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Capital structure and political patronage: The case of Malaysia

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Abstract

This paper extends prior work on the links between political patronage and capital structure in developing economies. Three proxies of political patronage are developed and applied to a group of Malaysian firms over a 10-year period. We find a positive and significant link between leverage and each of the three measures of political patronage. We also find evidence of an indirect link between political patronage and capital structure through firm size and profitability.

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1. Introduction

Very little is currently known about the determinants of the capital structure of non-western firms in developing or “relationship-based” capitalisms.² Yet the economic importance of these countries has increased substantially and their significance is likely to expand even more in coming decades. Understanding the determinants of capital structure in these environments is certainly worthwhile by itself. Empirical evidence from these developing, relationship-based economies may also provide additional insights into the forces that shape capital structures in western countries.

Malaysia presents an interesting and important case study of relationship-based capitalism. The close link between business and politics in Malaysia is well documented (e.g., Gomez and Jomo, 1997, 1998; Faccio et al., 2001; Gomez, 2002). The Malaysian government plays the role of political patron to selected firms. It exerts a significant influence over the corporate sector through listing restrictions, direct equity ownership of listed firms, control of the banking sector, and through government-sponsored “institutional” investors (Gomez and Jomo, 1997).³

The potential link between political patronage and capital structure is an important and unexplored issue. Prior empirical work has provided some insights into the determinants of capital structure, but this evidence is largely based on US firms (e.g., Titman and Wessels, 1988; Harris and Raviv, 1991; Myers, 2001; Hovakimian et al., 2001; Frank and Goyal, 2003; Welch, 2004).⁴ However, Rajan and Zingales (1995) point out the importance of understanding the link between institutions and capital structure, a view that is also echoed by La Porta et al. (1998) and Johnson and Mitton (2003).

Johnson and Mitton (2003) are the first to report that Malaysian firms with political patronage (in the form of informal ties to politicians) carry more debt. However, the focus of their paper is on the effects of capital controls and not on political patronage and debt capacity. Moreover, they report results for only one dimension of political patronage, use only one proxy and do so for only 1 year.

We develop a hypothesis of how firms with political patronage may be able to carry more debt. This hypothesis is based upon an institutional assessment of policy objectives, the nature of the bank sector, and the lack of a viable bond market.

² Some justify the close relation between politics and firms on policy grounds (Alavi, 1996) while others (e.g., Rajan and Zingales, 1998, 2003) argue that “crony” or “relationship-based” capitalism (of which political patronage is an integral part) is a result of relative financial under-development rather than some cultural propensity for corruption.

³ All “institutional investors” in Malaysia are supported by various levels of government. In particular, the two largest institutional investors, Amanah Saham Nasional and Amanah Saham Bumiputera, are under the control of the Department of Finance in Malaysia (Gomez and Jomo, 1997, p. 36).

⁴ To test the robustness of the US evidence, Rajan and Zingales (1995) carry out a study which looks at the capital structure of G-7 countries. Their analysis reveals two findings. Evidence from US firms appears to be robust for (western) G-7 firms. However, a deeper examination of the obvious institutional differences between the G-7 countries indicates that the theoretical underpinnings of the observed associations remain unresolved.

Our study of the link between leverage and political patronage uses three separate proxies of political patronage and measures their influence over a 10-year period.

We find a positive and significant link between leverage and political patronage for each of our three measures of political patronage. Our results are consistent with the more limited evidence presented by Johnson and Mitton (2003). In addition, we also find an indirect link between political patronage and firm leverage through firm size and profitability. Our results are adjusted for firm-specific and year-specific effects.

The rest of the paper is organized as follows. The next section provides a discussion of the Malaysian institutional context and our resultant hypothesis. The following section outlines the research design and data. Empirical results are then reported and explained. Conclusions are provided in the last section.

2. Malaysian context and hypothesis

2.1. Patronage

Malaysia was primarily a producer of two commodities (tin and rubber) when it gained independence from Britain in 1957. Malaysian government policy (otherwise known as the Industrialization Strategy) since then has focused on the diversification and industrialization of the economy of the country.⁵ This strategy has shifted over the years from *Import Substitution Industrialization* (ISI) in the 1960s–1970s to *Export Orientated Industrialization* (EOI) in the 1980s–1990s. However, industrialization continues to be very prominent in Malaysian government policy. Firms that are deemed to be compatible with the government industrialization policy are likely to be “picked” by the government to receive ISI/EOI motivated patronage.

Social considerations have also played an important role in government policy. The Malaysia government set out to address the socio-economic imbalance between the ethnic groups in the country following riots in 1969 among the three dominant ethnic groups: Malays (known as Bumiputeras), Chinese, and Indians. The policy instruments used were the New Economic Policy (NEP) from 1970 to 1990 and the National Development Policy (NDP) from 1991 to 2000. The objective of both the NEP and NDP was to promote and encourage Bumiputera participation in the corporate ownership of Malaysia. The social policy to support firms with Bumiputera ownership resulted in another group of firms “picked” by the government to receive NEP/NDP motivated patronage.

