CHAPTER 5 – INCOME INEQUALITY EFFECTS ON GROWTH-POVERTY RELATIONSHIP

5.1 INTRODUCTION

Discussions in this chapter are centred on understanding the trends and patterns of income distribution in Malaysia, and its impact on the relationship between economic growth and poverty. Simple analysis is used to examine the relationship between income inequality with economic growth and poverty separately. Decomposition analysis is employed to determine the effect of income inequality on poverty as compared with changes in economic growth.

5.2 TRENDS AND PATTERNS OF INCOME INEQUALITY IN MALAYSIA (1970-2002)

Income inequality has been a distributional problem in Malaysia since independence in 1957. The complexity of poverty arose from the fact that inequality was high in income trends of individuals or families in Malaysia. Over the years, the government has stressed on socio-economic development to promote more equality in distribution but the significant imbalances within ethnic-groups, regions and areas are still observable.

5.2.1 OVERALL INCOME INEQUALITY

The GC in Table 5.1 shows that income inequality in Malaysia has not changed in an increasing or decreasing trend. It tends to move up and down with respect to time. In 1980, the GC was 0.505 indicated that 50 per cent of the income is not distributed equally. This ratio has decreased to 0.483 in 1985 and reduced further to 0.442 in 1990 due to the increases in mean and median of income. However, this ratio increased in

85

1995 to 0.455. By 1998, Malaysia was well on the road to recovery from the financial crisis, and strong economic growth resulted in the GC falling further to 0.443 in 1999. Thereafter, most probably due to the impact of the 1997 financial crisis, the GC increased again to 0.4607. Overall, there was not much improvement in the Gini ratio. It has always been at approximately 50 per cent. Malaysia still faces the problem of high inequality in its income distribution.

Table 5. 1 - Malaysia: Gini Coefficient By Region, 1970-2002

Region	1970	1975	1980	1985	1990	1995	1999	2002
Peninsular Malaysia	0.5129	0.5570	0.5080	0.4798	0.4406	0.4571	0.4442	0.4600
Sabah	N.A.	N.A.	0.4900	0.4907	0.4592	0.4477	0.4477	0.4649
Sarawak	N.A.	N.A.	0.5010	0.4983	0.4412	0.4397	0.4066	0.4451
Malaysia	N.A.	N.A.	0.5050	0.4826	0.4421	0.4560	0.4432	0.4607

Notes: N.A. Not Available
Sources: *Economic Planning Unit*, Prime Minister's Department, Putrajaya, Malaysia

Peninsular Malaysia's trends of income inequality were similar to that of the whole of Malaysia. GC was high in the beginning, at 0.512, implying that almost 50 per cent of the income was unequally distributed. This ratio increased to 0.557 in 1975 implying that income inequality has worsened in that five years. However, during the period 1980-90, this ratio has reduced from 0.508 to 0.441 implying a slight improvement in the distribution of income despite economic slowdown. Thereafter, the GC has increased and decreased before achieving the rate of 0.460 in 2002. Income inequality throughout the period of 1970-2002 in Peninsular Malaysia showed little improvement, approximately 0.32 per cent of annual reduction.

In Sabah and Sarawak, income inequality in the early stages, in the year 1980, was also around 50 per cent. However, the fluctuation of inequality throughout the observed period of these two states was less severe. Since 1980, the GCs in both states have gradually reduced from 0.490 in Sabah and 0.501 in Sarawak to 0.448 and 0.407 in

1995 respectively. Income inequality only increased in the 2000s with the GC in Sabah achieving 0.465 and in Sarawak reaching 0.445 in 2002. Obviously, recession periods in Sabah and Sarawak in the 1980s have shown some improvements in income distribution. Overall, income inequality has not reduced much within the 1970-2002 period for both states.

5.2.2 INEQUALITY BETWEEN INCOME-GROUPS

In Malaysia, mean monthly gross household income of each income-group has increased tremendously. As shown in Table 5.2, mean income of the top 20 per cent of households increased from RM1, 877 per month in 1980 to RM6, 268 in 1999, registering a growth rate of 12.3 per cent per annum. Mean income of the middle and bottom 40 per cent of households increased even higher, at the rate of 15.7 per cent and 17.4 per cent per annum respectively during the same period. All income groups experienced increases in their income reflecting the greater benefits experienced by all groups as a result of the continuing expansion of Malaysia's economy.

