Preliminary GDP Statistics of Malaya, 1895-1939:

Progress and Perspectives

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1.1   Introduction

This paper reports the progress on work currently being undertaken to come up with estimates of the Gross Domestic Product (GDP) of Malaya in the pre-WWII era. The paper proceeds as follows: Section 2 provides a brief overview of the development of national income accounting in Malaysia. Section 3 outlines the methodology employed and source materials used to compute the pre-WWII GDP figures and discusses some of the major difficulties encountered. By linking our pre-war GDP series with the existing post-war estimates, it is now possible to make a quantitative assessment of economic growth in Malaysia in the twentieth century (section 4). In section 5, the results of a growth accounting exercise are reported and briefly discussed.

Section 2

2.1   National Income Accounting in Malaysia

In Malaysia, the Department of Statistics, established in 1949, is the main government agency entrusted with the responsibility for collecting, interpreting and disseminating statistics on the economy. In its early years, the statistics produced were limited to external trade and estate agriculture only. The first full set of national accounts prepared by the department was for the period 1955-60 based on the 1953 SNA. These accounts were updated in a number of subsequent publications, but the work was briefly interrupted before resuming in 1963 under new direction (Abraham and Gill, 1969a). Unfortunately, the new accounts, with 1960 as the starting year, are not comparable with the original ones.

For the period before 1955, we have to rely on estimates provided by individual scholars and international organizations. Benham's, *The National Income of Malaya, 1947-49*, published in 1951, contains the earliest national accounts estimates for the country. In 1955, the World Bank produced a report, *The Economic Development of*

Malaya, which included a detailed statistical appendix containing GDP estimates for 1949-53. Both the Benham estimates for 1947-49 and the World Bank estimates for 1949-53 were on a Pan-Malayan basis, which comprised the then Federation of Malaya (present-day Malaya or Peninsular Malaysia) and the then Crown Colony of Singapore. No attempt was made in either study to separate the data into the Malayan and Singapore components. Subsequent attempts to compute Peninsular Malaysia GDP shares from the Pan-Malayan estimates of Benham and the World Bank were made by Lim Chong Yah (1967) and Lee Soo Ann (1968). Abraham and Gill (1969a, 1969b) made significant contributions by estimating the sectoral GDP series for the years 1946-66, and the expenditure components of GDP for the years 1960-66. Drawing on all these contributions, Rao (1976) compiled the national accounts of Peninsular Malaysia at current and constant 1959 prices for the 25-year period from 1947 to 1971. Noteworthy is Rao's attempt to revise the national accounts data for the years 1955-59 and 1947-53 in order to achieve consistency with the 1960-71 estimates.

2.2 Pre-World War II Estimates

Before presenting our estimates, it is worth reporting briefly the estimates of 'national income' contained in a 1932 report that was prepared by the Retrenchment Commission. This Commission was appointed by the Federated Malay States government in March 1932 to look into the territory's sources of taxation and to estimate the probable revenue for the government for the period from 1933 to 1937. As a rough measure of what the tax base is likely to be in the 1930s, the Commission made a calculation of national income for the Federated Malay States in 1931 and provided estimates of national income for the years 1932 to 1937. The Commission started by noting that it "is impracticable…in the conditions of the Federated Malay States to obtain any approach to accurate information of individual incomes". In the absence of such information, the Commission accepted "as a sufficiently close approximation" to national income the "sum of two quantities more readily capable of measurement, viz., the figures of primary production and the gross profits of foreign trade" (p. 2). Exports were valued using f.o.b. prices, while products locally consumed were valued at consumers' rates. Gross profits on foreign trade were determined by taking the difference between retail prices and declared import values,

and the Commission assumed that this difference was 25 per cent of the declared import values "based on an examination of the quantities, declared import values, and retail prices, of certain representative commodities" (p. 2). On this basis, the Commission estimated the national income for the Federated Malay States in 1931 and went on to estimate the national income for each of the years from 1932 to 1937, with the caveat that the "figures are intended to represent tendencies rather than precise numerical forecasts" (p. 5). The figures are reproduced in Table 2.21. The estimates of the Retrenchment Commission clearly do not amount to national income in the modern sense. Neither the theoretical insight nor the methodology was sufficiently developed at the time to meet the requirements for the proper measurement of GDP.

Table 2.21

Federated Malay States

National Income 1931-1937

Straits $ million

	1931	**1932**	**1933**	**1934**	**1935**	**1936**	**1937**
Rubber	54	38	37	45	53	60	63
Tin	51	32	35	47	56	60	69
Other Produce	49	52	55	58	61	64	67
Profits of Trade	26	18	18	23	27	30	33
National Income	180	140	145	173	197	214	232

Source: *Report of the Federated Malay States Retrenchment Commission appointed by His Excellency the High Commissioner on the 9th March, 1932*, Kuala Lumpur, The Federated Malay States Government Printing Office, 1932, p. 5.

Section 3

3.1   **Methodology**

The GDP estimates presented here were computed using the expenditure method. The period covered is 1895 to 1939. The unit of analysis is Malaya, which is to be distinguished from *British* Malaya. The former refers to present-day Peninsular Malaysia, whereas the latter refers to Peninsular Malaysia plus Singapore, Labuan and Christmas Island. A strong case can be made for including Singapore in our analysis

because it was an integral part of the Malayan economy during this period and played a pivotal role in its development. However, since a primary objective is to link our pre-WWII series with the existing post-war data, it was decided to exclude Singapore so as to maintain consistency in geographical coverage.

I have tried to make use of primary source materials wherever possible. Fortunately, there is a large amount of archival material on the economy dating from the British colonial period that we can draw upon to 'piece together' a reasonable time series on each of the aggregate demand components. These consist mainly of official documents in the form of annual reports of the various state governments, government financial statements, annual returns on exports and imports, official correspondences, departmental statistics on government revenues and expenditures, and censuses on population.

The first step was to identify and locate as many of the relevant historical source materials as possible. Most of these were found in the National Archives in Kuala Lumpur and the Public Records Office in London. The next step was to transform all of the available quantitative information into a format appropriate for the purpose of computing GDP. Since many different historical source materials were used, the data contained in these sources were in many instances not compatible, and it was necessary to make various adjustments so as to make them internally consistent. There were also many gaps in the data which had to be bridged by making numerous assumptions.

The difficulties in preparing the estimates are compounded by the fact that the Malay Peninsula in the early part of the century was made up of eleven separate administrative units (Mills, 1958: 7). These were the Crown Colony of the Straits Settlements (SS) comprising the territories of Penang, Province Wellesley, Dindings, Malacca and Singapore; the Federated Malay States (FMS) of Perak, Selangor, Negri Sembilan and Pahang, with a federal government in addition to the four state governments; and, the five Unfederated Malay States (UMS) of Perlis, Kedah, Kelantan, Trengganu and Johore (Figure 3.11). Each administrative unit published its own independent set of annual reports, the coverage and quality of which varied considerably not only between different administrative units but also over time. There is more statistical information on the SS, less on the FMS, and even less on the UMS.

Fairly extensive statistical information are available from the officially

published documents relating to government expenditure, which I have drawn upon to construct the series on government consumption spending and government investment spending. The government expenditure records of the SS were published as a single administrative unit in *Blue Books* and *Annual Reports of the Straits Settlements*. The expenditure records of the FMS were similarly published as a unified set of statements of revenue and expenditure in *Annual Reports of the Federated Malay States*. In addition, each state of the FMS published its own annual reports. Outside of the administrative structure of the SS and the FMS, each state of the UMS published its own annual reports. The SS records are the most detailed, followed by those of the FMS and Johore. The records of Perlis, Kedah, Kelantan and Trengganu provide expenditure estimates in general terms only.

Unfortunately, the presentation of the expenditure estimates in the annual reports of the various states was not standardized. The general presentation was in the form of expenditures of different heads of department. In the evolution of each unit's administrative history, the list of heads changed, reflecting new needs. There were departments that were deemed irrelevant and were thus closed down. There were others that were integrated and there were those that were newly created. In addition, the financial obligations of these heads too changed over time, reflecting their evolving relative importance.

