

AUSTRALIA AND THE CHALLENGE OF THE NEW INTERNATIONAL ECONOMIC ORDER

NEIL DIAS KARUNARATNE

I. BENEFIT-COSTS AND THE NEW CHALLENGE TO AUSTRALIAN DECISION-MAKING

THE new international economic order poses a challenge to all developed countries as it demands a restructuring of the present international relations in a manner that will ensure a life of dignity and economic well-being to the vast majority of mankind. Debate on the NIEO has been confused by those vested interests which find the status quo to their advantage. The present analysis proceeds from the value premise that the present international order systematically discriminates against long-term progress in developing countries. The NIEO demands that the parameters of the present world order need to be changed and argues that this is justified and inevitable in order to consolidate peace and stability in an interdependent world of nations. The contention of this paper is that it is not in Australia's long-term interests to join without qualification the common front that is always presented by the developed nations of the world against the implementation of NIEO demands. Australia should consider herself an independent decision-making force and not a satellite of the super powers. Australia's geographic location and economic logistics require that Australian decision-makers pursue courses of action that enhance long-term benefits to Australia and subserve the welfare of most of mankind, rather than narrow ideologies and moribund cults. Decolonization, the British entry to the Common Market, and the Japanese-stimulated mineral boom have in the past signified phases of structural change in Australia's external economic relations. The NIEO demands signal that Australia is on the threshold of yet a new phase of development as an open economy. Therefore, an anticipatory foray into the way Australia should respond to the challenges of NIEO issues is an illuminating exercise. This analysis is not value neutral: it is founded on the assumption that Australia and the developing economies have long-term mutual gains to reap from a NIEO. Australia should, therefore, initiate and charter an independent course which relates to her developing neighborhood and which is likely to play an increasingly important role in her economic stability and prosperity.

Although Australia is located in a neighborhood of populous and poverty-

This paper was originally presented at the 49th Australia and New Zealand Association for the Advancement of Science at the University of Auckland, New Zealand, January 22-26, 1979. I am thankful to Dr. Stuart Macdonald for his comments on the draft of this paper.

stricken developing economies, in the past it has shied away from relating to the development aspirations of this neighborhood. However, Australian policymakers have recently shown some perception of the need to respond positively to issues of world development as subsumed in the NIEO demands. The appointment of a Senate Select Committee on the NIEO, and the so-called "Fraser plan" on world development¹ are indicative of the growing government consciousness of the need to search for a new "planetary bargain" or a NIEO. Australia has propagated its "lucky country" image, but in a world where poverty or income disparities between the haves and have-nots are widening, Australia cannot hope to perpetuate its affluent life style without provoking the envy and resentment of poor countries surrounding it. Enlightened diplomacy and meaningful actions to alleviate the poverty in her neighborhood are imperative for safeguarding Australia's long-term welfare and standing in the region. Australia's initial advantages are spectacular. A vast continent of 7.2 million square kilometers (claiming another 6.2 million square kilometers in Antarctica) is populated by only 14 million people enjoying one of the world's highest incomes of U.S.\$7,000 per capita. Australia is thirty-two times richer in per capita income terms than her neighbor, Indonesia, which supports ten times the population in a land area that is a fifth the size of Australia. The contrast is even more dramatic when Australia is compared with India, which supports fifty times more population than Australia on a subcontinent that is less than half Australia's size on a measly income of about 2 per cent of the Australian per capita income figure. Demographic explosions in the neighborhood and zero population growth in Australia, coupled with widening income disparities, can only exacerbate the political and economic tensions that beset Australia's relationships with her neighbors. Astute leadership is required to identify the benefits and goodwill that could accrue to Australia in a new partnership with her developing neighbors. It is no longer feasible for Australia to maintain her prosperity by retracting into splendid isolation in a shrinking global village.

The broad magnitudes of gains to Australia by her responding to the challenges of the NIEO can be appraised by appeal to the logic of benefit-cost analysis. Rigorous quantification of discounted benefit-cost ratios associated with the implementation of NIEO issues is well-nigh impossible because of the complexity of the interaction between innumerable variables. However, on the basis of informed judgments, the critical point—whether benefit-cost ratios are greater than or less than unity—and the size of the multiplier can be conjectured. Such information should be invaluable to decision-makers who have to formulate long-term policy guidelines for steering Australia's future.

II. SALIENT ISSUES OF THE NIEO AND THEIR RELEVANCE TO AUSTRALIA

The commitment in principle by the nations of the world to the UN Sixth (1974)

¹ Prime Minister M. Fraser's talks with the Japanese government during the visit to Tokyo in April 1978.

and Seventh Special Sessions Resolutions on the NIEO was followed by a marathon discussion and produced a prolific literature on the feasibility of implementing the NIEO. A "cool look" at the NIEO dialogue [7] and a sympathetic review of strategies of NIEO [12] provide a cross-sectional review of the NIEO debate.

The basic rationale for implementing the NIEO stems from the profound dissatisfaction of the developing economies with the domination of the international economic decision-making mechanisms and institutions by a handful of super powers and their satellites. Such supremos of the international economy as the World Bank and GATT, regulating the international monetary system and flow of international trade, are monopolies of the developed countries and take international decisions to safeguard the economic and political hegemony of the rich and powerful nations rather than to promote the interests of all nations. Two decades of development propagandized the need to bridge the widening gap between the rich and poor countries through generous international aid and transfer of skills and technology. However, in retrospect it becomes abundantly clear that the economic gap between the rich developed countries and the poor developing countries has widened. The foreign aid and resource transfers from the developed to developing countries have exacerbated poverty and led to maldevelopment in recipient developing countries. For instance, aid has not led to growth of GNP, instead it has eroded domestic savings, aggravated income inequality, transferred inappropriate technology, buttressed the power of elite, and impoverished the bottom 40 per cent of the poor in developing countries even further. The NIEO issues emphasize the removal of external constraints to the rapid growth of developing economies by facilitating more equitable trade, aid, technology, and monetary transfers, but NIEO debate does not ignore the need to put the domestic economy of developing economies on an even keel. Radical restructuring of the domestic order by focussing attention on the basic needs of the bottom 40 per cent is emphasized in NIEO strategies. This marks a departure from previous "trickel down" development strategies where growth of the enclave economy or leading sector was expected eventually to percolate to the lower reaches of society [11].