Informal ties with politicians may represent another type of political patronage in a “relation-based” capitalism such as that of Malaysia. While informal ties with politicians can result from pure chance personal encounters (Johnson and Mitton, 2003), it would seem more likely that political patronage (such as those motivated by ISI/EOI and/or NEP/NDP objectives) may often take on a personal dimension.

⁵ See, for example, Alavi (1996) for a more detailed discussion.

Political patronage may thus consist of three overlapping components (i.e., economic, social, and personal) reinforcing one another. Heavy Industries Corporation of Malaysia (listed as Hicom in the Kuala Lumpur Stock Exchange) is a good illustration of this overlap (Gomez and Jomo, 1997). Dr. Mahathir Mohamad, Prime Minister of Malaysia from 1981 to 2003, *personally* helped set up Hicom (one of the largest industrial firms in Malaysia) when he was finance minister in 1980. The Department of Finance in Malaysia provided significant resources to finance Hicom. Of course, Dr. Mahathir is also President of UMNO (United Malays' National Organization), a powerful advocate of Bumiputera capitalism and a dominant member of Barisan Nasional, the ruling coalition in Malaysia for the last 30 years.

2.2. Hypothesis

Government readiness to support and, if necessary, bail out patronized firms is obviously one important potential benefit of patronage. For example, the Malaysian government injected substantial cash into the financially distressed Proton, the national car company (Restall, 2000). This implicit guarantee of financial support substantially reduces a firm's bankruptcy risk. Periodic direct government purchases of firm shares at a rate substantially higher than the market rate also is an observed benefit of patronage. For example, the government bought 29% of Malaysian Air System in December 2000 at a price roughly twice the market price (Johnson and Mitton, 2003). A government purchase of this kind, in effect, produces a "free" injection of new capital for the patronized firm, thereby reducing bankruptcy risk.

Given the lack of a viable bond market, debt for most Malaysian firms takes the form of bank loans. However, the Malaysian government has taken control of the banking sector from Chinese and foreign interests (see Gomez and Jomo, 1997, Case Study 3), thus placing itself in a strong position to exert dominance over the economy (Herman, 1982). This dominance may be used to facilitate policy objectives, including ISI/EOI and NEP/NDP objectives.⁶

We hypothesize that firms with political patronage carry more debt. This view is consistent with prior evidence, with anecdotal evidence (which strongly suggests a government-induced and substantially lower bankruptcy risk for patronized firms) and with observations drawn from the debt market in Malaysia.

3. Data and methodology

3.1. Political patronage proxies

We use three different proxies to capture the economic, social and personal dimensions of political patronage. The first proxy used is the percentage of direct

⁶ For example, well-connected firms such as Renong and the Lion group have been able to repeatedly roll over their debts (Dhume et al., 2001).

government equity ownership of a firm (POLGovE). POLGovE is designed to capture the ISI/EOI (i.e., economic) dimension of political patronage because the government has little justification to take an equity position in a firm that is not compatible with the ISI/EOI objectives. POLGovE is a continuous variable reflecting the changing level of patronage at a point in time.

Our second proxy is the percentage of equity owned by “institutional” investors (POLInst). “Institutional” investors in Malaysia are either controlled by the government or by government sponsored and supported Bumiputera agencies. These “institutional” investors are established for the purpose of increasing Bumiputera corporate ownership. POLInst is designed to capture the NEP/NDP (i.e., social) dimension of political patronage. POLInst is also a continuous variable reflecting the changing level of political patronage at a point in time.

The final proxy is the informal ties a firm may have with each of the three most powerful politicians in Malaysia in the 1990s. POLInformal is a dummy variable equal to 1 if a firm is documented by Gomez and Jomo (1997) as tied to one of the three politicians, 0 otherwise. Johnson and Mitton (2003) are the first to use this specification in their study of capital controls in Malaysia. Our measure is based on the same list provided by Johnson and Mitton (2003). POLInformal should capture the personal dimension of political patronage.⁷

3.2. Sample data

Our sample is hand-gathered from 1990 to 1999 annual reports published by firms listed on the Kuala Lumpur Stock Exchange (KLSE). This method of data gathering has a number of benefits. First, the data source is primary and official and thus more accurate than secondary data sources. Second, the KLSE requires all its listed firms to abide by the KLSE listing requirements. Paragraph 9.26 of the listing requirements state that all listed firms should prepare their annual audited accounts in accordance with approved Malaysian Accounting Standards Board (MASB) and the ninth Schedule of the 1965 Malaysian Companies Act. We thus have reasonable confidence that the accounting data from the sample are consistent with accounting standards. Third, the KLSE requires all its listed firms to abide by its disclosure standards, which include the requirement that data lodged with the KLSE must be certified by qualified auditors and made publicly available (The Listing Requirements of KLSE, 2001). Thus, we are reasonably confident that the financial information in this data set is consistent in quality. Finally, KLSE classifies listed firms into sectors based on core business. Thus, this data set allows us to adjust for sector effects.