Overall, income share of the top 20 per cent of households in Malaysia fell by 1.0 per cent annually to 50.0 per cent during the period 1970-90. The middle 40 per cent of households' income share rose at an average annual rate of 0.9 per cent to 35.5 per cent while the bottom 40 per cent of households' income share rose annually by 2.2 per cent to 14.5 per cent of the total in 1990. Both the middle and bottom groups' income share increases were at the expense of the top group. Bottom groups' income share was growing at a faster rate than middle groups', which would suggest an improvement in the distribution of income.[91]

---

[91] See: Shireen, pg. 81

Table 5.2 – **Malaysia: Mean and Proportion of Income Shares of Total Monthly Gross Household Income of Top 20%, Middle 40% and Bottom 40% of Households By Region, 1970-2002**

Mean RM *(Proportion %)*	1970	1975	1980	1985	1990	1995	1999	2002
Peninsular Malaysia								
• Top 20%	735	1,455	1,931	2,917	2,889	5,338	6,465	N.A.
	(55.1)	*(60.1)*	*(55.7)*	*(53.2)*	*(49.9)*	*(51.5)*	*(50.7)*	*(51.2)*
• Middle 40%	N.A.	361	561	932	1,030	1,809	2,258	N.A.
	(32.8)	*(29.8)*	*(32.4)*	*(34.0)*	*(35.5)*	*(34.9)*	*(35.5)*	*(35.3)*
• Bottom 40%	76	121	205	348	423	706	882	N.A.
	(11.5)	*(10.1)*	*(11.9)*	*(12.8)*	*(14.6)*	*(13.6)*	*(13.8)*	*(13.5)*
• Top 20% / Bottom 20%	4.79	5.95	4.68	4.16	3.42	3.79	3.67	3.79
Sabah								
• Top 20%	N.A.	N.A.	2,083	3.311	3,228	4,147	4,875	N.A.
	(N.A.)	*(N.A.)*	*(54.3)*	*(54.6)*	*(51.0)*	*(50.2)*	*(51.0)*	*(51.7)*
• Middle 40%	N.A.	N.A.	639	988	1,138	1,495	1,662	N.A.
	(N.A.)	*(N.A.)*	*(33.3)*	*(32.6)*	*(36.0)*	*(36.2)*	*(34.8)*	*(35.5)*
• Bottom 40%	N.A.	N.A.	238	386	413	561	678	N.A.
	(N.A.)	*(N.A.)*	*(12.4)*	*(12.8)*	*(13.0)*	*(13.6)*	*(14.2)*	*(12.8)*
• Top 20% / Bottom 20%	N.A.	N.A.	4.38	4.27	3.92	3.69	3.59	4.04
Sarawak								
• Top 20%	N.A.	N.A.	1,607	2,827	3,003	3,765	5,410	N.A.
	(N.A.)	*(N.A.)*	*(55.2)*	*(54.8)*	*(50.4)*	*(49.8)*	*(47.3)*	*(50.4)*
• Middle 40%	N.A.	N.A.	481	859	1,039	1,618	2,103	N.A.
	(N.A.)	*(N.A.)*	*(33.1)*	*(33.2)*	*(35.0)*	*(35.8)*	*(36.8)*	*(35.4)*
• Bottom 40%	N.A.	N.A.	171	309	436	678	909	N.A.
	(N.A.)	*(N.A.)*	*(11.8)*	*(12.0)*	*(14.8)*	*(14.4)*	*(15.9)*	*(14.2)*
• Top 20% / Bottom 20%	N.A.	N.A.	4.68	4.57	3.41	3.46	2.97	3.55
Malaysia								
• Top 20%	N.A.	N.A.	1,877	2,938	2,925	5,020	6,268	N.A.
	(N.A.)	*(N.A.)*	*(55.5)*	*(53.5)*	*(50.0)*	*(51.3)*	*(50.5)*	*(51.3)*
• Middle 40%	N.A.	N.A.	554	929	1,037	1,777	2,204	N.A.
	(N.A.)	*(N.A.)*	*(32.7)*	*(33.8)*	*(35.5)*	*(35.0)*	*(35.5)*	*(35.2)*
• Bottom 40%	N.A.	N.A.	201	347	424	693	865	N.A.
	(N.A.)	*(N.A.)*	*(11.9)*	*(12.7)*	*(14.5)*	*(13.7)*	*(14.0)*	*(13.5)*
• Top 20% / Bottom 20%	N.A.	N.A.	4.66	4.21	3.45	3.74	3.61	3.80

Notes: N.A. Not Available
Source: *Economic Planning Unit (EPU)*, Prime Minister's Department, Putrajaya, Malaysia

After 1990, the trends of income share in Malaysia reverted back to the former trends. In 1995, income share of the top 20 per cent of households increased to 51.3 per cent but income share of the middle and bottom 40 per cent of households dropped to 35.0 per cent and 13.7 per cent respectively. This implies that distribution of income has worsened. However, income share of the top group reduced again to 50.5 per cent in

1999 while income share of the middle and bottom groups increased to 35.5 per cent and 14.0 per cent respectively. Income inequality, therefore, has reduced. This could be due to the impact of the 1997 financial crisis where the top-income groups felt the biggest impact compared to others.