The key issues of the NIEO calling for a positive response from Australia are the following:

- (1) There is the proposal to implement an Integrated Programme for Commodities (IPC) as suggested by UNCTAD, 1976. This aims at stabilization of primary export prices by establishing an internationally-subscribed Common Fund (CF) of U.S.\$6 billion to finance international buffer stocks. The prices of the stock-regulated primaries will be established at levels "equitable to the consumers and remunerative to producers." Both producer and consumer interests could be represented in overall decision-making on the buffer stocking arrangements. The IPC also aims at harnessing any prospects of commodity power by cartelization. Reversing the secular decline in the terms of trade of primary exporters by indexation of primary export prices to manufactured import prices has also been canvassed. The objective is to maintain the real purchasing power of

primary exports. The diversification of the narrow economic base of primary export-dependent economies is also envisaged in the implementation of the IPC package.

(2) The liberalization of trade in manufactured products is another key NIEO issue. At present, escalated tariff and nontariff barriers against labor-intensive manufactured goods (in which developing countries possess a comparative advantage) hinder entry to markets in developed countries. In a global development strategy, the share of manufactured products of developing countries is scheduled to treble over the present levels, and to account for 25 per cent of world production by the year 2000. The benefits of industrialization prospects to developing countries are undermined by the protectionist policies pursued in developed economies like Australia, often at the cost of real income and welfare losses that far outweigh any gains from avoiding employment losses due to import competition. The extension of the Generalized System of Preferences (GSP), under which imports from developing countries were accorded margins of preferences equivalent to the most-favored-nation (MFN) tariffs prevailing in developed countries, has been urged. However, the operation of the GSP scheme and its trade liberalization effects have been emasculated by a number of escape clauses, quota restrictions, rules of origin, and other nontariff barriers. The multi-lateral tariff negotiations (MTN) provide a forum for developing countries to lobby for the removal of the defects of GSP, and in particular the nontariff barriers which have continued to proliferate in developed countries. Trade liberalization, particularly in manufactured imports, provides the developed countries with an opportunity to help the developing countries in their long-term struggle against poverty and deprivation.

(3) The real costs of resources (aid) and technology transfer are other central NIEO issues on which reformed strategies are sought by developing economies. The developing countries seek "predictable continuous and increasingly assured" aid flows as they show declining trends. Although the donor countries have the capacity to implement the UN development decade target that 0.7 per cent of GNP of developed countries should be channelled as official development assistance (ODA), very few developed countries strive to achieve the target. The developing countries want aid to be linked to Special Drawing Rights (SDR) or international liquidity creation and to the taxation of the exploitation of the "common heritage of mankind"—namely, space, seabed, and nonrenewable resources. The mitigation of harsh terms of past debts and debt relief have also been proposed.

(4) The regulation, and even expropriation, of errant multinational corporations that exploit the needs of developing economies for technology have been urged along with the reduction of monopoly rents and of distortions due to dumping of inappropriate technologies in developing economies. The adverse repercussions of the control of multinationals on the flow of private foreign investment is appreciated in the NIEO debate. The need for the establishment of an indigenous technology creation capacity to lessen the stranglehold of multinationals on the domestic economy has been enunciated in the NIEO strategies.

There are many other issues in the NIEO demands, such as reform of the international monetary order, the infusion of greater automaticity to resource transfer like the SDR-aid link, and the establishment of a World Treasury which are not explored in detail in this study. This study focuses attention on four broad issues of the NIEO that are of special significance in the Australian context. They are:

- (i) the stabilization, cartelization, and indexation of primary exports;
 - (ii) trade liberalization and industrialization;
 - (iii) rationalization and enhancement of aid flows to developing countries; and
 - (iv) regulation of multinationals and the transfer of appropriate technology.
- These issues will now be analyzed in turn and their benefit-cost implications will be assessed.

III. THE STABILIZATION, CARTELIZATION, AND INDEXATION ISSUE

The Integrated Programme for Commodities (IPC) aims at stabilization of primary export prices by international buffer stocking and supply management. The program in effect attempts to internationalize the domestic farm support or price stabilization programs pursued in most developed economies. Australia, after much vacillation in 1978, gave its support to the Common Fund (CF) for establishing buffer stocks after the United States gave its assent to the CF in principle. Australia's financial commitment to the CF as a trade-weighted GNP ratio would be only U.S.\$25 million or 0.4 per cent of the initial U.S.\$6 billion required to set up the CF. Australia, which is a primary producer par excellence, receives nearly 70 per cent of her export earnings through primary commodities. The benefits that would accrue to Australia by implementing commodity stabilization schemes are enormous. The reduction of macroeconomic costs of inflationary pressures due to export price fluctuations would yield benefits in the region of U.S.\$200 million, on the basis of a comparable estimate for United States [4]. Thus the benefit-cost ratio of the IPC commodity price stabilization in broad terms could exceed 8. A computation by Laursen [15] indicates that implementation of the IPC stabilization proposal for the ten "core" primary commodities of special importance to developing economies would yield an unattractive global benefit-cost ratio of approximately 0.5. Laursen's estimate is based on short-run effects only and ignores the long-run beneficial effects on producers and consumers of primary products due to stabilization. An analysis of a sample of ten primary exports that accounted for over 55 per cent of the total export earnings (see Table I, column 1) indicated that Australia's export earnings were subject to wide fluctuations during the short period 1976-77 and prices of primary products were also unstable in the world market (see Table I, columns 5 and 6). By stabilizing export prices because of inelasticity of demand for mineral and metal exports, Australia could gain in terms of export earnings. She cannot hope to stabilize export earnings for rice, sugar, wheat, and wool because world demand for these products is elastic [5] (see Table I, column 2). Although no other

TABLE I
CHARACTERISTICS OF IMPORTANT PRIMARY EXPORTS FROM AUSTRALIA

Commodity	Percentage of Total Export Earnings (1)	Elasticity of World Demand (2)	% Share of Australia in the World Market (3)	% Developing Countries Share in the World Market (4)	Australia's Export Earnings Stability Index (CV) (%) (5)	World Price Stability Index (CV) (%) (6)
Aluminum	1.0	> -1	25.0	71	39	—
Coal	8.7	> -1	3.2	—	58	—
Copper	2.4	> -1	3.2	58	20	45
Iron	14.6	> -1	11.4	45	44	—
Meat	21.7	< -1	—	13	25	17
Rice	0.6	< -1	—	37	37	50
Sugar	7.4	< -1	—	67	45	46
Wheat	8.1	< -1	—	4	44	19
Wool	33.0	< -1	33.0	12	24	19
Zinc	2.5	> -1	8.1	23	24	73