Figure 3.11
The Malay Peninsula, c. 1925

SIAM

SOUTH CHINA SEA

Perlis

Kedah

Penang

Province
Wellesley

Kelantan

Trengganu

Perak

Dindings

Pahang

STRAITS
OF
MALACCA

Selangor

Negri
Sembilan

Malacca

Johore

Straits Settlements

Federated Malay States

Unfederated Malay States

Singapore
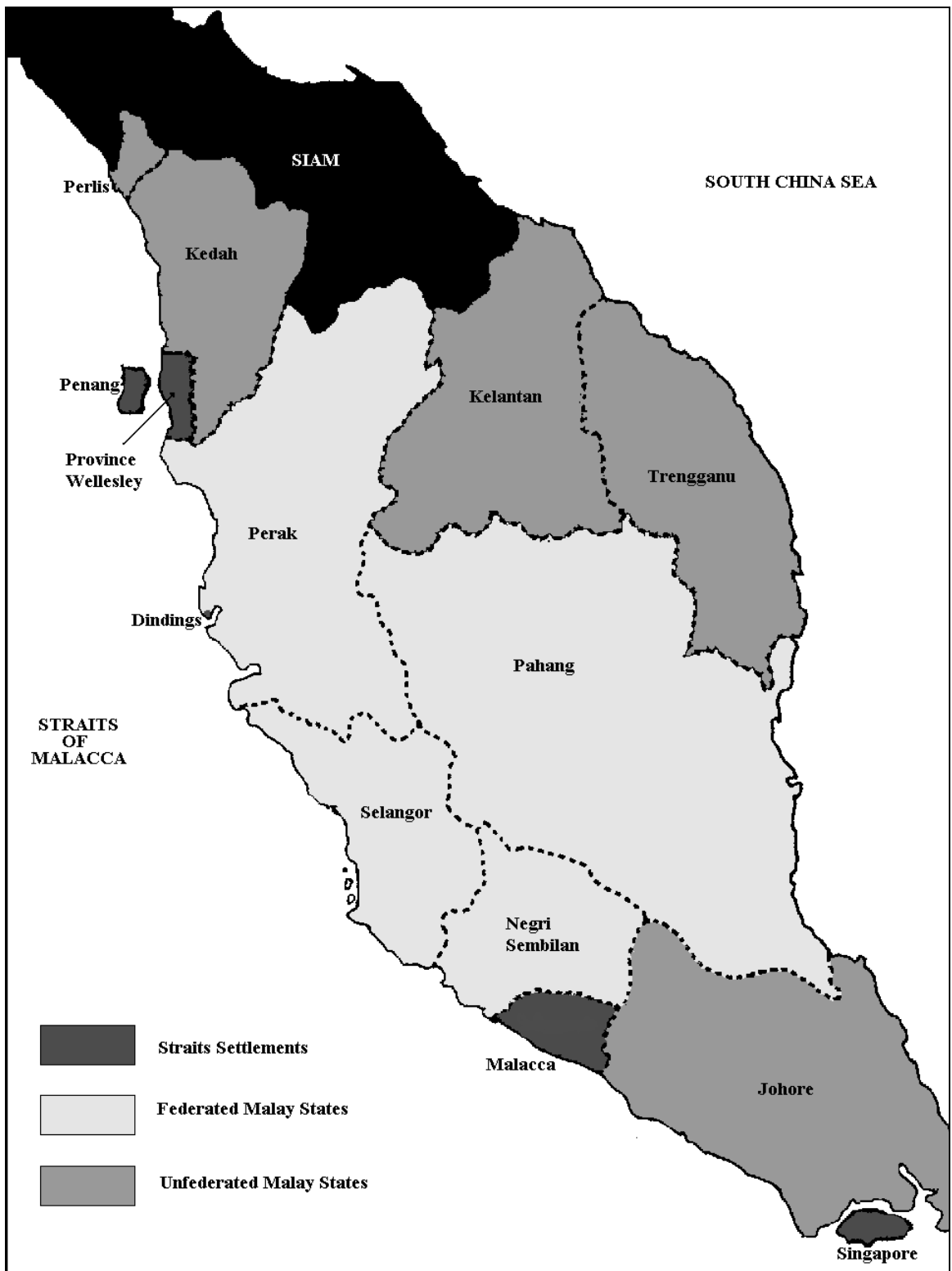
On account of the differences in the way the expenditure estimates were constructed and presented, the estimates of Malaya were assembled from four separate exercises. These correspond to estimates for (a) Penang, Province Wellesley, Dindings and Malacca; (b) the FMS; (c) the FMS Railway, and; (d) the UMS. Adding together the estimates of each of these components gives us the total government expenditure estimates of Malaya.

The series on private investment was built up by adding together private investment in three sectors: (1) planting of perennial crops (rubber, oil palm, coconut, arecanut, gambier, coffee, tea and pineapple); (2) machinery and equipment; and (3) construction. There exist extensive data on acreage under cultivation on each of the major perennial crops, the costs per acre of bringing each crop to fruition and the number of years it takes for each crop to reach bearing age. These formed the basis for the calculations of private investment on these crops. Figures on machinery and equipment spending were compiled using import data, the assumption being made that there was no domestic production of these items during this period. The scarcity of statistical information on housing makes it extremely difficult to put together a series on private construction. Instead data from the 1950s and early 1960s were used as the basis for obtaining the pre-war construction estimates.

Any attempt to put together a consistent historical series on imports and exports is faced with the daunting problem of isolating Singapore's trade figures from those of Malaya. This is because the trade statistics as presented in the Straits Settlements Blue Book series treat Singapore, Penang, Dindings, Malacca, Labuan and Christmas Island as a single statistical entity. The procedure adopted was to disaggregate the data so that the trade statistics for Penang, Malacca, the FMS, and the UMS can be estimated separately, taking care not to include inter-state trade between these territories. Totaling all these individual figures gives us the merchandise import and merchandise export figures of Malaya. Data on invisible trade are not available for the years 1895-1939. The earliest figures from the official reports date from 1960. An examination of these reports indicate that between 1960 and 1968, merchandise exports constitute about 92 per cent of total exports, and merchandise imports about 90 per cent of total imports. The assumption was made that these ratios prevailed during the period 1895-1939, and consequently the figures on merchandise imports and merchandise exports were adjusted accordingly to obtain

the estimates on imports of goods and non-factor services and exports of goods and non-factor services.

Private consumption expenditure proved to be the most difficult of all the aggregate demand components to estimate because very little information on actual expenditure is available for the period under review. It was necessary to rely on data for the post-war period to derive the pre-war estimates. The first household budget survey covering the whole country was conducted in 1957-58. Prior to this, there was one other household budget survey that was conducted in 1947-48. This earlier survey is of limited use in the present context because it is concerned primarily with Singapore, and does not capture the significantly broader rural, agricultural and mining base of colonial Malaya.

Our pre-war consumption estimates use data from the 1957-58 household budget survey as the point of reference. The first step was to recast the data in the survey in *per capita* terms. It was felt that computing the expenditure series in terms of 'consumption per capita' was more appropriate than doing so in terms of 'consumption per household', given that Malaya's large immigrant community in the early decades of the century consisted mainly of single adult males.

The best way to present the method used in obtaining the estimates on private consumption expenditure is by explaining how it was done for a single year. The construction of the expenditure estimates for 1900 is thus explained in detail below. Before proceeding, a few general comments are in order. First, it will be seen that our estimates are closely tied to population characteristics. As the 1957-58 household budget survey shows, consumption patterns vary among different ethnic groups and between rural and urban areas. In computing our expenditure estimates, an attempt was made to take these differences in consumption patterns into account. Second, data on the prices of some food items are available from the historical records for each year from 1895 to 1939. These are tabulated in Tables A1.1 A1.4. What we do not have is information on the *quantities* consumed of the individual food items, which would have enabled us to construct an expenditure series. Lacking this information, it has been necessary to make some assumptions about the quantities of the food items consumed. This is explained further below. The following presentation should be read in conjunction with Table 3.11:

1. **Column 1** of Table 3.11 shows the number of individuals in each ethnic group disaggregated along rural-urban lines;

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2. **Column 2** shows the number of food items for which we have data on prices in 1900. The list of these food items together with their prices is shown in Table A 1.2;

3. **Column 3** tabulates the per capita monthly expenditure on these 19 food items at prices prevailing in 1900. Because data on the quantity consumed of each food item were not available, quantity data for other years were used instead. It was assumed that Malay, Chinese and Indian individuals in 1900 consumed the same quantities of each of the 19 food items as did individuals in the same category in 1957. For example, it was assumed that a Malay individual living in a rural area in 1900 consumed the same quantity of rice, as did a rural Malay in 1957, and likewise for the other food items. In the case of Europeans, the quantities used were based on data obtained in a 1948 report, while that of the Eurasians were based on the 1957-58 Indian food habits. The final group referred to in the census reports was "Others" whose dietary habits were assumed to be the average of the Malays, Chinese and Indians;

4. **Column 4** shows the per capita monthly expenditure on these 19 food items in 1957;

5. **Column 5** shows the per capita monthly expenditure on all food in 1957;

6. **Column 6** gives the share of the 19 food items in total food expenditure in 1957. This is obtained by taking the ratio of the figures in column (4) to the figures in column (5);

7. **Column 7** shows our estimates of the per capita monthly expenditure on food generally in 1900. These estimates were calculated based on the assumption that the share of the 19 food items in total expenditure in 1900 is the same as the share of these food items in total expenditure in 1957 (which we have already obtained in column (6) above). To calculate the per capita monthly expenditure on food, we simply divide the figures in column (3) by the corresponding figures in column (6);

8. **Column 8** shows our assumptions of the share of food in total consumption expenditure for each category of individual;

9. These assumptions were then used to calculate total per capita monthly expenditure in 1900 for each category of individual (**column 9**);

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10. **Column 10** contains estimates on the monthly expenditure of all individuals in each category;

11. **Column 11** shows the *annual* consumption expenditure of all individuals in each category;

12. The vertical sum of each entry in column 11 gives us the total private consumption expenditure in 1900.

The procedure described above was performed for each of the other years between 1895 and 1939.