⁷ Because this measure cannot change over time, a question exists as to whether these political ties continue throughout the period. While noting this limitation, Johnson and Mitton (2003, p. 358) argue that it is a minor problem given the stability of the government during the sample period. Also, political ties (like other relationships in the non-western world) take a long time to develop and are unlikely to change abruptly. Finally, this proxy is only one of three used in our study and all three proxies produce consistent results.

Table 1
Descriptive sample statistics of 257 Malaysian firms 1990–1999

		Consumer	Manufacturing	Mining	Financial	Construction	Trading	Hotel	Plantation	Property	All sectors
All firms	<i>N</i> = 2570	8%	38%	3%	9%	2%	8%	1%	15%	16%	100%
Firms with government ownership	<i>N</i> = 1670	10%	40%	2%	8%	3%	10%	1%	11%	15%	65%
Firms with ties to politicians	<i>N</i> = 410	7%	27%	1%	9%	4%	18%	2%	12%	20%	16%
Government ownership (%)	Mean	10.4	14.0	10.1	13.0	7.0	11.0	3.0	12.0	10.0	11
	Median	10.6	11.0	10.4	12.0	5.0	10.0	3.5	10.5	11.0	10
“Institutional” ownership (%)	Mean	64	63	55	59	65	63	74	59	60	62
	Median	63	66	58	63	63	68	73	63	62	65

Our data collection began with an initial list of 322 firms. Sixty-five firms were lost because of the lack of availability of annual reports, resulting in a final balanced panel sample of 257 firms for a period of 10 years.

Table 1 shows descriptive statistics for the sample. The mean of government ownership is about 11% and the mean of “institutional” ownership is 62%. The significance of government influence over the corporate sector in Malaysia can be seen not only through the substantial direct equity ownership of listed firms (11%) but also through the dominance of government controlled and sponsored “institutional” ownership of listed firms (62%). Moreover, a majority of the firms (65%) have a greater than zero level of government ownership. Almost all the firms in our sample (99%) have greater than zero level of “institutional” ownership. Finally, a substantial number (16%) have informal ties with leading politicians. These statistics suggest that (1) political patronage extends beyond firms having informal ties with politicians; and (2) the level of patronage may differ significantly across firms receiving political patronage. Table 1 also shows that government ownership is most pronounced for manufacturing firms (40%). The same pattern is observed for firms with informal ties to politicians (27%).

3.3. Panel data estimation procedures

Estimates obtained using panel data estimation procedures have a number of advantages over the simply-pooled ordinary least squares (OLS) procedures (e.g., Hsiao, 1989). Simply-pooled OLS estimation procedures cannot adjust for firm-specific and time-specific (i.e., year-specific) effects, which, if correlated with other explanatory variables, would produce an omitted variables bias and a mis-specified model. This problem is serious as it produces flawed estimates. The fixed-effects model (FEM) overcomes this problem by adjusting for these effects through the firm-specific and time-specific intercepts. The firm-specific intercepts capture the unobserved and/or unmeasurable firm-specific characteristics. The time-specific intercepts capture the unobserved and/or unmeasurable time-varying characteristics. Alternatively, the problem of omitting specific effects (both firm- and year-specific) can be similarly overcome by the random-effects model (REM), which assumes that the firm-specific and time-specific characteristics are randomly generated from a normal distribution and are uncorrelated with other regressors in the model. Various statistical tests can be used to determine which model (OLS, FEM, or REM) produces the most adequate specifications. We estimated all three models and selected the appropriate model based on statistical tests.

3.4. Variables

Empirical work on capital structure suggests that leverage (used as a measure for capital structure) increases with fixed assets, non-debt shields, investment opportunities, and firm size and decreases with volatility, advertising expenditure, the probability of bankruptcy, profitability and uniqueness of product (e.g., Harris and Raviv, 1991). Thus, we gather data on the following variables. The dependent

variable, LEVERAGE, is the amount of the leverage in a firm. Since most firm borrowings in Malaysia are from commercial banks, the leverage variable may be viewed as a proxy for bank debt. Three proxies for political patronage (POLGovE, POLInst, and POLInformal), are used as well as firm size (SIZE), Tangible asset (TanAsset), profitability (ROA), investment opportunities (MTBK), and sector dummies (sector effects). We limited our analysis to these factors since they have been shown to be most consistently linked to leverage in previous studies (e.g., Harris and Raviv, 1991; Rajan and Zingales, 1995), and because of the unavailability of data for other factors.⁸ Our model resembles the model used in the G-7 study of Rajan and Zingales (1995) except for the inclusion of political patronage and of the panel data estimation procedure.