Sources: Column 1=Based on Australian Bureau of Statistics, *Overseas Trade, 1976-77*. The sample of ten commodities listed accounted for 55.3 per cent of the total value of export earnings of A\$11.6 billion for 1976-77. Column 2=Based on calculations using data of columns 1, 3, and 4 in the formula $\eta_D = \lambda \eta_C + (1 - \lambda) \eta_S$ cross-checked with empirical information from Brook and Grilli [5]. Column 3=ABS, Bureau of Mineral Resources, UNCTAD, and other sources. Column 4=UNCTAD, Document TD/B/C. 1/166, 1974, and ABS sources. Column 5=ABS, *Overseas Trade, 1976-77*. The index refers to a coefficient of variation of Australia's export earnings. Column 6=Commodities Division, IMF. The index refers to a coefficient of variation of price indices from Quarter III 1973 to Quarter II 1977.

primary commodity possesses the attributes of petroleum that permitted the spectacular success of the OPEC cartel, it needs to be noted that if Australia acts in collusion with developing economies, she can hope to benefit from cartelization of a number of primary commodities. The necessary condition for the success of cartelization hinges on the inelasticity of world demand for the cartelized product. Elasticity of world demand, η_D , is in turn a weighted function of elasticity of demand for the cartelized product, η_C , weighted by its share in the global market (λ), plus the elasticity of supply, η_S , of output by noncartelized primary commodities producers weighted by their share in the world market ($1 - \lambda$):

$$\text{i. e., } \eta_D = \lambda \eta_C + (1 - \lambda) \eta_S .$$

An examination of a sample of ten primary exports of Australia using the above formula reveals that a number of mineral and metal exports, such as aluminum (bauxite), copper, iron ore, and zinc possess inelastic world demand (see Table I, column 2). When Australia's share of world market and that of developing economies are aggregated, they add up to a substantial share of the world market, thus satisfying the necessary conditions for the success of cartelization (see Table I, columns 3 and 4). However, Australia has looked askance at the prospect of colluding with developing countries on price-raising cartels because of the fear of losing the goodwill of her allies among the developed countries. Besides, Australia has some fears about irreversible market losses due to substitution of cheaper products. The argument that Australia would stand to gain more from cartelization than the developing country partners cannot be interpreted as an objectionable feature as Australia could benignly recycle cartel profits to needy developing countries through resource transfers (aid) and liberal trade. Detailed studies on specific exports, such as aluminum and bauxite, indicate that Australia could benefit to the extent of a maximum of U.S.\$456 million [19, p. 356]. In the case of copper, it has been estimated that joint action by the six major copper producers could raise the rate of return on capital invested by at least 5 per cent in the short run [20, p. 72]. The prospects for gains by cartelization in agricultural primary exports are bleak as the world demand for meat, rice, sugar, wheat, and wool is highly elastic. Besides costs of storing, say, 3 million tonnes of wheat in Australia would amount to about A\$103 million [6, p. 39]. However, stockpiling of wool, incurring a capital cost of A\$41 million, has been estimated to yield a return of 3.7 per cent on the capital invested [8, p. 188]. Australia, which shares the adverse effects of price instability in primary exports, should strike a bargain with developing economies to benefit from the joint gains of cartelization whenever gainful prospects are available.

The indexation proposal contained in the IPC package aims at halting the secular deterioration of the terms of trade of primary product prices vis-à-vis manufactured import prices to developing countries, i.e., the Singer-Prebisch thesis. UNCTAD and IBRD indices of primary export and import prices and the barter terms of trade show that the barter terms of trade moved against primary exporters during the period 1963-72 by 13 per cent and 17 per cent

TABLE II
 DETERIORATION OF TERMS OF TRADE OF (PRIMARY) EXPORTS VIS-À-VIS MANUFACTURED IMPORTS

Year	Coffee Bags/ 100 Tons of Steel (U.S.A.) (1)	Banana Cases/ Ton of Steel (U.S.A.) (2)	Tons of Tea/ 100 Tons of Steel (U.K.) (3)	Year	P_x Export Price Index (Aust.) (4)	P_M Import Price Index (Aust.) (5)	Terms of Trade Index P_x/P_M (Aust.) (6)
1950	6.1	1.4	—	1953	71	41.1	172.7
1955	6.3	1.6	6.9	1968	55	48.3	113.9
1960	11.9	2.2	7.5	1969	56	49.3	113.6
1965	9.5	2.0	8.9	1970	55	51.5	106.8
1969	11.9	2.2	10.5	1971	55	54.7	100.5
1970	9.5	2.3	10.4	1972	63	56.9	110.7
1971	—	—	13.3	1973	81	56.9	142.4
1972	12.1	2.8	14.1	1974	95	79.4	119.6
1973	12.6	2.8	14.3	1975	100	100.0	100.0
1974	12.9	2.5	15.0	1976	106	109.8	96.5
				1977	117	132.8	88.1

Sources: Columns 1, 2, and 3=Rangarajan [21, p. 100]. Columns 4 and 5=IMF, *International Financial Statistics*, Vol. 31, No. 5 (May 1978), p. 71.

respectively. Such measurements of the deterioration in the barter terms of trade have been criticized on the grounds that they ignore the sensitivity of the indices to productivity and quality changes embodied in manufactured export prices, changes in the reference year, weight diagram, price quotations, etc. Notwithstanding these deficiencies, it has to be pointed out that Australia's terms of trade for the twenty-five year period 1950-74 fell by almost half, thus severely eroding the import capacity of a predominant primary exporter such as Australia (see Table II, columns 4, 5, and 6). The magnitude of the deterioration of the Australian barter terms of trade, despite the limitations of the concept, indicates that Australia would stand to benefit by indexation of those terms of trade. For developing countries, certain hard facts about commodity trade still continue to raise some doubts about the sophisticated debunkings of the Singer-Prebisch thesis. For example, one is left wondering whether the terms of trade have not deteriorated for primary exporters when in 1950 six bags of coffee bought 100 tons of steel from the United States. In 1974, nearly thirteen bags were required for the same exchange. In 1950, 1.4 cases of bananas purchased one ton of steel from the United States: twenty-five years later, 2.5 cases were required to buy a ton of steel. In the case of tea in 1955, nearly 7 tons bought 100 tons of British steel: in 1974, 15 tons of tea were required to buy 100 tons of steel (see Table II, columns 1, 2, and 3). This fragmentary evidence supports the Singer-Prebisch thesis of the inexorable decline of the terms of trade of primary exporters and it shows the unequal exchange that prevails between the developed and developing countries which the NIEO strategies attempt to rectify.