In the 2000s, income inequality in distribution increased again. Income share of the top 20 per cent of households increased to 51.3 per cent in 2002 and income share of the middle and bottom 40 per cent of households dropped to 35.2 per cent and 13.5 per cent respectively.

Ultimately, different rates of growth of each income-group and income shares of the top, middle and bottom income-groups in Malaysia revealed a trend of inequality, which decreased, increased, dropped and finally, increased. This trend corresponded with the inequality results shown by the GC. The ratio of the top quintile to the bottom quintile throughout the period 1988-2002, therefore, has reduced from 4.66 in 1980 to 3.45 in 1990, then, increased to 3.74 in 1995 before dropping again to 3.61 in 1999 and finally, increased to 3.80 in 2002.

5.2.3 INTRA-GROUP INCOME INEQUALITY

5.2.3.1 Intra-Area Income Inequality

Between 1970-1979, income differential between rural and urban areas decreased, whereby the increased rural mean household income is higher, at 4.1 per cent annually whereas the urban mean household income, at 7.3 per cent annually. The urban-rural disparity (the ratio of rural mean income to urban mean income), as shown in Table 5.3, improved from 2.14 in 1970 to 1.77 in 1979. Overall, income inequality was higher in the rural than the urban areas, but in both cases, inequality were decreasing over the last decade.

Table 5.3 – Malaysia: Urban/Rural Distribution of Household Income, 1970-1999

Mean (RM)	1970	1973	1976	1979	1984	1987	1990	1995	1997	1999
All	423	502	566	669	792	760	1,167	2,020	2,606	2,472
Urban (U)	687	789	913	942	1,114	1,039	1,617	2,589	3,357	3,103
Rural (R)	321	374	431	531	596	604	951	1,326	1,704	1,718
Disparity Ratio (U/R)	2.14	2.11	2.12	1.77	1.87	1.72	1.70	1.95	2.04	1.81

Notes: Figures for 1970-1987 are based on constant 1978 prices; figures for 1990-99 are based on
constant 1990 prices.
Sources: Henderson, Hulme, Phillips, and Noorul et al (2002).

Urban household income in Malaysia grew at a much faster rate at 3.7 per cent per annum during 1979-1984 compared to slower growth rate of rural income, at 2.5 per cent per annum. This resulted in an increase in the urban-rural income disparity ratio from 1.77 in 1979 to 1.87 in 1984. Peninsular Malaysia experienced such a pattern with urban income growing faster than rural income. Sabah and Sarawak, however, underwent a reverse situation with income growth in rural areas exceeding that in the urban areas.

During 1990-1999, urban and rural households registered an increase in their monthly household income. Household income in the rural areas grew by 9.0 per cent per annum. The rapid expansion of the urban economy led to an increase in the mean monthly income of urban households at the rate of 10.2 per cent per annum. The slower growth of rural household income resulted in an increase in the urban-rural income disparity ratio from 1.70 in 1990 to 1.81 in 1999.

Intra-area income inequality throughout the period of 1970-1999 has improved slightly by 0.33 points of reduction in the urban-rural disparity ratio. A widening gap of urban-rural income was obvious in periods of recession: 1975-76, 1984-85 and 1996-97. Economic crisis, thus, affected mean household income in rural areas greater than in urban areas. Improved rural household mean income played an important role in reducing the extent of the widening gap due to recession.

5.2.3.2 Intra-Ethnic Income Inequality

All ethnic groups in Malaysia registered an increase in household income during 1970-1999. In Table 5.4, notice that the Bumiputera mean household income increased from RM276 in 1970 to RM1, 984 in 1999. This increase of the mean household income-group was sufficient to reduce income inequality between the Bumiputera group and non-Bumiputera group. The growth rates recorded by the Bumiputera at 32.6 per cent per annum was higher compared to the average annual growth rates achieved by the Chinese and Indians, at 23.5 per cent and 24.5 per cent respectively. Overall, the income imbalance gap has lessened.

The differential income growth rates between the Bumiputera and Chinese led to a marginal decrease in the Chinese-Bumiputera income disparity ratio from 2.29 in 1970 to 1.74 in 1999. The income disparity ratio between the Indians and the Bumiputera also narrowed slightly from 1.73 to 1.36 during the same period. The Chinese-Indian income disparity ratio, however, remained at about 1.30 due to similar growth rate of the Chinese and Indian mean household income. This pattern of income distribution was found in Peninsular Malaysia, Sabah and Sarawak.

