

Ethnic Inequality and Poverty in Malaysia

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Abstract: Disparities in living standards between ethnic groups are common in developing countries, where poverty reduction is widely seen as an overarching goal. Understandably, some governments try to reduce ethnic inequality in the hope of reducing poverty (along with other goals). Malaysia is probably the most famous example. A large national effort at affirmative action since 1971 has favored the poorer (majority) of “Bumiputera” (mainly Malays) over other groups. The paper finds that all of the main ethnic groups have seen sizeable household-income gains since 1970, with highest growth rate for the Bumiputera, although the decline in relative ethnic inequality has not been enough to prevent rising absolute gaps. Lower ethnic inequality has helped reduce poverty, though it has not been as important as either overall economic growth or falling inequality within ethnic groups. This is more because of the limited extent of the realized reductions in ethnic inequality than a low potential for poverty reduction by this means. Indeed, the elasticities of national poverty to lower ethnic inequality remain high even today.

Keywords: Ethnic inequality; poverty; growth; Malaysia

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1. Introduction

Many countries face troubling ethnic/racial disparities in average living standards. In developing countries striving to reduce absolute poverty, the question arises as to what role policy efforts to reduce those disparities can play in national poverty reduction. This paper studies what is undoubtedly the most famous example in the developing world, Malaysia. The colonial legacy included both high inequality—with a marked ethnic dimension to that inequality—and high poverty—with especially high levels of poverty historically for the ethnic majority, the “Bumiputera,” mainly comprising the Malay people. The other main ethnic groups are those with “Chinese” and “Indian” ethnic origins (though almost all born in Malaysia).

A dramatic change in economic policy occurred in 1971, in the wake of race riots in May 1969. This was the New Economic Policy (NEP). The distinctive feature was the effort at affirmative action in favor of the Bumiputera, who received favorable treatment in access to education and public-sector hiring, along with efforts to raise their corporate share ownership. The policy lasted 20 years, though it has had a continuing influence to this day.

This type of ethnically-grounded policy can be defended from a number of perspectives, including as a means of redressing historical inequalities produced in pre-Independence (colonial) times, and as a means of reducing horizontal inequality, including counteracting continuing discrimination by ethnicity.² Ethnic inequality has been widely seen as the greatest threat to Malaysia’s political and economic stability.³ Given that the intended beneficiaries are the poorest ethnic group, the policy has also been seen as a key instrument for fighting poverty.

The case for believing that reducing ethnic inequality is an important tool for reducing poverty remains far from clear today, 50 years after the 1969 riots and subsequent policy changes. There is a widespread view that since then “The gap in income between Malays ... and Chinese- and Indian-Malaysians has narrowed dramatically.” (Economist, 2017). Is that right? The Bumiputera may have seen higher growth rates in average incomes than the other ethnic groups, but that does not imply that “the gap ... has narrowed” (even if not “dramatically”). If the initial inequality is high enough, relative inequality can fall while absolute inequality rises.⁴

² Evidence of the latter is found in Lee and Khalid (2016) who use a field experiment to assess employer responses to job applications that differ only in ethnicity, as suggested by the applicant’s name.

³ See, for example, the discussion in Jomo (1989).

⁴ The evidence across countries suggests that this is indeed common (Ravallion, 2018).

One also hears claims that “The most remarkable achievement of the NEP was in the reduction in poverty” (Khalid, 2014).⁵ But is that right? Other observers have not agreed. Indeed, one hears diametrically opposed views on the NEP-policies and the continuing efforts at affirmative action (views that appear to be correlated, though imperfectly, with personal ethnicity in the obvious way). Critics of the NEP have pointed to the fact that a large share of inequality is within ethnic groups, not between them.⁶ But this is hardly convincing. A static inequality decomposition can be deceptive about how inequality evolves over time and it cannot tell us that policies aimed at reducing ethnic inequalities will be ineffective against poverty, which depends on levels of living as well as their relative distribution. Pro-poor redistribution between ethnic groups—interpreted as bringing their means closer using various policies—can change levels of inequality within those groups. It is far from obvious from the literature how much this policy regime has mattered to the evolution of Malaysia’s poverty measures over time. With reference to poverty reduction post-1971, the [Wikipedia](#) entry on NEP writes that “It is unclear what role the NEP played.” Based on the existing literature, that guarded assessment appears to be justified. Despite careful early work (including by Anand, 1983) it would be fair to say that today’s literature on ethnic inequality in Malaysia is full of unsupported generalizations. Further research is needed.

There is little hope of credibly identifying the NEP’s causal impact on poverty. We cannot observe Malaysia in the absence of the NEP. Nor do we have any (comparable) time series of distributional data prior to the NEP to allow even an uncontrolled reflexive comparison. (The available series of comparable surveys starts just one year before the NEP.) There are some suggestive clues, however. It is unlikely from the historical record that ethnic inequality was falling prior to the NEP. The paper finds that (relative) ethnic inequality has been falling since the NEP, with greater progress against ethnic inequality in the main NEP period. So there is a case for believing that the NEP had a role in reducing ethnic inequality since 1970.

Rather than evaluating the NEP, this paper addresses some less ambitious but still important questions relevant to understanding the role of ethnic inequality in progress against poverty. The specific questions are as follows:

⁵ One finds many other statements of this sort in the literature; see, for example, Roslan (2001).

⁶ An influential early demonstration of the decomposition point is Anand (1983) who found that only 13% of total inequality (measured using a Theil index) in 1970 is between ethnic groups. Also see the comments in Thillainathan and Cheong (2018) (reviewing Khalid, 2014) who use the evidence on inequality decompositions to question the effectiveness of the NEP.

- Have we seen falling ethnic inequality since 1970? Have the gaps narrowed, as widely believed? How has inequality within ethnic groups evolved?
- How much did lower ethnic inequality contribute to falling national poverty, as distinct from overall economic growth, falling within-group inequality and changes in population composition by ethnicity?
- Have the gains from ethnically grounded redistribution as an instrument against poverty been largely exhausted over the last 50 years? Or is there still some potential left?

The paper begins with a summary of some relevant aspects of Malaysia's economic history, also reviewing the relevant literature. Section 3 discusses the data, drawing on results from comparable household surveys spanning 1970-2016. The main results are found in Section 4, which studies the correlations between income growth and poverty reduction by ethnicity, the contribution of lower ethnic inequality to poverty reduction, and the responsiveness of national poverty to ethnic redistribution. Section 5 concludes.

2. Ethnic inequality in Malaysia

One needs to know about some aspects of the economic history of Malaysia to understand the motivation for this study. Prior to Independence in 1957, the economy of the British colony of Malaya (as it was called then) saw sizeable growth of GDP 1900-1939 (about 3% p.a.), but little of this was passed on to domestic real wages and consumption (Shah, 2017). Private consumption per capita grew at around 1% per annum. The profits remitted to Britain stemmed from two primary exports, tin and rubber. Extraction was done by British-owned companies that invested little in the domestic economy and repatriated their profits. It appears to be a reasonable (and often heard) claim that ethnic inequality by the time of Independence was in large part at least a legacy of colonialism. The historical record suggests that the British favored non-Malays in business opportunities. The ethnic Malays worked little in the lucrative mining and sectors, which appears to have been in large part an effect of colonial agricultural policy (Wikipedia, 2019). Employment in the booming tin mining was dominated by Chinese brought in by the British, while it tended to be immigrant Indian workers in the new cash-crop sectors (sugarcane, coffee and especially rubber).⁷ The British needed to educate some Malays for civil

⁷ The social stratification of colonial Malay is described in Hirschman (1975), Anand (1983), Ikemoto (1985), Shah (2017), among others.

service, interacting with the local Sultans. However, the bulk of the Bumiputera in the colonial period lacked easy access to modern schooling, if only because schools were scarce in the rural areas where most lived.⁸ While schooling attainments were improving for all groups in the late colonial period, the education system of the time probably left the majority of the Bumiputera poorly equipped in the skills (including in English language) needed for participation in the growing non-farm economy.

Thus, Malaysia at the time of Independence in 1957 was highly dualistic, comprising a large, low-productivity, agricultural sector plus foreign-controlled export-oriented mining and plantation sectors. There was a corresponding ethnic polarization in employment with the bulk of the Malays in the subsistence farming sector, non-Malays in the rest, with higher earnings. Urban Chinese mean income was 2.8 times the rural Malay mean in 1957 (Ikemoto, 1985, Table 1). The poverty profile matched, with far higher poverty incidence among Malays. Ikemoto (1985, Table 5) estimates a poverty rate of 71% for Malays as compared to 27% for those with Chinese origin and 36% for those with Indian origin.⁹ And by 1957 the vast majority of the Chinese and Indian people living in Malaya had been born there (Hirschman, 1972).

The immediate post-Independence government focused on economic growth, domestic ownership, and economic diversification away from tin and rubber. Domestic consumption growth caught up with GDP growth. Given this, it is likely that poverty incidence started to fall post-Independence, though no comparable national survey data exist to test this claim with tolerable rigor. However, it appears unlikely that inequality between Malays and Chinese had fallen in the period after Independence. Ikemoto (1985, Table 1) provides estimates indicating that urban Chinese mean income was a remarkable 3.1 times greater than the rural Malay mean in 1970, as compared to 2.8 times in 1957/58.¹⁰ In short, it appears that the colonial period generated ethnic inequality, and policy makers in the immediate post-Independence period gave little attention to that inequality, which may well have continued to rise (Chakravarty and Roslan, 2005).