IV. TRADE LIBERALIZATION AND INDUSTRIALIZATION ISSUE

An excellent survey of protection in Australia [17] refers to the several studies on the costs and distortions wrought on the Australian economy due to the perpetuation of high levels of assistance. It has been estimated that a change to a free trade situation in Australia could lead to a gain of a maximum of 3 per cent in terms of aggregate consumption. It has also been calculated that each employee in manufacturing industries has to be subsidized to the tune of A\$3,000. All these distortions undermine Australia's competitive position in the export market by making imported inputs to manufacturing costly. High levels of protection lead not only to intra-sectoral and inter-sectoral allocative inefficiency, but also breed X-inefficiency. Protectionist lobbying and pressures will determine the magnitude of profits rather than efficient management, at the expense of consumer welfare of course!

One of the major impediments to structural change and the persistence with irrational trade policies inimical to both Australia's economic interests and those of developing economies, is the bogey of job losses due to competition from "sweated labor" imports from neighboring developing countries. However, empirical evidence debunks this myth as the share of total Asian imports in the Australian market in 1975-76 was only 10 per cent, but some individual sector shares were large (textiles—20 per cent; clothing and footwear—57 per cent;

wood—43 per cent; and miscellaneous manufacturing—16 per cent). During the period 1968–69 to 1975–76, textiles, clothing, and footwear imports registered the maximum rates of market penetration—only 5 per cent per annum! [18] (see Table III, column 7).

Since the major obstacle to Australia's trade liberalization, and the provisions of greater market access to developing countries' manufactured imports as sought by the NIEO is the negative employment impacts fear, a specific analysis of this problem is attempted next.

The rate of growth of a manufacturing sector's employment (\dot{l}) could be regarded as a composite of positive rates of impacts of final demand expansion (\dot{f}), export expansion (\dot{e}), and the negative rates of impacts of import competition (\dot{m}) and productivity (or technological) changes (\dot{p}) [9]. To recapitulate:

$$\dot{l} = \alpha \dot{f} + \beta \dot{e} - \gamma \dot{m} - \delta \dot{p},$$

where the coefficients α , β , γ , δ , denote the magnitude of the effects of demand, exports, imports, and productivity rate of growth variables, respectively.

An algebraic exposition of the above model derivation is given in the Appendix. The model was empirically validated using ABS Overseas Trade data for the period 1968–69 to 1973–74. The magnitude of specific variable effects on employment has been calculated and presented in Table IV. The overall positive employment effect of aggregate demand expansion in manufacturing sectors was almost nine times larger than the positive net trade effects. However, the positive demand effects for employment were completely swamped by the negative employment effects of productivity (or technological) changes. The textiles sector, which had the highest negative import impact on employment, showed that productivity (or technological) changes induced adverse effects on employment which were double the negative impact of import competition on employment. Overall the negative effects of productivity on employment were more than four times the adverse effects of imports on employment. Official studies also indicate that technological changes led to substantial changes in employment in manufacturing industries in the 1970s [2, p. 78].

Restructuring of Australian manufacturing industry in order to accommodate the NIEO strategy of increased market access for the growing industrial output of developing economies does not present a net loss to Australia in the long run. Australian resistance to structural change, prompted by fears of union backlash and lobbying of protectionist rentiers, has politicized the issue of structural change. Despite a growing consensus amongst economists over the need for a radical overhaul of Australia's irrational protectionist barriers [14], official policy emphasizes "gradualism" on the premise that Australia is going through a recession! The global recession must be even harsher for her developing neighbors who are economically much weaker than Australia. The procrastination of structural change in competitive manufacturing sectors in Australia is bound to make the eventual and inevitable changes very costly when they are made. Australia, it should be noted, has a comparative advantage in the Hecksher-Ohlin sense in certain types of manufacturing which are intensive in the use of Aus-

TABLE
AVERAGE AND DISPERSION OF EFFECTIVE RATES OF

Sector (ASIC Code)	Average					
	Total Assistance				Ter-	
	(1) Mean		(2) CV		(3) Mean	
	%	(Rank)	CV	(Rank)	%	(Rank)
1. Food (21-22)	20	(9)	65	(12)	10	(8)
2. Textiles (23)	50	(3)	122	(10)	24	(2)
3. Clothing & footwear (24)	95	(1)	306	(2)	35	(1)
4. Wood (25)	18	(10)	138	(8)	16	(5)
5. Paper (26)	30	(5)	188	(6)	5	(11)
6. Chemicals (27)	26	(7)	200	(5)	7	(10)
7. Nonmetallics (28)	10	(12)	71	(11)	15	(6)
8. Basic metals (29)	16	(11)	145	(7)	5	(12)
9. Fabricated metals (31)	38	(4)	211	(3)	20	(4)
10. Transport equipment (32)	68	(2)	133	(9)	23	(3)
11. Other machinery (33)	28	(6)	200	(4)	12	(7)
12. Misc. machinery (34)	26	(8)	350	(1)	9	(9)
Total	29		97		13	
Rank correlations (Column)	$R_{(1)(2)}=0.69$					

Source: [2].

tralia's abundant resources—land, minerals, and knowledge. The capital, skills and technological know-how, and relatively abundant natural resources offer prospects for gainful specialization according to comparative advantage. The industrialization of developing economies is likely to accelerate in the 1980s and industrial or manufactured exports from developing countries will play the same role that Japan played after the weakening of Australia's colonial nexus. In the 1980s, with the petering out of the Japanese induced mineral export boom, the "industrial revolution" that is occurring in the neighboring developing countries will open up vast new opportunities for Australian trade and development. If Australia embarks on a rapid structural adjustment program of specializing in those sectors in which it has a comparative advantage and providing market access to those manufactures in which developing economies have an advantage, there could be complementarity in trade and mutual gains to both Australia and the developing countries. However, myopic fears of short-run losses in employment and income appear to be obstructing the implementation of policies that would in the long run lead to two-digit discounted benefit-cost ratios for Australia. The dynamic long-term trading opportunities that are opening up at Australia's doorstep in developing Asia (ASEAN) need to be harnessed for Australia's gain. Such positive moves by Australia would be in accordance with the NIEO resolutions for trade promotion and industrialization of developing countries. Only by timely restructuring of manufacturing industry, coupled with adjustment assistance, can the distortionary malaise built into Australian trade and industry be phased out

