

APPENDIX I

THE YIELD CYCLE

Post war material planted up to 1954 consisted mainly of clonal seedlings and the older clones 1742 and 1286. Based on commercial yield records which were provided by a large number of estates to the R.R.I. the average yield of this type of material has been estimated to increase from 450 lbs in the first year of tapping to 1,200 lbs in the 7th to 9th year of tapping after that a decrease to 1,000 lbs per acre per annum has been assumed to account for the lower yields on renewed bark. The yield for each year are given under A in the following table.

The average yield of modern high yielding clones has been estimated in the last column. Between 1955-1957 about 25% of the planting was done with these high yielding clones. Between 1958-1960 this was about 50%. After 1961 an increase has been assumed up to 75%. On this assumption yield has been calculated for columns B, C, D.

THE YEAR CYCLE

Year of Tapping	Material Planted 1946-54 A	Material Planted 1955-57 B	Material Planted 1958-60 C	Material Planted 1961 onwards. D	Modern high Yielding Clones
1st year	450	460	475	490	500
2nd year	600	650	700	750	800
3rd year	750	810	875	940	1,000
4th year	900	980	1,050	1,120	1,200
5th year	1,050	1,125	1,200	1,275	1,350
6th year	1,150	1,225	1,300	1,375	1,450
7th, 9th year	1,200	1,275	1,350	1,425	1,500
10th year	1,150				
11th year	1,100				
12th year	1,050				
13th and the following	1,000				

Source: Paardekoopers Forecast on Production of Natural Rubber to 1975.

## APPENDIX II

### RUBBER PRICES AND ECONOMIC GROWTH

Economic growth is defined as "the increase in Total Gross Domestic Products (RGDPs) in one period when compared with another period." A comparison between the fluctuating nature of the annual RGDP with that of the annual prices of rubber will help to explain how rubber price changes has been a determining factor in the post-war economic growth of Malaya. This comparison is shown in Table 1.

The close correlation between the fluctuating nature of the RGDPs of Malaya and the fluctuating nature of the rubber prices is evident from the figures in Table 1. The highest annual rate of growth of the Malayan economy was 60.8% in 1950, and the highest annual rate of decline was -16.9% in 1952. Correspondingly, the highest annual rate of rubber price increase was 133.2% also in 1950, and the highest annual rate of decrease in rubber price was -43.3% also in 1952. This is not just a mere coincidence, as we shall see later that there is a close correlation between rubber price changes and the RGDPs. Why is there such a close correlation? It is simply because when rubber price increases, rubber export proceeds increase accordingly, ceteris paribus; and since rubber export proceeds form a considerable portion of the Malayan Gross National Product, it is not unexpected that the RGDPs increase or decrease, following the upswing or downswing of rubber prices. When we examine the fluctuating nature of the RGDP closely, we find that it is mainly due to rubber price changes. Of course, changes in prices of other exports like tin, iron ore, etc. also caused changes in the export proceeds, hence the RGDPs; but the fluctuations in the prices of these commodities were far less critical than the fluctuations in the prices of rubber. Therefore we can quite safely assume that the root cause of instability in export proceeds is due to violent fluctuations in prices of rubber.

If we look at Table 1 we find that average annual prices of rubber in 1947 to 1949 ranged from 37 cents to 42 cents per lb., and the low prices of rubber is also reflected in the low RGDPs during this period. The Malayan economy was in fact "crawling at a snail's pace."

But 1950 witnessed a sharp increase in the price level of rubber, an increase of about 133.2% over the 1949's figure. The price of rubber for that year sky-rocketed to M 100.2 cents per pound because of the U.S.A.'s purchases for strategic stock-piling on account of the Korean war. This fantastic increase in rubber price was the main cause for the fantastic increase in the RGDP in 1950, an increase of 60.8% in a single year between 1949 and 1950. It

normally takes a country about twenty years to achieve this rate of growth. It was because of this first 'big push' which was mainly due to the phenomenal increase in price of rubber, that the Malayan economy 'took off' to a much higher level of development. In the following year, 1951, the price of rubber still increased, though at a lower rate, and similarly, there was an increase in the GDP for that year, but also at a lower rate. The slower momentum was followed by a big downturn which started in 1952. Here again, it was mainly because of the great fall in the price of rubber, (at a rate of -43.3%) that the GDP fell by -16.9% and the economic position further deteriorated as the prices of rubber further declined.