⁸ Hirschman (1972) describes education attainments at the time of Independence, drawing on the 1957 Census.

⁹ Based on 1957/58 Household Budget Survey; see Anand (1983) on the weaknesses of this survey.

¹⁰ Also see Gallup's (1998, Figure 2.8) compilation of estimates of Malay income relative to Chinese, echoing earlier claims in Hirschman (1975), Snodgrass (1980) and Anand (1983).

This all changed in the early 1970s. The riots that broke out in 1969 are widely seen to be motivated by the prevailing ethnic inequalities in the country. In response, 1971 saw the introduction of the New Economic Policy (NEP). The twin aims were (i) helping the majority Malay ethnic group (“Bumiputera”) catch up economically with other Malaysians, esp., the Chinese, and (ii) reducing absolute poverty. New affirmative action policies favored the Bumiputera, such as by aiming to assure that Bumiputera own 30% of corporate wealth, and giving preference to the Bumiputera in access to public tertiary education. Relatively “color-blind” policies would also have differentially favored the Malays such as the emphasis given to raising the productivity of small-holder agriculture.

Ethnicity is clearly an important and politically salient dimension of inequality in Malaysia. The issue here is whether it is also important to the evolution of poverty measures for Malaysia. One way that we might expect the ethnic disparities in incomes to matter little to aggregate poverty incidence is if growth in the mean income of the poorest group, the Bumiputera, tended to favor the relatively well off people in that group, largely by-passing the poor, while growth in the richest group, the Chinese, tended to benefit the poor. Intuitively, such a distributional pattern of economic growth would mean that the inter-ethnic distribution was relatively unimportant to poverty trends.

There are some suggestions that this might be the case in the literature, though one finds little sign of careful empirical tests. For example, with reference to the NEP, the first Prime Minister of Malaysia, Tunku Abdul Rahman, was opposed to the 30% target for Bumiputera ownership of private corporations, writing that “Some (Malays) became rich overnight while others became despicable Ali Babas and the country suffered economic setbacks” (Abdul Rahman Putra, 1986, p.98). Similarly, Jomo (1989, p.42) describes the new State interventionism of the 1970s, under the NEP, as being “..primarily in favour of the nascent Malay bourgeoisie;” he conspicuously does not say “in favor of poor Malays.” He goes on to argue that:

“In view of the generally rapid growth of the Malaysian economy throughout most of the 1970s and part of the 1980s, poverty (as defined by the government) could have been completely eradicated if more just and effective redistributive policies had been implemented, government waste minimised, and if government allocations ostensibly for poverty eradication had not been used to enrich politicians and contractors securing rural projects.” (Jomo, 1989, p.46).

However, no evidence is presented.

The message in this historical account is that, while progress toward the NEP target would undoubtedly increase mean income of the Bumiputera, it only benefited a select few with initial advantages, or luck, leaving most Malays no better off. Motivated in large part by this view, a number of recent observers have argued that the race-grounded redistributive policies need to be replaced with “needs-based affirmative action” (Thillainathan and Cheong, 2018, p.302). However, while there are clearly strong feelings on both sides of this debate, the evidence is limited, and claims are regularly made with little or no supportive evidence. Nor do the claims made take any account of the constraints routinely faced in finer targeting. For example, given the information and incentive constraints, it is known that categorical targeting based on race may well be an effective policy instrument, especially when one takes account of the limited information and weak administrative capabilities of governments to implement finer “needs-based” targeting (Ravallion, 2017).

To try to throw some further light on this issue, the paper provides a new analytic decomposition of the rate of poverty reduction into four components: (i) a pure growth component; (ii) an ethnic inequality component; (iii) a component reflecting intra-ethnic distributional shifts not accountable to growth in the group-specific means, and (iv) a population composition component reflecting ethnic differences in population growth rates. As with similar decompositions, the components are treated as independent factors. In this respect, probably the main caveat is that it has been argued by Thillainathan and Cheong (2016) that the NEP reduced Malaysia’s rate of economic growth. For the same reason that this paper does not claim to provide an impact evaluation of the NEP, the evidence for the claim that the policy reduced the growth rate is not strong, and the claim must be considered something of a conjecture. If it is true that the NEP diminished the growth rate then the decomposition used in this paper will overstate the contribution of lower ethnic inequality to poverty reduction.

3. Data and summary statistics

The data used here are mainly from a comparable series of 18 nationally-representative household surveys spanning 1970-2016. There were two surveys prior to 1970, but there are serious comparability problems with the 1970 and subsequent surveys (Anand, 1983). A constraint on the analysis is the lack of public access to the micro data. The latter only exist since

1997 (earlier data no longer being in a machine-readable form according to DOSM staff). However, the complete micro data (1997 onwards) are not publically available.

Ethnicity: Since ethnicity plays a central role in this analysis, one should be clear on the definitions of the three main ethnic groups, the Bumiputera, the Malaysian-Chinese and the Malaysian-Indians, comprising 99% of the population (averaged over all years). A “Malay” is defined in the Constitution as “a person who professed the Muslim religion, habitually speaks the Malay language, and conforms to the Malay custom.” (According to the 2010 Census, 100% of Malays indicate Islam as their religion.) Other Bumiputera include the Orang Asli, the original inhabitants of Peninsular Malaysia, now representing 0.5% of the population. Chinese are relatively well defined as those of Chinese descent (whatever their country of birth). “Indians” have come to include those with both Indian (mainly Tamil) descent and those from Bangladesh, Pakistan and Sri Lanka. (The bulk are Hindus.) The 1970 and 1980 census provide these breakdowns for the total population, although later Censuses switched to total citizens.

Figure 1 shows the three main ethnic population shares over time. From the 2010 Census (the latest available at the time of writing), the Bumiputera are 68% of the total (55% Malay and 13% other Bumiputera), while the Chinese are 25% and Indians 7%. The rising share of Bumiputera reflects their higher fertility rate. In 1991, the Bumiputera fertility rate was 4.5, as compared to 2.5 for the Chinese and 2.8 for Indians (Saw, 2015). By 2011 all three fertility rates had fallen, but the proportionate differences remained similar; in 2011 the fertility rates were 2.7, 1.6 and 1.7 respectively. The rising share of the poorest ethnic group will tend to be poverty increasing. We will see how much so in Section 4.

While this paper takes a national perspective, it can be noted that there are some marked geographic differences in ethnic composition (Saw, 2015). From the 2010 Census, the percentage Malay varies from 43% in Penang (Kuala Lumpur close behind with 45%) to 97% in Terengganu (95% in Kelantan). The percentage Chinese ranges from 3% in Kelantan and Terengganu to 46% in Penang (43% in Kuala Lumpur).

Distributional data: The analysis here is based on published tabulations by the Government’s Department of Statistics (DOSM) from 1970 onwards and the World Bank’s *PovcalNet* data base from 1984 onwards. The underlying data base for *PovcalNet* is both tabulations and (for more recent years) micro data on the relevant variables (household income,

household size and the survey weights). The two sources come from the same surveys but they are not strictly comparable, mainly because the DOSM published tables use household total income while *PovcalNet* uses household income per capita (as is more common practice internationally). Again, without access to the full micro data (which, in any case, is impossible prior to 1997) there is nothing that can be done to eliminate this inconsistency. Thankfully, both tell a similar story when comparable.

The headline is Malaysia's progress against both poverty and inequality. A useful descriptive tool for representing the overall changes in income distribution in Malaysia is the Growth Incidence Curve (GIC) (Ravallion and Chen, 2003). This gives the growth rate over time by percentiles of the distribution, ranked from poorest to richest. The GIC is obtained by calculating growth rates across quantile functions (as explained in Ravallion and Chen, 2003). Unfortunately, the GIC cannot be calculated from the published tabulations by DOSM, but it can be calculated using *PovcalNet* by numerical methods (inverting the process by using a line search to find the "poverty line" corresponding to each possible "headcount index" as one moves from the poorest percentile to the richest). This means that the base year for the GIC must be 1984, the earliest year of the data for Malaysia underlying *PovcalNet*.

The result is given in Figure 2 for the period 1984-2016. The overall growth rate in mean household income per capita was 2.5% per annum. However, this varied from the highest value of 3.4% at percentiles 5-6, to the lowest value at the very top. Given the positive growth of all quantiles, the poverty rate has fallen for all possible poverty lines. Given that growth rates tend to be higher for poorer percentiles, it can be said that "inequality" has fallen. Unfortunately, the GIC cannot be broken down by ethnicity since this is not available in *PovcalNet*, and reliable GICs cannot be calculated from the limited published tabulations available historically.

With the available inequality data from DOSM we can go back to 1970. This reveals a trend decline in the national Gini index for household incomes (ignoring ethnicity), as can be seen in Figure 3. (The discussion will return to DOSM's corresponding poverty measures.) However, it is notable that the decline did not start in 1970, but later, in the mid-1970s, after the NEP began. What was happening to ethnic inequality?

