

**CRISE** ● Centre for Research on Inequality,  
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Queen Elizabeth House, University of Oxford

# **Playing the (non)ethnic card: The electoral system and ethnic voting patterns in Malaysia**

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### *Abstract*

This paper examines the ethnic determinants of constituency delineations and voting patterns in West Malaysia over the past five general elections, paying particular attention to the ramifications of the 2002 redelineation exercise. I show that the 2002 redelineation exercise reduced markedly the ethnic bias of the electoral system yet increased the overall imbalance in constituency size. I then argue that the old electoral logic of small Malay-dominated rural constituencies, which tended to vote strongly for the Alliance/BN government (incumbent since Independence), and large Chinese-dominated urban constituencies, which tended to vote more for the opposition, has become increasingly irrelevant due to Malay urbanisation and shifting ethnic voting patterns. The paper thus concludes that the 2002 exercise represented the 'correction' of an increasing imbalance between the patterns of the government's electoral support and constituency delineations. Ethnic bias in the electoral system was substantially replaced by a direct political bias in favour of the BN government.

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# Playing the (non)ethnic card: The electoral system and ethnic voting patterns in Malaysia

By Graham Brown

## 1. Introduction

The March 2004 general elections in Malaysia were, even by the standards of a country which has never seen the incumbent federal government lose an election, a foregone conclusion. The ruling *Barisan Nasional* (BN, or National Front) coalition romped home with 63 per cent of the popular vote and over 90 per cent of the seats, buoyed by a resurgent economy and a change of leadership the previous year. In October 2003, the charismatic but controversial Mahathir Mohamed, prime minister since 1981, retired in favour of his slightly colourless but broadly popular deputy, Abdullah Ahmad Badawi. Abdullah had impressed many observers in his first six months with an apparent commitment to eradicate corruption and undo many of the social cleavages left by his predecessor's confrontational style. The elections were also, however, the first to be held after a series of significant changes in electoral law and the alignment of constituencies in the country.

This paper examines the ethnic dimension of electoral politics in Malaysia – particularly West Malaysia – since independence, paying particular attention to these changes in the electoral system. The previous election in 1999, when opposition parties had mounted arguably their strongest challenge to the regime for three decades, witnessed a haemorrhage in support for the BN from rural Malay constituencies – a result made worse by the electoral over-weightage allocated these constituencies since independence (Weiss, 2001; Welsh, 2004). Following the election, the BN government and the politically compliant Election Commission undertook an extensive re-jigging of the electoral system. This paper examines these changes within the context of the broad trajectories of electoral politics since independence. It argues that the constituency redelineation exercise undertaken as part of this process resulted in a reduction in the *ethnic* bias of the electoral system but an increase in the *political* bias of the system. By ethnic bias, I mean the extent to which the alignment of constituencies gave extra electoral strength to one particular ethnic group – the Malays. By political bias, I mean the extent to which the system gave extra electoral strength to particular geographical areas and particular distributions of ethnicity within constituencies that favoured the incumbent BN regime. The argument is based on statistical analysis of electoral data from the past five general elections – held in 1986, 1990, 1995, 1999 and 2004 – including both the actual election results and the constituency profiles provided by the Election Commission, which give a breakdown of the electoral role by ethnicity.<sup>1</sup>

## 2. Ethnicity and the Electoral System

Malaysia is a monarchical federation of thirteen states and three federal territories split between the West Malaysia peninsular, which comprises eleven states, and the two East Malaysian states of Sabah (formerly British North Borneo) and Sarawak on the island of Borneo. West Malaysia, then known as Malaya, gained its independence from the British in 1957, and in 1963 joined with Singapore and the Borneo states to create the

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### Notes

<sup>1</sup> The data for 1986 – 1999 are taken from various issues of the *Information Malaysia Yearbook*; for 2004 they are taken from The Star Online (2004).

Malaysian Federation.<sup>2</sup> The country attained its current borders in 1965 after the speedy departure of Singapore from the federation.

Malaysia is one of the most ethnically diverse countries in the region, home to a range of indigenous and migrant groups. On the peninsular, the majority ethnic group is the Malays. Together with the many native indigenous groups of East Malaysia and the small *Orang Asli* communities on the peninsular, these groups together constitute the *bumiputera* (lit. Sons of the Soil) – a designation for native groups that enjoy certain constitutionally protected privileges. During the British colonial period, many Chinese and Indian migrants came to Malaya and their descendants form a large minority population. Faster population growth among the bumiputera have seen them increase from a bare majority at independence to around two-thirds of the population (see Table 1).

**Table 1: Ethnic distribution of Malaysia, 1964 and 2003<sup>3</sup>**

	1964	2000
Bumiputera	50.1%	65.0%
Chinese	36.8%	26.1%
Indian	11.2%	7.6%
Others	1.9%	1.3%

Sources: Means, 1970, p.12; Malaysia, 2004, 93

Constitutionally democratic, Malaysia has maintained parliamentary rule through multi-party elections since gaining independence, with the exception of a period of nineteen months following the outbreak of severe ethnic rioting in May 1969, when parliament was suspended and replaced with a National Operations Council. Pre-independence legislative council elections were won convincingly by the Alliance, a coalition of ethnically-based parties, which went on to win every subsequent election with the two-thirds majority necessary for constitutional amendments.<sup>4</sup> Initially comprising the United Malays National Organisation (UMNO), the Malaysian Chinese Association (MCA) and the Malaysian Indian Congress (MIC), the Alliance was expanded with the cooptation of most of the opposition parties following the 1969 violence, and in 1974 was renamed the *Barisan Nasional*.<sup>5</sup> The coalition has varied over time - the main Islamic opposition *Partai Islam seMalaysia* (PAS – Pan-Malaysian Islamic Party) left the coalition in 1978, and a number of smaller ‘mosquito’ parties flit in and out – but the UMNO-MCA-MIC triumvirate remains central, with UMNO the undisputed first among equals. One of the effects of this uninterrupted incumbency for the Alliance/BN regime has been a steady erosion of democratic practices and an increasing blurring of the distinctions between party (or coalition) and state (Crouch, 1996; Lim 2002b). Many commentators now see the triennial UMNO party elections as more important than general elections for deciding who runs the country (e.g. Gomez and Jomo, 1998; Khoo, 1997).

