DEVELOPMENT PATTERN OF A PRIMARY-EXPORT-ORIENTED ECONOMY : WEST MALAYSIA'S POSTWAR EXPERIENCE

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THE OBJECTIVE OF this paper is to provide a statistical overview of the postwar development pattern of the West Malaysian economy. Section I is a brief review of the West Malaysian economy's growth performance in the postwar period (1947–71). In Section II, some observations from an important paper by Chenery and Taylor are noted [4]. The principal results of and discussion on West Malaysian development are given in Section III.

I. WEST MALAYSIA: BRIEF REVIEW OF POSTWAR GROWTH

The Malaysian Federation is made up of West Malaysia, Sabah, and Sarawak. In 1970, the population of West Malaysia (8.8 million) was approximately 85 per cent of the total Malaysian population (10.4 million). In Malaysia's GNP at market prices of a little over M$12,000 million in 1971, the West Malaysian share was some 80 per cent. Both factors make West Malaysia the major constituent of the country.

Historically, the fortunes of West Malaysia have been heavily dependent on the export of a few primary commodities—specifically, rubber, tin, iron ore, oil palm, and timber.[1] An immediate consequence of this primary-export-orientation is the impact of changing terms of trade on the standard of living of the West Malaysian population. While we cannot compute a "pure measure" for standard of living, we can derive an aggregate measure of gross national income (GNI) at constant prices by adjusting the gross national product at factor cost (GNP) for changes in the purchasing power of exports. The data on GNP and GNI for the years 1947 through 1971 are given in Appendix Table A. The differences in annual growth rates of GNP and GNI are substantial, years especially notable in this regard being 1950, 1955, 1959, and 1969 which are all periods of relatively high primary commodity prices in general and relatively high natural rubber prices in particular.

[1] Rubber and tin, however, were the principal export products during 1947–71. Their contribution to export earnings fluctuated from year to year due to price variations. For instance, rubber and tin export earnings were 80 per cent of total merchandise export earnings in 1947. The share in 1970 was 64 per cent. The 1970 share was very much influenced by the low natural rubber price. More data and discussion are available in [2].

The quarter century from 1947 to 1971 can be divided into two parts with reference to the economic growth performance of West Malaysia. These two phases are 1947–58 and 1959–71. As may be noted from Appendix Table A, the period 1947–58 was characterized by both positive and negative growth rates in GNP and GNI. The period 1959–71 was characterized by positive growth rates throughout. Taking into account the average annual growth rates of the two phases given in Table I, we may refer to the first as a *slow growth phase* and the second as a *rapid growth phase.*[2]

Relatively more significant changes in economic structure have occurred during the rapid growth phase than during the slow growth phase. The average composition of gross domestic product in terms of aggregate demand components is given in Table II for the two phases. The average composition in terms of sectoral origin of product is given in Table III.

TABLE I

AVERAGE ANNUAL GROWTH RATES

		(%)
Period	GNP	GNI
1947–58	2.25	4.89
1959–71	6.45	5.64

Source: Appendix Table A.

TABLE II

AVERAGE COMPOSITION OF GDP AT CONSTANT MARKET PRICES:
AGGREGATE DEMAND COMPONENTS, 1947–58 and 1959–71

Aggregate Demand Component	Average Percentage Contribution during	
	1947–58	1959–71
Private consumption	59.2	57.4
Government consumption	10.7	14.7
Gross domestic capital formation	7.6	13.0
Exports	53.1	49.5
Subtotal	130.6	134.6
Less imports	30.6	34.6
Total	100.0	100.0

Source: Author's estimates in [3].

[2] It is noteworthy that the beginning of the rapid growth phase of 1959–71 coincided with the achievement of independence in 1959. A more important distinction between the two phases might also be noted. The administrative, executive, and financial resources of the government were directed very much toward fighting communist insurrection during 1948–58. In the second phase, they were more readily available for economic and social development. A detailed discussion is given in [2].

TABLE III

AVERAGE SECTORAL COMPOSITION OF GDP AT CONSTANT FACTOR
COST, 1947–58 and 1959–71

Sector	Average Percentage Contribution during	
	1947–58	1959–71
Primary[a]	49.8	46.2
Secondary[b]	8.4	11.7
Tertiary[c]	41.8	42.1
Total	100.0	100.0

Source: Appendix Table B.
[a] Agriculture, forestry, fishing, and mining.
[b] Manufacturing and construction.
[c] All other activities.