In 1970, at the beginning of the study period, the mean income of the Chinese was 1.29 times that of the Bumiputera, while the Indian mean was 1.77 times higher than for the

Bumiputera. While all three main ethnic groups have seen rising mean income over time, the growth rate was higher for the Bumiputera than either the Chinese or Indians. The annual growth rates (based on a regression of log mean on time) over 1970-2016 were 4.15% (s.e.=0.19%), 3.09 (0.18), and 3.31 (0.13) for the Bumiputera, Chinese and Indians respectively.¹¹ Thus, we see progress toward relative convergence, as is evident from Figure 4, panel (a), with the Bumiputera mean rising as a proportion of both the Chinese mean and the Indian mean. However, there has still been absolute divergence (comparing panels (b) and (c) of Figure 4). Each of the absolute gaps relative to the Chinese have shown a statistically significant positive trend (at better than the 1% level), although this is not true of the Indian-Bumiputera gap (which has a positive trend, but only significant at the 6% level). In other words, the differential in longer-term growth rates has not been high enough given the initial ethnic inequality to assure that the absolute gap in mean incomes started to fall.¹² Figure 4, panel (c), does not support the claim that “The gap in income between Malays ... and Chinese- and Indian-Malaysians has narrowed dramatically.” (Economist, 2017). Indeed, based on the available data, one might be more inclined to say that the (absolute) gap has risen dramatically.

While the data available are unlikely to provide a persuasive basis for causal attribution to the NEP (as discussed in the Introduction), it is of interest to see if the evolution of inequality is correlated with the time period of the NEP, 1971-1991. While the NEP (under different names) continued to have influence well after 1991, if the NEP was an important factor in reducing ethnic inequality then we would expect to see signs of this in the time series data. Here it is notable that, while overall inequality has been on a trend decline in Malaysia, this did not start until the mid-1970s, as noted above. An obvious test is to see whether the evolution of the group-specific mean relative to the overall mean changed in the NEP period in favor of the Bumiputera. On pooling the three ethnic groups, the test regression can be written as:

$$\frac{\mu_{jt}}{\mu_t} = \sum_{i=1}^3 [\alpha_i + (\beta_{0i} + \beta_{1i}NEP_t)(t - 1)]D_{ij} + \varepsilon_{jt} \quad (1)$$

¹¹ All standard errors reported in this paper are robust to residual autocorrelation as well as heteroscedasticity, using the method Newey and West (1987) (the automatic lag specification with the degrees of freedom adjustment).

¹² More precisely, if the mean for group i grows at a constant rate r_i , such that $y_{it} = (1 + r_i)y_{it-1}$, then it is readily verified that (on comparing groups i and j), $y_{it} - y_{jt} < (>)y_{it-1} - y_{jt-1}$ as $\frac{r_j}{r_i} > (<) \frac{y_{it-1}}{y_{jt-1}}$.

where μ_{jt} denotes the mean income of ethnic group j ($=1,2,3$) in year t ($=1,T$) with national mean, μ_t , $NEP_t = 1$ if t is within the NEP period and 0 otherwise, and $D_{ij} = 1$ if $i=j$ and 0 otherwise. In other words, each group has its own initial (1970) ratio of mean income to the overall mean, and the ratio evolves with a trend rate specific to each group, but with a potentially different trend during the NEP period. Estimating (1) on the pooled data set of survey years and three ethnic groups ($n=54$), I find that $\hat{\beta}_{11} = 0.003$ (robust s.e.=0.0005) (for the Bumiputera), $\hat{\beta}_{12} = -0.003$ (0.001) (for the Chinese) and $\hat{\beta}_{13} = -0.004$ (0.001) (for the Indians). Over the 20 years period of the NEP, the ratio of the Bumiputera mean to the national mean would have been 0.06 lower without the NEP, representing a drop from 0.81 to 0.75. So the NEP period saw a significantly higher trend increase in the relative mean of the Bumiputera, with significantly lower trends for those with Chinese and Indian origin. These findings are consistent with the view that the NEP saw a shift in ethnic inequality.

Poverty measures: The focus here is on income inequality and poverty. The main poverty measures used are those from DOSM, applying the Government's official poverty lines to their survey data on household incomes. The official line is kept constant in real terms over time, adjusting only for inflation. Currently the line is MYR 920 per household per month, or a little over MYR 7 per person per day, at average household size. It is of interest to see how this compares to other countries. For that purpose we need to use Purchasing Power Parity (PPP) exchange rates from the International Comparison Program (ICP). The last ICP was for 2011, when the official line was MYR 800. At average household size this is equivalent to MYR 6.41 per person per day. When converted using the PPP for consumption from the 2011 ICP that comes out at almost exactly \$4 per day.¹³

Thus, Malaysia's official line is well above the World Bank's international poverty line of \$1.90 a day. But it should be well above that line. The \$1.90 line is deliberately low, being anchored to poverty lines found in the poorest countries. If one looks instead at countries with a roughly similar average income as Malaysia, one would expect the poverty line to be about \$12 a day—three times the current line in Malaysia. Figure 5 shows how Malaysia's poverty line

¹³ Note that the PPP rate is well below the exchange rate given that many goods and services are cheaper in Malaysia than in the US. Unlike market exchange rates, PPP rates are based on the actual prices paid by people.

compares to the poverty lines found in other countries. Malaysia's current official line is clearly well below what one would expect for a country with its current average standard of living.

This is not the first time that the current level of Malaysia's official line has been questioned. For example, in one comment in 2018 in the Malaysia newspaper, the [Star](#), a Malaysian politician (the Deputy Minister of International Trade and Investment), Dr Ong Kian Ming, wrote that "As wages climbed and we became a middle-income nation, we didn't increase the standard for what is considered decent living above the poverty line." \$4 a day may well have been a sensible line for Malaysia in 1970. But that is no longer clear; real income per household in Malaysia has increased over five fold since 1970!

As an alternative, I have constructed relative lines that rise with average income over time in a seemingly sensible way. The slope as mean income rises is 1:3; so for each MYR 10 increase in the mean, my line rises by MYR 3.33. But I also gave the line a lower bound; I set this at the official "hard-core" poverty line, which is about \$2.50. These parameter choices yield a poverty line of about \$12 per day in 2016. This is a schedule of "weakly relative lines" as defined by Ravallion and Chen (2011). The "weakly" refers to the fact that the poverty line is not directly proportional to the mean (so that it has an elasticity less than unity). Making the line directly proportional to the mean ("strongly relative") has the very odd property that if all incomes (including that of the poor) rise by the same percentage then poverty does not change.¹⁴ Figure 6 compares my new series of poverty measures for Malaysia with those for \$4 a day. We see a very similar pattern over time, and we still see a marked longer-term decline in poverty incidence.

Figure 7 gives the official incidence of poverty by ethnic group over 1970-2016. At the beginning of the period, the overall poverty rate was 49%, falling to 0.4% by the end of the period. The decline is even more dramatic for the Bumiputera, for whom the poverty rate fell from 65% in 1970 to 0.5% in 2016. For the Chinese and Indians, the poverty rate was 26% and 39% at the beginning of the period, falling to 0.1% by 2016. Based on the official figures at least,

¹⁴ Strongly relative lines also have the property that the poverty rate can fall in a recession. For example, if one uses strongly relative lines for Malaysia I have found that the poverty rate fell during the Global Financial Crisis of 2008-10. That is clearly wrong. Weakly relative lines are much more sensible.

it can reasonably be said that Malaysia has virtually eliminated poverty, and it has done so for each of the three ethnic groups.

While the focus here is on income poverty, it should be noted that there has also been progress in reducing mortality rates at all ages. The infant mortality rate has fallen from 38 deaths for children under one year per thousand live-births in 1970-72 to 7 deaths in 2009-11 (Saw, 2015, Table 9.2). However, there are persistent disparities by ethnicity. The life expectancy of Bumiputera men in 2012 was 71 years, as compared to 77 years for the Chinese and 68 years for the Indians (Saw, 2015, Table 9.7). For women the corresponding numbers are 76, 80 and 76 years. It is also notable that the relative gap in life expectancy has risen over time for men; the Bumiputera life expectancy was 98% of the Chinese figure in 1991, falling to 92% in 2012. For women the relative life expectancies have changed little. The reasons for these persistent (indeed, rising, for men) ethnic disparities in life expectancy are unclear.

4. Ethnic inequality, growth and poverty

First, we will see what these data reveal about the distribution of rising average incomes within each ethnic group. This will be of descriptive interest, but it will also provide key parameters for the subsequent analysis, which provides an analytic decomposition of the rate of national poverty reduction that identifies ethnic redistribution as an explicit component. The results indicate that this has been a less important factor than within-group redistribution and (especially) overall economic growth. The last subsection asks whether this is because ethnic redistribution is a blunt instrument or whether there has not been a sufficient reduction in ethnic inequality to make it a strong factor in national poverty reduction.