Table 3.11
Steps for Calculating Private Consumption Expenditure in 1900

		No. of Persons	No. of Food Items	Per Capita Monthly Expenditure on 19 Food Items in 1900 ($)	Per Capita Monthly Expenditure on 19 Food Items in 1957 ($)	Per Capita Monthly Expenditure on Food in 1957 ($)	Share of 19 Food Items in Total Food Expenditure in 1957	Per Capita Monthly Expenditure on Food in 1900 ($)	Share of Food in Total Monthly Expenditure in 1900	Total Per Capita Monthly Expenditure in 1900 ($)	Total Monthly Expenditure in 1900 ($)	Total Consumption Expenditure in 1900 ($)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
							(4)÷(5)	(3)÷(6)		(7)÷(8)	(9)*(1)	(10)*12
Malay	Rural	1,080,119	19	0.95	5.87	15.10	0.39	2.44	0.90	2.71	2,927,122	35,125,464
	Urban	70,722	19	1.18	6.87	21.19	0.32	3.63	0.86	4.22	298,447	3,581,364
Chinese	Rural	347,439	19	1.70	9.49	21.80	0.44	3.89	0.90	4.33	1,504,411	18,052,932
	Urban	171,486	19	1.80	9.62	24.84	0.39	4.62	0.85	5.46	936,314	11,235,768
Indian	Rural	68,128	19	1.55	8.56	22.61	0.38	4.08	0.90	4.54	309,301	3,711,612
	Urban	41,197	19	1.84	8.80	23.07	0.38	4.84	0.93	5.19	213,812	2,565,744
European	Rural	981	19	1.32	5.03	23.26	0.22	6.00	0.40	15.28	14,990	179,880
	Urban	2,049	19	1.32	5.03	23.26	0.22	6.00	0.40	15.28	31,309	375,708
Eurasian	Rural	602	19	1.55	8.56	22.61	0.38	4.08	0.90	4.54	2,733	32,796
	Urban	4,554	19	1.84	8.80	23.07	0.38	4.84	0.93	5.19	23,635	283,620
Others	Rural	27,790	19	1.34	7.53	20.08	0.38	3.62	0.90	3.98	110,604	1,327,248
	Urban	4,350	19	1.56	8.12	23.09	0.35	4.46	0.88	5.03	21,881	262,572
Total No. of Persons		1,819,417										76,734,708

Source: Nazrin, 2000, TableA1.5, p. 33.

The accuracy of our consumption expenditure estimates depends critically on the validity of our three main assumptions. The first is our assumption that individuals in the same ethnic-locational category consume the same *quantities* of the 19 food items even though they are separated by a 57-year time span (step 3). The second is our assumption that expenditure on these 19 food items constituted the same *share* of total spending in 1900 and in 1957 (step 7). These are strong assumptions. Many changes would have occurred between 1900 and 1957 that could have invalidated either or both of these assumptions. Changes in tastes, changes in relative prices and/or changes in real income, to name but a few. There is clearly scope for much further work to improve these estimates. Even if the argument is accepted that tastes change slowly over time, future work will need to investigate the price and income elasticities of demand for food among the different categories of individual.

The third assumption has to do with the share of food in total consumption expenditure for each category of individual. Column 8 of Table 3.11 shows these shares for the year 1930 only. The complete list of assumed food shares that were used in computing the expenditure series is shown in Table 3.12. These figures were arrived at based on the information contained in the 1957-58 household budget survey. It was assumed that as we go further back in time from 1957, the share of food in total consumption expenditure becomes larger. This seems a reasonable assumption and is consistent with Engel's law.

In choosing the actual shares, information contained in contemporary records was used as guidelines. Four distinct periods between 1895 and 1939 were identified during which the weight of food in the total consumption spending of a rural (rubber estate) Indian worker was established. In the first decade of the century, the historical records indicate that an Indian rubber estate worker spends about 90 per cent of his monthly expenditure on food.[1] The assumption was made that food accounted for 90 per cent of the Indian worker's monthly expenditure from 1895 to1912. In the period from 1913 to 1922, the weight of food was reported to be around 87 per cent, and was fixed at 85 per cent for our purposes.[2]

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[1] *Annual Report, Indian Immigration and Emigration, Federated Malay States, 1906*, p. 2.

[2] Marjoribanks and The Honorable Kham Bahadur (1917: 34-35).

Table 3.12
Assumptions on the Share of Food in Total Consumption Expenditure by
Individuals of Various Ethnic Groups, 1895-1939

Year	Malay		Chinese		Indian		European		Eurasian		Others	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
1895	0.90	0.86	0.90	0.85	0.90	0.93	0.40	0.40	0.90	0.93	0.90	0.88
1896	0.90	0.86	0.90	0.85	0.90	0.93	0.40	0.40	0.90	0.93	0.90	0.88
1897	0.90	0.86	0.90	0.85	0.90	0.93	0.40	0.40	0.90	0.93	0.90	0.88
1898	0.90	0.86	0.90	0.85	0.90	0.93	0.40	0.40	0.90	0.93	0.90	0.88
1899	0.90	0.86	0.90	0.85	0.90	0.93	0.40	0.40	0.90	0.93	0.90	0.88
1900	0.90	0.86	0.90	0.85	0.90	0.93	0.40	0.40	0.90	0.93	0.90	0.88
1901	0.90	0.86	0.90	0.85	0.90	0.93	0.40	0.40	0.90	0.93	0.90	0.88
1902	0.90	0.86	0.90	0.85	0.90	0.93	0.40	0.40	0.90	0.93	0.90	0.88
1903	0.90	0.86	0.90	0.85	0.90	0.93	0.40	0.40	0.90	0.93	0.90	0.88
1904	0.90	0.86	0.90	0.85	0.90	0.93	0.40	0.40	0.90	0.93	0.90	0.88
1905	0.90	0.86	0.90	0.85	0.90	0.93	0.40	0.40	0.90	0.93	0.90	0.88
1906	0.90	0.86	0.90	0.85	0.90	0.93	0.40	0.40	0.90	0.93	0.90	0.88
1907	0.90	0.86	0.90	0.85	0.90	0.93	0.40	0.40	0.90	0.93	0.90	0.88
1908	0.90	0.86	0.90	0.85	0.90	0.93	0.40	0.40	0.90	0.93	0.90	0.88
1909	0.90	0.86	0.90	0.85	0.90	0.93	0.40	0.40	0.90	0.93	0.90	0.88
1910	0.90	0.86	0.90	0.85	0.90	0.93	0.40	0.40	0.90	0.93	0.90	0.88
1911	0.90	0.86	0.90	0.85	0.90	0.93	0.40	0.40	0.90	0.93	0.90	0.88
1912	0.90	0.86	0.90	0.85	0.90	0.93	0.40	0.40	0.90	0.93	0.90	0.88
1913	0.85	0.81	0.85	0.80	0.85	0.88	0.35	0.35	0.85	0.88	0.85	0.83
1914	0.85	0.81	0.85	0.80	0.85	0.88	0.35	0.35	0.85	0.88	0.85	0.83
1915	0.85	0.81	0.85	0.80	0.85	0.88	0.35	0.35	0.85	0.88	0.85	0.83
1916	0.85	0.81	0.85	0.80	0.85	0.88	0.35	0.35	0.85	0.88	0.85	0.83
1917	0.85	0.81	0.85	0.80	0.85	0.88	0.35	0.35	0.85	0.88	0.85	0.83
1918	0.85	0.81	0.85	0.80	0.85	0.88	0.35	0.35	0.85	0.88	0.85	0.83
1919	0.85	0.81	0.85	0.80	0.85	0.88	0.35	0.35	0.85	0.88	0.85	0.83
1920	0.85	0.81	0.85	0.80	0.85	0.88	0.35	0.35	0.85	0.88	0.85	0.83
1921	0.85	0.81	0.85	0.80	0.85	0.88	0.35	0.35	0.85	0.88	0.85	0.83
1922	0.85	0.81	0.85	0.80	0.85	0.88	0.35	0.35	0.85	0.88	0.85	0.83
1923	0.70	0.66	0.70	0.65	0.70	0.73	0.35	0.35	0.70	0.73	0.70	0.68
1924	0.70	0.66	0.70	0.65	0.70	0.73	0.35	0.35	0.70	0.73	0.70	0.68
1925	0.70	0.66	0.70	0.65	0.70	0.73	0.35	0.35	0.70	0.73	0.70	0.68
1926	0.70	0.66	0.70	0.65	0.70	0.73	0.35	0.35	0.70	0.73	0.70	0.68
1927	0.70	0.66	0.70	0.65	0.70	0.73	0.35	0.35	0.70	0.73	0.70	0.68
1928	0.70	0.66	0.70	0.65	0.70	0.73	0.35	0.35	0.70	0.73	0.70	0.68
1929	0.70	0.66	0.70	0.65	0.70	0.73	0.35	0.35	0.70	0.73	0.70	0.68
1930	0.65	0.61	0.65	0.60	0.65	0.68	0.30	0.30	0.65	0.68	0.65	0.63
1931	0.65	0.61	0.65	0.60	0.65	0.68	0.30	0.30	0.65	0.68	0.65	0.63
1932	0.65	0.61	0.65	0.60	0.65	0.68	0.30	0.30	0.65	0.68	0.65	0.63
1933	0.65	0.61	0.65	0.60	0.65	0.68	0.30	0.30	0.65	0.68	0.65	0.63
1934	0.65	0.61	0.65	0.60	0.65	0.68	0.30	0.30	0.65	0.68	0.65	0.63
1935	0.65	0.61	0.65	0.60	0.65	0.68	0.30	0.30	0.65	0.68	0.65	0.63
1936	0.65	0.61	0.65	0.60	0.65	0.68	0.30	0.30	0.65	0.68	0.65	0.63
1937	0.65	0.61	0.65	0.60	0.65	0.68	0.30	0.30	0.65	0.68	0.65	0.63
1938	0.65	0.61	0.65	0.60	0.65	0.68	0.30	0.30	0.65	0.68	0.65	0.63
1939	0.65	0.61	0.65	0.60	0.65	0.68	0.30	0.30	0.65	0.68	0.65	0.63
1957	0.62	0.58	0.60	0.55	0.48	0.51	0.19	0.19	0.48	0.51	0.57	0.55

The third period was from 1923 to 1929, during which the weight of food was estimated at 70 per cent.[3] In the fourth period (1930-1939), it was assumed that food accounted for about 65 per cent of his monthly spending.