Table II is given mainly to indicate the economy's high degree of export-orientation and the relatively higher rate of capital formation in the second phase. The relative increase in the dependence on imports is also worth attention. Table III is a simple summary of the structure of the economy in the two phases. The secondary sector's contribution to gross domestic product is higher during the second phase than in the first and the primary sector's contribution is lower. Annual data on the sectoral composition of gross domestic product are given in Appendix Table B and the data will be the basis for the results in Section III.

II. SOME OBSERVATIONS FROM THE CHENERY-TAYLOR STUDY

Of the various past contributions on the subject of development patterns, the most recent work by Chenery and Taylor [4] was used as our basic reference.[3] Chenery and Taylor have classified development patterns into three types: (i) the large country pattern, (ii) the pattern of small industry-oriented countries, and (iii) the pattern of small primary-export-oriented countries. In regard to the third category, the authors observed:

[3] The following are some important past contributions. Studies based on international cross-section data are: H. B. Chenery, "Patterns of Industrial Growth," *American Economic Review,* September 1960; S. Kuznets, "Quantitative Aspects of the Economic Growth of Nations: II. Industrial Distribution of National Product and Labour Force," *Economic Development and Cultural Change,* July 1957 (Supplement); L. Taylor, "Development Patterns: A Simulation Study," *Quarterly Journal of Economics,* May 1969; and United Nations, Department of Economic and Social Affairs, *A Study of Industrial Growth* (New York, 1963). Studies based on national time series include H. B. Chenery; S. Shishido; and T. Watanabe, "The Pattern of Japanese Growth, 1914–1954," *Econometrica,* January 1962; and P. Temin, "A Time-Series Test of Patterns of Industrial Growth," *Economic Development and Cultural Change,* January 1967. A recent study using both cross-section and time-series data is H. B. Chenery and L. Taylor [4, pp. 391–416]. This last cited study alone is included in the list of references given at the end of this paper.

The countries oriented toward primary exports have a development pattern that is notably different from the first two types. Primary production declines much more slowly and exceeds industry up to an income level of nearly U.S. $800. The effects of rich natural resources on the productive structure are illustrated in most extreme form by Venezuela, Malaya [4] and Iraq—the countries having the highest indices of primary orientation. [4, p. 400]

Results from the Chenery-Taylor study are used as a benchmark for our work. For a comparative analysis of time series and cross-section results, they used the following equations.

Cross-Section Data (data of various countries):

$$\log x_i = \alpha + \beta \log y + \gamma \log N; \tag{1}$$

Time-Series Data (data of individual countries):

$$\log x_i = \alpha + \beta \log y; \tag{2}$$

where x_i = share of sector i (primary and secondary) in GDP,

   y = per capita GNP (in 1960 U.S.$),

   N = population (in millions).

For convenience, the coefficient "β" in the above equations may be called the *sector share elasticity*.

In the Chenery-Taylor study, based on sector share elasticity "β" obtained from the second equation for each country, the median elasticity was computed for comparison with the cross-section elasticity obtained from the first equation. For small primary-oriented countries, the estimates are as given in Table IV.

TABLE IV

SECTOR SHARE ELASTICITIES OF SMALL PRIMARY-
ORIENTED COUNTRIES FROM CHENERY-TAYLOR STUDY

Sector	Median from Time-Series Elasticities	Cross-Section Elasticity
Primary	−0.55	−0.37
Secondary*	0.34	0.34

Source: H. B. Chenery and L. Taylor [4, p. 403].
* Includes manufacturing and construction. In the source stated, the sector is referred to as "industry."

The secondary sector elasticity is the same in time-series as well as in cross-section data. The elasticity for primary sector differs between time-series and cross-section data. Time-series elasticity indicates a faster decline in primary sector share. No explanation was given by Chenery and Taylor for this discrepancy. A simple explanation may be that since the countries are primary-oriented, the share of primary sector in GDP when measured at current prices declines faster due to the secular decline in primary product prices causing the terms of trade to turn in favor of the secondary sector and against primary

4 "Malaya" in the quotation cited in the text was used for West Malaysia.

production.[5] The cross-section elasticity is probably less influenced by such price variations.

We shall now pursue the Chenery-Taylor type econometric analysis using the data in Appendix Table B for West Malaysia.