Table 5.4 – Malaysia: Distribution of Household Income by Ethnicity, 1970-1999

Mean (RM)	1970	1973	1976	1979	1984	1987	1990	1995	1999
Overall	423	502	566	669	792	760	1,167	2,020	2,472
Bumiputera (B)	276	335	380	475	616	614	940	1,604	1,984
Chinese (C)	632	739	866	906	1,086	1,012	1,631	2,890	3,456
Indian (I)	478	565	592	730	791	771	1,209	2,140	2,702
Others	1,304	1,798	1,395	1,816	1,775	2,043	955	1,284	1,371
Disparity Ratio									
• (C/B)	2.29	2.21	2.28	1.91	1.76	1.65	1.74	1.80	1.74
• (I/B)	1.73	1.69	1.56	1.54	1.28	1.26	1.29	1.33	1.36
• (C/I)	1.32	1.31	1.46	1.24	1.37	1.31	1.35	1.35	1.28

Notes: Figures for 1970-1987 are based on constant 1978 prices; figures for 1990-99 are based on
      constant 1990 prices.
Sources: Henderson, Hulme, Phillips, and Noorul (2002).

Overall, the gap in household income between Bumiputera and non-Bumiputera communities has narrowed. However, although the gap was narrowing, it still remained wide, especially among the major ethnic groups – the Chinese and the Bumiputera. In 1999, the real mean household income of the Chinese, at RM3, 456, was 74.2 per cent higher than that of the Bumiputera.

5.2.3.3 Intra-Regional (State) Income Inequality

All states recorded an increase in household income among Malaysians during the period of 1984-1999. This high growth rates were the result of the continuous shift towards the secondary and tertiary sectors experienced by all states. Apparently, the more- developed states of Penang, Johor and Melaka registered higher growth rates of mean monthly household income as compared with the less-developed states of Kedah and Perlis in the Northern Region as well as Kelantan in the Eastern Region. These differentials in household income among regions, which are in favour of the developed areas, have contributed to the widening of the income gap.

Disparity ratio of the states with highest mean income with respect to the states with lowest mean income, showed a varying trend of inequality within 1984-1999. Income inequality improved during the years of 1984-1987 with the highest to lowest disparity ratio of mean income reducing from 3.07 to 2.68 as presented in Table 5.5. This disparity ratio, however, increased to 3.09 in 1995 and achieved a high of 3.82 in 1997 indicating that income inequality among states has worsened. In 1999, income inequality among states slightly improved with mean income disparity ratio lowering to 3.12. This is because the impact of economic crisis has affected the income gain of more-developed states as compared to the less-developed states. Overall, mean income disparity among states in Malaysia was still apparent.

Table 5.5 – Malaysia: Mean Monthly Household Income by State, 1984-1999

State	1984	1987	1995	1997	1999	Average Annual Growth Rates (%)
More Developed States						
Johor	1,065	1,060	2,138	2,772	2,846	11.15
Melaka	1,040	1,034	1,843	2,276	2,646	10.29
Negeri Sembilan	1,039	908	1,767	2,378	2,335	8.32
Perak	883	863	1,436	1,940	1,743	6.49
Penang	1,183	1,130	2,225	3,130	3,128	10.96
Selangor	1,590	1,558	3,162	4,006	3,702[#]	8.86
Kuala Lumpur	1,920	1,790	3,371	4,768	4,105	7.59
Less Developed States						
Kedah	690	718	1,295	1,590	1,612	8.91
Kelantan	625	667	1,091	1,249	1,314	7.35
Pahang	960	900	1,436	1,632	1,482	3.63
Perlis	692	711	1,158	1,507	1,431	7.12
Sabah*	1,212	1,116	1,647	2,057	1,905	3.81
Sarawak	1,033	1,141	1,886	2,242	2,276	8.02
Terengganu	756	694	1,117	1,497	1,599	7.43
Disparity Ratio						
• Highest/Lowest	3.07	2.68	3.09	3.82	3.12	