Based on the above information, the weight of food against total monthly spending of 90 per cent, 85 per cent, 70 per cent and 65 per cent was applied to all rural groups, except for Europeans. Weights for the urban groups were obtained by taking the percentage difference between urban and rural groups in the 1957-58 household budget survey and applying them to the earlier years. The only exception was in the case of the Europeans, where it was assumed that there was no difference in the weight of food between urban and rural dwellers. For the Europeans, the weight of food for the periods 1895-1912, 1913-29, and 1930-39 was estimated at 40 per cent, 35 per cent and 30 per cent respectively.

We can make some general comments about the plausibility of the estimates. Among the aggregates, the estimates on government expenditure are likely to be the most reliable, followed by those on exports and imports. The private investment figures are almost certainly on the low side, although it is not possible at this stage to assess the extent of underestimation. For example, no attempt was made to explicitly estimate investment in the tin mining industry. The lack of records makes it extremely difficult to estimate the value of Chinese mining, which was highly labor intensive and small scale in nature. In comparison, western mining was highly capital intensive, particularly after the introduction of dredging in 1912. Since these mines used mostly imported equipment, the expenditures on these items would have been captured in the returns on machinery imports. Another important omission, due to data unavailability, is investment in the "indigenous" sector of the economy. Ignoring, for example, farm improvements and construction work undertaken by farmers and their families means that a sizeable portion of subsistence agricultural investment is excluded from our estimates. These are areas where future work can help improve the private investment estimates presented here.

The private consumption estimates can be improved by relaxing some of the restrictive assumptions discussed earlier. Figure 3.12 provides a check on our results by comparing our estimates of the monthly expenditure of an Indian rubber estate worker with his average monthly wage. Figure 3.13 does the same for a Chinese tin

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[3] Parmer (1957: 302).

miner. It can be seen that our monthly expenditure estimates are generally lower than earnings, which is what we would have expected. The notable exception was during 1919-21 in the case of the Indian laborer, which was the period of high rice prices brought about by the rice shortage crisis.

Figure 3.12
**A Comparison of the Monthly Wage Rate of an Indian Rubber Estate Worker
and his Monthly Consumption Expenditure, 1895-1939**
(Current Prices)
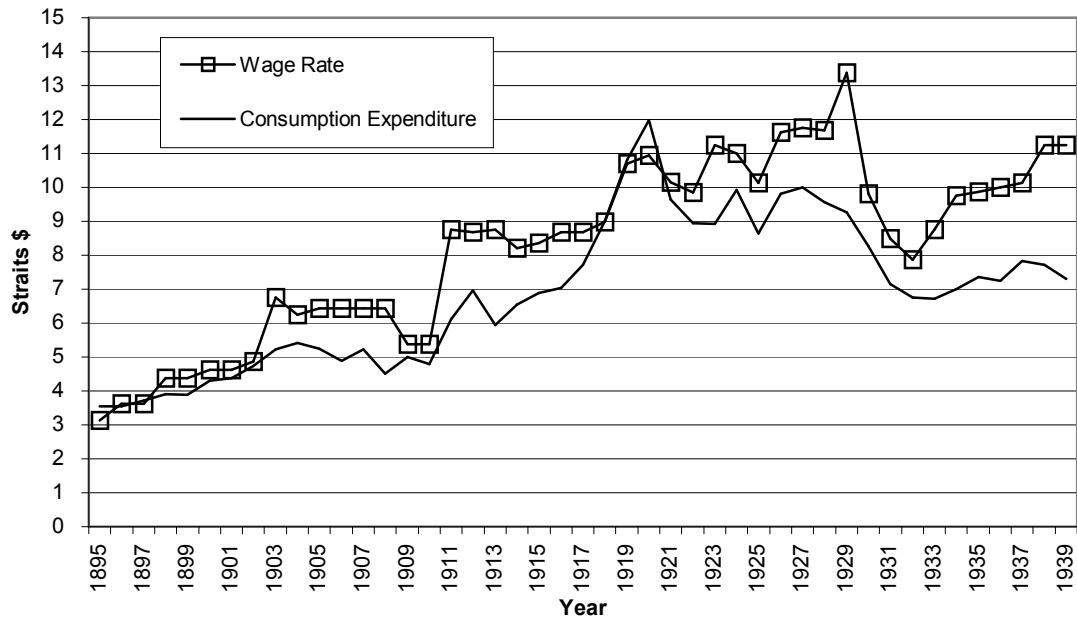
Sources: (1) *Straits Settlements, Blue Book*, 1895-1923.
(2) *Annual Report, Labour Department, Federated Malay States*, 1924, 1926-28, 1930-40.

Figure 3.13
**A Comparison of the Monthly Wage Rate of a Chinese Tin Miner and his
Monthly Consumption Expenditure, 1895-1939**
(Current Prices)
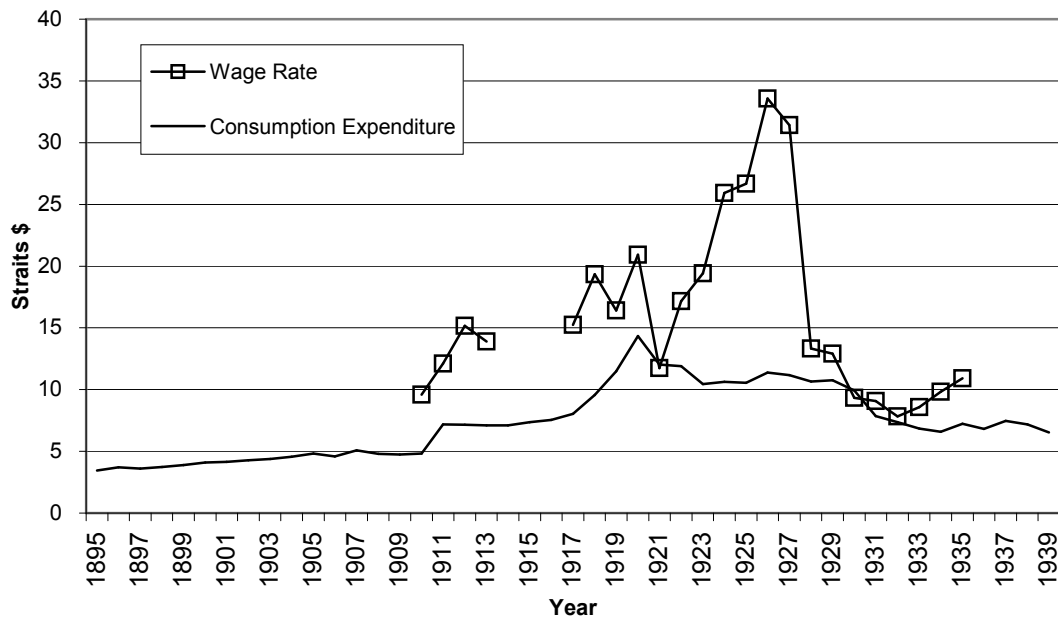
Sources: (1) *Straits Settlements, Blue Book*, 1895-1923.
(2) *Annual Report, Labour Department, Federated Malay States*, 1924, 1926-28, 1930-40.

The foregoing discussion suggests that the GDP estimates should at best be regarded as rough approximations only. These estimates will certainly be continually revised as more data become available and as better methods of estimation are employed. The value of the series presented here is more for the insight they provide us about the long-term trends of the whole economy rather than in the precise magnitude of individual components of GDP or their annual variation. Table 3.13 tabulates the GDP estimates of Malaya at current prices for each year from 1895 to 1939. Figure 3.14 plots these estimates at current and constant 1978 prices.

Table 3.13: Gross Domestic Product of Malaya by Type of Expenditure, 1895-1939 Straits $ million at current prices

Year	Private Consumption Expenditure (1)	Government Consumption Expenditure (2)	Gross Capital Formation (3)	Export of Goods and Services (4)	Import of Goods and Services (5)	GDP at market prices 1 + 2 + 3 + 4 − 5
1895	56.9	10.0	8.4	67.6	69.2	73.7
1896	67.0	10.8	7.5	73.3	68.8	89.8
1897	67.0	13.0	8.7	81.3	77.1	92.9
1898	69.4	15.7	15.1	90.7	86.4	104.5
1899	72.7	14.4	16.2	112.8	97.2	118.9
1900	76.7	16.6	12.4	125.0	107.9	122.8
1901	78.4	20.8	18.1	132.3	107.1	142.5
1902	85.2	15.6	17.8	140.5	103.3	155.8
1903	86.1	17.8	17.5	139.8	123.8	137.4
1904	91.2	18.3	32.0	139.4	130.5	150.4
1905	94.2	16.6	19.7	140.3	114.6	156.2
1906	91.4	18.5	33.6	151.3	118.7	176.1
1907	98.4	20.5	31.2	151.7	128.2	173.6
1908	74.6	20.8	58.1	130.2	120.9	162.8
1909	95.0	20.2	38.6	138.6	99.9	192.5
1910	98.7	22.5	54.2	178.7	112.4	241.7
1911	114.3	23.5	64.9	199.3	147.7	254.3
1912	156.2	25.5	80.2	244.7	176.5	330.1
1913	139.7	31.7	130.9	237.0	186.2	353.1
1914	144.7	42.2	85.4	205.4	157.7	320.0
1915	153.5	42.2	53.5	265.7	150.8	364.1
1916	163.3	41.5	41.3	349.2	182.7	412.6
1917	176.2	47.8	98.7	431.7	204.1	550.3
1918	202.0	49.3	76.7	390.4	219.8	498.6
1919	261.1	80.8	120.3	500.5	310.1	652.6
1920	408.3	112.0	133.1	546.3	446.4	753.3
1921	336.2	125.2	102.1	245.3	232.5	576.3
1922	259.2	73.1	80.2	285.1	195.0	502.6
1923	277.9	74.0	90.4	392.1	234.0	600.4
1924	315.9	73.6	65.2	466.8	257.7	663.8
1925	288.8	83.8	91.1	787.2	358.6	892.3
1926	314.6	109.9	104.5	836.2	439.4	925.8
1927	322.8	109.8	130.4	635.4	433.2	765.2
1928	320.9	110.6	142.5	524.3	421.8	676.5
1929	321.7	118.8	162.2	660.9	444.0	819.6
1930	319.0	110.7	138.2	418.1	363.9	622.1
1931	288.5	107.7	93.0	219.0	232.6	475.6
1932	269.9	88.8	67.9	198.9	174.7	450.8
1933	267.0	79.7	47.2	244.0	176.7	461.2
1934	248.2	71.2	62.6	393.4	230.0	545.4
1935	289.7	82.8	54.0	392.4	242.3	576.6
1936	297.2	78.0	56.1	485.0	272.3	644.0
1937	336.3	98.1	83.3	713.9	369.7	861.9
1938	352.6	124.0	78.2	408.8	321.4	642.2
1939	345.6	111.4	85.6	525.8	340.0	728.4