Poverty reduction and growth in mean incomes: The poverty rate depends on both mean income and the relative distribution of income, loosely interpretable as “inequality.” Using *PovcalNet* one can calculate both actual poverty measures and counterfactual measures, in which one combines the mean for one date with the distribution (Lorenz curve) for another date. Table 1 gives these measures using both the initial and end point for the series in *PovcalNet*. Applying the Datt and Ravallion (1992) decomposition one finds that 75% of the reduction in absolute poverty in Malaysia since 1984 is attributable to growth in mean household income, with 25%

due to falling inequality.¹⁵ This changes noticeably if one switches to the (weakly) relative measures described in the previous section. Then the same decomposition method, but now using the relative lines, indicates that 57% of the fall in poverty over the same period was attributable to growth in the mean (holding the Lorenz curve constant), with 43% due to falling inequality.

The evidence does not support the view that economic growth has been (relative) inequality increasing within ethnic groups. Indeed, for each ethnic group, one finds a negative correlation between levels of the (log) Gini index and the (log) group means; the correlation coefficients between the (log) Gini index and (log) mean real income are -0.83, -0.72, and -0.60 for the Bumiputera, Chinese and Indians respectively. However, the correlations largely vanish when one switches to the difference-in-logs, suggesting that the negative correlation is spurious, being generated by common time trends. The correlation coefficient between changes in the (log) Bumiputera Gini index and the log Bumiputera mean is 0.25, but this is not significantly different from zero ($t=0.99$). For the Chinese, the correlation is 0.03 while it is 0.15 for Indians, and neither is significantly different from zero. So, as can best be determined with the data available, processes of economic growth have been close to distribution-neutral within ethnic groups.

Figure 8 gives the (relative) Gini indices by ethnic group. Inequality has been falling within each group, and nationally since the mid-1970s. The convergence evident is an indication that relative inequality has been falling between groups. This can also be seen in Figure 4, panel (b). Given this pattern of falling inequality, one can expect quite high elasticities of poverty to growth in the mean income, allowing the intra-ethnic group inequality to respond to growth in the mean.¹⁶

Table 2 provides relevant summary statistics while Table 3 gives the growth elasticities of absolute poverty reduction by ethnic group and nationally. (With the data currently available it is not possible to do an ethnic decomposition of the relative poverty measures.) The log of the

¹⁵ This calculation uses *PovcalNet*. The 1984 Lorenz curve is held constant, while the mean grows at the observed rate in the data. This is equivalent to re-estimating the 1984 poverty measure in *PovcalNet* using the original poverty line times the ratio of the end-point mean to the 1984 mean. I have taken an average of the decompositions using the initial year is used as the reference and that for the final year. As noted by Datt and Ravallion (1992) the decomposition becomes exact when one does this averaging.

¹⁶ So these elasticities should not be confused with Kakwani's (1993) elasticities w.r.t the mean holding inequality constant.

headcount index for each ethnic group is regressed on the log of the mean for that group. Results are also given for the first difference of this regression, given that the variables have strong time trends in the levels. Thus this second specification is likely to be more robust to time-dependent omitted variables, though there was no sign of a significant time trend in the log poverty measures controlling for the log mean. Against that advantage, there may also be some bias due to time-varying measurement errors; there is the usual attenuation bias, but also a potentially offsetting bias due to the likely negative correlation between the measurement errors in the dependent and independent variables.

The (log) poverty rate moves with the (log) mean for each of the three main ethnic groups. The “other” group is the exception. The following analysis will take the difference-in-logs specification to be preferable.

Contribution of lower inter-ethnic inequality to poverty reduction: Let $L_i(p)$ denote the Lorenz curve for group i , giving the share of the group’s total income held by the poorest p proportion of the population ranked by income, y . The function L_i naturally varies between groups. By well-known properties of the Lorenz curve, we know that $L_i'(p) = y/\mu_i$, where μ_i is the group’s mean income. Equivalently (on inverting), $p = F_i(y)$ where F_i is the group-specific cumulative distribution function (subsuming the mean) with corresponding density function f_i . Without loss of generality, we can assume that a parameter vector π_i fully characterizes the inter-group differences, so we can re-write the Lorenz curve as $L(p, \pi_i)$.

Motivated by the discussion in Section 2, we allow the possibility that the Lorenz parameters are functions of the mean, reflecting the potentially unequal ways in which efforts to reduce inter-group inequality in mean incomes may alter within-group inequality. We can write this as $\pi_i = \phi_i(\mu_i) + I_i$ where I_i is a vector of group-specific parameters that are unaffected by changes in the mean.

Combining these features, we can now write the poverty rate H_i for group i in the implicit form: $\mu_i L_p(H_i, \pi_i) = z$ (subscript p denoting the partial derivative as usual). On taking the differential of this equation and letting η_i denote the elasticity of the poverty rate for group i (headcount index, H_i) to the mean for group i , we can write:

$$\frac{dH_i}{H_i} = \eta_i \frac{d\mu_i}{\mu_i} + \gamma_i dI_i \quad (2)$$

where:

$$\eta_i = - \left(z + \mu_i^2 L_{\pi\pi}(\cdot) \phi'_i(\cdot) \right) f_i(z) / H_i$$

$$\gamma_i = -\mu_i L_{\pi\pi}(\cdot) f_i(z) / H_i$$

The second term on the RHS of (2) stems from shifts in intra-group inequality not attributable to growth in the mean. In the special case in which the Lorenz curve parameters are fixed we have $dI_i=0$ and $\eta_i = -zf_i(z)/H_i$, the elasticity of the headcount index evaluated at the poverty line (as expected, given that H is homogeneous of degree zero in μ and z).

On noting that $H = \sum_{i=1}^4 s_i H_i$ (where $s_i \equiv n_i/n$) it is readily verified that:

$$\frac{dH}{H} = \sum_{i=1}^4 s_i^H \eta_i \frac{d\mu_i}{\mu_i} + \sum_{i=1}^4 s_i^H \frac{dn_i}{n_i} + \sum_{i=1}^4 s_i^H \gamma_i dI_i \quad (3)$$

Here $s_i^H \equiv s_i H_i / H$, the share of poverty in group i . With some further algebraic manipulation we then have the following decomposition for the proportionate rate of poverty reduction:

$$\begin{aligned} \frac{dH}{H} \text{ (rate of poverty reduction)} = & \\ & \left(\sum_{i=1}^4 s_i^H \eta_i \right) \frac{d\mu}{\mu} \text{ (aggregate growth effect)} \\ & + \sum_{i=1}^4 s_i^H \eta_i \left(\frac{d\mu_i}{\mu_i} - \frac{d\mu}{\mu} \right) \text{ (ethnic-redistribution effect)} \\ & + \sum_{i=1}^4 s_i^H \gamma_i dI_i \text{ (intra-group distributional shifts not attributed to growth)} \\ & + \sum_{i=1}^4 s_i^H \frac{dn_i}{n_i} \text{ (population composition effect)} \end{aligned} \quad (4)$$

If all ethnic groups see the same rate of growth in mean income then the ethnic redistribution component goes to zero. If, in addition, there are no changes in inequality within group (specifically in the Lorenz parameters), and all groups have the same rate of population growth then only the overall rate of growth matters to the rate of poverty reduction.

Following the results of the previous subsection (Table 3), I will assumed a value of η_i of -2 for the Bumiputera, and -3 for each of the Chinese and Indians, and 0 for “others.” The overall rate of poverty reduction is 10.47% per annum (Table 2). On using the initial year as weights, the pure growth effect is 8.12% per annum, representing 78% of the total. The contribution of inter-ethnic redistribution is a decline in poverty of 0.75% per annum. The population effect is poverty increasing, as expected, though the effect is small, representing only 0.14% per annum. The implied contribution of intra-group distributional shifts not accountable to growth in the within-group means is a 1.72% per annum decline in the poverty rate.

Inter-ethnic redistribution and aggregate poverty: The previous subsection found that lower ethnic inequality has been poverty reducing in Malaysia, but the effect has been rather small compared (especially) to the impact of growth in the mean, but also small relative to shifts in inequality within groups that are not accountable to changes in the overall mean. The question arises: is this seemingly weak effect of ethnic redistribution the result of a low elasticity of national poverty to such redistribution, or a lack of effective redistribution?

Now consider a redistribution of income from group j to group i , holding the overall mean constant; then:

$$s_i^y \frac{d\mu_i}{\mu_i} + s_j^y \frac{d\mu_j}{\mu_j} = 0 \quad (5)$$

Here $s_i^y \equiv s_i \mu_i / \mu$. The aggregate poverty rate is: $H = \sum_{i=1}^4 s_i H_i$. Then we have:

$$\frac{dH}{H} = s_i^H \frac{dH_i}{H_i} + s_j^H \frac{dH_j}{H_j} = s_i^H \eta_i \frac{d\mu_i}{\mu_i} + s_j^H \eta_j \frac{d\mu_j}{\mu_j} \quad (6)$$

Solving we have:

$$\frac{dH}{H} = \left(s_i^H \eta_i - s_j^H \eta_j \frac{s_i^y}{s_j^y} \right) \frac{d\mu_i}{\mu_i} \quad (7)$$

The term in parentheses is the elasticity of the national poverty rate to an increase in the mean of group i when that increase comes at the expense of group j , holding the overall mean constant.