The firm's debt ratio, or LEVERAGE, is calculated as the book value of total debt divided by total assets. SIZE is the natural log of total assets. TanAsset is the ratio of fixed assets to total assets. ROA is the return on assets (the ratio of profit to total assets). ROA, as a profitability measure, can be also construed as a proxy for bankruptcy risk. MTBV is the ratio of price per share to book value equity per share (a proxy for investment opportunities). The Sector Dummies variable is a vector of dummy variables denoting the different sectors to which the firms in the sample belong – consumer, manufacturing, mining, finance, construction, trading/services, hotel and plantation (with properties being the omitted sector).

4. Analysis

4.1. Univariate analysis

Table 2 shows the financial characteristics of the sample firms classified by whether there is (or is not) government ownership and whether there are informal ties between the firms and politicians. We could not subdivide the sample based on whether a firm has “institutional” ownership because 99% of the firms have some form of institutional ownership. Analysis of these data does suggest a relationship between firm leverage and political patronage.

Firms with some degree of government ownership have a debt to total assets ratio of 15.3%, as compared to a lower 13.7% for firms without government ownership. This difference is statistically significant at the 1% level. While the sizes of the two groups of firms and their profitability (as measured by the return on assets) do not differ, there are substantial differences between the tangible assets ratios for the two groups as well as for the market to book ratio. Firms with government ownership have much higher tangible asset ratios, which may in turn explain their higher

⁸ For example, the true effect of taxes on leverage cannot be assessed without information on personal taxes of investors. We cannot obtain this information. While there are a number of non-debt tax shields in the forms of allowances, non-taxable income and special deductions, a proxy is difficult to construct. These shields are granted for activities (e.g., an approved training scheme) often at the discretion of the Malaysian authorities and the disclosure of these activities is not mandatory.

Table 2
Comparative mean statistics of selected variables in 257 Malaysian firms 1990–1999

	All firms	Firms with government ownership	Firms without government ownership	Means difference (<i>t</i> -statistics)	Firms with ties to politicians	Firms without ties to politicians	Means difference (<i>t</i> -statistics)
POLGovE	0.1100	0.1655	0.0000	11.337***	0.0769	0.1160	−3.913***
POLInst	0.6199	0.5899	0.6791	−23.903***	0.6732	0.6103	6.002***
LEVERAGE	0.1521	0.1532	0.1374	11.267***	0.2054	0.1359	5.902***
SIZE	13.0207	13.2939	12.4816	1.531	13.7025	12.8969	9.169***
ROA	0.0809	0.0780	0.0803	−1.601	0.0783	0.0825	−1.55
TanAsset	0.2234	0.2425	0.1855	6.599***	0.1920	0.2291	3.257***
MKBV	2.9590	2.3673	4.1279	−3.811***	4.5083	2.6776	3.022***

Notes: POLGovE = percentage of equity owned by the government. POLInst = percentage of equity owned by government-controlled or sponsored “institutional” investors. LEVERAGE = (Total debt)/(Total assets). SIZE = log of asset book value. ROA = (Pre-tax profits)/(Total assets). TanAsset = (Property & plants & machinery)/(Total assets). MKBV = (Market price of share)/(Shareholders Equity/Number of ordinary shares outstanding).

*** Indicates statistical significance at the 99% confidence level.

leverage. Also, firms with government ownership have (somewhat surprisingly) much lower market to book ratios. These differences are statistically significant at the 1% level.

Similar univariate comparisons are found for firms with ties to politicians as compared to firms without such ties. These data again suggest a link between political patronage and leverage. Indeed, the difference in leverage between firms with informal political ties and those without is dramatic – 20.5% versus 13.6%. There are also differences for the other variables, though the relationships are quite distinct from those found in Panel A. While profitability again is not statistically different between the two groups, other characteristics are distinct. Firms with informal ties to politicians are larger, have less tangible assets, and a much larger market to book ratio. This suggests that the nature of political patronage differs considerably when that patronage is informal as compared to when it is explicit through government ownership. Indeed, the contrast in the leverage ratio and the market to book ratio suggests that informal political ties have much more powerful effects.