Notes: * Includes the Federal Territory of Labuan.
      [#] Includes the Federal Territory of Putrajaya.
Sources: Mid-Term Review of the Fifth Malaysian Plan, 1986-90 and Mid-Term Review of the Seventh Malaysian Plan, 1996-2000.
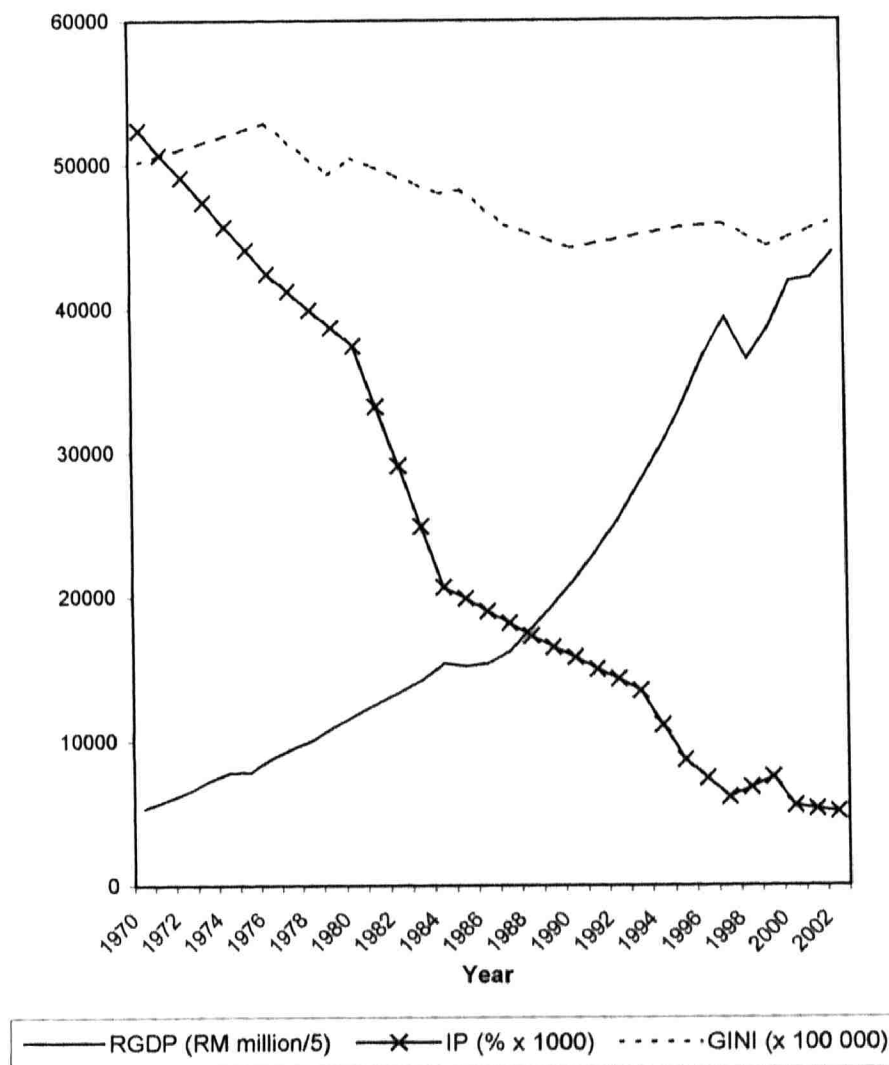
5.4 RELATIONSHIPS BETWEEN GROWTH, POVERTY AND INEQUALITY

Due to the mechanism of the workings of income inequality, the understanding was that poverty, inequality, and growth affect each other directly and indirectly. Considering these relationships, what will be the impact of inequality on the growth-poverty relationship established in Chapter 4? Before exploring on the relationships using regression analysis, general linkages of growth, poverty and inequality in Malaysia will be observed using figures and statistical data.

Based on Figure 5.1, GC throughout the period of 1970 to 2002 was relatively stable with a slight reduction. IP falls gradually throughout the period while real GDP continues to grow. The expectation seems to be that increasing growth in Malaysia is

playing a greater role in causing poverty reduction as compared to income inequality. To obtain a clearer picture of whether there is an inverse relationship between inequality and growth, and a positive relationship between inequality and poverty in Malaysia, the linkages of inequality with growth and poverty have to be observed separately.

**Figure 5.1 – Malaysia: RGDP, Incidence of Poverty and Gini Coefficients, 1970-2002**

Sources: Economic Planning Unit, Prime Minister Department and Malaysia Plans (various issues)

5.3.1 RELATIONSHIP BETWEEN GROWTH AND INEQUALITY

Based on general observation of Figure 5.2, inequality and growth trends have a robust negative or countered effect on each other. It seems that there exists a trade-off between growth and inequality. When RGDP continue to grow, the GC shows that

inequality within the nation is reducing. An implicit assumption is that causality runs from growth to inequality. In reality, feedback effects also exist and run from inequality to growth, mainly through a host of institutional factors. Thus, in other words, we can say that increase in inequality has adversely affected the growth of RGDP.