The federal electoral system adopted in Malaya at independence was broadly modelled on the Westminster system, with an elected lower house based on single-member first-past-the-post constituencies and an appointed upper house.<sup>6</sup> As in Westminster,

<sup>2</sup> The original plan for Malaysia had also included the Sultanate of Brunei, which dropped out of the negotiations early on.

<sup>3</sup> Figures for 1964 exclude Singapore, and are thus geographically directly comparable.

<sup>4</sup> The Alliance as it stood after the 1969 election fell short of a two-thirds majority and, indeed, slightly lost the popular vote. Following the restoration of parliament in 1971, however, the expanded coalition comfortably passed this mark.

<sup>5</sup> Prior to 1963, both the MCA and the MIC of course used the term ‘Malaya’ not ‘Malaysia’ in their party names.

<sup>6</sup> In contrast to the British House of Lords, however, appointees to the upper house (Senators) serve a maximum of two fixed terms of three years.

parliaments sit for a maximum of five years, but can be dissolved earlier. At the state level, legislative assemblies led by a Chief Minister or *Mentri Besar* are elected concurrently with the federal parliament, except in East Malaysia where the Chief Ministers retain the power to dissolve their respective legislatures at their own discretion.<sup>7</sup> The federal territories are administered by appointed officials. The first federal territory was created in 1974, when the capital city of Kuala Lumpur was separated from Selangor state. The second federal territory was created in 1984, when the island of Labuan was ceded to the federal government by Sabah state for development as a duty free and offshore banking zone. More recently, Putrajaya, the new administrative capital and also formerly part of Selangor, was designated a federal territory for the 2004 elections. Elections for local municipal and district council were replaced by appointed positions in 1976. These development will be discussed further below.

The first-past-the-post system has long benefited the Alliance/BN regime, allowing it to maintain a two-thirds parliamentary majority, even when its share of the popular vote fell to barely above half (see Table 2). Since the country's first general election in 1959, the Alliance/BN has won an average 57.6 per cent of the vote in each election, but its share of the seats in parliament has averaged 80.8 per cent. This magnifying effect of first-past-the-post systems on parliamentary majorities is a well-established phenomenon across many countries. Where it is particularly relevant in Malaysia is the extent to which small constituencies also facilitate easier manipulation of boundaries to benefit particular ethnic groups.

**Table 2: Distortion Effect of First Past The Post Voting in Malaysia**

	1959	1964	1969	1974	1978	1982	1986	1990	1995	1999	2004
Alliance/BN share of vote (%)	51.8	58.4	48.4	60.7	57.2	60.5	57.3	53.4	65.1	56.5	63.8
Alliance/BN seats won (%)	71.2	85.6	58.4	87.7	85.1	85.7	83.6	70.6	84.4	76.2	90.4
<i>Difference</i>	19.4	27.2	10.0	27.0	27.9	25.2	26.3	17.2	19.3	19.7	26.6

From the earliest days of independent Malaya, ethnic considerations were built in to the political system; the Constitution Commission mandated in 1956 to make recommendations to the British and Malay monarchs for the new nation's constitution was specifically charged with 'the safe-guarding of the special position of the Malays and the legitimate interests of other communities' (Colonial Office, 1957), as well as cementing the position of the Malay monarchs. The Commission itself, however, was relatively lukewarm towards the enshrinement of Malay 'special rights' and its proposals were castigated by Onn Jaafar, founder of UMNO, as having 'sold [the Malays] down the river' (Onn Jaafar, quoted in von Vorys, 1975, p.132). Modifications to the proposals in the Malayan Legislative Council, already dominated by the Alliance, strengthened Malay 'special rights', most notably in clearly designating Malay as the national language and Islam as the official religion.

Ethnic considerations were also built in to the electoral system itself. Constituencies were to be determined on the principle of equality of size, but a rural weightage of up to two times was allowed. Ostensibly due to the 'greater difficulty of reaching electors... and the other disadvantages facing rural constituencies' (Vasil, 1980, p.55), this system

<sup>7</sup> At the federal level, it is the King (*yang di-Pertuan Agung*) who officially dissolves parliament, acting on the advice of the prime minister. At the state level, the titular Head of State acts on the advice of the Chief Minister or *Mentri Besar*. The Head of States are hereditary Sultans in Johor, Kedah, Kelantan, Negri Sembilan, Pahang, Perak, Perlis (where the title Raja is used in place of Sultan), Selangor and Terengganu and appointed governors in Melaka, Penang, Sabah and Sarawak. The King himself (all monarchies pass only to males) is selected from among the state Sultans for a five year term.

in practice gave an electoral advantage to the Malay community, which was overwhelmingly rural at the time of independence.<sup>8</sup> Ethnic weightage was also an issue in the formation of Malaysia, with Chinese-dominated Singapore massively under-represented in electoral terms. The justification for this was the greater degree of internal powers afforded Singapore in contrast to the Malayan states – Singapore had its own Prime Minister. The bumiputera dominated East Malaysian states, however, which also enjoyed greater internal powers than the Malayan states, were afforded a greater number seats than their share of the population demanded, a situation which persists, slightly reduced, to date (see Table 3).<sup>9</sup> Disputes over its position in the electoral system were one of the key issues leading to the split between Kuala Lumpur and Singapore, and the latter's ultimate expulsion from the federation.