4.2. Regression analysis

Our empirical analysis uses a regression model of the following general form:

$$\text{LEVERAGE}_{it} = a + b_1\text{POL}_{it} + b_2\text{SIZE}_{it} + b_3\text{TanAsset} + b_6\text{ROA}_{it} + b_6\text{MTBK}_{it} + b \text{ Sector dummies.}$$

We first obtain bivariate (Kendall’s Tau-*b*) correlations among explanatory variables (Table 3). The low correlations found between explanatory variables suggest that the problem of multicollinearity is not serious in the data set. High correlations exist only between the political patronage proxies. The correlation between

Table 3

Kendall's Tau-*b* correlations among the dependent and explanatory variables

	LEVERAGE	POLGovE	POLInst	POLInformal	SIZE	ROA	TanAsset	MKBV
LEVERAGE	1							
POLGovE	0.027**	1						
POLInst	0.018**	-0.501**	1					
POLInformal	0.124*	0.378**	-0.334**	1				
SIZE	0.277**	0.104**	0.015	0.116*	1			
ROA	-0.170*	0.018	0.013	0.04	0.016	1		
TanAsset	-0.018*	0.013*	0.051	-0.61	-0.153*	0.090*	1	
MKBV	-0.026	-0.007*	0.016	-0.050	-0.081*	0.031	0.013	1

Notes: POLGovE = percentage of equity owned by the government. POLInst = percentage of equity owned by government-controlled or sponsored "institutional" investors. POLInformal = 1 if the firm is connected with top politicians; 0 otherwise. LEVERAGE = (Total debt)/(Total assets). SIZE = log of asset book value. ROA = (Pre-tax profits)/(Total assets). TanAsset = (Property & plants & machinery)/(Total assets). MKBV = (Market price of share)/(Shareholders Equity/Number of ordinary shares outstanding).

* Correlation is significant at the 0.05 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

POLGovE and POLInst is a statistically significant -0.501 . The correlation between POLInst and POLInformal is a statistical significant -0.334 . These high correlations suggest political patronage proxies should be used as alternatives rather than together.⁹

We initially obtain estimates from all three models: simply-pooled ordinary least squares regression model (OLS), fixed-effects model (FEM), and random-effects model (REM). We run three tests to determine the most appropriate model to use (see, e.g., Hsiao, 1989). The Likelihood Ratio Test suggests FEM out-performs simply-pooled OLS. The Lagrange Multiplier (LM) Test suggests REM out-performs simple-pooled OLS. The Hausman Chi Square Test suggests that REM outperforms FEM. Thus, REM estimates are reported in the paper. Results from the regression model using three different proxies for political patronage are presented in Table 4. These results are adjusted for firm-specific effects and time-specific effects (through a two-way REM) as well as sector effects (through sector dummies).

Table 4 shows that the coefficients of POLGovE, POLInst, and POLInformal are all positive and statistically significant. Firms with higher levels of direct government equity ownership (POLGovE) have higher leverage. Firms with higher levels of "institutional" equity ownership have higher leverage. Firms with informal political ties also have higher leverage. These results suggest that political patronage is linked to a firm's ability to carry more debt. This evidence strongly supports our hypothesis.

⁹ The correlations results appear to suggest that there is no significant connection between large firms and political patronage. There are two possible explanations for this. First, all the firms in our sample are listed firms. Out of the 329,032 registered companies, there are less than 500 listed on the KLSE stock exchange. Thus, all the firms in our sample, in a sense, are large firms. Second, many of the "smaller" listed firms are well-run manufacturing firms, which are mainly Chinese-owned but politically well-connected nonetheless (Gomez, 2002).

Table 4
Two-way random-effects regression analysis of 257 Malaysian firms 1990–1999

Independent variable	Predicted sign	LEVERAGE	LEVERAGE	LEVERAGE
Constant	?	−0.5996*** (−4.137)	−0.6976*** (−5.248)	−0.6289*** (−3.871)
POLGovE	+	0.0751*** (3.021)		
POLInst	+		0.1625** (2.142)	
POLInformal	+			0.3727** (2.253)
SIZE	?	0.0467*** (2.814)	0.0478*** (2.765)	0.04831*** (3.617)
ROA	−	−0.5472** (−1.971)	−0.3129** (−2.013)	−0.5734** (−2.140)
TanAsset	+	0.0811*** (2.769)	0.0851*** (2.714)	0.09034*** (3.016)
MKBV	+	−0.0078 (−0.816)	−0.0080 (−1.038)	−0.0079 (−1.183)
(Sector effects)				
Consumer	?	−0.1483*** (−3.425)	−0.1371*** (−2.753)	−0.1628*** (−3.125)
Manufacturing	?	0.1123*** (2.869)	0.1023*** (3.208)	0.1239*** (2.753)
Mining	?	0.2444 (1.264)	0.2055 (1.043)	0.1419 (0.894)
Finance	?	0.2996*** (3.137)	0.2948*** (2.658)	0.3046*** (2.756)
Construction	?	0.2611*** (2.956)	0.2394*** (2.975)	0.2760*** (3.206)
Trading	?	0.1500*** (2.641)	0.1364*** (3.520)	0.1606*** (2.943)
Hotel	?	−0.3024*** (−3.052)	−0.3158*** (−3.113)	−0.3192*** (−3.192)
Plantations	?	0.0712*** (2.731)	0.0578*** (2.613)	0.0811*** (3.018)
Observations		2570	2570	2570
Adjusted R-square		0.128	0.126	0.183

Notes: POLGovE = percentage of equity owned by the government. POLInst = percentage of equity owned by government- controlled or sponsored “institutional” investors. POLInformal = 1 if the firm is connected with top politicians; 0 otherwise. LEVERAGE = (Total debt)/(Total assets). SIZE = log of asset book value ROA = (Pre-tax profits)/(Total assets). TanAsset = (Property & plants & machinery)/(Total assets). MKBV = (Market price of share)/(Shareholders Equity/Number of ordinary shares outstanding). Sector effects = sector dummy (consumer, manufacturing, mining, construction, trading/ser- vices, hotel, and plantation, with properties being the omitted sector).