Figure 3.14

Gross Domestic Product of Malaya at Current and 1978 Prices, 1895-1939
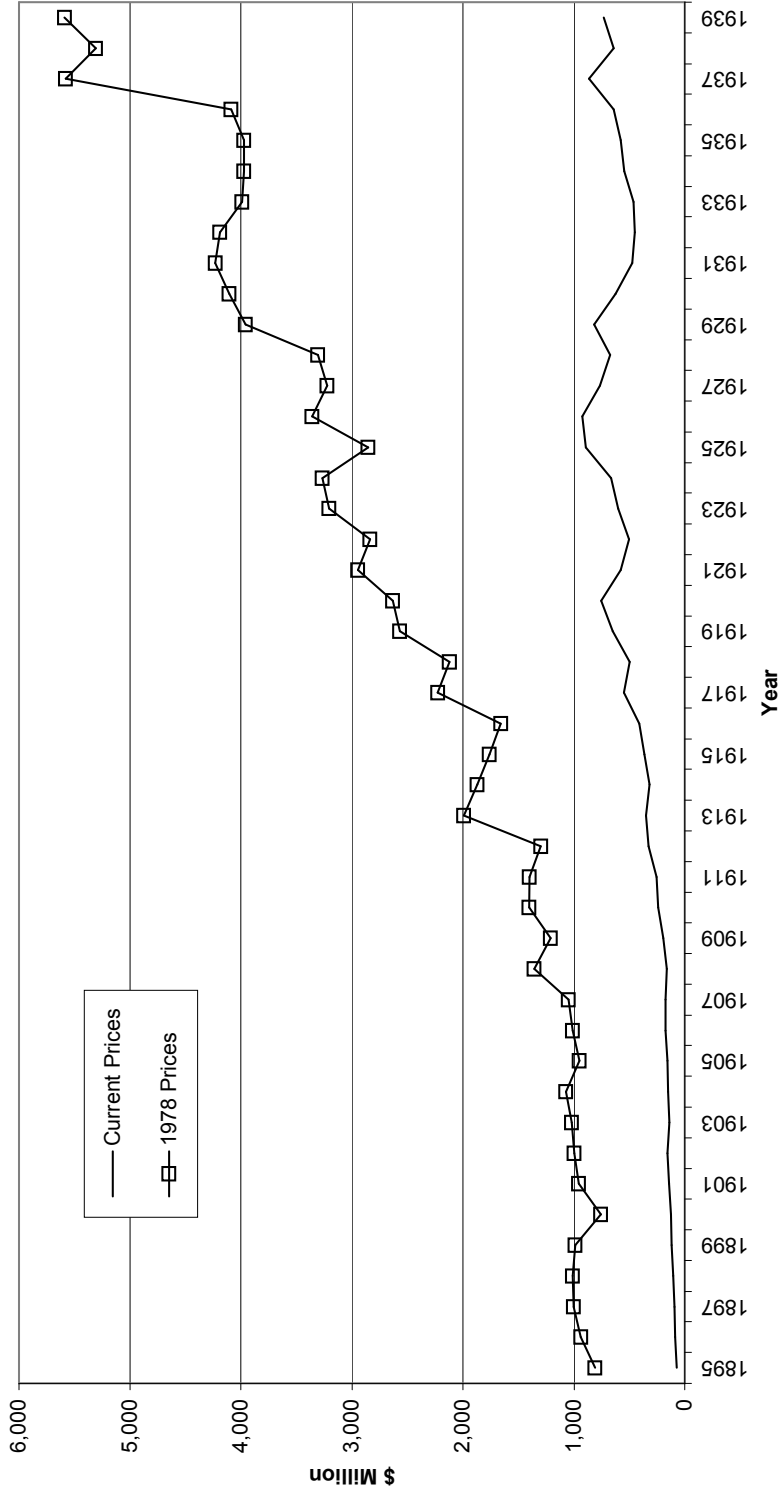
Section 4

4.1 Economic Growth in the Twentieth Century

Figure 4.11 plots the real per capita GDP of Malaya for the period 1895-1997 and of Malaysia for the period 1971-98. At the close of the nineteenth century, Malaya's real GDP per capita stood at about $650. One hundred years later (1997), it had increased to over $7,000. This implies a compound rate of growth of about 2.3 per cent per year for the entire period (1895-1997). This almost tenfold increase in GDP per capita was, however, not evenly distributed over the period. In 1939, real GDP per capita was slightly over two times higher than what it was in 1895. In 1965, it was still a modest 2.75 times higher than the level it was at three-quarters of a century earlier. The really big increase in per capita output took place from the mid-1960s. From 1970 to 1997, GDP per capita increased by a factor of four.

From Table 4.11, we can see that there has been considerable variation in the growth rates of real GDP and real GDP per capita over the course of the century. Pre-war, the biggest advances took place between 1905 and 1921, when real GDP and real GDP per capita grew at an average annual rate of 6 per cent and 3.5 per cent respectively. Growth in this period was driven largely by huge investments in the rubber industry. The interwar years were difficult ones for the economy, mainly as a result of wide fluctuations in rubber and tin prices. In addition to the great depression, the economy experienced several periods of export restriction — the Stevenson Rubber Restriction Scheme (1922-28), the International Rubber Restriction Agreement (1934-41) and the Tin Restriction Agreement (1931-41). Real GDP per capita growth averaged 0.8 per cent per year between 1922 and 1939.

Figure 4.11
Malaya and Malaysia
Gross Domestic Product per capita, 1895-1998
(1978 Prices)

Sources: Rao (1976); Nazrin (2000); Department of Statistics, Malaysia.

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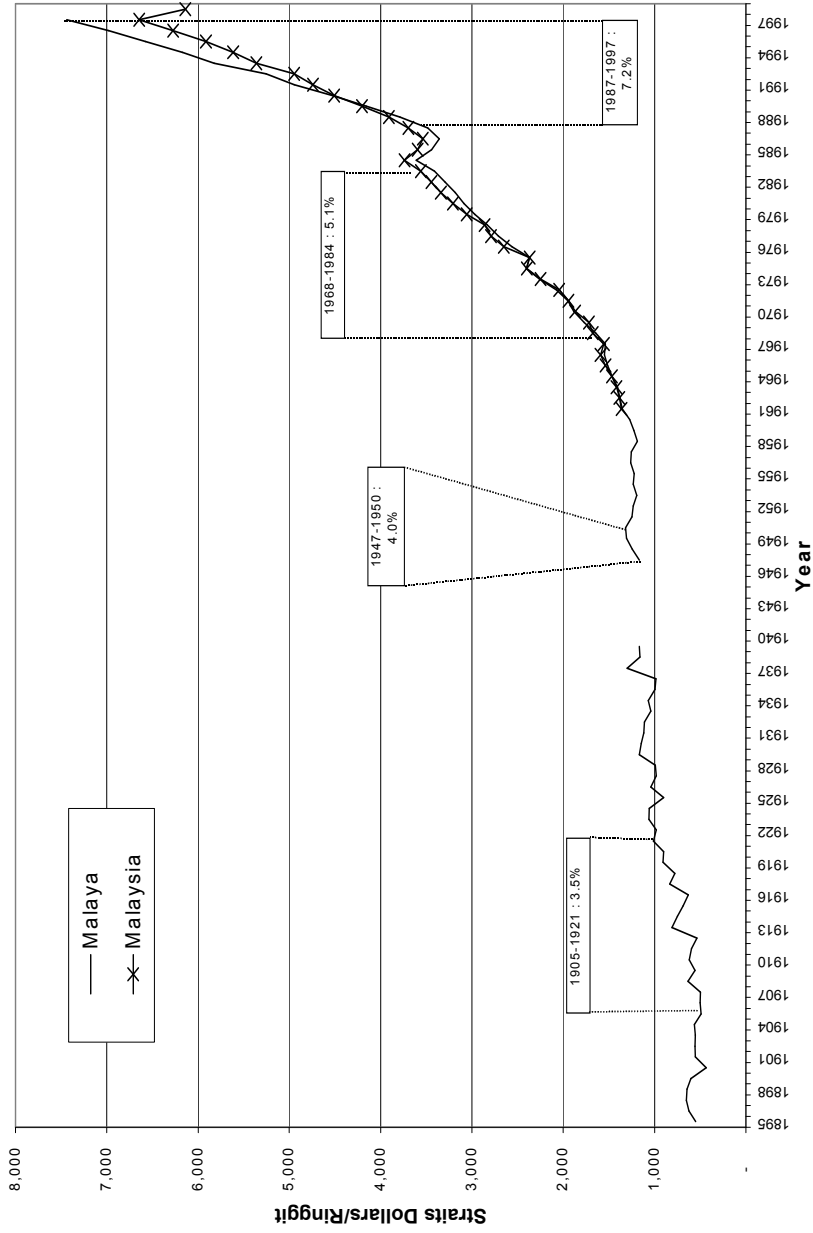
Table 4.11
Average Annual Growth (%) of real GDP, real GDP per capita and Population
of Malaya and Malaysia, 1895-1997

	Malaya			Malaysia		
	GDP	Population	GDP Per Capita	GDP	Population	GDP Per Capita
1895-1939	4.4	2.7	1.7			
1947-1997	6.1	2.4	3.7			
1895-1904	3.2	2.9	0.3			
1905-1921	6.0	2.5	3.5			
1922-1939	3.6	2.8	0.8			
1947-1970	4.8	2.7	2.1			
1971-1986	5.9	2.3	3.6	6.5	2.6	3.9
1987-1997	9.1	1.9	7.2	8.3	2.6	5.7

Sources: Rao (1976); Nazrin (2000); Department of Statistics, Malaysia.