**Table 3: Relative electoral strength of East Malaysia, 1974-2004**

	1974	1984	1994	2004
Per cent of electorate	14.7	15.0	16.8	16.5
Per cent of seats	26.0	25.5	25.0	24.9
Over-weightage	1.77	1.70	1.49	1.50

Source: calculated from Lim (2002a: 118) and The Star Online (2004)

Despite provisions allowing some degree of ethnic manipulation of the electoral system, the Election Commission initially proved reluctant to employ these powers and its first delineation exercise, published in 1960, appeared to give the non-Malays a considerably stronger electoral position than previously. The Alliance government responded by amending the constitution to make parliament the final arbiter of boundary changes – previously the Election Commission's proposals were final – and to redefine the Election Commission's mandate. Most important here was the removal of a stipulated limit on the variance in constituency sizes. Over the ensuing decades, the Election Commission was brought further under executive control, and is now widely seen by critics as little more than a fig leaf for the government's desired manipulation of constituency boundaries.

Beyond federal elections, two other important changes to the electoral system were made in the first two decades after independence, both following the Alliance's relatively poor performance in the 1969 election, which sparked the ethnic riots. Firstly, Kuala Lumpur was mandated as a federal territory and taken out of Selangor state. The Selangor state assembly had almost fallen to the opposition in 1969, and the formation of the federal territory, then dominated by urban Chinese who tended to support the opposition, effectively ensured that Selangor would remain under Alliance/BN control. The latter two federal territories – Labuan and Putrajaya – are electorally insignificant even at the state level. Putrajaya, however, was also awarded a federal constituency of its own, provoking widespread accusations of gerrymandering. Putrajaya is the new purpose-built administrative capital of Malaysia located outside of Kuala Lumpur and is thus almost entirely populated by government officials, senior civil servants and their families, who are under enormous pressure to vote for the BN. Moreover, the constituency had in 2004 only around five thousand registered voters, less than half the next smallest constituency and less than 10 per cent of the West Malaysian average of around 52,000 voters. In comparison, the eleven constituencies which comprise the neighbouring Federal Territory of Kuala Lumpur, average over 60,000 voters with none smaller than 50,000. At the time it was mandated, Putrajaya reportedly had less than a hundred eligible voters resident.

<sup>8</sup> Quite what these 'other disadvantages' were (or are) has never been elaborated.

<sup>9</sup> It should be noted, however, that Sarawak was not included in the 2002/3 redelineation exercise, while Sabah gained five extra seats. If a similar number of extra seats are awarded Sarawak when its redelineation happens, the East Malaysian overweightage will be considerably increased.

Secondly, the 1970s saw the removal of an entire level of elected government, with elected local councils being replaced by state assembly appointees. The commission of enquiry that had recommended this change argued that elected local authorities could not 'promote, reflect and consolidate the spirit of national cohesiveness' (quoted in Shabbir Cheema and Ahmad Hussein, 1978, p.585). Whilst the decision was broadly accepted as 'administratively sound' (Stubbs, 1977, p.257), many larger local councils, such as Ipoh, were also opposition-dominated (Barraclough, 1986).

Following the BN's relatively poor performance in the 1999 general election, held just a year after massive street demonstrations to protest the dismissal and imprisonment of the popular deputy prime minister Anwar Ibrahim, the government undertook the most extensive electoral engineering for two decades. Amendments to the election laws made it impossible to challenge the accuracy of the electoral rolls. Allegations of 'phantom voters' have been common and one legal challenge to the accuracy of the rolls following the 1999 elections resulted in a court annulling the result in the Likas state constituency in Sabah. No further such challenges would be possible.<sup>10</sup> The deposit required of federal election candidates was also raised to RM20,000 (over US\$5,000), making it among the highest in the world; the ceiling on election spending was raised four-fold. Both these latter measures clearly benefited the well-financed BN parties at the expense of the opposition or independents.

More relevant from the perspective of this paper, however, was the electoral re-delineation exercise carried out in 2002 and passed in 2003. The exercise was the most extensive undertaken since 1974, but also the most rapidly done – taking the Election Commission a bare eight months to complete, compared to the normal two years. The exercise clearly benefited the government, with BN strongholds such as Johor and Sabah gaining extra seats (six and five respectively) and opposition-controlled Kelantan and Terengganu receiving none. Individual constituency boundary redelimitations also appeared to favour the BN; the Kedah seat of Yan, for instance, which was won slimly by a prominent opposition politician in 1999, was redrawn to include a district from the staunchly pro-government neighbouring seat of Gurun (Ong, 2002). Another instance, already discussed, was the creation of the Putrajaya constituency. Rather than consider individual cases, however, I want here to focus on the broad implications of the delineation exercise. The analysis is restricted to West Malaysia, which accounts for approximately three-quarters of all seats, for two reasons. Firstly, both the ethnic demography and the political dynamics of East Malaysia are substantially different from the peninsular. Secondly, the East Malaysian state of Sarawak was, in any case, not included in the redelineation exercise.

As already noted, Malay-dominated West rural constituencies in West Malaysia have historically been relatively smaller in terms of electorate than the more mixed or non-Malay dominated urban constituencies. We can put an aggregate measure on this overweightage by comparing the actual proportion of each ethnic group on the electoral role to the average proportion of the group in each constituency.<sup>11</sup> By treating every constituency equally, the latter measure gives the effective strength of the ethnic group

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<sup>10</sup> In annulling the election result, the judge who heard the case also alleged that he had received a phone-call from prominent though un-named politicians asking him to be 'careful' in his judgment. This rare indication of political independence in the Malaysian judiciary may in part be explained by the fact that the judge was retiring shortly afterwards. In any case, in the re-run election, the original BN candidate won by a slightly increased margin.