* Significance at 90% confidence level.

** Significance at 95% confidence level.

*** Significance at 99% confidence level.

The coefficient of SIZE is positive and statistically significant regardless of how political patronage is measured. Larger firms in Malaysia carry more debt. The result

is consistent with previous results from US and western firms. While size may also be a proxy for negative probability of default, the positive effects of ISI/EOI as well as NEP/NDP for larger firms may go beyond political patronage. Thus, policy effects can further reinforce the conventional size effects.

The coefficient of TanAsset is positive and statistically significant in all three regressions. This result is consistent with the results based on US and western firms and with the argument that tangible assets are easier to collateralize. In a bank dominated financial system, as is the case in Malaysia, firms may well have no choice but to establish strong relationships with their banks. The collateral value of tangible assets remains important in a firm's ability to carry more debt even after adjusting for the effects of political patronage.

The coefficient of ROA is negative and statistically significant in all three coefficients. This result is consistent with those from US and western firms: profitable firms carry less debt, despite the fact that interest payment is also tax-deductible in Malaysia. Our result regarding ROA is adjusted for the effects of political patronage. The coefficient of MKBV, the proxy for investment opportunities, is not significantly different from zero in all three regressions. One explanation for this result is that political patronage may be a better proxy for investment opportunities than MKBV in Malaysia. Finally, the coefficients for sector dummies all are statistically different from zero with the Mining sector being the sole exception. These results suggest the importance of adjusting for sectors effects.

4.3. Further analysis

Our regression analysis confirms a direct link between capital structure and political patronage. However, there may also be indirect links between capital structure and political patronage through interactions with the variables known to be associated with capital structure. To investigate the potentially interactive effects, we introduce four interactive variables into the model: POLGovE*Size (POLInst*Size and POLInformal*Size), POLGovE*TanAsset (POLInst*TanAsset and POLInformal*TanAsset), POLGovE*ROA (POLInst*ROA and POLInformal*ROA), and (POLInst*MTBV and POLInformal*MTBV).

Our results are shown in Table 5. The coefficients of the non-interactive variables remain materially the same as in Table 4, with the exception of the coefficient of ROA, which ceases to be significantly different from zero. The coefficients of the interactive variable POLGovE*Size (POLInst*Size) and of the interactive variable POLGovE*ROA (POLInst*ROA, POLInformal*ROA) are positive and statistically significant. The political patronage proxies (POLGovE, POLInst, and POLInformal) are linked to capital structure both directly and *indirectly* through their interaction with two of the four variables known to be associated with capital structure: SIZE and ROA.

Larger firms with political patronage appear to carry *more* debt than mere firms with political patronage. *Profitable* firms with political patronage carry *more* debt than mere firms with political patronage. Political patronage increases a firm's leverage both directly and indirectly through its interaction with firm size and

Table 5

Two-way random-effects regression analysis of 257 Malaysian firms 1990–1999 (with interactive variables)

Independent variable	Predicted sign	LEVERAGE	LEVERAGE	LEVERAGE
Constant	?	−0.4907*** (−5.132)	−0.6212*** (−5.426)	−0.6061*** (−4.863)
POLGovE	+	0.0695*** (3.253)		
POLInst	+		0.1139** (2.247)	
POLInformal	+			0.4372* (1.852)
SIZE	?	0.0492*** (2.925)	0.0494*** (2.742)	0.0483*** (3.268)
ROA	−	−0.4128 (0.796)	−0.2143 (0.843)	−0.6073 (1.175)
TanAsset	+	0.0795** (2.297)	0.0714*** (2.650)	0.0821*** (2.834)
MKBV	+	−0.0013 (−0.562)	−0.0073 (−0.731)	−0.0085 (−0.829)
POLGovE*SIZE	?	0.0056*** (3.326)		
POLInst*SIZE	?		0.0076** (2.035)	
POLInformal*SIZE	?			0.0016 (0.641)
POLGovE*ROA	?	0.2605*** (2.894)		
POLInst*ROA	?		0.4173** (2.155)	
POLInformal*ROA	?			0.1394*** (2.648)
POLGovE*TanAsset	?	0.0128 (0.482)		
POLInst*TanAsset	?		0.0196 (0.748)	
POLInformal*TanAsset	?			0.0152 (0.893)
POLGovE*MKBV	?	−0.0084 (−0.137)		
POLInst*MKBV	?		0.0016 (0.235)	
POLInformal*MKBV	?			0.0017 (0.492)
(Sector effects)				
Consumer	?	−0.1306* (−1.778)	−0.1362* (−1.692)	−0.1566** (−1.983)
Manufacturing	?	0.1505* (1.750)	0.1153** (1.984)	0.1186*** (2.678)
Mining	?	0.2470 (1.351)	0.2789 (1.294)	0.1108 (1.136)
Finance	?	0.2271*** (3.002)	0.2239*** (3.123)	0.3088*** (2.898)
Construction	?	0.2788* (1.778)	0.2493** (2.035)	0.2743*** (3.268)