Figure 9 gives the redistributive elasticities over time for all three combinations of interest, Chinese to Bumiputera, Indian to Bumiputera and Chinese to Indian. We see that the

elasticities are highest (most negative) for redistribution between the Chinese and the Bumiputera, and lowest (very close to zero) for redistribution from the Chinese to Indians. Also note that the elasticities for redistribution from Chinese to Bumiputera have not fallen over time, indeed there is a trend increase (more negative elasticities). Despite the signs of economic convergence by ethnicity, the efficacy of ethnic redistribution from the Chinese to the Bumiputera in reducing poverty has remained high.

The above results tell us that there has been scope for ethnic redistribution to reduce poverty, though that scope has not been exhausted, despite the efforts made since 1971. Indeed, the elasticities for redistribution from the richest group (the Chinese) to the poorest (the Bumiputera) in Figure 9 are quite high, and if anything they have increased over time (in absolute value).

5. Conclusions

The paper has tried to quantify Malaysia's progress against ethnic inequality of incomes and the role this has played in reducing the incidence of poverty nationally. It is acknowledged that policies to reduce ethnic inequalities, including affirmative action, can serve other societal goals besides fighting poverty, including promoting social solidarity and cooperation (though such policies have also been known to generate social frictions). In Malaysia, the fact that the poorest ethnic group is a majority of the population also created strong political pressure for addressing ethnic inequality—at least after the loud voices of protest heard in 1969.

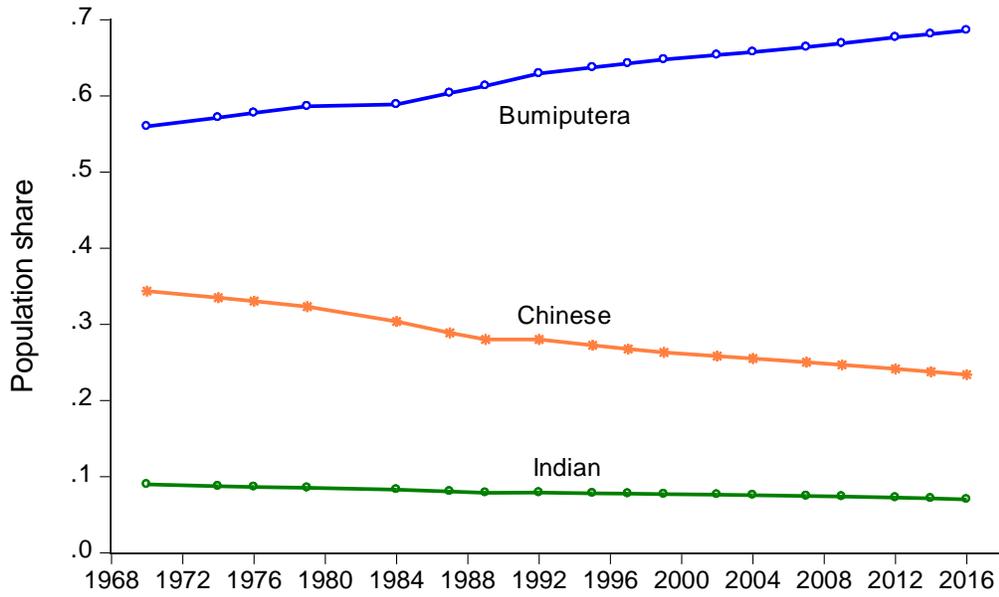
However, for a country such as Malaysia, with large ethnic disparities and an official poverty rate of almost 50% in 1970, it is understandable that poverty reduction is an important criterion for judging the success of almost any policies, including ethnically-grounded redistributive efforts. The twin aims of Malaysia's New Economic Policy starting in 1971 (in the wake of the race riots) were ethnic redistribution and reducing poverty. Successive governments have taken interventionist stances against ethnic inequality since 1971. Over the same period, the country has seen enormous progress against poverty; indeed the official poverty rate has gone to virtually zero, though the old official poverty line is almost certainly too low by prevailing standards.

While Malaysia still has relatively high inequality measures, the country can claim more success than many countries in reducing inequality. The paper finds that this has played a non-negligible role in reducing poverty over 1970-2016, in combination with overall economic growth. There have also been clear signs of relative (though not absolute) convergence in mean household incomes between the main ethnic groups. The mean income of the lagging Bumiputeras has grown at a faster rate since 1970 than that of either the Chinese or the Indians, but the differential in growth rates has not been enough to attenuate the large absolute gaps in mean incomes by ethnicity. If the pattern over 1970-2016 continues then mean incomes will continue to diverge.

The paper's results suggest that progress in reducing ethnic inequality has played only a minor role in reducing national poverty over these 50 years. Less than one tenth of the overall rate of poverty reduction is accountable to reduced inequality in average incomes between the main ethnic groups. Inequality reduction within ethnic groups has played a more important role, though overall economic growth has been the main driver. Changes in the ethnic composition of the population (associated with the higher fertility rates of the Bumiputera) tended to be poverty increasing, though this effect turns out to be small.

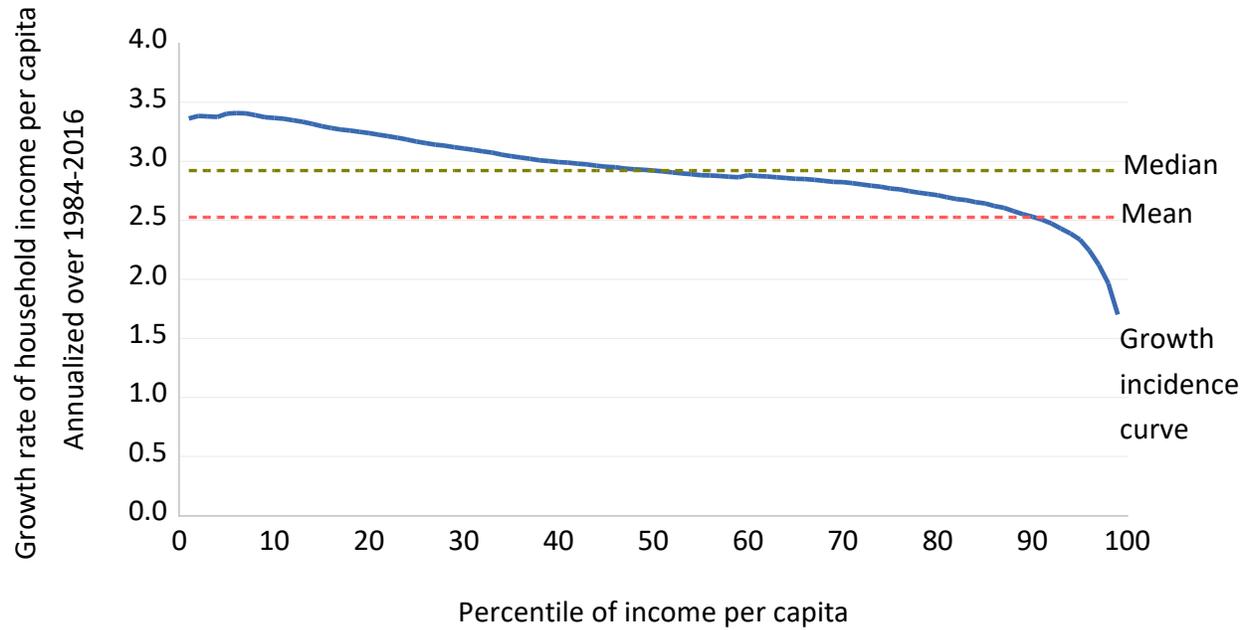
An important caveat is that the paper's finding that the reduction in ethnic inequality has been a relatively minor factor in overall poverty reduction should not be read as saying that ethnic redistribution is a blunt tool against poverty in this setting. Indeed, the paper finds quite sizable elasticities of national poverty to inequality-reducing ethnic redistribution. And the elasticities have stayed high through the period of poverty reduction spanning 50 years. This paper's findings say more about how limited actual ethnic redistribution has been than about the potential for such redistribution.