Three distinct growth episodes can be identified in the post-WWII period: (1) the period up to 1970; (2) 1971-86; and, (3) 1987-97. The period up to 1970 was one of great political uncertainty. It includes the Emergency (1948-60), the confrontation with Indonesia (1963-66), the split with Singapore (1965), and the ethnic disturbances of 1969. The 1960s also coincided with the import substitution industrialization phase of Malaysia's economic development. Between 1947 and 1970, real GDP and real GDP per capita grew at an annual average rate of 4.8 per cent and 2.1 per cent respectively. The 1971-86 period marked the heyday of the New Economic Policy (NEP) era, characterized by widespread public sector involvement in the economy,[4] which reached a peak in the early 1980s as a result of the push into heavy industries. The economy went into recession in 1985 and staged a small recovery in 1986. Between 1971 and 1986, real GDP grew at an average annual rate of 5.9 per cent, and real GDP per capita at 3.6 per cent. The economy registered an even better growth performance in 1987-97 following the structural adjustment program that was put in place after the economic crisis of the mid-1980s. Growth of real GDP and real GDP per capita averaged 9.1 per cent and 7.2 per cent respectively during this period.

Section 5

5.1   Sources of Economic Growth

Table 5.11 presents the results of a growth accounting exercise for the period 1900-97. Two sets of results are presented, one for *Malaya* for the period 1900-39 and 1955-70, and the other for *Malaysia* for the period 1962-99. The choice of geographical coverage and time periods was dictated by data availability.

The output measure is GDP in 1978 prices. Data for the 1900-39 period are my own estimates, while those for the post-WWII period are from Rao (1976) for 1947-1959 and the Department of Statistics, Malaysia for 1960-1997. The capital stock figures were obtained by using the perpetual inventory method. Labor input growth is approximated by the growth rate of population for the 1900-60 period, and the growth rate of employment for the post-1960 period. In choosing the factor shares, the suggestions by Sarel (1996) and of Collins and Bosworth (1996) were used as guidelines and a capital share of 30 per cent was applied for the entire period.

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[4] Although the NEP officially ran from 1970 to 1990, many of the NEP guidelines were relaxed after

Table 5.11
Growth Accounting Breakdown of Sources of Growth, 1900-1997
(Capital Share = 0.3, Labor Share = 0.7)

Period	Rate of Growth (%):				Contribution to GDP growth (%):		
	GDP	Capital	Labor	TFP	Capital	Labor	TFP
Malaya							
1900-1939	4.6	2.1	1.9	0.6	45.7	41.3	13.0
1900-1917	4.8	3.4	1.9	-0.5	70.8	39.6	-10.4
1918-1939	4.3	1.0	1.9	1.4	23.3	44.2	32.5
1955-1970	5.4	1.3	1.9	2.2	24.1	35.2	40.7
Malaysia							
1962-1999	6.6	2.7	2.1	1.8	40.9	31.8	27.3
1962-1970	6.4	2.0	2.0	2.4	31.3	31.3	37.4
1971-1986	6.5	3.2	1.9	1.4	49.2	29.2	21.6
1987-1997	8.3	2.6	2.5	3.2	31.3	30.1	38.6

Source: Nazrin, 2000, Table 3.21, p. 153.

Capital input contribution: The increase in capital input was responsible for 2.1 percentage points, or 45.7 per cent, of the 4.6 per cent growth rate of real GDP over the 1900-39 period. The contribution was 2.7 percentage points, or 41 per cent, over the 1962-99 period. Pre-war, capital's contribution was much larger during 1900-17 than during 1918-39, both absolutely and proportionally. For the years 1962-97, the growth of capital has varied from 2.0 per cent a year during 1962-70, 3.2 per cent during 1971-86, and 2.6 per cent during 1987-97. The percentage contribution to output growth was highest, at 49.2 per cent, during 1971-86.

Labor input contribution: Labor input contribution to overall growth has remained stable at between 1.9 to 2.1 per cent for most of the century. The exception was during 1987-97, when labor's contribution rose to 2.5 per cent, mainly as a result of the entry into the workforce of the large school-age cohorts of the 1960s and 1970s.

the mid-1980s recession.

TFP contribution: Pre-war, TFP growth was positive during 1918-39, contributing 1.4 percentage points (32 per cent) of the observed 4.3 per cent average growth in real output, and negative during 1900-17 (–0.5 percentage points). Table 5.11 also shows that there was a marked productivity growth slowdown in the 1970s and early 1980s. There was a pick-up in TFP growth after the mid-1980s with TFP growth averaging 3.2 per cent during 1987-97. In fact, the contribution of TFP growth to overall growth (38.6 per cent) during this period was larger than that of either labor or capital, a phenomenon witnessed only in the late 1950s and 1960s.

Table A1.1
Prices of 36 Food Items, 1895-1899

Straits $

	Food Items	Unit	1895	1896	1897	1898	1899
1	Bread	lb.	0.06	0.06	0.06	0.07	0.07
2	Potatoes	per kati	0.06	0.07	0.06	0.06	0.06
3	Coconut	nut	0.06	0.06	0.06	0.06	0.06
4	Brinjals	per kati	0.02	0.03	0.02	0.02	0.03
	Carrots and pumpkins	per kati	0.02	0.02	0.02	0.03	0.03
	Chilies	per kati	0.11	0.08	0.14	0.16	0.14
	Cucumber	per kati	0.02	0.03	0.02	0.02	0.03
	Kangkong	per kati	0.01	0.01	0.01	0.01	0.01
	Radish, Chinese	per kati	0.03	0.03	0.02	0.02	0.03
	Sawi bungah	per kati	0.11	0.10	0.10	0.13	0.13
5	Pineapple	each	0.03	0.04	0.04	0.03	0.02
6	Beef	per kati	0.25	0.25	0.25	0.26	0.32
	Mutton	per kati	0.40	0.33	0.40	0.47	0.48
	Pork	per kati	0.34	0.35	0.30	0.30	0.35
	Chicken	per kati	0.28	0.32	0.30	0.31	0.35
7	Chencharu	per kati	0.08	0.09	0.11	0.09	0.12
	Crabs	per kati	0.11	0.11	0.11	0.11	0.10
	Pari	per kati	0.08	0.08	0.09	0.12	0.11
	Prawns and shrimps	per kati	0.19	0.20	0.16	0.16	0.20
	Tenggiri	per kati	0.15	0.14	0.16	0.18	0.17
8	Eggs, Chicken	each	0.02	0.03	0.02	0.03	0.03
	Eggs, Duck	each	0.02	0.03	0.02	0.02	0.02
9	Milk, Condensed	14 oz.	0.24	0.22	0.23	0.24	0.23
	Milk, Fresh	pints	0.10	0.10	0.11	0.11	0.11
10	Oil, Coconut	per kati	0.16	0.16	0.14	0.17	0.19
	Oil, Groundnut	per kati	0.13	0.17	0.14	0.16	0.16
11	Butter	lb.	0.90	0.89	0.81	0.71	0.96
	Ghee	lb.	0.05	0.05	0.07	0.09	0.07
	Lard	kati	0.19	0.18	0.24	0.22	0.23
12	Belachan	per kati	0.14	0.14	0.14	0.15	0.15
	Chilies, Dried	per kati	0.12	0.12	0.21	0.21	0.16
	Garlic	per kati	0.07	0.08	0.09	0.09	0.08
	Tamarind	per kati	0.06	0.05	0.07	0.07	0.07
13	Rice, Local	per kati	0.03	0.03	0.03	0.03	0.03
	Rice, Siam	per kati	0.03	0.04	0.04	0.04	0.04
	Rice, Rangoon	per kati	0.03	0.04	0.05	0.05	0.05

1 Cereals	5 Fruit	9 Milk and milk products	13 Rice
2 Starchy roots	6 Meat	10 Oil, vegetable origin	
3 Pulses, nuts and seeds	7 Seafood	11 Oil and fat, animal origin	
4 Vegetables	8 Eggs	12 Spices	

Source: Selangor, Government Gazette, 1895-1899.