<sup>11</sup> Algebraically, for  $N$  constituencies, with an electorate of  $e_i$  voters of whom proportion  $g_i$  ( $0 \leq g_i \leq 1$ ) are the required ethnic group, the electoral weightage of group  $g$  is defined as:

$$w_g = \frac{\sum_{i=1}^N e_i \sum_{i=1}^N g_i}{N \sum_{i=1}^N e_i g_i} - 1$$



in returning MPs. The percentage difference between these two measures gives a figure for the relative over-weightage of the group. Table 4 shows this measure for the three main ethnic groups over the past five elections. Between 1986 and 1999, the relative strength of the Malays and the Chinese remained steady, with the former over-represented by around 7 per cent and the latter under-represented by around 10 per cent. Over the same period, the smaller Indian community experienced a worsening situation, from 6 per cent under-representation to 8 per cent. Between 1999 and 2004, however, all three groups move significantly towards equal representation. The Malay community lost a quarter of its over-representation, dropping to 5.3 per cent; the other communities reduced their under-representation correspondingly.

**Table 4: Electoral weightage of main ethnic groups in West Malaysia, 1986-2004**

	1986	1990	1995	1999	2004
Malay	7.1%	7.4%	7.0%	7.0%	5.3%
Chinese	-10.0%	-10.2%	-10.0%	-10.1%	-8.2%
Indian	-5.9%	-7.2%	-7.5%	-7.9%	-5.9%

In understanding the implications of this shift, two apposite factors are worth noting. Firstly, while constituency delineation has historically favoured rural, largely Malay constituencies, the BN has increasingly performed best in ethnically-mixed seats, most of which are urban. Secondly, in the 1999 general election, the drop in support for the BN regime was particularly evident among the Malay community.

How was this effect achieved? Table 5 demonstrates the relationship between ethnic composition and constituency size in West Malaysia over the previous five elections defined by three categories of constituency: 'Non-Malay' for constituencies less than one third Malay, 'Mixed' for constituencies between one-third and two-thirds Malay, and 'Malay' for constituencies more than two-thirds Malay. In order to discount any distortion over time due to overall population increase and the changing total number of seats, the constituency size is given as relative to the average. Constituencies over the average (i.e. greater than 1.0) are relatively *disenfranchised*, requiring a greater absolute number of voters to return one representative, and vice versa.

**Table 5: Relative constituency size and BN share of vote by seat category, West Malaysia 1986-2004**

	1986	1990	1995	1999	2004
Average relative size of constituencies					
Non-Malay seats	1.566	1.482	1.402	1.366	1.351
Mixed seats	1.153	1.206	1.198	1.228	1.171
Malay seats	0.945	0.934	0.906	0.896	0.979
Relative BN share of vote					
Non-Malay seats	0.697	0.730	0.824	0.914	0.813
Mixed seats	1.114	1.113	1.112	1.117	1.118
Malay seats	1.087	1.017	0.928	0.910	0.975

Note: 'Non-Malay' = less than one-third Malay; 'Mixed' = one-third to two-thirds Malay; 'Malay' = more than two-thirds Malay.

The largest category of seats is the mixed seats, which accounted for between 43 and 46 per cent of West Malaysian seats in each election. Throughout the entire period since 1986, this category of seats has been the best performer for the BN, with an average vote for the BN consistently 11-12 per cent higher than its overall share of the vote in West Malaysia. The relative size of these constituencies, however, has consistently been larger than average, although not as large as the non-Malay seats.

From the BN perspective, this is an inefficient distribution of voters – the category of seats that support it most strongly is relatively disenfranchised in terms of constituency size. Moreover, the broad trend in the size of these seats between 1986 and 1999 was upwards. The previous redelineation exercise in 1994 reduced the relative size of these seats slightly, but by 1999 the upwards trend had resumed. The more recent redelineation exercise, however, was considerably more effective in reducing the size of these seats. Whilst voters in these seats remain disenfranchised in terms of the number of voters it takes to return one MP, the 2002 redelineation reduced this disenfranchisement to its lowest level since 1986.

Also inefficient from the BN perspective was the fact that between 1986 and 1999, the relative enfranchisement of the Malay category of seats was consistently increasing, but the relative BN share of the vote in these seats was decreasing. Once again, the 2002 redelineation exercise reversed this by increasing the relative size of the Malay seats beyond even their level in 1986. In the event, these seats also experienced a sharp upturn in relative support for the BN, although still remaining below its overall share.

The above analysis suggests that the 2002 redelineation exercise saw a significant shift in the pattern of constituencies from one that favoured a particular ethnic group – the Malays – towards one that favoured a particular distribution of ethnic groups *within* each constituency – ethnic polarization. This new constituency profile plays to the electoral strengths of the BN regime. Importantly, while the redelineation exercise reduced the relationship between constituency size and Malay proportion of the electorate, it in fact slightly *increased* the overall imbalance in constituency size in West Malaysia, even without considering the exceptional case of Putrajaya (see Table 6).

