Millett (1990:101) reports the development during 1990 of an Industrial Area in Lae (the major industrial center of Papua New Guinea) and reduced duty provisions under the Industrial Centres Corporation Bill 1990 (PNG 1991:95, 1992 Budget documents: Vol. 2, 89). The development of this industrial area could also provide occasion for encouraging the entry of new firms under Special Zone status. (See Stein (1991) for a recent discussion.) One should note, however, that the Fiji TFF provisions do not operate on a "zone" basis—and the favorable implications of this are now being seen in the geographical diversification of TFF employment (McGavin 1991).

Promotion and administrative simplicity

The clear lesson is that INVESTMENT WELCOME promotion must be backed-up by administrative simplicity and effectiveness. Incentives involve tax expenditures (Millett 1990:108). A 1982 survey of the Papua New Guinea private sector showed little response to the complex range of incentives (Millett 1990:106). Until recently, Papua New Guinea has shown a poor record of implementation of deregulation proposals (Millett 1990:106, 110). The costs of compliance with regulations particularly impact upon small firms (Millett 1990:116). The key need is to create an environment conducive for investment to happen. Complex special provisions and incentives can be scrapped and outlays applied to better uses. The protective stance is inward-looking (Millett 1990:45). Development requires outward-looking responses (Parry 1988).

The government's *Industry and Trade Development Action Plan* identifies as an essential part of the government's structural adjustment program the promotion of non-mining sectors of the Papua New Guinea economy for a more broad-based and sustained economic growth and development (PNG 1991:1). The *Plan* supports the already good record of Papua New Guinea for establishing announced and stable public policies that provide a predictable policy environment for private sector development (PNG 1991:2), along with a recognition that "the greatest scope for economic growth and the creation of employment for masses of people lies in the hands of the private sector" (PNG 1991:38). The *Plan* concentrates on creating the *preconditions* that will be conducive to the establishment of manufacturing activities (PNG 1991:9).

A suitable balancing of this perspective is the stark recognition that Papua New Guinea has plenty of land, but is short of capital. Rural development employs a great deal more labor per unit of scarce capital than does value-adding through investment in agricultural processing and manufacturing—which require little of the plentiful resources (of land and relatively unskilled labor), but need more of scarce skills and capital. It is necessary, therefore, to set a policy for development of manufacturing activities in the context of a *primary thrust* for national rural development.

The emphasis that consideration of policies for greater efficiency builds up to is one that *opens-up possibilities* that are consistent with a balanced and efficient path of development, as was earlier explained.

Adjustments that move the economy toward international competitiveness are effective in opening-up possibilities only if competitive outcomes actually get "in the ball park" (not merely "moving much closer to it from 100 miles away"). This means that some adjustments may need to be cumulative before large effects are noticed (and this may strain the sustaining of adjustment processes). There is a great deal of pessimism about possibilities in Papua New Guinea for anything but mineral resources development. The paper offers a scenario whereby mineral resources development can be made to serve diversified economic and social development with more broad-based economic growth. Whether this really "takes-off" in manufacturing depends upon whether Papua New Guinea can successfully enter import-replacement markets and international markets for value-added products.

These possibilities are not simply a "given"—as though sitting on a shelf and needing only to be taken down and dusted, so to speak. As many previously poor nations have demonstrated and are now demonstrating, economic opportunities are *created opportunities*. The first stage in creating these opportunities is to provide a milieu or environment in which development changes can happen.

Establishing an Investment Promotions Authority does not ensure that trade and development *will* occur. Deregulating the labor market does not ensure that employment growth *will* occur. What these changes do is help to set in place the conditions where created opportunities *can happen*. The conditions are then in place for market-led growth and development—especially in new kinds of economic activities.

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