Table A1.2
Prices of 19 Food Items, 1900-1911

Straits $

	Food Items	Unit	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911
1	Potatoes	per kati	0.06	0.07	0.08	0.08	0.08	0.07	0.06	0.07	0.07	0.07	0.07	0.07
2	Coconuts	nut	0.06	0.06	0.07	0.07	0.07	0.07	0.06	0.07	0.07	0.07	0.06	0.06
3	Brinjals	per kati	0.03	0.09	0.12	0.06	0.05	0.03	0.03	0.03	0.04	0.03	0.03	0.04
	Carrot & pumpkin	per kati	0.03	0.03	0.04	0.04	0.04	0.02	0.03	0.04	0.04	0.03	0.04	0.04
	Cucumber	per kati	0.04	0.04	0.04	0.06	0.06	0.03	0.04	0.05	0.04	0.03	0.04	0.04
4	Pineapple	each	0.05	0.07	0.06	0.07	0.07	0.04	0.05	0.06	0.08	0.05	0.04	0.06
5	Beef	per kati	0.26	0.29	0.31	0.30	0.30	0.30	0.30	0.28	0.30	0.28	0.29	0.31
	Mutton	per kati	0.58	0.55	0.58	0.59	0.60	0.56	0.49	0.50	0.55	0.48	0.31	0.40
	Pork	per kati	0.37	0.35	0.35	0.31	0.35	0.38	0.35	0.39	0.36	0.38	0.38	0.38
	Chicken	per kati	0.30	0.36	0.39	0.42	0.42	0.43	0.37	0.36	0.35	0.35	0.35	0.38
	Duck	per kati	0.80	0.76	0.83	0.85	0.79	0.69	0.76	0.70	0.56	0.55	0.60	0.65
6	Crabs	per kati	0.16	0.17	0.16	0.20	0.18	0.16	0.18	0.18	0.19	0.16	0.18	0.2
	Prawns & shrimps	per kati	0.33	0.33	0.37	0.34	0.39	0.40	0.32	0.39	0.32	0.32	0.29	0.31
7	Milk, fresh	pints	0.31	0.26	0.26	0.40	0.44	0.45	0.40	0.40	0.40	0.40	0.40	0.40
8	Butter	lb.	0.74	0.72	0.78	0.77	0.78	0.74	0.75	0.75	0.74	0.73	0.73	0.73
9	Garlic	per kati	0.07	0.13	0.12	0.10	0.14	0.10	0.11	0.11	0.08	0.07	0.09	0.10
10	Rice, Local	per kati	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.01	0.03	0.03	0.03
	Rice, Siam	per kati	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.08
	Rice, Rangoon	per kati	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

1 Starchy roots
2 Pulses, nuts and seeds
3 Vegetable

4 Fruit
5 Meat
6 Seafood

7 Milk and milk products
8 Oil and fat, animal origin
9 Spices

10 Rice

Sources: (1) Selangor, Government Gazette, 1900-1909.
(2) Perak, Government Gazette, 1904-1909.
(3) Negri Sembilan, Government Gazette, 1900-1909.
(4) Federated Malay States, Government Gazette, 1910-1911.

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Table A1.3
Prices of 46 Food Items, 1912-1919

Straits $

	Food Items	Unit	1912	1913	1914	1915	1916	1917	1918	1919
1	Bread	lb.	0.07	0.07	0.07	0.06	0.06	0.07	0.17	0.18
2	Sugar	per kati	0.08	0.08	0.11	0.13	0.12	0.13	0.11	0.23
3	Coconut	nut	0.07	0.07	0.07	0.06	0.09	0.06	0.06	0.07
4	Brinjals	per kati	0.04	0.04	0.04	0.03	0.04	0.04	0.05	0.06
	Carrots and pumpkins	per kati	0.05	0.04	0.04	0.03	0.04	0.04	0.04	0.05
	Chilies	per kati	0.25	0.22	0.17	0.23	0.26	0.25	0.23	0.43
	Cucumber	per kati	0.05	0.04	0.04	0.04	0.04	0.05	0.06	0.06
	Kangkong	per kati	0.05	0.05	0.05	0.03	0.02	0.03	0.04	0.05
	Onions, Big	per kati	0.08	0.08	0.09	0.08	0.09	0.11	0.15	0.17
	Radish, Chinese	per kati	0.10	0.10	0.10	0.17	0.16	0.17	0.16	0.17
	Sawi bungah	per kati	0.04	0.04	0.04	0.04	0.12	0.04	0.05	0.06
	Spinach	per kati	0.05	0.05	0.03	0.03	0.03	0.04	0.04	0.05
	Tomatoes	per kati	0.24	0.25	0.26	0.27	0.24	0.25	0.26	0.27
5	Durian	each	0.23	0.30	0.23	0.22	0.18	0.49	0.37	0.55
	Pineapple	each	0.10	0.10	0.08	0.07	0.07	0.08	0.08	0.11
6	Beef	per kati	0.30	0.31	0.29	0.33	0.33	0.33	0.38	0.39
	Mutton	per kati	0.40	0.40	0.41	0.45	0.42	0.54	0.61	0.68
	Pork	per kati	0.40	0.40	0.42	0.43	0.41	0.41	0.51	0.46
	Chicken	per kati	0.38	0.38	0.38	0.50	0.50	0.55	0.52	0.50
	Duck	per kati	0.79	0.73	0.65	0.71	0.66	0.60	0.65	1.15
7	Bawal hitam	per kati	0.28	0.26	0.28	0.28	0.28	0.34	0.38	0.39
	Bawal puteh	per kati	0.31	0.29	0.32	0.31	0.32	0.36	0.41	0.41
	Chencharu	per kati	0.21	0.19	0.21	0.21	0.19	0.23	0.23	0.25
	Crabs	per kati	0.17	0.18	0.19	0.18	0.19	0.19	0.23	0.24
	Crustaceans, Others	per kati	0.28	0.26	0.28	0.31	0.34	0.37	0.39	0.38
	Kurau	per kati	0.30	0.41	0.81	0.30	0.33	0.36	0.42	0.43
	Parang	per kati	0.29	0.25	0.29	0.25	0.24	0.30	0.33	0.35
	Pari	per kati	0.12	0.11	0.11	0.13	0.13	0.16	0.17	0.17
	Prawns and shrimps	per kati	0.20	0.20	0.20	0.25	0.25	0.24	0.31	0.40
	Tenggiri	per kati	0.29	0.26	0.30	0.28	0.28	0.35	0.38	0.38
8	Eggs, Chicken	each	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04
	Eggs, Duck	each	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04
9	Milk, Condensed	14 oz	0.18	0.19	0.27	0.27	0.30	0.34	0.43	0.43
10	Oil, Coconut	per kati	0.23	0.24	0.19	0.19	0.21	0.19	0.21	0.32
	Oil, Groundnut	per kati	0.19	0.20	0.19	0.18	0.19	0.27	0.36	0.46
11	Butter	lb.	0.65	0.65	0.60	0.66	0.71	0.72	0.82	0.90
	Ghee	lb.	0.06	0.07	0.08	0.08	0.08	0.08	0.10	0.12
	Lard	per kati	0.25	0.29	0.25	0.21	0.25	0.38	0.48	0.63
12	Belachan	per kati	0.14	0.13	0.18	0.11	0.18	0.13	0.14	0.14
	Chilies, Dried	per kati	0.19	0.18	0.26	0.26	0.19	0.19	0.34	0.33
	Garlic	per kati	0.09	0.09	0.09	0.10	0.10	0.13	0.17	0.18
	Onions, Small	per kati	0.08	0.08	0.09	0.11	0.10	0.11	0.14	0.17
	Tamarind	per kati	0.07	0.06	0.07	0.06	0.08	0.07	0.07	0.07
13	Rice, Local	per kati	0.08	0.04	0.03	0.03	0.03	0.03	0.03	0.05
	Rice, Siam	per kati	0.08	0.08	0.07	0.07	0.07	0.07	0.09	0.13
	Rice, Rangoon	per kati	0.07	0.06	0.06	0.06	0.06	0.06	0.09	0.10

1 Cereals	5 Fruit	9 Milk and milk products	13 Rice
2 Sugar	6 Meat	10 Oil, vegetable origin	
3 Pulses, nuts and seeds	7 Seafood	11 Oil and fat, animal origin	
4 Vegetables	8 Eggs	12 Spices	

Source: Federated Malay States, Government Gazette, 1912-1919.