(continued on next page)

Table 5 (continued)

Independent variable	Predicted sign	LEVERAGE	LEVERAGE	LEVERAGE
Trading	?	(1.769) 0.1554 (1.542)	(2.013) 0.1694 (1.602)	(2.664) 0.1612** (1.673)
Hotel	?	−0.2827*** (−2.789)	−0.1864*** (−2.810)	−0.3203*** (−2.735)
Plantations	?	0.0704** (2.132)	0.0585*** (2.937)	0.0852** (2.410)
Observations		2570	2570	2570
Adjusted R-square		0.128	0.126	0.183

Notes: POLGovE = percentage of equity owned by the government. POLInst = percentage of equity owned by government- controlled or sponsored “institutional” investors. POLInformal = 1 if the firm is connected with top politicians; 0 otherwise. LEVERAGE = (Total debt)/(Total assets). SIZE = log of asset book value. ROA = (Pre-tax profits)/(Total assets). TanAsset = (Property & plants & machinery)/(Total assets). MKBV = (Market price of share)/(Shareholders Equity/Number of ordinary shares outstanding). Sector effects = sector dummy (consumer, manufacturing, mining, construction, trading/services, hotel, and plantation, with properties being the omitted).

* Significance at 90% confidence level.

** Significance at 95% confidence level.

*** Significance at 99% confidence level.

profitability. These results are robust with all three political patronage proxies. The interaction between political patronage and size suggests that the leverage increasing effects of political patronage are stronger for larger firms and for more profitable firms.

4.4. Robustness checks

We also estimated the Granger “causality” test in order to assess the issue of causality. Our results show that neither political patronage “causes” leverage nor leverage “causes” political patronage. In addition, we carried out the Hausman specification test to assess the issue of *simultaneity* between leverage and political patronage. We find no evidence of simultaneity. This is not surprising given the results of the Granger test, which is in fact a test of endogeneity.

We also re-estimated the regressions after excluding a few “outliers” based on the method suggested by Neter et al. (1990). These results, both in terms of signs and statistical significance, are not materially different from those reported. We also re-estimated the regressions excluding financial firms with no meaningful differences in results.

There may be some clustering since POLInformal, the dummy variable for informal ties, does not change over time. To adjust for these possible clustering effects, we re-run the regressions (by stating POLInformal is the clustering variable) and obtain clustering-adjusted standard errors. We find no change in the significance level of other coefficients in both regressions. However, the significance level of the POLInformal coefficient is reduced from the 95% level to the 90% level in the regression without interactive variables. The significance level of the POLInformal coefficient

Table 6
Whole-period and sub-period coefficients

	1990–1999	1990–1996	1998–1999
Panel A: Coefficients using book value leverage (book value of debt/book asset value)			
<i>Model without interactive variables</i>			
POLGovE	0.0751 ^{***} (3.021)	0.0713 ^{***} (3.235)	0.0728 ^{***} (3.163)
POLInst	0.1625 ^{**} (2.142)	0.1540 ^{***} (2.343)	0.1669 ^{**} (2.025)
POLInformal	0.3727 ^{**} (2.253)	0.3295 ^{**} (2.106)	0.3452 [*] (1.926)
<i>Model with interactive variables</i>			
POLGovE	0.0695 ^{***} (3.251)	0.0713 ^{***} (3.318)	0.682 ^{**} (2.518)
POLInst	0.1139 ^{**} (2.247)	0.1341 ^{**} (2.435)	0.1117 ^{**} (2.305)
POLInformal	0.4372 [*] (1.852)	0.4017 [*] (1.738)	0.4426 [*] (1.9121)
Panel B: Coefficients using market value leverage (book value of debt/market value of equity)			
<i>Model without interactive variables</i>			
PolGovE	0.1537 ^{***} (2.863)	0.1403 ^{***} (2.671)	0.1735 ^{**} (2.305)
PolInst	0.3728 ^{**} (1.9847)	0.3354 ^{**} (2.236)	0.3682 [*] (1.856)
POLInformal	0.6247 ^{**} (2.285)	0.6451 ^{**} (2.303)	0.6392 [*] (1.910)
<i>Model with interactive variables</i>			
POLGovE	0.1926 ^{***} (3.137)	0.1803 ^{**} (2.231)	0.2156 ^{***} (3.214)
POLInst	0.4572 ^{***} (2.591)	0.4418 ^{**} (2.379)	0.4163 ^{**} (2.093)
POLInformal	0.7681 ^{**} (1.980)	0.7357 [*] (1.793)	0.7468 ^{**} (2.403)

Notes: POLGovE = percentage of equity owned by the government. POLInst = percentage of equity owned by government- controlled or sponsored “institutional” investors. POLInformal = 1 if the firm is connected with top politicians; 0 otherwise.