III. WEST MALAYSIAN DEVELOPMENT PATTERN: RESULTS AND DISCUSSION

For each of the two phases (1947–58 and 1959–71) under consideration, we shall compute the following two regressions:

$$\log x_i \text{ on } \log y, \text{ and} \tag{3}$$
$$\log x_i \text{ on } \log y', \tag{4}$$

where x_i is the share of sector "i" (primary, secondary, and tertiary) in gross domestic product at constant prices, y is GNP per capita at constant prices and y' is GNI per capita at constant prices. The basic data are given in Appendix Table B.

If we strictly follow the Chenery-Taylor study, it is enough to consider the regression in (3). We have added (4) in view of our earlier discussion in Section I and also to gain more knowledge of the development pattern in a primary-export-oriented economy. The following table on correlation coefficients may be examined first.

From Table V, we note that the correlation coefficients between the primary sector share and each of the independent variables as well as the tertiary sector share and each of the independent variables are not statistically significant in the first phase, namely, the period 1947–58. For the secondary sector share, even though the correlation coefficients with each of the independent variables

TABLE V

CORRELATION BETWEEN LOG x_i AND TWO VARIANTS
OF LOG y, 1947–58 and 1959–71

Dependent Variable: Log	Independent Variable: Log	Correlation Coefficients	
		1947–58	1959–71
Primary share	GNP/capita	−0.2626*	−0.6928
	GNI/capita	0.1465*	−0.6278
Secondary share	GNP/capita	−0.5472	0.9403
	GNI/capita	0.7096	0.9071
Tertiary share	GNP/capita	0.4919*	0.1018*
	GNI/capita	−0.4607*	0.0336*

* Not statistically significant at 5 per cent level.

5 Chenery and Taylor did not explicitly state whether they used sectoral share data at current or constant prices. But, from the IBRD *1971 World Tables*, one gets the impression that current price data have been used. An earlier issue of the *World Tables* was the primary data source for the Chenery-Taylor study. To substantiate our observation about the effect of prices on elasticities, we have used West Malaysian data and the results are in Appendix Table C.

are statistically significant, the coefficient is negative when the independent variable is GNP/capita and is relatively higher and positive when it is GNI/capita. The second relationship (the regression of the "log" of the secondary sector share on the "log" of GNI/capita) rather than the first, however, appears to be a better description of the growth pattern of the 1947–58 period. On the one hand, there was a modest increase in the share of the secondary sector in GDP (Appendix Table B). On the other, the average growth rate of GNI (4.9 per cent) was more than two times the average growth rate of GNP (2.2 per cent). The boost for the secondary sector share came, during 1947–58, essentially from the increase in domestic demand brought about by a relatively high rate of increase in purchasing power which in turn came from favorable terms of trade. The variation in the secondary sector share is thus better explained by the variation in GNI/capita. Moreover, a priori, we expect the secondary sector share elasticity to be positive. The log-linear relation between the secondary sector share and GNI/capita for the 1947–58 period gave an elasticity of 0.71 in contrast to the relation between the secondary share and GNP/capita which gave an elasticity of −0.55. We, therefore, tentatively conclude that for assessing the growth pattern of an export-oriented economy, it is important to consider not only the sector share elasticities obtained by using GNP/capita as the independent variable, but also the elasticity estimates obtained by using GNI/capita as the independent variable. We may add that the conclusion is of special significance for the particular growth phases of an export-oriented economy when the secondary share expansion depends mainly on domestic demand expansion.

As for the 1959–71 period results, we note from Table V that all the correlation coefficients are statistically significant except those between the tertiary sector share and each of the two independent variables. For the primary and secondary sector shares, the correlations with GNP/capita are slightly more than those with GNI/capita. Even though the differences between the two correlation coefficients for each sector are marginal, an explanation for the slightly higher correlation with GNP/capita may be found in the nature of growth during the 1959–71 phase. This phase was characterized by an average rate of GNP growth of 6.4 per cent, higher than the average GNI rate of 5.6 per cent. The phase witnessed productivity improvements in the primary export sector[6] and forward movement in manufacturing development based not only on import substitution geared to domestic demand but also on export promotion (Table VI).[7] If productivity improvement in the primary export sector did not occur and did not counteract the unfavorable terms of trade and if the growth of the secondary sector was solely dependent on the growth of domestic demand, then, the secondary sector growth pattern of the 1959–71 period would have been

[6] For instance, in the case of rubber which was the principal export commodity, productivity increase came mainly from a massive program of replanting with high-yielding seedlings. Output per acre increased from 720 lbs. in 1961 to 1,016 lbs. in 1970 in the case of rubber estates and from 526 lbs. in 1965 to 676 lbs. in 1970 in the case of small holdings. The accomplishments of the replanting program are discussed in detail in [2].