Figure 1: Malaysia's ethnic population shares over time



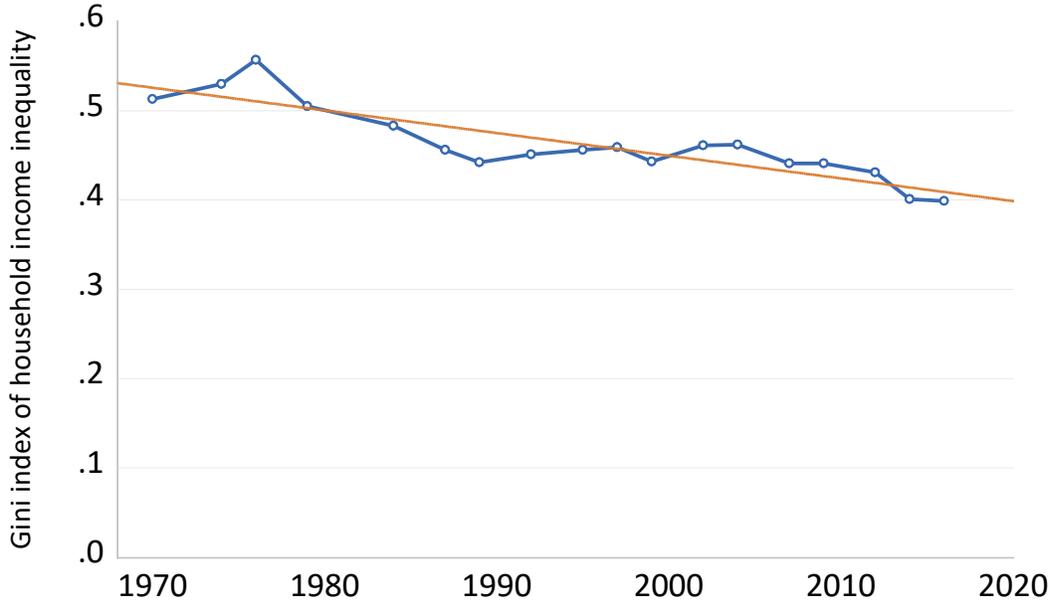
Source: Public data from DOSM.

Figure 2: Growth incidence curve for Malaysia, 1984-2016



Source: Author's calculations using PovcalNet.

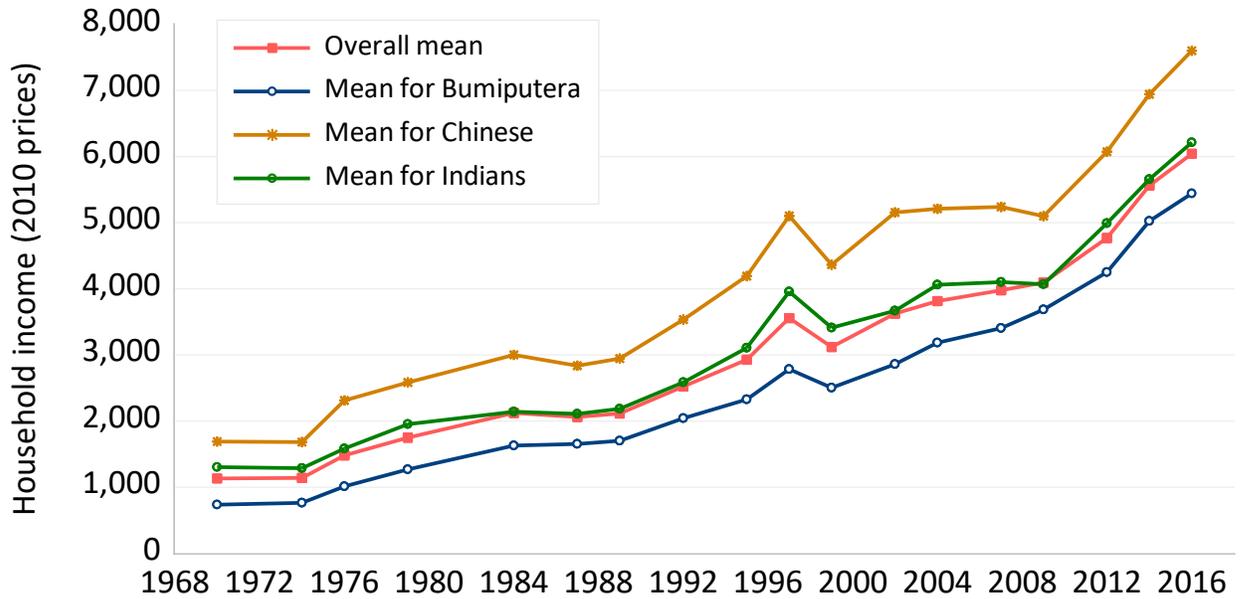
Figure 3: National Gini index for household incomes



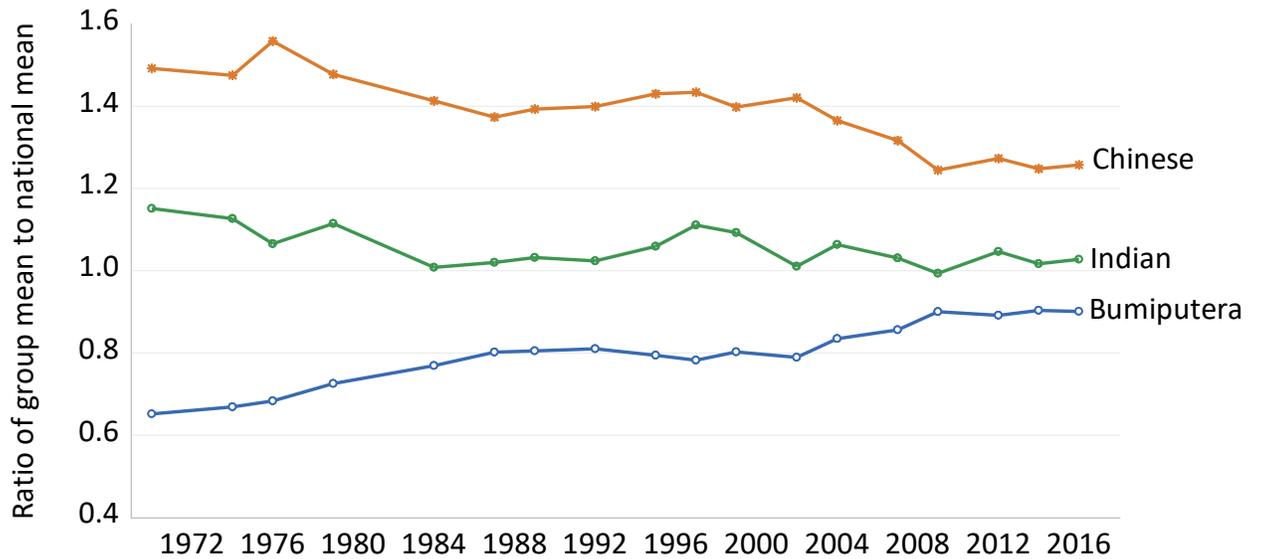
Source: Public data from DOSM.

Figure 4: Mean real household income by ethnic group

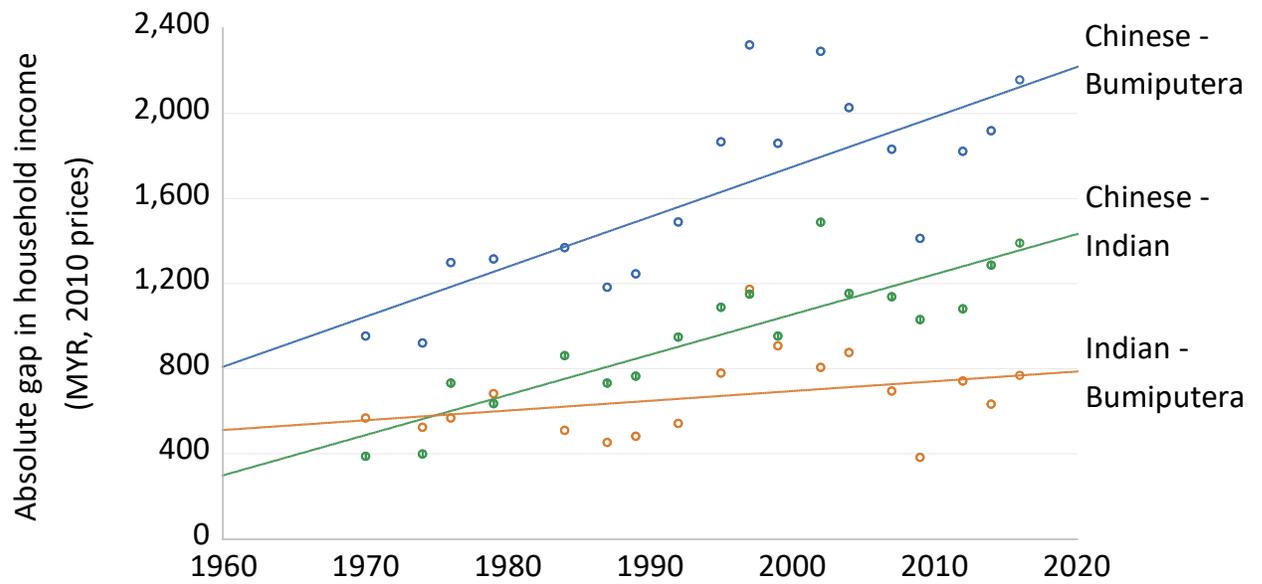
(a) Overall means and means by ethnicity