III

ASSISTANCE AND TARIFFS COMPETING IN AUSTRALIA: 1975-76

iff	Effective Rates						Australian Market Penetration Rate of Asian Imports	
	(4)		(5)		(6)			(7)
	CV		Mean		Mean			
	CV	(Rank)	%	(Rank)	%	(Rank)		
	72	(7)	27	(9)	-1	(10)	1.0	
	47	(12)	56	(3)	-4	(7)	9.7	
	233	(1)	97	(1)	-20	(2)	11.7	
	108	(5)	19	(11)	-3	(8)	4.2	
	47	(11)	31	(6)	-2	(9)	1.0	
	61	(9)	29	(7)	-5	(6)	3.8	
	115	(4)	10	(12)	0	(12)	0.5	
	52	(10)	23	(10)	-1	(11)	0.2	
	134	(2)	41	(4)	-10	(4)	1.0	
	125	(3)	76	(2)	-28	(1)	0.3	
	79	(6)	33	(5)	-12	(3)	1.1	
	66	(8)	28	(8)	-8	(5)	4.2	
	65		34		-4			
	$R_{(1)(6)}=0.80$							

TABLE IV
EMPLOYMENT IMPACTS OF MACRO RATES OF GROWTH IN SELECTED
IMPORT-COMPETING INDUSTRIES: 1968-69 TO 1973-74

Sector (ASIC Code)	(Annual rates)				
	Employment \dot{i} (1)	Demand \dot{j} (2)	Exports \dot{e} (3)	Imports \dot{m} (4)	Productivity \dot{p} (5)
1. Food (21-22)	1.7	6.9	5.0	-0.5	-9.7
2. Textiles (23)	0.1	16.1	5.7	-7.1	-14.6
3. Clothing & footwear (24)	0.1	12.2	0.1	-5.2	-7.0
4. Wood (25)	0.7	13.5	1.2	-2.0	-12.0
5. Paper (26)	0.9	12.7	0.1	-1.1	-10.8
6. Chemicals (27)	0.7	7.7	8.0	-4.0	-11.0
7. Nonmetallics (28)	0.9	13.8	0.3	-1.4	-11.8
8. Basic metals (29)	1.7	10.8	2.6	-0.1	-11.6
9. Fabricated metals (31)	0.3	13.3	1.5	-4.0	-10.5
10. Transport equipment (32)	1.4	10.2	1.4	-2.6	-7.6
11. Other machinery (33)	0.6	11.7	0.5	-2.1	-9.5
12. Misc. machinery (34)	2.9	5.0	54.7	-45.4	-11.8
Total	0.7	10.1	3.2	-2.3	-10.3

Source: ABS, *Overseas Trade, 1968-69 to 1973-74*.

Note: Results calculated on the basis of the model detailed in the Appendix.

so that it can yield benefits to Australia and her developing neighbors. A clear-cut positive response to this major challenge of NIEO has not so far been enunciated by Australian policymakers. But, growing pressures from developing

neighbors and threats of trade retaliation [1] will force Australia's hand to take far-reaching decisions soon. Liberal trade consistent with the industrialization of developing countries is a NIEO issue to which Australia can respond positively, because the long-term benefits would far outweigh any short-term adjustment costs that Australia may have to incur.

V. RATIONALIZATION OF AID FLOWS AND MITIGATION OF DEBT BURDENS

One of the main issues of the NIEO demands is that developed countries should disburse 0.7 per cent of GNP as official development assistance (ODA) as targetted by the United Nations. Besides, the quality of aid should be improved, and in the context of the perverse effects of aid on the developing economies, a new development aid strategy should be implemented. Empirical evidence that foreign aid aggravated income-inequality, strengthened elite, and impoverished the poorer sections of developing economies, is copious [11]. Aid was ostensibly disbursed for development purposes and the failure of aid on this score substantiated the allegations that aid was an imperialist tool. Its most ardent advocates are now backing away on the basis of rather contentious grounds that recipients violate human rights and waste aid! Regardless of the abuses of past aid and its miserable performance, one cannot gainsay that it has a useful role to perform in world development. The NIEO demands emphasize that the quality of aid should be improved by giving it on more concessional terms, and further aid should be freed of the political whim and leverage of powerful donors. The direction of aid to implement development projects that satisfy the basic human needs of the poorest 40 per cent in the developing world is a plank of the NIEO aid strategy. White elephant projects using inappropriate technology characteristic of past aid operations are rejected in the new strategy.

Australia is yet to make a categorical commitment to a "new basic needs" oriented aid strategy. Australian aid donations are designed on the basis of hegemonic interests and narrow patronage and despite the elation of aid officials that Australia ranks high in per capita ODA/GNP ratio terms, a scrutiny of Australian aid statistics shows that there is much scope for improvement in the context of the NIEO issue. In 1975, Australia recorded her highest ODA/GNP ratio of 0.60 or roughly 75 per cent of the UN target. In 1977, the ratio declined to 0.42 and Australia's attainment of the UN target was short by 40 per cent (see Table V). Australia shares with other developed country donors the declining trend in aid commitments, despite the positive per capita GNP growth rates. Australia's individual rank in the OECD donor league of seventeen countries fell from third in 1971 to eighth in 1977 (see Table V, row 2). Australia, a lucky country with a high per capita income, has the capacity to produce a better performance in aid; the least it could have striven for in the 1970s was to preserve its third rank in the OECD donor league.

Australia's aid is much less benign than official figures reveal. In 1977, Australia disbursed A\$454 million as foreign aid and nearly 51 per cent went to its

TABLE V
AUSTRALIA'S OFFICIAL AID PERFORMANCE: 1971-77

Characteristics	1971	1972	1973	1974	1975	1976	1977
1. Australia (ODA/GNP)	0.53	0.59	0.44	0.55	0.60	0.42	0.45
2. Australia's rank among DAC donors	3	2	4	4	5	8	8
3. DAC average ($n=17$)	0.35	0.33	0.30	0.33	0.35	0.33	0.31

Source: [3, p. 14, Table 9].