Figure 5.2 – Malaysia: Relationship Between Growth and Inequality, 1970-2002
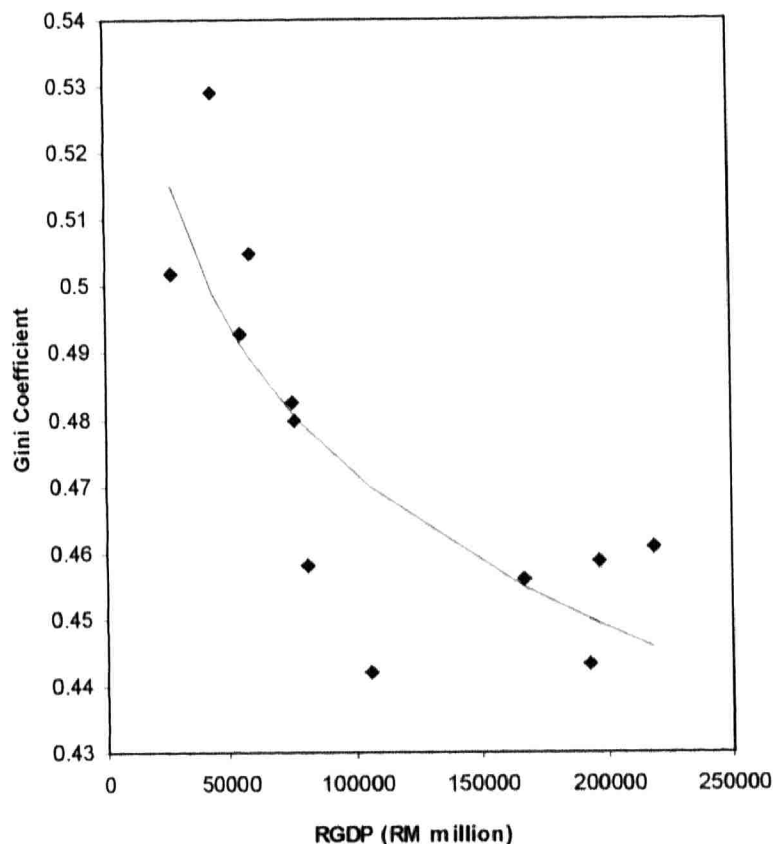
Notes: The black line in the figure is generated using regression analysis as shown in Appendix G (G-1).
Sources: Economic Planning Unit, Prime Minister Department and Malaysia Plans (various issues).

Separating actual growth data throughout the period of 1970-2002 into different short-time periods according to speed of growth rates indicates that there is no association between income inequality (GC) and growth rates. In the period of high and rapid growth, inequality can be either increasing or decreasing. In periods of medium and slow growth, inequality also changes in such patterns. Therefore, in the short-run, there is no definite linkage that increase in growth would be associated with increase in the rate of inequality and vice versa.

95

Table 5.6 – Malaysia: RGDP Growth Rates and Inequality Change, 1970-2001

| Year	Annual RGDP Growth (%)	Annual Change in Gini Ratio (%)
Rapid Growth Periods		
1970-1976	10.63	0.90
1976-1979	8.55	-2.27
1979-1980	7.43	2.43
1980-1984	7.43	-1.24
1987-1990	10.23	-1.16
1990-1995	11.44	0.63
1995-1997	9.03	0.29
Medium Growth Periods		
1985-1987	3.30	-2.55
1999-2002	4.48	1.32
Slow Growth Periods		
1984-1985	-1.12	0.54
1997-1999	-0.86	-1.68

Notes: The division of growth periods are based on the rate of average annual growth rates of RGDP, where years with growth rates of 7.0 per cent and above are considered as rapid growth periods, years with growth rates of 4.0 to 7.0 per cent are considered as medium growth periods, and years with growth rates of 4.0 per cent and lower considered as slow growth periods. The GC data used for the calculation of average annual change are officially published data and estimated data using the Warr's method of estimation as shown in Appendix A (Table A-4).

Source: GDP data are from Malaysia Economic Statistics – Time Series, 2000, Department of Statistics, Malaysia, November 2001.
Inequality data are from Economic Planning Unit, Malaysia

5.3.2 RELATIONSHIP BETWEEN INEQUALITY AND POVERTY

The actual data of inequality and poverty in Malaysia, on the other hand, shows robust positive relationship throughout the period of 1970-2002. Based on Figure 5.3, when inequality increases, the rate of poverty in the country will also rise and vice versa. This implied that income distribution could be an effective anti-poverty tool in Malaysia. However, comparison with the effectiveness of growth has to be made to determine whether pursuing better distribution is an important and integral component of any poverty reduction strategy in Malaysia.

Figure 5.3 – Malaysia: Relationship Between Poverty and Inequality, 1970-2002
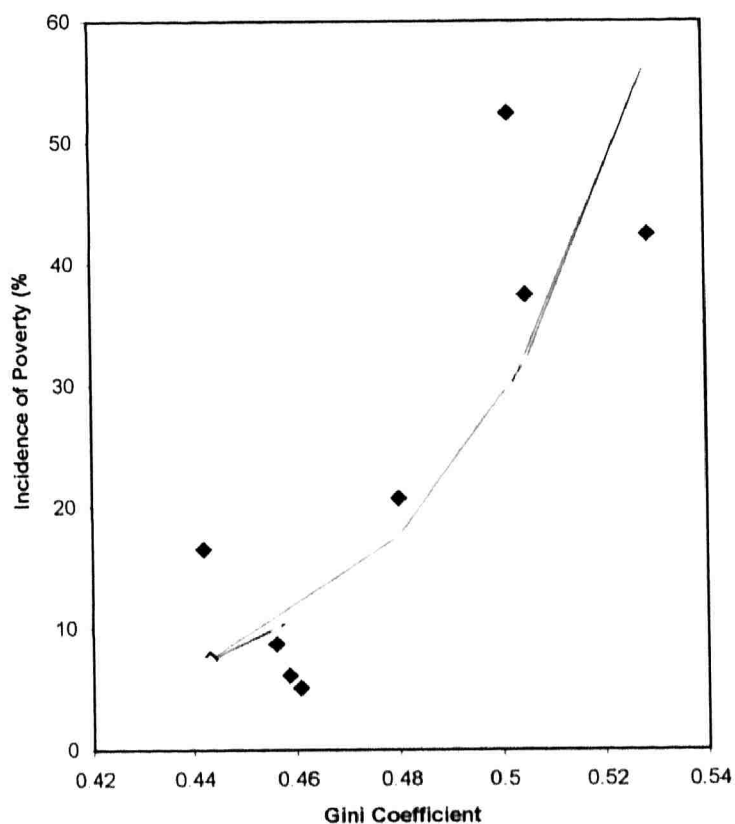
Notes: The black line in the figure is generated using regression analysis as shown in Appendix G (G-1).
Sources: Economic Planning Unit, Prime Minister Department and Malaysia Plans (various issues).