Table A1.4
Prices of 42 Food Items, 1920-1939

Straits $

	Food Items	Unit	1920	1921	1922	1913	1924	1925	1926	1927	1928	1929
1	Bread	lb.	0.19	0.20	0.18	0.11	0.10	0.10	0.10	0.14	0.14	0.14
2	Potatoes	per kati	0.12	0.11	0.09	0.12	0.14	0.11	0.20	0.21	0.20	0.13
3	Sugar	per kati	0.46	0.20	0.14	0.15	0.15	0.12	0.11	0.11	0.10	0.09
4	Coconut	nut	0.13	0.08	0.06	0.06	0.07	0.07	0.07	0.08	0.07	0.07
5	Brinjals	per kati	0.07	0.05	0.04	0.04	0.05	0.05	0.07	0.08	0.06	0.06
	Cabbage	per kati	0.25	0.19	0.20	0.19	0.18	0.19	0.22	0.19	0.15	0.15
	Carrots and pumpkins	per kati	0.06	0.05	0.04	0.04	0.05	0.05	0.05	0.05	0.04	0.04
	Chilies	per kati	0.22	0.16	0.13	0.14	0.18	0.19	0.24	0.25	0.19	0.22
	Cucumber	per kati	0.08	0.05	0.05	0.05	0.05	0.06	0.08	0.07	0.06	0.06
	Kangkong	per kati	0.06	0.05	0.04	0.04	0.04	0.04	0.06	0.05	0.05	0.05
	Onions, Big	per kati	0.23	0.15	0.12	0.12	0.13	0.12	0.14	0.13	0.12	0.11
	Radish, Chinese	per kati	0.16	0.16	0.07	0.05	0.06	0.06	0.08	0.10	0.06	0.04
	Sawi bungah	per kati	0.13	0.10	0.26	0.05	0.08	0.06	0.09	0.10	0.08	0.09
	Spinach	per kati	0.07	0.06	0.09	0.04	0.04	0.04	0.05	0.07	0.06	0.06
	Tomatoes	per kati	0.32	0.35	0.27	0.19	0.24	0.34	0.36	0.34	0.34	0.29
6	Pineapple	each	0.15	0.11	0.10	0.08	0.08	0.09	0.11	0.12	0.11	0.10
7	Beef	per kati	0.59	0.60	0.53	0.47	0.44	0.47	0.58	0.60	0.59	0.56
	Mutton	per kati	1.10	0.86	0.58	0.60	0.60	0.64	0.64	0.63	0.65	0.65
8	Bawal hitam	per kati	0.50	0.41	0.39	0.36	0.36	0.41	0.51	0.49	0.47	0.49
	Bawal puteh	per kati	0.52	0.45	0.43	0.43	0.42	0.46	0.56	0.54	0.52	0.54
	Chencharu	per kati	0.34	0.24	0.23	0.22	0.20	0.23	0.28	0.30	0.27	0.29
	Crabs	per kati	0.34	0.26	0.25	0.23	0.24	0.24	0.25	0.25	0.24	0.27
	Crustaceans, Others	per kati	0.49	0.41	0.35	0.41	0.41	0.45	0.50	0.48	0.50	0.53
	Kurau	per kati	0.58	0.48	0.46	0.46	0.48	0.53	0.64	0.63	0.60	0.65
	Parang	per kati	0.48	0.38	0.34	0.31	0.30	0.34	0.41	0.39	0.38	0.41
	Pari	per kati	0.22	0.19	0.16	0.13	0.12	0.14	0.16	0.15	0.15	0.17
	Prawns and shrimps	per kati	0.52	0.44	0.38	0.35	0.34	0.37	0.38	0.36	0.37	0.41
	Tenggiri	per kati	0.51	0.43	0.41	0.37	0.37	0.41	0.52	0.50	0.48	0.52
9	Eggs, Chicken	each	0.08	0.06	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05
	Eggs, Duck	each	0.07	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05
10	Milk, Condensed	14 oz.	0.49	0.50	0.38	0.37	0.34	0.30	0.29	0.27	0.26	0.26
11	Oil, Coconut	per kati	0.45	0.27	0.22	0.24	0.25	0.25	0.29	0.25	0.27	0.24
12	Butter	lb.	1.05	1.02	0.81	0.83	0.81	0.79	0.77	0.73	0.77	1.07
	Lard	kati	0.73	0.49	0.33	0.43	0.42	0.42	0.48	0.47	0.44	0.42
13	Belachan	per kati	0.21	0.21	0.13	0.16	0.14	0.17	0.16	0.16	0.16	0.26
	Chilies, Dried	per kati	0.42	0.24	0.26	0.26	0.28	0.29	0.30	0.32	0.17	0.29
	Garlic	per kati	0.36	0.22	0.16	0.16	0.19	0.22	0.23	0.19	0.19	0.20
	Onions, Small	per kati	0.22	0.15	0.13	0.13	0.14	0.13	0.14	0.14	0.13	0.13
	Tamarind	per kati	0.12	0.14	0.10	0.12	0.11	0.11	0.10	0.11	0.12	0.12
14	Rice, Local	per kati	0.06	0.07	0.03	0.04	0.07	0.03	0.03	0.03	0.04	0.03
	Rice, Siam	per kati	0.21	0.19	0.15	0.08	0.09	0.09	0.09	0.09	0.09	0.09
	Rice, Rangoon	per kati	0.21	0.19	0.17	0.07	0.08	0.08	0.09	0.09	0.08	0.08

1 Cereals	5 Vegetables	9 Eggs	13 Spices
2 Starchy roots	6 Fruit	10 Milk and milk products	14 Rice
3 Sugar	7 Meat	11 Oil, vegetable origin	
4 Pulses, nuts and seeds	8 Seafood	12 Oil and fat, animal origin	

Source: Federated Malay States, Government Gazette, 1920-1929.

Table A1.4 (continued)

	Food Items	Unit	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
1	Bread	lb.	0.14	0.13	0.12	0.14	0.14	0.14	0.13	0.14	0.14	0.14
2	Potatoes	per kati	0.14	0.11	0.11	0.11	0.10	0.12	0.10	0.10	0.09	0.09
3	Sugar	per kati	0.07	0.09	0.10	0.11	0.10	0.10	0.09	0.09	0.08	0.08
4	Coconut	nut	0.06	0.04	0.03	0.03	0.03	0.03	0.04	0.05	0.04	0.03
5	Brinjals	per kati	0.05	0.04	0.03	0.03	0.03	0.03	0.04	0.04	0.05	0.05
	Cabbage	per kati	0.13	0.14	0.13	0.12	0.13	0.14	0.15	0.16	0.14	0.11
	Carrots and pumpkins	per kati	0.04	0.03	0.03	0.04	0.04	0.03	0.04	0.03	0.04	0.04
	Chilies	per kati	0.17	0.15	0.12	0.17	0.11	0.11	0.09	0.12	0.14	0.11
	Cucumber	per kati	0.05	0.04	0.04	0.03	0.03	0.04	0.04	0.05	0.05	0.05
	Kangkong	per kati	0.04	0.04	0.03	0.03	0.03	0.04	0.03	0.04	0.04	0.05
	Onions, Big	per kati	0.10	0.09	0.08	0.08	0.07	0.06	0.08	0.08	0.08	0.07
	Radish, Chinese	per kati	0.04	0.04	0.03	0.02	0.02	0.04	0.03	0.04	0.04	0.04
	Sawi bungah	per kati	0.07	0.06	0.05	0.05	0.05	0.05	0.04	0.05	0.05	0.06
	Spinach	per kati	0.06	0.05	0.05	0.04	0.04	0.04	0.03	0.03	0.04	0.05
	Tomatoes	per kati	0.28	0.23	0.18	0.16	0.14	0.16	0.12	0.14	0.15	0.15
6	Pineapple	each	0.09	0.07	0.06	0.05	0.04	0.04	0.04	0.05	0.04	0.07
7	Beef	per kati	0.48	0.46	0.42	0.35	0.30	0.32	0.34	0.34	0.39	0.39
	Mutton	per kati	0.63	0.56	0.42	0.38	0.39	0.39	0.43	0.42	0.42	0.42
8	Bawal hitam	per kati	0.41	0.31	0.28	0.26	0.27	0.28	0.25	0.30	0.31	0.30
	Bawal puteh	per kati	0.47	0.35	0.31	0.29	0.31	0.32	0.32	0.36	0.36	0.33
	Chencharu	per kati	0.26	0.22	0.19	0.16	0.15	0.15	0.15	0.17	0.19	0.19
	Crabs	per kati	0.25	0.17	0.13	0.12	0.11	0.11	0.12	0.13	0.14	0.13
	Crustaceans, Others	per kati	0.51	0.47	0.43	0.37	0.37	0.39	0.40	0.42	0.42	0.32
	Kurau	per kati	0.61	0.51	0.41	0.36	0.38	0.38	0.36	0.44	0.44	0.42
	Parang	per kati	0.38	0.29	0.24	0.21	0.21	0.21	0.20	0.23	0.27	0.23
	Pari	per kati	0.15	0.13	0.14	0.10	0.08	0.07	0.07	0.08	0.08	0.09
	Prawns and shrimps	per kati	0.33	0.30	0.26	0.27	0.30	0.28	0.25	0.37	0.34	0.32
	Tenggiri	per kati	0.43	0.34	0.29	0.26	0.26	0.29	0.28	0.30	0.30	0.24
9	Egg, Chicken	each	0.04	0.03	0.03	0.03	0.02	0.03	0.03	0.03	0.03	0.03
	Eggs, Duck	each	0.04	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03
10	Milk, Condensed	14 oz.	0.26	0.26	0.26	0.26	0.25	0.25	0.22	0.24	0.23	0.22
11	Oil, Coconut	per kati	0.24	0.17	0.14	0.14	0.14	0.12	0.14	0.19	0.12	0.11
12	Butter	lb.	1.05	0.77	0.64	0.61	0.60	0.60	0.55	0.50	0.52	0.54
	Lard	kati	0.34	0.30	0.34	0.35	0.35	0.35	0.32	0.33	0.33	0.31
13	Belachan	per kati	0.30	0.21	0.22	0.23	0.23	0.23	0.21	0.21	0.23	0.23
	Chilies, Dried	per kati	0.25	0.24	0.15	0.14	0.19	0.15	0.10	0.20	0.25	0.24
	Garlic	per kati	0.16	0.15	0.13	0.11	0.10	0.09	0.13	0.14	0.13	0.14
	Onions, Small	per kati	0.11	0.10	0.08	0.07	0.06	0.06	0.06	0.06	0.07	0.07
	Tamarind	per kati	0.11	0.11	0.09	0.09	0.08	0.08	0.07	0.08	0.08	0.08
14	Rice, Local	per kati	0.02	0.01	0.02	0.02	0.02	0.03	0.03	0.04	0.04	0.04
	Rice, Siam	per kati	0.08	0.05	0.05	0.04	0.04	0.05	0.05	0.05	0.05	0.04
	Rice, Rangoon	per kati	0.07	0.05	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.04

1 Cereals	5 Vegetables	9 Eggs	13 Spices
2 Starchy roots	6 Fruit	10 Milk and milk products	14 Rice
3 Sugar	7 Meat	11 Oil, vegetable origin	
4 Pulses, nuts and seeds	8 Seafood	12 Oil and fat, animal origin	

Source: Federated Malay States, Government Gazette, 1930-1939.

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