TABLE VI
UNEVEN DISTRIBUTION OF AUSTRALIAN AID: 1975-76

Region	Population		Aid		Aid Per Capita	Source Tied
	Millions	(%)	A\$ Million	(%)	(A\$)	Aid (%)
South Asia	819	(64.28)	27	(9)	0.03	100
Africa	149	(11.69)	2	(1)	0.01	100
Southeast Asia	303	(23.78)	46	(15)	0.15	100
South Pacific & PNG	3	(0.24)	226	(75)	75.5	82
Total	1,274	(100.00)	306	(100)	0.23	

Source: United Nations, *Statistical Yearbook*, 1976.

former protectorate, Papua New Guinea, 33 per cent was channelled as bilateral aid, and the balance—16 per cent—was given as multilateral aid. The hegemonic and commercial motivation in the direction of Australia's aid is obvious. Furthermore, Australian aid was not evenly distributed amongst its aid beneficiary population. About 75 per cent of Australia's aid was channelled to Papua New Guinea and a few Pacific islands which sustained less than 3 per cent of Australia's aid recipient population. Therefore, South Asia, which sustains 65 per cent of Australia's aid recipient population, received a paltry per capita aid of A\$0.03, while Papua New Guinea received as per capita aid A\$75.00 (see Table VI).

The ballyhoo that Australia's aid is 100 per cent in grant form exaggerates benefits of aid to recipients in developing countries and the cost to Australia. It should be noted that, except for Papua New Guinea, which received about 82 per cent of source-tied aid, most of the other aid disbursements are 100 per cent procurement source-tied. Procurement source-tying of aid inflates the cost of aid to recipients by compelling them to buy at donor-dictated high prices and by transporting in national carriers at higher than world freight rates. After adjustment for some of these factors, it was calculated that Australian aid was worth, on the average, only 79 per cent of its face value during 1972-73 to 1975-76 (see Table VII). Giving of aid in grant form is the most convenient and efficient way of aid donation for a small donor like Australia which contributes only about 10 per cent of what the United States gives. Furthermore, a substantial portion of Australian aid flows back to the Australian economy in the form of savings of Australian personnel working on Australian aid projects. Moreover, technical aid to students is largely spent locally. Thus when aid is procurement source-tied, it operates like an export subsidy. It provides employment,

TABLE VII
REAL COST OF AUSTRALIAN AID

Year	Nominal Value (A\$ Million)	Real Cost of Food Aid (A\$ Million)	Discounted Real Cost (A\$ Million)	Real Cost as a Percentage of Nominal Value
1972-73	204.3	12.3	163.2	80
1973-74	242.8	16.8	192.7	80
1974-75	278.6	26.6	217.0	78
1975-76	303.4	17.4	243.0	80
Total	1,029.1	73.1	815.9	79

Source: [13].

generates savings, and increases local demand and it is, therefore, in real terms much less costly to Australia than is suggested by published nominal values of aid. Australia has the economic capability and a declared moral commitment to provide a reasonable quantum of aid to developing economies in an equitable manner. It is propitious that Australia reviews its aid operation in the context of the NIEO debate to make it more effective and equitable so as to contribute to the strategy of eradicating global poverty as envisaged in the NIEO.

Neither has Australia's voice been heard on the question of debt mitigation and the proposal for generalized debt relief. The harshness of past aid partly explains the massive U.S.\$250 billion debt collectively owed by developing countries. Nearly 25 per cent of export earnings are directed yearly for debt servicing. Australia has been noncommittal on the proposal for debt relief and it has tacitly supported the other developed countries in the rejection of generalized debt relief. Australia is not a large creditor, and if it pursues a line that is sympathetic to the NIEO spirit, Australia could gain massive goodwill and improve its stature in the international community. Australia's silence or apathy on certain vital NIEO issues like generalized debt relief or mitigation of the harsh terms of past debt is unwarranted and represents diplomatic apathy to an important NIEO issue.

VI. REGULATION OF MULTINATIONAL CORPORATIONS AND THE TRANSFER OF TECHNOLOGY

The multinational corporations have played a crucial role in private foreign investments and technology transfer to developing countries. In import substitution, export promotion leading to favorable balance of payments effects, in providing tax revenue, skilling and generating employment, MNCs have made positive contributions. However, the technological dependence resultant from MNC technology transfers has led to long-term macroeconomic costs such as: transfer pricing to circumvent government fiscal controls and dumping of inappropriate technology. In order to make fast monopoly rents in this regard, capital-intensive technologies leading to redundancies in the work force is a case in point. MNC-induced technological dependence also undermines the drive for

TABLE VIII
FOREIGN/MNCs CONTROL OF AUSTRALIAN SHARE CAPITAL
AND PATENTS: 1974

Country of Origin	Market Value of Shares Controlled*		Total Patents Granted (3)	Percentage of Foreign Control (4)
	A\$1,000 in 1974 Prices (1)	% (2)		
U.S.A.	138.7	19	76,275	34
U.K.	295.3	40	37,808	76
Others	35.4	5	—	—
Australia	260.0	36	12,828	93
Total	729.4	100	Developing countries	90

Sources: Columns 1 and 2=Lawrisky [16].

Columns 3 and 4=Johns [10].

* Based on a sample survey of MNCs.

indigenous innovation, research and development. This in turn leads to long-term costs by the perpetuation of foreign economic dependence and in the short run it leads to a "brain drain" of frustrated qualified manpower. The long-term and short-run macroeconomic costs far outweigh any benefits from unbridled dependence on the MNCs and their subsidiaries for the transfer and diffusion of technology.

Australia shares with developing countries the phenomenon of excessive technological dependence as indicated by the large share of the MNCs of Australian patents granted. Australian patents granted to foreigners exceeded the Japanese grants by more than fourfold [10]. In manufacturing industries foreign MNC control is heaviest in chemicals, transport equipment, fabricated metal products sectors. The stranglehold of foreign MNCs on the domestic manufacturing industry is further corroborated by the fact that out of market value of shares of companies in Australia valued at A\$729 million, 64 per cent was foreign owned [16], while 93 per cent of Australian patents issued were to foreign companies (see Table VIII).

The developing countries' clamor to negotiate MNC rent seeking operations by exploitation of their monopoly power over technology market information has not strangely enough evoked much support from Australia although Australia tends to be exploited in the same way as other developing countries. In 1974-75 it cost Australia nearly A\$75 million as payment of royalties and copyrights to MNCs. Australian-controlled MNCs in the neighboring countries earned payments valued at A\$9 million. The deficit in Australia's technology balance of payments could be converted into a surplus, if Australia follows a policy of mending broken fences with her developing neighbors on MNC and private foreign investment.