Table 5.7 – Malaysia: Poverty and Inequality Change, 1970-2002

Year	Annual Change in Gini Ratio (%)	Annual Change in Poverty Incidence (%)
Increasing Inequality Periods		
1970-1976	0.90	-3.18
1990-1995	0.63	-9.45
1995-1997	0.29	-14.94
1999-2002	1.32	-10.67
Decreasing Inequality Periods		
1976-1980	-1.13	-2.95
1980-1984	-1.24	-11.16
1984-1990	-1.32	-3.38
1997-1999	-1.68	11.48

Notes: Both Gini ratio and poverty incidence (IP) are actual published data. IP data for 1990 is based on
   1989 figure.
Source: Economic Planning Unit, Prime Minister's Department, Putrajaya, Malaysia

By dividing actual inequality (GC) into short-term periods according to the periods of rising and falling inequality, the change in GC hardly reflects any relation with the change in the IP. In periods where the GC has positive value which indicated that inequality has risen, poverty rate that is expected to increase, however, has all decreased. In periods where inequality is decreasing, as represented by the negative ratio of the Gini, it also corresponded with reduction in the annual rate of poverty change, except for the period 1997-1999. Overall, there seems to be no existing trend in the relationship between poverty and inequality in Malaysia in the short-run.

5.4 GROWTH, POVERTY AND INEQUALITY REGRESSION ANALYSES

The three-way relationships between growth, poverty and inequality are rather complicated (Tahir and Ali, 2000). This requires a closer look at the actual patterns of relationship through regression analysis. It is clear that income distribution and economic growth both matter for poverty reduction. Does the influence of growth on poverty dominate the influence of changes in inequality? What will their relative importance be? Based on *Hypotheses 3* and *4* mentioned in Chapter 3, section 3.4.2 and data and methods of analyses explained in Chapter 3, sections 3.1, 3.2 and 3.5.2, the results of the relationship are interpreted as below.

5.4.1 ELASTICITIES OF POVERTY WITH RESPECT TO GROWTH AND INEQUALITY

Based on level regression analysis, the result of IP with respect to real GDP per capita and income inequality (GC) is presented in Table 5.8. The slope coefficient of real GDP per capita for the level regression is highly significant, but the slope coefficient of GC is insignificant. This indicates that the effect of growth dominate the effect of inequality in reducing poverty. With 1.0 percent of real GDP per capita growth, the IP can be reduced at the rate of 1.7 per cent. The power of economic growth

98

to reduce poverty was still high although it was slightly lower, by 0.2 per cent, compared to the same rate estimated in Chapter 4, section 4.5.1. This implies that inequality do affect the ability of growth in reducing poverty. Observe that, as GC increases by 1.0 per cent, IP will rise by 1.2 per cent. This supported the acceptance of *Hypothesis 3* that as inequality increases, the ability of growth to reduce poverty decreases. Due to the effect of growth component that outweighed the effect of distributional component, poverty reduces as economy grows. Overall, almost all changes in poverty were explained by per capita of RGDP growth and GC based on the R^2 value of 1.0.

Table 5.8 – Growth and Inequality Elasticity With Respect to Poverty: Regression Results

	Dependant Variable: Poverty Incidence (Ln IP)	
	Coefficient	*(t-Statistic)*
Constant	6.636	*(11.423)****
Ln RGDPC	-1.714	*(-10.917)****
Ln GC	1.185	*(1.120)*
R-squared	0.945	
Adjusted R-squared	0.941	
F-statistic	257.697***	
No. of Observation	33	

Notes: * Significant at 10 per cent level
    ** Significant at 5 per cent level
    *** Significant at 1 per cent level

5.4.2 TRADE-OFF OF GROWTH AND INEQUALITY ELASTICITY

The value of IGTI for Malaysia is computed to be 0.69 as shown in Table 5.9, which means that an increase of 1.0 per cent in the GC will require a real GDP per capita growth of approximately 0.7 per cent for the IP to remain unchanged. This result suggests that a strategy of inequality reduction will have a smaller payoff for poverty reduction than the strategy of promoting growth. Therefore, following growth-maximising policies may be adequate for Malaysia to achieve a rapid reduction in poverty as compared to following inequality-reducing policies.