(b) Relative convergence: Means by ethnicity normalized by overall mean

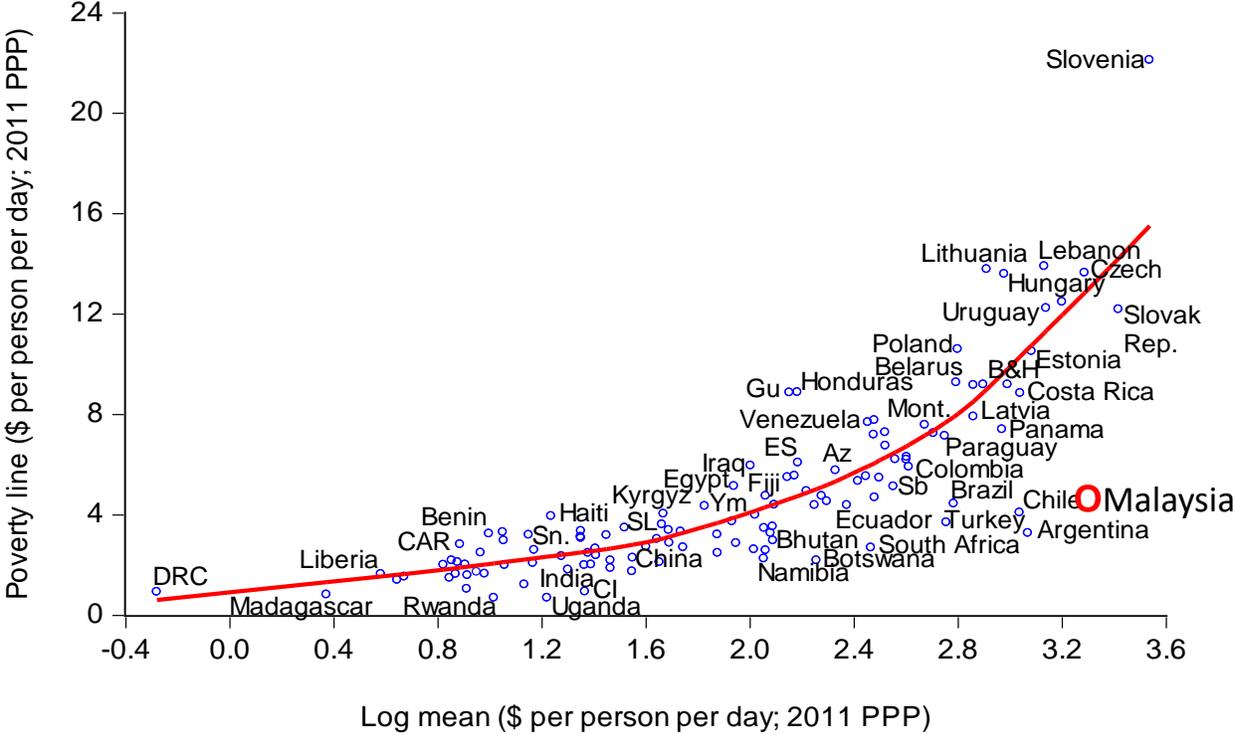


(c) Absolute divergence: Gaps in (real) household incomes



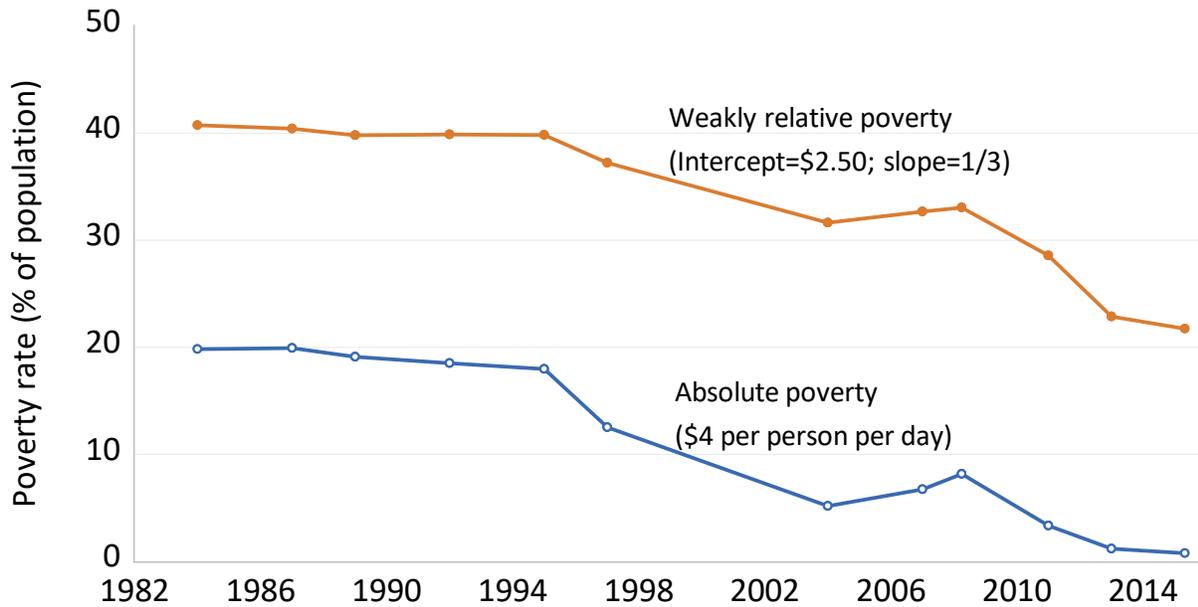
Source: Author's calculations using public data from DOSM.

Figure 5: Malaysia’s official poverty line compared to national poverty lines across countries



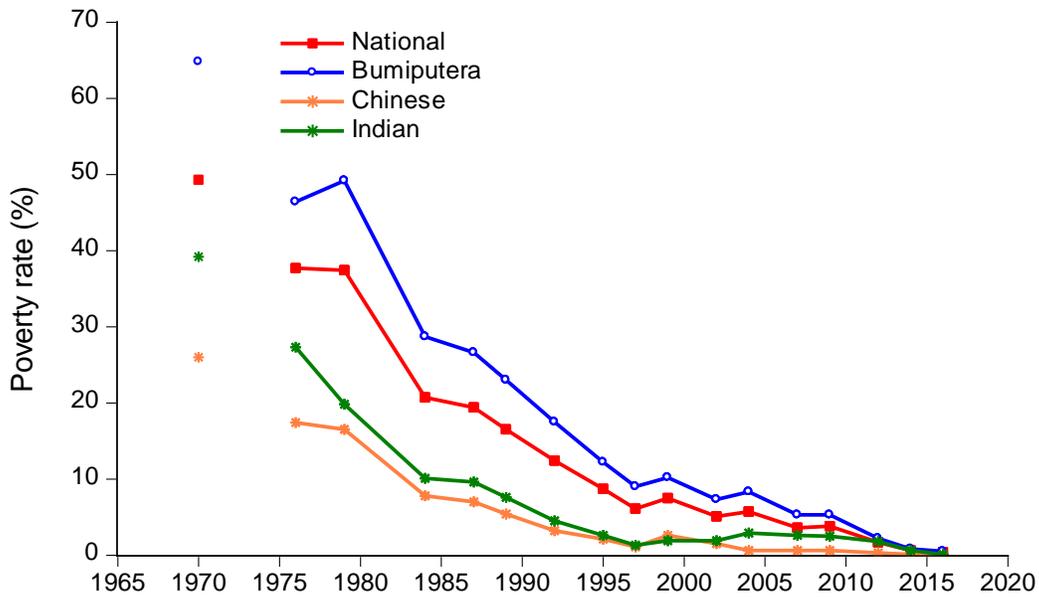
Source: National poverty lines from Ravallion and Chen (2017)

Figure 6: Comparison of absolute and (weakly) relative poverty measures for Malaysia



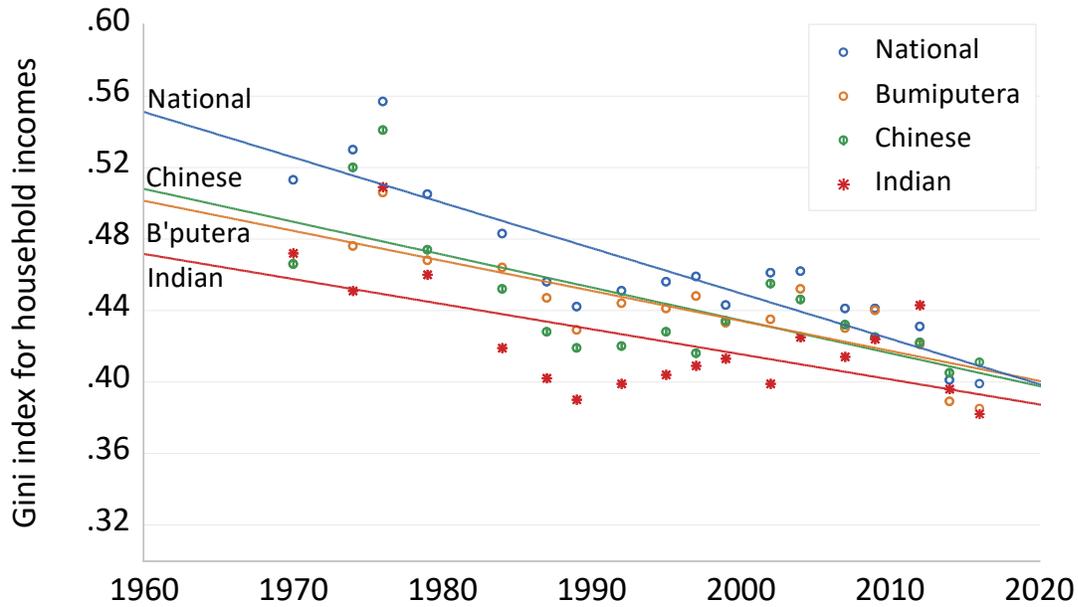
Source: Author's calculations using stipulated poverty line and PovcalNet