Australia has been complacent about the proposals for joint action to regulate MNCs by a mutually agreed code of conduct for the transfer of technology. To usher the NIEO, developing countries have argued the case for the revision of

the Patents Convention for regulating the MNCs and the adoption of mutually agreed code of conduct for the transfer of technology at "fair and reasonable prices." It is alleged that MNCs sell to developing countries technology off their shelf charging monopoly rents. The effective regulation of MNCs by a code would require interchange of information on restrictive business practices (RBPs), e.g., tie in clauses, prices, quality, etc. Such information would facilitate the unscrambling of the technology package with benefits to the recipients of technology. A positive response to the code for technology transfer and control of MNCs will lead to long-term macro-benefits by mitigating costs to the Australian economy due to MNCs current operations. Also by supporting the internationalization of antitrust legislation widely practiced in domestic economies of developed countries Australia would gain in international stature. The growing overseas investment particularly in developing economies will not be looked at with suspicion, if Australia declares its support for the revision of the antiquated patent convention and for the international adoption and adherence to a code for the fair priced transfer of technology.

VII. CONCLUDING OBSERVATIONS ON THE NIEO CHALLENGE TO AUSTRALIA

The global dialogue on the establishment of a NIEO in which developing economies are given a fair deal to trade, industrialize, and prosper, can be studied by the examination of some key issues. The key NIEO issues that pose a challenge to Australian decision-makers have been analyzed. It was demonstrated pragmatically that the implementation of the key issues of commodity price stabilization, trade liberalization, aid enhancement, and regulation of multinationals, with Australian collaboration would result in favorable long-term benefit-cost ratios to Australia. However, Australian policymakers have so far fumbled and failed to provide prompt and independent support to NIEO issues; rather Australia has chosen to wait and accept with servitude decisions made by the United States on NIEO issues such as stabilization (Common Fund) and trade liberalization (MTN). In the 1980s, Australia's economic prosperity will be determined by trade and investment relationships in the developing neighborhood. Hence, the time is quite opportune for Australia to evolve its own stance on the NIEO challenges. By supporting the NIEO strategies, Australia can help developing countries in the neighborhood to realize their economic aspirations and can simultaneously reap benefits for the Australian economy. Australia's failure to respond promptly and positively to the NIEO challenges can be chastised as both morally and economically indefensible. In the 1980s, Australian decision-makers have to gear themselves to the new realities of the accentuating demands for the implementation of the NIEO and she has to capitalize in her own self-interest by expressing more clearly its support, in international foray, for the NIEO demands that are favorable to her. These certainly include the NIEO proposals that attempt to change global institutions, trading relationships, and monetary mechanics that put primary producing and technologically dependant economies

like Australia at a disadvantage. Australian decision-makers, bureaucrats, and politicians should wake up to the potential of mutual gains from the implementation of the NIEO to Australia and the developing world and evolve appropriate policies to harness benefits. The long-term discounted positive benefit-cost ratios for Australia and the developing countries may be dissipated due to the foot-dragging of decision-makers indoctrinated by the barrage of "erudite" condemnations of the NIEO emanating from certain quarters in developed countries. These sophisticated criticisms regard the NIEO proposals as bad economics and as impractical attempts to redistribute the wealth of rich countries to the poor. The true aim of the NIEO, however, is to internationalize the welfare and justice schemes widely practiced domestically in many developed liberal democracies including Australia. Domestic farm price support programs, preferential treatment to the handicapped and socially disadvantaged, redistribution of income by progressive taxation, and regulation of monopolistic practices by antitrust legal codes are some of the national counterparts of the NIEO issues identified in this paper. Australian decision-makers should not subscribe to policies that smack of double standards, particularly when they are inimical to her own long-term interest and that of the two-thirds of mankind that dwell in developing countries. The rationale for NIEO draws from the welfare policies practiced by developed countries to ensure justice and equity to their citizenry. The extension of these welfare measures globally needs to be actively campaigned for by all those who are committed to a just and equitable NIEO.

The challenge of the NIEO has brought to the fore the need for Australia to emerge as a true leader in the neighborhood's economic and political advancement. Recent decisions related to the discriminatory air fares deal and the lobbying in the United States for multilateral trade negotiation (MTN) concessions indicate that Australian policymaking is still hamstrung by tradition rather than common sense. The NIEO challenge clearly indicates that Australia could take-off on another spectacular spell of prosperity and extricate herself from the worldwide depression. Developing Asia is poised for an industrial revolution and Australia has in its neighborhood a potential export market of 1 billion consumers. She has a comparative advantage in industries intensive in the use of land, mineral resources, and technology. Australia could specialize in a range of industries based on her abundant resource endowments and engage in complementary trade and investment with her neighbors. Australian decision-makers are yet to formulate a comprehensive adjustment assistance program so as to relieve the traumas of trade-affected workers in those industries which are vulnerable to import competition due to trade liberalization. As we noted, the benefits of trade liberalization flowing to Australia through cheaper prices for imports and the opening up of new export vistas for Australian manufacturing will overcompensate for any losses of employment amongst the 5 per cent of the labor force engaged in those labor-intensive manufactures in which Australia suffers a comparative disadvantage. The Australian investment in the developing neighborhood is destined to play a crucial role in intra-industry specialization and the horizontal trading prospects that have emerged. Australia's stance on

the code on international technology transfer and regulation of multinationals should be announced to clear the air about any lurking doubts about Australia's benign intentions in the region. The transformation of Australia's protectionist policies, closetting its inefficient manufacturing industries, is imperative if Australia is to capitalize on her regional lead in new product know-how and technology in the context of a harmonious international division of labor as foreshadowed in the NIEO.

Australian decision-making has been conservative and tardy in harnessing the potential benefits offered by the challenge of NIEO issues. Australian public opinion has been largely uniformed of the benefits of NIEO, the media has occasionally featured the taunts and jibes of the NIEO that pour forth from developed economies feeling threatened by the NIEO. The mobilization of public opinion and sympathy for NIEO issues that are beneficial to not only Australia but also to all mankind is long overdue. The laggard response of decision-makers is perhaps partly due to lack of research and informed debate in Australia on the NIEO issues. In Australia's long-term economic interest, research and public discussion of the implications of the NIEO issues will have to receive much more attention in the future than in the past.