Table 5.9 – Malaysia: Growth and Inequality Elasticity Trade-off

Growth Elasticity (β_6)	-1.714
Inequality Elasticity (η)	1.185
IGTI ($-\eta/\beta_6$)	0.691

Notes: The values of growth and inequality elasticity are based on results obtained in Table 5.8.

5.3.3 THE PRO-POOR GROWTH INDEX

As shown in Table 5.10, the calculated value of the PPGI was about 0.3, which is greater than 0 and less than 1.0. This implies that growth has not been highly or strictly pro-poor but able to reduce IP in Malaysia when the influence from income inequality has been taken into consideration. Growth, therefore, can be characterised as "trickle-down" and is necessarily good for the poor. Promoting growth-maximising policies, hence, will be more effective in reducing poverty as compared to following inequality-reducing policies.

Table 5.10 – Malaysia: Pro-Poor Growth Index (PPGI)

Poverty Elasticity ($\beta_6 + \eta$)	-0.529
Growth Elasticity (β_6)	-1.714
Inequality Elasticity (η)	1.185
PPGI [($\beta_6 + \eta$)/β_6]	0.309

Notes: The values of growth and inequality elasticity are based on results obtained in Table 5.8.

5.4.4 THE "DISTRIBUTION-CORRECTED" RATE OF GROWTH

Table 5.11 shows that the slope coefficient of the "distributed-corrected" rate of growth is significant at 5 per cent level. This implies that when real GDP per capita growth, after considering the negative effect of inequality (GC), increase by 1.0 per cent, CIP will decrease by 1.5 per cent. The ability of the change of real growth in influencing the change of CIP decrease faster as compared to the similar rate in Chapter 4, section 4.5.1 when income inequality effect is not taken into consideration.

Inequality, thus, affected the trend of change in IP negatively. R^2 is low, at 0.16, implies that there is a large unexplained variance, though at least some of this is measurement error. *Hypothesis 4* that states changes in poverty reduction to changes in growth falls as inequality increases and reaches zero is accepted. The ability of increase of growth in reducing the rate of poverty reduction has risen due to the (overall) decrease of inequality. Growth's effect is relatively larger than inequality's effect.

Table 5.11 – Growth and Inequality With Respect to Change in Poverty: Regression Results

	Dependant Variable: Change in Poverty Incidence (CIP)	
	Coefficient	*(t-Statistic)*
Constant	-3.474	*(-1.851)***
(1- GC)RGDPCG	-1.475	*(-2.379)***
R-squared	0.159	
Adjusted R-squared	0.131	
F-statistic	5.661**	
No. of Observation	32	

Notes: * Significant at 10 per cent level
 ** Significant at 5 per cent level
 *** Significant at 1 per cent level

5.4 CONCLUSION

Overall, the trend of income inequality in Malaysia throughout the period of 1970 to 2002 was relatively equal and stable. Therefore, it affected little on the relationship between growth and poverty in Malaysia. However, the separate relations of inequality with growth and poverty showed that inequality adversely affects growth and positively influences poverty. In other words, the higher the level of inequality, the lower will be the ability of growth to reduce poverty. Since the magnitude of the effects of growth

overtakes the effects of inequality, growth still played the more important role in reducing poverty in Malaysia. Particularly in the following;

- growth-poverty-inequality relationship, income inequality does not significantly determine the rate of poverty reduction as compared to growth.
- a higher level of inequality will 'trade-off' a lower level of growth rates so that the IP does not change.
- growth can be characterised as "trickle-down" and is necessarily good for the poor after considering the impacts of income inequality.
- the 'distribution-corrected' rate of growth implies that the ability of changes of growth in reducing the rate of poverty reduction has increased due to the negative effect of income inequality.

Therefore, income inequality in distribution is a factor that impinges the effectiveness of growth to reduce poverty. However, its effect is very small and hardly gives any impact on the growth-poverty relationship. This explains why income inequality is increasing in Malaysia in the later stages of development while poverty still continues to reduce with economic growth. The value of 'pro-poor growth index' and 'inequality-growth trade-off index' suggests to us that poverty-reduction payoff from growth is greater than poverty-reduction payoff from inequality. Therefore, growth-maximising policies rather than the pro-poor policies that favour inequality-minimising will be an adequate and appropriate policy to reduce poverty in Malaysia.