**Table 6: Distribution of constituency sizes in West Malaysia, 1986, 1995 and 2004**

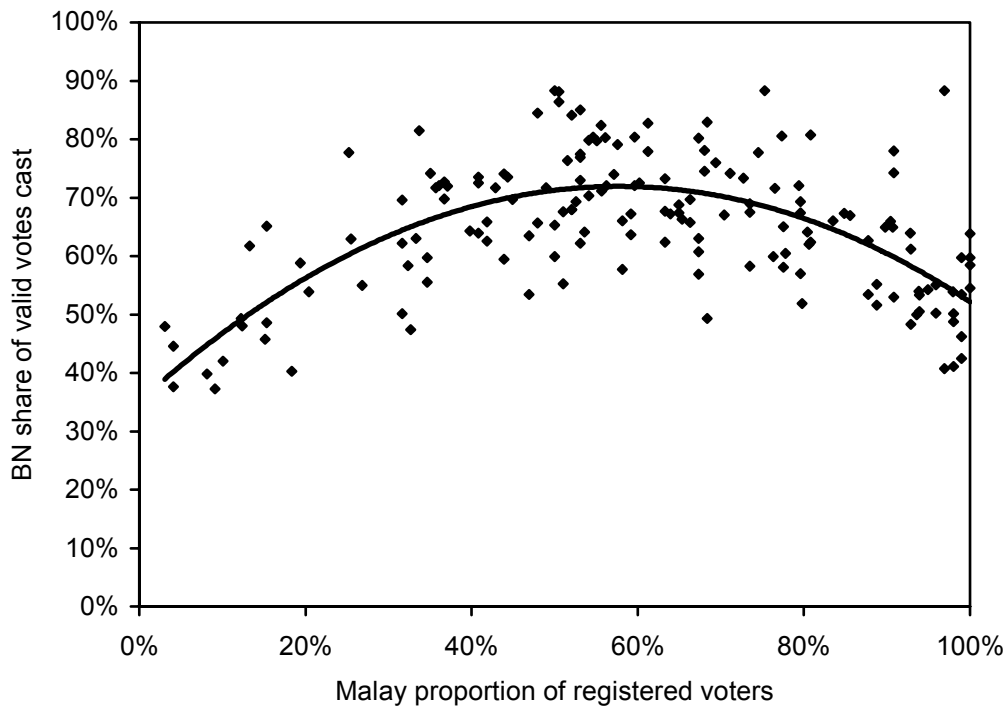
	1986	1995	2004(a)	2004(b)
Largest constituency	81,005	85,954	104,185	104,185
Smallest constituency	23,979	21,719	23,061	5,079
Ratio	3.38	3.96	4.52	20.51
Coefficient of variation of constituency sizes	0.290	0.258	0.297	0.306
Correlation between constituency size and Malay proportion of electorate (c)	-0.61	-0.61	-0.41	-0.42

Notes: (a) excluding Putrajaya; (b) including Putrajaya; (c) all correlations are significant at the 0.01 level

### 3. Ethnic Voting Patterns in West Malaysia, 1986–2004

We have seen, then, that the re-delineation exercise had two main effects: increasing the electoral strength of pro-government strongholds and reducing (although by no means eradicating) the ethnic bias of the electoral system. Implicit in this is a broad shift in voting patterns in West Malaysia. This section thus focuses attention on long-run ethnic voting patterns in West Malaysia, which returns around three-quarters of the parliamentary seats at the federal level. It has long been noted that in West Malaysia, the BN government tends to perform better electorally in ethnically-mixed constituencies, with support levels falling off in both Malay dominated and non-Malay dominated seats. Early explorations of this voting pattern used averages for different categories of seat based on their ethnic distribution (e.g. Vasil, 1971). More recently, scholars have developed a technique for demonstrating the strength of this relationship graphically (e.g. Loh and Saravanamuttu, 2003). By plotting the proportion of Malays in a constituency against the BN share of valid votes in a scatter chart, the strength of this trend become clear. Figure 1 shows this relationship for the March 2004 election. With

a quadratic curve estimation, the goodness-of-fit ( $R^2$ ) between the proportion of Malays in a constituency and the BN vote is 0.456.



**Figure 1: Electoral support for the BN by proportion of Malay voters in West Malaysian constituencies, 2004**

Whilst this method clearly demonstrates voting trends, however, the quadratic line of best fit that accompanies it is difficult to interpret in any meaningful way, especially when it comes to comparisons between elections. Using voting data from Malaysia's previous five general elections, I expand on this type of analysis by utilising an index of ethnic polarization at the constituency level to model the BN's electoral performance in a way that is temporally comparable.

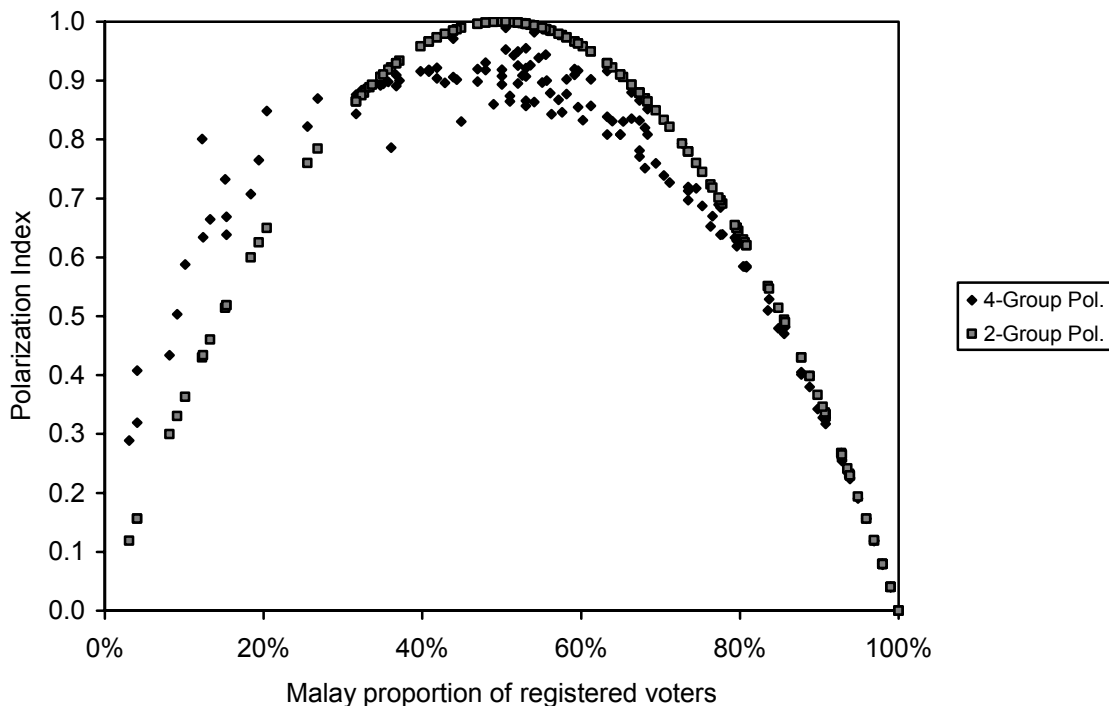
I employ the Polarization Index developed by José Montalvo and Marta Reynal-Querol (2003) to examine the changing impact of ethnicity on elections in West Malaysia. Developed for use in cross-national studies of the relationship between demographic diversity, development and conflict, the index, which ranges between 0 and 1, measures how far a population is polarized into two large groups, reaching its maximum where the population is exactly divided into two equally-sized ethnic groups, and its minimum where the population is either perfectly homogenous (all individuals belong to one group), or perfectly heterogeneous (a theoretically infinite population each belonging to a different group).<sup>12</sup>