However, for various reasons, such as the replenishment of stocks by manufacturers and the high level of industrial activity in consuming countries like U.S.A., Canada and U.K., this downward trend in prices of rubber was reversed in 1953, when it increased by 69.6% over the 1952's figure. Again, Malaya benefited much from this phenomenal increase in the price of rubber (also tin), and this increased the GDP, which in turn increased the GDP by 27.4%. This second 'big push' put the Malayan economy on a higher level of economic development. But the high price of rubber was again short lived, lasting for only one year, after which it declined, and once again economic decay set in by 1957.

Soon after that, the falling prices of rubber, which was due mainly to a mild recession in world trade, were reversed when the rubber market revived in 1958, when there were heavy bulk purchases by Russia and China. The price of rubber increased by 26.2% over the 1957's figure, and it was principally because of this price upswing that increased the GDP (rubber export proceeds increased from \$1,197 million in 1957 to \$1,722 million in 1958 and \$1,829 million in 1960)<sup>1</sup> and this increase played the main part in raising the GDP by 15.1% in 1958. Again, like the preceding two 'big pushes', this third 'big push' put the Malayan economy on a yet higher level of economic development.

This upswing and downswing in the post-war Malayan economy seems to follow the same pattern as the upswing and downswing in the prices of rubber. This pattern can be traced and classified into four 'cycles':<sup>2</sup>

- (a) Pre-cycle Period, 1947-1949;
- (b) First post-war Malayan 'cycle', 1950-54;
- (c) Second post-war Malayan 'cycle', 1955-58;
- (d) Third post-war Malayan 'cycle', 1959-62.

The three post-war cycles were all export induced. Each subsequent trough and peak of each cycle was higher than its predecessors.

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<sup>1</sup>Lim Chong Yah: *Ekonoxi IV*, 1963.

<sup>2</sup>*Ibid*, page 14

It must also be pointed out that changes in the rubber price are not due entirely to changes in prices of rubber (which caused changes in rubber export proceeds), but also due to changes in other exports, like changes in the prices of other exports, especially tin, though the rubber export proceeds to tin export proceeds ratio came to about 6:1 in 1959, indicating the relative importance of their price changes. It must also be noted that changes in export proceeds of rubber were due much more to changes in price rather than to changes in the quantity factor; for example, in the first big push (1950-51) rubber price increased by 25%, whereas the corresponding increase in quantity was only by 3%.

In the second big push, (1955-60) rubber price increased by 37, whereas rubber export quantity increased by only 9%. In the Third big push period (1959-60) export quantity increased by 15%, but the export price increase was still much higher, by 24%. Similarly, the price decline was much greater than the fall in export quantity. Hence, it was the rubber price changes that really determined the size of rubber export proceeds, which in turn mainly determined the GNP, and this in turn mainly determined the rate which indicates the economic growth of Malaya.

Though rubber prices changes is an important factor determining the nature and pattern of economic growth in post-war Malayan economy, we must not lose sight of the fact that other factors like political and social stability, continued stability of the Malayan currency, the establishment and development of institutions like the post office savings banks and the Employees Provident Fund scheme, and improvement in the tax system, etc. have all played their role in determining the nature and pattern of post-war Malayan economic development. However, rubber prices are still considered as one of the most important, if not the most important, factors in determining the future economic development of Malaya, as it is envisaged in the First Malaysian Development Plan that there would not be too drastic a fall in the price of rubber, otherwise, the Malaysian economy would be much hindered, or even dismantled, unless industrialisation can cope up with the rate of population growth.