* Significance at 90% confidence level.

** Significance at 95% confidence level.

*** Significance at 99% confidence level.

is also reduced somewhat in the regression with interactive variables but the 90% significance level is still maintained. Thus, we conclude that clustering does not appear to be an important problem. We did the same for POLGovE and POLInst and again observe the lack of a serious clustering problem.

As reported earlier, we lost 65 firms from the initial list of firms. Since we do not know what happened to these firms, we cannot rule out the existence of selection bias as a potential problem. Some of these 65 firms may have gone into bankruptcy, been acquired, changed names, or disappeared for other reasons. As an initial check on

the potential significance of this problem, we compare our hand-gathered sample with the sample in Johnson and Mitton (2003). Their sample was collected from *Worldscope*.

The average firm size (measured by the natural log of book value) is practically the same for both samples: 13.8 in Johnson and Mitton's sample and 13.02 in our sample. Similarly, firms with ties to politicians tend to be significantly larger in both samples. Firms in Johnson and Mitton's sample appear to have more leverage, on average, than those in our sample (23.7% versus 15.2%). This may reflect the fact that our sample covers a 10-year period rather than just 1 year. In both samples, firms with ties to politicians have significantly higher leverage than firms without. Firms in our sample have a higher ROA (8%) than firms in Johnson and Mitton's yearly sample (4%). However, both our data and those of Johnson and Mitton show no significant difference in ROA between firms with political ties and firms without.¹⁰ Finally, firms in both samples appear to have very similar MKBV: 2.96 in our sample and 2.22 in Johnson and Mitton.

The comparison above suggests that these two samples are quite similar and provides further evidence that selection bias is not a serious problem. Furthermore, if some of these firms did go into bankruptcy or were acquired, they would most likely have disappeared during the Asian financial crisis. To investigate this, we subdivided the sample into two sub-samples: 1990–1996 (before the crisis) and 1998–1999 (after the crisis). The results from the sub-samples (shown in Panel A, Table 6) are virtually the same as those from the entire sample, further suggesting that the missing observations do not bias our results. Finally, we use an alternative proxy for leverage (the ratio of book value of debt to market value of equity) and re-run the regressions for the entire sample (1990–1999) and two sub-samples (1990–1996 and 1998–1999). Panel B, Table 6 shows the major coefficients. Again, the results (in terms of direction and statistical significance) are not materially different.

The results from Table 6 suggest that the link between capital structure and political patronage does not appear to have been significantly affected by the financial crisis in 1997. One possible explanation for this evidence is that Malaysia very much remains a “relationship-based” and developing economy after the crisis. The evidence of a continued link between capital structure and political patronage may also reflect the fact that the link between business and politics remains “more of the same” in Malaysia after the 1997 financial crisis (Gomez, 2002, p. 107).

5. Conclusions

This paper examines the link between firm leverage and political patronage in a group of Malaysian firms over an extended 10-year period. Our hypothesis is that firms with political patronage in Malaysia carry more debt. Consistent with this hypothesis, we find a positive and significant link between leverage and political patronage for all three different measures of political patronage. Our result is also

¹⁰ Johnson and Mitton (2003, p. 363).

consistent with Johnson and Mitton (2003) who found a positive link between firm leverage and informal ties to politicians. We also find evidence that the link between political patronage and firm leverage is indirect through firm size and profitability. Larger firms with political patronage tend to carry more debt than mere firms with political patronage. Profitable firms with political patronage tend to carry more debt than mere firms with political patronage. Our results are adjusted for firm-specific and year-specific effects.

Our results from Malaysia are also consistent with previous US and G-7 country studies on firm capital structure. Firm leverage is positively correlated with size, profitability, and asset tangibility. However, investment opportunities (as measured by the market-to-book asset ratio) do not appear to be related to firm leverage. The implication may be that political patronage may be a better proxy for investment opportunities than market-to-book value in Malaysia.

Our results for Malaysia firms suggest that there is a difference in capital structure between “market-based” capitalisms (e.g., US or G-7 countries) and “relationship-based” capitalisms (e.g., Malaysia). Furthermore, this difference may be explained by interrelated institutional factors which include policy objectives, the nature of the bank sector, and the lack of a viable bond market.

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