[7] The period 1959–71 was also characterized by improvements in intersectoral interdependence—an aspect discussed in [1] and [2].

TABLE VI

PERCENTAGE COMPOSITION OF MERCHANDISE EXPORTS BY BROAD SECTORS, 1960–67

Sector	1960	1961	1962	1963	1964	1965	1966	1967
1. Primary (including processing of primary products)	89.0	87.1	86.7	88.0	86.5	85.6	84.5	84.7
2. Manufacturing	3.8	4.0	4.2	5.6	8.0	8.9	10.0	12.5
3. Re-exports and postal packages	7.2	8.9	9.1	6.4	5.5	5.5	5.5	2.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: [2].

TABLE VII

SECTOR SHARE ELASTICITIES FROM THE REGRESSIONS OF
LOG x_i ON LOG y AND LOG y', 1959–71

Sector	Sector Share Elasticity with GNP/Capita	Sector Share Elasticity with GNI/Capita
Primary	–0.21	–0.31
Secondary	0.79	1.24

fairly similar to that of the 1947–58 period and variations in the secondary sector share would have been relatively better explained by variations in GNI/capita.

We may now consider the sector share elasticities in Table VII obtained for the second phase (1959–71). It is notable that in absolute terms, the elasticities obtained with GNI/capita are greater than those obtained with GNP/capita. In the Chenery-Taylor study, the elasticities for various countries using time-series data were derived with GNP/capita as the independent variable. Their results from the time-series data will probably be modified if GNI/capita is used as an independent variable.[8] The cross-section results also may be amended if a more comparable "income" concept than GNP converted to U.S. dollars is used. In spite of these comments, we may compare the West Malaysian elasticities with those obtained by Chenery and Taylor for the small primary-export-oriented countries. The primary sector share elasticity of −0.21 (or −0.31) is lower in absolute terms than the cross-country elasticity of −0.37 obtained by Chenery and Taylor. The secondary sector elasticity of 0.79 (or 1.24) is higher than the cross-country elasticity of 0.34 that they obtained. The relatively slow rate of decline in the primary sector share and the relatively high rate of increase in the secondary sector share together constituting the West Malaysian development pattern, are merely the result of a development strategy—that of continued primary-export-orientation and positive action to attract private foreign investment in manufacturing by providing infrastructure, tax and other incentives, and so on. Such a strategy will have to continue until manufacturing exports can

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[8] The results may also be modified by taking sector shares at constant prices. See footnote 5.

replace primary exports. Until then, import-dependent industrialization will require "balancing" from the primary export sector. Conceptually, balanced growth here refers to growth with external balance, of great importance to an open economy, different from growth with internal (intersectoral) balance significant to a closed economy. One way or the other, sustained growth has to be balanced growth.

In the Chenery-Taylor study, we have three alternative development patterns. One was the pattern assigned to small primary-export-oriented countries. This pattern can be further categorized by taking account of differences in growth performance and development strategy for different nations. In the final analysis, what a nation has done in terms of development policy and strategy is what determines its development pattern. Country by country studies of development patterns will be useful for gathering knowledge on similarities and differences in the patterns between countries.

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APPENDIX TABLE A

GNP AND GNI AT 1959 FACTOR COST AND ANNUAL
GROWTH RATES, WEST MALAYSIA, 1947-71

Year	GNP (M$ Million)	Annual Growth Rate (%)	GNI (M$ Million)	Annual Growth Rate (%)	Index of Terms of Trade*
1947	3,479	—	2,467	—	47
1948	3,670	5.5	2,638	6.9	54
1949	3,891	6.0	2,795	6.0	54
1950	3,699	−4.9	3,741	33.8	102
1951	3,440	−7.0	4,092	9.4	129
1952	3,856	12.1	3,508	−14.3	84
1953	4,019	4.2	3,336	−4.9	68
1954	4,268	6.2	3,677	10.2	73
1955	3,883	−9.0	3,959	7.7	104
1956	4,227	8.9	4,078	3.0	93
1957	4,350	2.9	4,003	−1.8	85
1958	4,347	−0.1	3,914	−2.2	81
1959	4,426	1.8	4,426	13.1	100
1960	4,635	4.7	4,677	5.7	102
1961	5,320	14.8	4,856	3.8	84
1962	5,710	7.3	5,157	6.2	83

APPENDIX TABLE A (Continued)