To calculate the index, I use the constituency profiles from the Election Commission, which provides the ethnic composition of each constituency in West Malaysia broken down into four groups: Malay, Chinese, Indian and Other. There are two practical ways

<sup>12</sup> In a population of  $N$  ethnic groups, where each group  $i$  constitutes  $\pi_i$  of the total population, the formula for the index is:

$$P = 4 \sum_{i=1}^N \pi_i^2 (1 - \pi_i)$$

in which this data can be employed. Firstly, we can treat all four ethnic groups separately (designating 'others' as a single group).<sup>13</sup> Alternatively, we can treat all three non-Malays groups as a single 'group' – this latter approach justified by the widespread view that the main political divide in the Peninsular is between Malays and non-Malays, rather than the three main groups independently. Figure 2 shows both configurations of the Polarization Index in action, plotting the proportion of Malays in all West Malaysian constituencies in 2004 against the index calculated for four groups (Malays, Chinese, Indians, Others) and two groups (Malays, non-Malays). In the two-group context, the proportion of non-Malays is obviously the 'remainder' left over from the Malay proportion, hence the equation resolves to a perfect quadratic curve. In the four-group context, where Malays constitute the overwhelming majority of the voters, the distribution of the non-Malay voters will have little effect on the Polarization Index, similarly in constituencies where Chinese voters dominate. Thus, the two 'tails' of the four-group curve closely approximate the two-group model. The greater variance at the apex of the four-group curve is due to the greater room for diversity in the demographic profile of the non-Malay constituents. Thus, for instance, both Hulu Selangor in Selangor state and Tanjong in Johor had around 50 per cent Malay registered voters, but the profile of the non-Malays in the former was considerably more varied (28 per cent Indian, 19 per cent Chinese) than the latter (48 per cent Chinese), resulting in a lower Polarization Index score of .86 compared with .99.



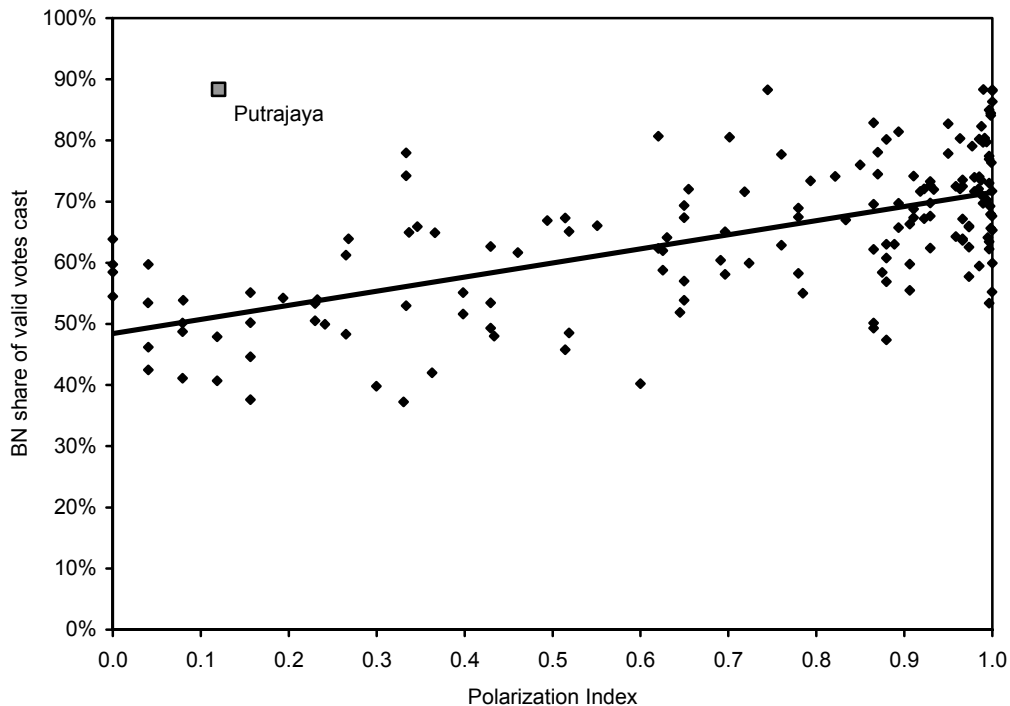
**Figure 2: Polarization Index as applied to West Malaysian parliamentary constituencies, 2004**

Clearly, these two calculations of the index are highly correlated ( $R^2=0.939$  in 2004) and we would thus expect them to perform similarly in the models elaborated below. Indeed, the trends and the significance of the models are essentially the same, whichever

<sup>13</sup> As the 'others' typically form only a very small proportion of the electorate, any heterogeneity within this group would only affect the overall index fractionally.

calculation is used. In fact, the two-group model performs slightly better in terms of significance and this is thus the form we adopt from here on (see Appendix I for details).

By plotting the Polarization Index against BN performance for each constituency, we thus derive a *linear* measure of the relationship between constituency ethnic profile and support for the BN, as demonstrated in Figure 3, again in relation to the March 2004 election. At this point, it is worth noting the rogue result of Putrajaya constituency, which voted overwhelmingly for the BN, despite scoring a very low .12 on the Polarization Index (97 per cent Malay). This result is largely accounted for by the specific political profile of the Putrajaya constituency discussed above. This is justification enough for removing Putrajaya from the dataset as an outlier, which improves the R<sup>2</sup> fit of the linear relationship in Figure 3 from .260 to .299.