REFERENCES

1. ARNDT, H. W. "Malaysia and Asean Economic Co-operation—An Australian Viewpoint," *UMBC Review*, Vol. 14, No. 1 (1978).
2. Australia, Industries Assistance Commission. *Annual Report, 1977-78* (Canberra, Australian Government Publishing Service).
3. *Australia's Official Development Assistance to Developing Countries, 1978-79, 1978-79* Budget Paper No. 8 (Canberra: Australian Government Publishing Service, 1978).
4. BEHRMAN, J. R. "International Commodity Agreements—An Evaluation of the UNCTAD Integrated Commodity Programme," mimeographed (1977).
5. BROOK, E. M., and GRILLI, E. R. "Commodity Price Stabilization and the Developing World," *Finance and Development*, Vol. 14, No. 1 (March 1977).
6. CONNELL, P., and AMOS, A. "The Costs of Long-Term Storage of Additional Wheat Stocks in Australia," *Quarterly Review of Agricultural Economics*, Vol. 29, No. 1 (January 1976).
7. CORDEN, W. M. "The New International Economic Order: A Cool Look," mimeographed (Australian National University, 1978).
8. DALTON, M. E. "Dynamic Stockholding Policies for Stabilizing the Wool Market," *Quarterly Review of Agricultural Economics*, Vol. 29, No. 3 (July 1976).
9. FRANK, C. R., Jr. *Foreign Trade and Domestic Aid* (Washington, D.C.: Brookings Institution, 1977).
10. JOHNS, B. "Technology as a Resource: Inventing Less, Importing More?" in *Australia's Resources Future*, ed. P. Hastings and A. Farran (Melbourne: Thomas Nelson in association with the Australian Institute of International Affairs, 1978).
11. KARUNARATNE, N. D. "Foreign Aid and the New International Economic Order," paper presented at a public seminar sponsored by Queensland Economics Teachers Association and the Action for World Development, 1978.
12. ———. "Strategies for a New International Economic Order," *Asia Quarterly*, 1979, No. 4.
13. KARUNARATNE, N. D., and ROY, K. C. "Australian Aid to Developing Countries," mimeographed (Department of Economics, University of Queensland, 1978).

14. KASPER, W., and PARRY, T. G., eds. *Growth Trade and Structural Change in an Open Economy* (Centre for Applied Economic Research, University of New South Wales, 1978).
15. LAURSEN, K. "The Integrated Programme for Commodities," *World Development*, Vol. 6, No. 4 (April 1978).
16. LAWRISSKY, M. *Ownership and Control of Australian Corporations*, Transnational Corporations Research Projects, Faculty of Economics, University of Sydney (1978).
17. LLOYD, P. J. "Protection Policy," in *Surveys of Australian Economics*, ed. F. H. Gruen (Sydney: George Allen & Unwin, 1978).
18. MCMAHON, P. "Australian-Asian Trade: An Examination of Aspects of Comparative Advantage," paper presented at the 7th Conference of Economists, Sydney-Macquarie University, August-September 1978.
19. PINDYCK, R. S. "Cartel Pricing and the Structure of the World Bauxite Market," *Bell Journal of Economics*, Vol. 8, No. 2 (Autumn 1977).
20. RADETZKI, M. "The Potential for Monopolistic Commodity Pricing by Developing Countries," in *A World Divided: The Less Developed Countries in the International Economy*, ed. G. K. Helleiner (Cambridge: Cambridge University Press, 1976).
21. RANGARAJAN, L. N. *Commodity Conflict: The Political Economy of International Commodity Negotiations* (London: Croom Helm, 1978).

APPENDIX

A SECTORAL MODEL OF EMPLOYMENT GROWTH

Sectoral output can be regarded as a composite of domestic demands plus exports less imports thus:

$$X_i = F_i + E_i - M_i, \quad (1)$$

where

- X_i = output of the i th sector;
- F_i = domestic demand of the i th sector;
- E_i = exports of the i th sector; and
- M_i = imports of the i th sector.

Productivity of the i th sector could be shown as:

$$P_i = \frac{X_i}{L_i}, \quad (2)$$

where

P_i = output per employee in the i th sector.

From (1) and (2) by equating output, we could write thus

$$F_i + E_i - M_i = P_i L_i. \quad (3)$$

Differentiating with respect to time and rearranging (2) we obtain:

$$\frac{dL_i}{dt} = \frac{dF_i}{dt} + \frac{dE_i}{dt} - \frac{dM_i}{dt} - \frac{dP_i}{dt}. \quad (4)$$

Dividing throughout by L_i and manipulating as shown we obtain:

$$\left(\frac{I}{L_i} \frac{dL_i}{dt}\right) = \frac{F_i}{L_i} \left(\frac{dF_i}{dt} \frac{I}{F_i}\right) + \frac{E_i}{L_i} \left(\frac{dE_i}{dt} \frac{I}{E_i}\right) - \frac{M_i}{L_i} \left(\frac{dM_i}{dt} \frac{I}{M_i}\right) - \frac{P_i}{L_i} \left(\frac{dP_i}{dt} \frac{I}{P_i}\right). \quad (5)$$

The instantaneous rates of growth can be shown by a dot on top of the corresponding variable small case letters and the ratios of variables can be shown by Greek letters, where

$$\alpha = \frac{\frac{1}{n} \sum F_i}{\frac{1}{n} \sum L_i}, \quad \beta = \frac{\frac{1}{n} \sum E_i}{\frac{1}{n} \sum L_i}, \quad \gamma = \frac{\frac{1}{n} \sum M_i}{\frac{1}{n} \sum L_i}, \quad \text{and}$$

$$\delta = \frac{\frac{1}{n} \sum P_i}{\frac{1}{n} \sum L_i}.$$

Then (5) could be rewritten thus:

$$\dot{l} = \alpha \dot{f} + \beta \dot{e} - \gamma \dot{m} - \delta \dot{p}. \quad (6)$$

For the empirical validation of the instantaneous rates of growth, the average annual growth rates of the variables between a given initial and terminal year were used as proxies. In this case, the initial year was 1968–69 and the terminal year was 1975–76 and Overseas Trade data, ABS, were used. The ratios which weight the rates of growth refer to the simple average of the initial and terminal year values.

The rates of growth of all variables except productivity rate refer to observed or actual rates for the specified period. The productivity rate of growth was calculated as a residual after subtracting other growth rates from the employment rate.