Figure 7: Official (absolute) poverty rates by ethnic group



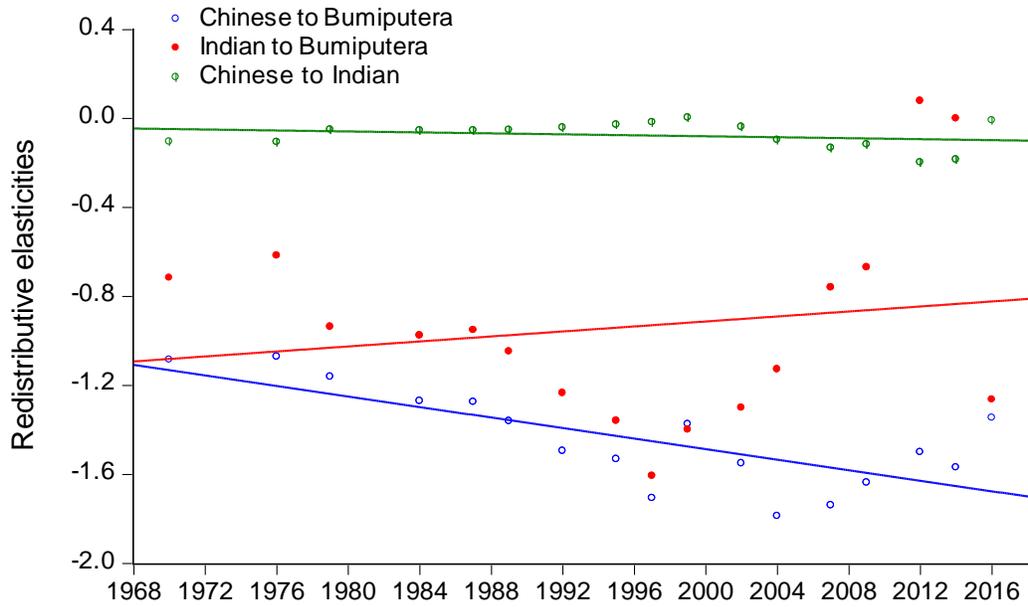
Source: Public data from DOSM.

Figure 8: Gini indices for household income by ethnic group



Source: Public data from DOSM.

Figure 9: Redistributive elasticities of national poverty reduction



Source: Author's calculations as described in text.

Table 1: Actual and counterfactual poverty rates

Absolute poverty (\$4 per person per day); % population		
	Distribution	
	1984	2016
Mean	1984	11.82
	2016	0.75

Weakly relative poverty (intercept=\$2.50; slope =1/3); % population		
	Distribution	
	1984	2016
Mean	1984	32.85
	2016	21.73

Source: Author's calculations using *PovcalNet*.

Table 2: Summary statistics for beginning and end of the series

	1970	2016	Growth rate (annualized log difference x 100)
Headcount index (official)	0.493	0.004	-10.466
Mean income	1131.13	6042.69	3.643
Mean for Bumiputera	736.95	5442.59	4.347
Mean for Chinese	1688.12	7598.95	3.270
Mean for Indians	1302.51	6209.43	3.395
Population share for Bumiputera	0.560	0.686	0.441
Population share for Chinese	0.343	0.234	-0.834
Population share for Indians	0.090	0.070	-0.539
Bumiputera share of poverty (%)	73.609	85.752	0.332
Chinese share of poverty (%)	18.112	5.849	-2.457
Indian share of poverty (%)	7.146	1.753	-3.055

Source: Author's calculations using public data from DOSM.

Table 3: Regressions for the log headcount index by ethnic group and nationally

	Bumiputera		Chinese		Indian		Others		National	
	Log headcount index	Difference in logs	Log headcount index	Difference in logs	Log headcount index	Difference in logs	Log headcount index	Difference in logs	Log headcount index	Difference in logs
Constant	20.323*** (2.853)	n.a.	33.569*** (3.314)	n.a.	25.574*** (2.794)	n.a.	10.815 (6.596)	n.a.	24.215*** (2.990)	n.a.
Log real mean	-2.325*** (0.374)	-1.958*** (0.683)	-3.969*** (0.403)	-3.003*** (0.645)	-3.030*** (0.362)	-3.008*** (0.741)	-1.042 (0.864)	-0.428 (0.268)	-2.788*** (0.381)	-2.357*** (0.698)
R ²	0.889	0.043	0.935	0.366	0.876	0.142	0.136	-0.079	0.914	0.231
N	17	16	17	16	17	16	17	16	17	16

Note: HAC standard errors in parentheses. The mean is that for the relevant ethnic group. The poverty rate is not available for 1974. The differences for 1976 are calculated relative to 1970 (including for the log means). Source: Author's calculations as described in the text.

References

- Abdul Rahman Putra, Tunku , 1986. *Political Awakening*, Kuala Lumpur: Pelanduk Publications.
- Anand, Sudhir, 1983, *Inequality and Poverty in Malaysia: Measurement and Decomposition*, New York: Oxford University Press.
- Chakravarty, Shanti, and Abdul-Hakim Roslan, A.H., 2005, "Ethnic Nationalism and Income Distribution in Malaysia," *European Journal of Development Research* 17(2): 270–288.
- Datt, Gaurav, and Martin Ravallion, 1992, "Growth and Redistribution Components of Changes in Poverty Measures: A Decomposition with Applications to Brazil and India in the 1980s," *Journal of Development Economics* 38: 275-295.
- Economist, The, 2017, "Deformative Action: Malaysia's System of Racial Preferences should be Scrapped," May 18.
- Gallup, John Luke, 1998, "Ethnicity and Earnings in Malaysia," Harvard Institute for International Development, Harvard University.
- Hirschman, Charles, 1972, "Educational Patterns in Colonial Malaya," *Comparative Education Review* 16(3): 486-502.
- _____, 1975, *Ethnic and Social Stratification in Malaysia*, Arnold and Catherine Rose Monograph Series, Washington DC: American Sociological Association.
- Ikemoto, Y., 1985, "Income Distribution in Malaysia: 1957-80," *The Developing Economies* 23(4): 347-367.
- Jomo, K. S., 1989, "Malaysia's New Economic Policy and National Unity," *Third World Quarterly* 11(4): 36-53.
- Kakwani, Nanak, 1993, "Poverty and Economic Growth with Application to Côte D'Ivoire," *Review of Income and Wealth*, 39, 121-139.
- Khalid, Muhammed Abdul, 2014, *The Colour of Inequality. Ethnicity, Class, Income and Wealth in Malaysia*, Kuala Lumpur: MPH Publishing.
- Lee, Hwok-Aun and Muhammed Abdul Khalid, 2016, "Discrimination of High Degrees: Race and Graduate Hiring in Malaysia," *Journal of the Asia Pacific Economy* 21(1): 53-76.
- Lee Yong Leng and Martina Ting 1986 "Economic Divisions and Ethnic Differences in Malaysia," *Southeast Asian Journal of Social Science* 14(2): 85-96.
- Newey, Whitney and Kenneth West, 1987, "A Simple, Positive Semidefinite, Heteroskedasticity and Autocorrelation Consistent Covariance Matrix," *Econometrica* 55: 703–708

- Ravallion, Martin, 2017, *Interventions against Poverty in Poor Places*, 20th Annual WIDER Lecture, World Institute of Development Economics, Helsinki.
- _____, 2018, “What Might Explain Today’s Conflicting Narratives on Global Inequality?” WIDER Working Paper 2018/141.
- Ravallion, Martin, and Shaohua Chen, 2003, ““Measuring Pro-Poor Growth,” *Economics Letters*, 78(1): 93-99.
- Ravallion, Martin, and Shaohua Chen, 2011, “Weakly Relative Poverty,” *Review of Economics and Statistics* 93(4): 1251-1261.
- _____, and _____, 2018, “Welfare-Consistent Global Poverty Measures,” NBER Working Paper 23739.
- Roslan, Abdul-Hakim, 2001, “[Income Inequality, Poverty and Development Policy in Malaysia.](#)” Universiti Utara Malaysia.
- Saw, Swee-Hock, 2015, *The Population of Malaysia (Second Edition)*, ISEAS Publishing, Singapore.
- Shah, Sultan Nazrin, 2016. “Economic History of Malaya, Population Data.” <https://www.ehm.my/data/population-data>
- _____, 2017, *Charting the Economy*. New York: Oxford University Press.
- Snodgrass, D.R., 1980, *Economic Inequality and Development in West Malaysia*, Kuala Lumpur: Oxford University Press.
- Thillainathan, R., and Kee-Cheok Cheong, 2018, “ Book Review” (of Khalid, 2014), *Malaysian Journal of Economic Studies* 55(2): 301-307.
- _____ and _____, 2016, “Malaysia’s New Economic Policy, Growth and Distribution: Revisiting the Debate,” *Malaysian Journal of Economic Studies* 53(1): 51-68.