**Figure 3: Scatter plot of Polarization Index and BN Share of Vote, West Malaysia 2004**

The limitation of the Polarization Index is that it does not allow us to describe the voting behaviour of individual ethnic groups or groups of constituencies. Compared with Figure 1, the index cannot tell us anything about the difference between the ‘tails’ in the curve: whether support for the BN falls off faster in Malay dominated seats than in non-Malay dominated seats. To remedy this problem to some degree, I include a second demographic variable in the model, a dummy integer for Malay majority constituencies, which takes the value 1 in seats with more than 50 per cent Malay electors, and 0 otherwise.

Employing ANOVA multiple regression of the Polarization Index and the Malay Majority dummy against the BN vote thus produces a three-factor model for the ethnic dimension of its vote, comparable across elections:

- The Polarization Effect (PE), given by the regression coefficient for the Polarization Index, which can be interpreted as a measure of how far ethnic diversity benefits the BN in each election. Returning to Figure 1, this factor gives

a measure of the steepness of the inverted-U curve. A Polarization Effect of .274, for instance, implies that an increase of .100 in the Polarization Index would result in the BN polling 2.74 per cent more votes;

- The Malay Majority Effect (MME), given by the coefficient for the Malay Majority dummy variable. In constituencies with the same Polarization Index, this factor accounts for the difference in support that the BN received in Malay majority seats. The MME accounts for the difference between the two tails in Figure 1. With an MME of .101, for instance, the BN would be modelled as having received 10.1 per cent more votes in a constituency that was 60 per cent Malay and 40 per cent Chinese than in one that was 60 per cent Chinese and 40 per cent Malay; and
- a residual measure of the Base Support Level (BSL), given by the constant in the regression equation. Interpreting the constant in such regressions is always more difficult, but an increase in the BSL without any other changes would correspond to a vertical shift in the Figure 1 curve.

It is important to recognize the limitations of this model. Most obvious is the problem of the MME, which produces a fairly arbitrary increase in the modelled vote between constituencies that are 49.9 per cent Malay and those that are 50.0 per cent Malay. Moreover, as this model is based on the actual results for each election, it is not to be understood as a *predictive* model, but rather as an explanatory model that allows us to compare the ethnic dimension of the BN's performance across elections. The model is statistically significant and has a high adjusted-R<sup>2</sup> value for all elections.<sup>14</sup>

**Table 7: Ethnic dimension of BN support in West Malaysia, 1986-2004**

	1986	1990	1995	1999	2004
Polarization Effect	0.195 (7.30)	0.268 (9.15)	0.338 (13.18)	0.237 (9.88)	0.247 (11.84)
Malay Majority Effect	0.191 (11.06)	0.120 (6.36)	0.081 (4.67)	0.013 (0.78)	0.078 (5.43)
Base Support Level	0.330 (13.14)	0.289 (10.40)	0.377 (15.32)	0.381 (16.61)	0.419 (20.85)
Overall Model Fit (Adjusted R <sup>2</sup> )	0.548	0.446	0.560	0.404	0.483

Note: t-values in brackets

Table 7 summarizes the model for each election. The most immediately important trend here is the constant decline in the Malay Majority Effect between 1986 and 1999, both in terms of the coefficient itself and its significance as measured by the t-value. This equates to an equalling out in the ethnic 'tails' of support for the BN. The 1986 election saw the heyday of the Chinese-based opposition Democratic Action Party (DAP), riding on a wave of discontent within the Chinese community and crisis within the MCA, winning twenty-four seats and over a 20 per cent of the national vote. In contrast, the main Malay opposition party PAS suffered an unprecedented rout, its conservative appeal undercut by Mahathir's Islamisation drive and the cooptation of the charismatic Islamic activist Anwar Ibrahim in to UMNO (Ramanathan and Mohd. Hamdan, 1990). As the decreasing MME shows, however, over the following three elections support for the BN from the rural Malay-dominated constituencies fell: in 1990, the BN lost control of Kelantan state assembly to PAS, which it failed to retake in 1995, despite an otherwise overwhelming victory; in 1999, PAS added Terengganu to the states under its control. Whilst the MME rose again in 2004, it remains low – the BN recaptured Terengganu but not Kelantan.

<sup>14</sup> See Appendix I for full regression results.

It is harder to discern any consistent long-term trend in the Polarization Effect, but what is important to note is that it has remained, since 1990, significantly higher than the Malay Majority Effect. The sharp down-turn in 1999 may be associated with formation, for the first-time, of a full multiethnic opposition coalition. Nonetheless, ethnic Polarization rather than Malay dominance appear to be the basis of the BN's electoral support. As we have seen, the electoral system during this period was heavily weighted towards the Malay community. With the Malay Majority Effect declining and support in ethnically polarized constituencies consistently high, it would clearly favour the BN to reduce the pro-Malay bias in the electoral system and increase the weightage of mixed areas – exactly, as we have seen, what the Election Commission chose to deliver.

#### 4. Conclusions

This paper has employed statistical techniques to examine the impacts of the 2002 electoral redelineation exercise and its relation to voting trends in West Malaysia over the past five elections. It has argued that in West Malaysia, the historical over-weightage for the rural Malay community has, from a regime perspective, increasingly become electorally irrelevant or even disadvantageous. The old model of large and hence relatively disenfranchised, Chinese-dominated urban constituencies that tended to vote for the opposition and smaller, Malay-dominated rural constituencies that favoured the BN is becoming irrelevant as Malay urbanisation increases the heterogeneity of the urban and semi-urban areas, whilst support for the BN has also solidified in these areas.