Year	GNP (M$ Million)	Annual Growth Rate (%)	GNI (M$ Million)	Annual Growth Rate (%)	Index of Terms of Trade*
1963	6,020	5.4	5,332	3.4	80
1964	6,440	7.0	5,765	8.1	81
1965	6,758	4.9	6,236	8.2	85
1966	7,112	5.2	6,366	2.1	80
1967	7,393	4.0	6,439	1.1	75
1968	8,021	8.5	6,631	3.0	68
1969	8,547	6.6	7,452	12.4	78
1970	9,177	7.4	7,904	6.1	75
1971	9,757	6.3	7,909	0.1	65

Source: [3]. See the note at the end of the Appendix Table B.
* Export price index/import price index.

APPENDIX TABLE B

PER CAPITA GNP AND GNI AND PERCENTAGE SECTORAL
COMPOSITION OF GDP, WEST MALAYSIA, 1947–71

Year	Per Capita GNP at 1959 Factor Cost (M$)	Per Capita GNI at 1959 Prices (M$)	Percentage Composition of GDP at 1959 Factor Cost		
			Primary	Secondary	Tertiary
1947	709	503	49.4	6.4	44.2
1948	729	524	50.0	7.5	42.5
1949	755	542	51.4	7.2	41.4
1950	700	708	51.4	8.3	40.3
1951	635	755	49.9	8.3	41.8
1952	694	632	49.6	8.7	41.7
1953	706	586	48.3	8.3	43.4
1954	731	630	46.8	8.3	44.9
1955	649	662	52.9	9.5	37.6
1956	690	665	49.6	9.5	40.9
1957	693	637	49.8	9.2	41.0
1958	673	606	48.9	8.9	42.2
1959	665	665	48.6	9.2	42.2
1960	677	683	50.9	10.2	38.9
1961	755	689	48.0	10.1	41.9
1962	787	711	46.3	10.9	42.8
1963	807	714	45.5	11.2	43.3
1964	838	751	43.5	11.8	44.7
1965	855	789	44.3	12.3	43.4
1966	874	782	45.2	12.4	42.4
1967	883	769	45.3	12.9	41.8
1968	931	769	45.9	13.0	41.1
1969	964	840	46.0	12.8	41.2
1970	1,006	867	45.6	12.9	41.5
1971	1,040	843	45.0	13.2	41.8

Source: Author's estimates in [3].
Note: The data in Appendix Tables A and B were originally compiled for my

Ph. D. thesis [2]. These national accounts data, subsequently revised, are available in a forthcoming monograph [3]. What follows is a very brief note on the method of compilation.

Based on the published pan-Malayan (West Malaysia and Singapore together) data on the expenditure components of GDP for 1947–54 and the officially published data for 1955–71, a consistent series for 1947–71 was first compiled on GDP at market prices and expenditure components at current market prices. (For sources of basic data and the details of methods of compilation, see [3].) Estimates of GDP and GNP at current factor cost were also developed. Using appropriate price deflators for expenditure components, GDP and GNP series were compiled at constant market prices and factor costs. As for the GDP series by sector, the compilation at constant factor costs was based on production data and production indices for the primary and secondary sectors. From the series on aggregate GDP at constant factor cost, substraction of the GDP originating in the primary and secondary sectors yielded the series on GDP originating in the tertiary sector.

The compilation of the series on GNI at constant factor cost was made as follows. To begin with, GDP at constant factor cost was disaggregated into product for domestic use and product for export. The product for export was then adjusted to reflect its purchasing power in terms of imports—it was multiplied by the export price index and deflated by the import price index. The product for export so adjusted for the effect of terms of trade (export price index upon import price index) was added to the product for domestic use. From this total the net factor income payments going abroad deflated by the import price index was subtracted to derive GNI. All the detailed national account tabulations at current and constant prices as well as a comprehensive discussion of the methods of compilation are available in [3].

APPENDIX TABLE C

REGRESSION RESULTS FROM CURRENT PRICE AND CONSTANT PRICE DATA ON
SECTORAL SHARES, WEST MALAYSIA, 1960–71

Sector Share	Current Price Data		Constant Price Data	
	Regression* Coefficient	Correlation Coefficient	Regression* Coefficient	Correlation Coefficient
Primary	−0.7657	−0.9571	−0.2046	−0.6279
Secondary	1.3398	0.9714	0.7176	0.9213
Tertiary	0.2464	0.8223	0.0387	0.1381

* Regression of log of sector share on log of GNP/capita.