The overall impacts of this shift in electoral terms are made clear in Table 8. Between 1986 and 1999, the correlation between Malay proportion of voters and relative constituency size was strongly negative (representing *over-enfranchisement*) and significant. There was also a strong and significant positive correlation (representing *under-enfranchisement*) for the more polarized constituencies. In 1986, this arrangement benefited the BN, as can be seen in the strong negative correlation between constituency size and BN vote: the BN won a lot of 'easy' small seats; the DAP in particular had to struggle to win larger seats. By 1995, however, the shifting ethnic voting trends meant that the electoral arrangements no longer benefited the BN as well as they had in 1986; in 1995 and 1999, there was no meaningful correlation between constituency size and BN performance. In 2004, the correlation between BN share of the vote and constituency size resumed the significant negative (and hence electorally beneficial) relationship that was evident prior to 1995.

The 2002 redelineation exercise in West Malaysia was thus, for the BN, the 'correction' of an increasing imbalance between its electoral support patterns and the ethnic bias of the system itself; in 2004, the correlation between constituency size and ethnicity – whether measured by proportion of Malays in the constituency or by the Polarization Index – reduced significantly. Yet while ethnic determinants of constituency size reduced, the overall imbalance in constituency size (as measured by the coefficient of variation) increased, representing a move further away from the principle of equality of size. The 2004 election also saw the BN perform significantly better in smaller constituencies in a way that it had not since 1990. Hence, we can conclude that the 2002 redelineation exercise reduced the ethnic bias of the electoral system, replacing it with a more direct political bias in favour of the BN. Of course, the Election Commission retains its stance of political independence, but it seems reasonable to conclude that if the BN itself had redrawn the constituency boundaries to its own benefit, it couldn't have done a much better job than the Election Commission.

**Table 8: Summary statistic and correlations for relative constituency sizes, West Malaysia, 1986-2004**

	1986	1990	1995	1999	2004
Coefficient of variation in constituency sizes					
	0.290	0.315	0.258	0.280	0.306
Correlation: relative constituency size and Malay proportion of voters					
Correlation	-0.619	-0.528	-0.613	-0.570	-0.408
Significance	0.000	0.000	0.000	0.000	0.000
N	132	132	144	144	164
Correlation: relative constituency size and Polarization Index					
Correlation	0.319	0.319	0.414	0.422	0.185
Significance	0.000	0.000	0.000	0.000	0.018
N	132	132	144	144	164
Correlation: relative constituency size and BN share of vote					
Correlation	-0.476	-0.235	0.027	0.073	-0.233
Significance	0.000	0.007	0.749	0.387	0.003
N	130	132	142	144	162

Note: the lower number of observations in the final correlation is due to uncontested seats and, in 2004, the exclusion of Putrajaya from the correlation

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**Appendix I: Full Regression Results for Election Models, 1986-2004****1986:**

Source	SS	df	MS	Number of obs	
Model	1.290083	2	0.645042	F(2, 127)	130
Residual	1.033456	127	0.008137	Prob > F	79.27
Total	2.323539	129	0.018012	Adj R-squared	0.0000
bnshare	Coef.	Std. Err.	T	P>t	[95% Conf. Interval]
PE	0.195283	0.026743	7.30	0.000	0.142363 0.248203
MME	0.190961	0.017267	11.06	0.000	0.156793 0.225128
_BSL	0.330215	0.025128	13.14	0.000	0.280491 0.379938

**1990:**

Source	SS	df	MS	Number of obs	
Model	1.086136	2	0.543068	F(2, 129)	132
Residual	1.304587	129	0.010113	Prob > F	53.70
Total	2.390723	131	0.018250	Adj R-squared	0.0000
bnshare	Coef.	Std. Err.	T	P>t	[95% Conf. Interval]
PE	0.268217	0.029329	9.15	0.000	0.210190 0.326244
MME	0.120494	0.018952	6.36	0.000	0.082997 0.157992
_BSL	0.288995	0.027793	10.40	0.000	0.234006 0.343983

**1995:**

Source	SS	df	MS	Number of obs	
Model	1.586489	2	0.793244	F(2, 138)	141
Residual	1.217751	138	0.008824	Prob > F	89.89
Total	2.804240	140	0.020030	Adj R-squared	0.0000
bnshare	Coef.	Std. Err.	T	P>t	[95% Conf. Interval]
PE	0.337984	0.025646	13.18	0.000	0.287274 0.388693
MME	0.080880	0.017325	4.67	0.000	0.046623 0.115136
_BSL	0.377162	0.024614	15.32	0.000	0.328492 0.425832

**1999:**

Source	SS	df	MS	Number of obs	
Model	0.762510	2	0.381255	F(2, 141)	144
Residual	1.088362	141	0.007719	Prob > F	49.39
Total	1.850872	143	0.012943	Adj R-squared	0.0000
bnshare	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
PE	0.237199	0.024005	9.88	0.000	0.189742 0.284656
MME	0.012525	0.015981	0.78	0.434	-0.019068 0.044119
_BSL	0.380514	0.022915	16.61	0.000	0.335214 0.425814

**2004:**

Source	SS	df	MS	Number of obs	
Model	1.057012	2	0.528506	F(2, 159)	162
Residual	1.104654	159	0.006948	Prob > F	76.07
Total	2.161666	161	0.013426	Adj R-squared	0.0000
bnshare	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
PE	0.246978	0.020864	11.84	0.000	0.205771 0.288185
MME	0.077753	0.014310	5.43	0.000	0.049491 0.106014
_BSL	0.418666	0.020076	20.85	0.000	0.379016 0.458315

Variables entered into all regressions:

- bnshare: Proportion of valid votes in constituency cast for BN [dependent]
- PE: Polarization Index for constituency, calculated on the basis of two groups, Malay and non-Malay.
- MME: Dummy variable, takes value 1 where more than 50 per cent of electoral role in constituency is Malay; 0 in all other cases