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Product Market Competition, Regulation and Dividend Payout Policy of Malaysian Banks

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Abstract
Purpose -This paper investigates the impact of the product market competition, regulations on the dividend policies of the listed banks, over the period of 1995-2005 in Malaysia.
Methodology - Ordered Probit modelling technique and target adjustment model.
Findings- We find significant differences in the payout of the banks categorized as selling a non-interest based banking products and mix of both interest and non-interest based banking products. We find that the decision to increase dividends is significantly related to earnings, and the decision to cut dividend is significantly related to the changes in the non-performing loans, corporate and real estate sectors loans ratio and earnings loses.
Research implications – Research findings have implication for the regulators of the banks. Originality/value - The research provides a clear link between banks' portfolio choice and earnings that have implications for the dividends in the emerging markets.
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Key words: Dividends, Banks, Non-performing loans, Ordered Probit Model, Malaysia.

1. Introduction

The question of why firms pay dividends has been examined using agency costs, signalling and clientele models (see Bhattacharya, 2007 for a review). In perfect markets, it was argued that dividend policy was irrelevant to a firm's value (Miller and Modigliani, 1961). Under the assumption of no taxes, no transaction costs, and no information asymmetry between the managers and the shareholders, the dividend policy was considered irrelevant. Much attention has been given to dividend policies of the non-financial firms in the emerging markets (e.g., see Aivazian et al., 2003; Horace, 2003; Pandey, 2003; Adaoglu, 2000; La Porta et al., 2000; Allen and Veronica, 1996) and complex dividend policies of the financial firms has not been given such high-level of attention.

The main purpose of this paper is to provide a performance based perspective of banks' dividends policy. The main contribution of our paper is that it highlights the impact of the product market competition and monetary policy on the optimal dividend policy of the banks. We study banks because such financial firms are different from the non-financial firms. For financial firms such as the banks, deposits play an important role in both the real

and financial decisions. The regulatory restrictions also affect financial firms more than non-financial firms such as the banks are obliged under prudential regulations to keep a minimum capital adequacy ratio all the times, and previous studies have shown that such regulatory reserve requirements influence the financing decisions of the banks (Ogler and Taggart, 1983).

This paper builds up on the limited empirical literature of real and financing decision of financial firms by examining the dividend policies of banks in Malaysia. It is similar in spirit to Kopecky and VanHoose (2004) who investigated the impact of monetary policy and other factors on the optimal bank lending and market loan rates. This paper is also related to growing literature on the impact of banking sector competition and regulations on the product market (see Chami and Cosimano, 2001; Kopecky and VanHoose, 2004) and financing decisions of the banks.

The Malaysian banking sector has a unique combination of Non-Islamic and Islamic banks. There are subsidiaries of the major European (UK), U.S. and Asian (Japan and Thailand) banks. In this paper, we argue that selling of different banking product by these banks might have implications for dividend decisions of the banks because using mixture of products with/without interest components i.e., with/without Islamic banking window operations could affect the cash flows of the banks, and thus dividend policies of the banks. Previous studies have only examined the productivity of banks in Malaysia (see e.g., Sufian, 2004, Krishnasamy et al., 2004; Katib and Mathews, 2005). Second, the banking sector has undergone major changes due to government policies and the Asian financial crisis[1]. In the aftermath of the Asian crisis, the Malaysian government took unprecedented measures for the

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[1] For instance, in 1994, government created a distinction between larger and sounder banks. To be a Tier I bank, a bank's capital had to reach at least RM. 500 Million otherwise a bank was referred to as a Tier II bank.

survival of the major banks[2]. As a result of mergers, following structure of banking sector emerged (See Table 1).

[Insert Table 1 about here]

The main findings of the paper are as follows, earnings and earnings lose affect banks' dividend payout. The deadweight costs of non-performing loans and higher loan concentration in real estate sector caused Malaysian banks to significantly reduce their dividends over the period of 1995-2005. The paper is organized as follows. Section 2 provides a review of dividend policy literature and formulates hypotheses. Section 3 sets up an estimation model and briefly discusses the dataset used for empirical analysis. Section 4 reports the main results and paper concludes in Section 5.

2. Dividends Policy Literature and Hypotheses

Agency Theory

Despite dividend irrelevance to a firm's value suggested by Miller and Modigliani, the finance literature offer theoretical insights into how the managers are likely to approach the issue of dividend policy (see Baker et al, 2002 for managerial perspective on dividend policy). One of the central assumptions in Miller and Modigliani (1961) is that, managers take steps in the best interests of the owners of the firm, and therefore, tries to maximise shareholders' wealth. This implies that firms with diffuse ownership, other things being equal, will have the same stock market value as firms which are owned and run largely by 'insiders'. Agency theory suggests that managers, who work as 'agents' for shareholders, are not necessarily motivated to work in the shareholders' best interests (Jensen and Meckling 1976). The potential for opportunistic behaviour by managers' results in lower values for

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[2] Two special purpose agencies were created: *Danaharta* for buying non-performing loans (NPLs) and *Danamodel* for injecting new equity into banking sector. By the end of July 1999, *Danaharta* was managing RM 40 Billion in NPLs and *Danamodel* had injected a total of RM 7.1 Billion in 10 financial institutions (Bank Negara Malaysia, 1999). Asian financial crisis exposed the vulnerabilities of the small banks and the need for these institutions to maintain a high level of capital (Sufian, 2004).

firms with managers acting as agents compared to the values of firms which are both owned and run by managers. The agency theory predicts that given the potential of managerial hazard, dividends act as the management's signal to the shareholders about the future prospectus, or as a mean to constrain managers' over investment behaviour (Jensen, 1986). If there are no positive net present value projects available for the firm, it would be better for the managers to pay dividends rather than waste free cash flows. Likewise, free cash flow theory favours both dividends and external debt to constrain managerial moral hazard. Free cash theory predicts that firms with higher free cash flows should pay higher dividends and vice versa.

The banks face double agency costs due to asymmetric information between bank the managers and shareholders, bank managers and depositors, and very little between bank managers and bank regulators. The dividend policy conveys information to the depositors as well as shareholders –assisting them in uncovering the actual financial conditions of the banks. Likewise, if regulators 'force' a bank to change its dividend policy, this will inevitably communicate private information to shareholders and depositors about the bank's solvency status. Bessler and Nohel (1996) argue that this multidimensional aspect of the asymmetric information problem faced by banks, customers, and shareholders is an important factor in arguing that dividend policy of the banks are different from non-financial firms.

Signalling Theory

Miller and Modigliani (1961) suggested that dividends might convey information about firms' future earnings if management pursued a policy of dividend stabilisation, and used changes in the dividends payout to signal a change in their views about the firms' future profitability. According to Signalling theory, managers have inside information about a firm that they cannot, or do not wish to pass on to the shareholders, for example, better estimates of future earnings. Corporate dividends are considered to be management's most cost-

effective way of reducing the investor uncertainty about the company's value. Bhattacharya (1979) and Miller and Rock (1985) suggest that outside investors have imperfect information about firms' profitability, and therefore dividends function as a signal of expected cash flows.

Clientele Effect Theory

Black and Scholes (1974) and Allen et al. (2000) propose clientele theories underlying firms' dividend policies. Baker and Wurgler (2004) argued that there are several reasons for the existence of several clientele effects. First, market imperfections, such as transaction costs, taxes, and institutional investment constraints cause traditional dividend "clienteles". Second, there is a widespread popular belief that dividend payers are less risky. Third, some investors may use dividends to infer managers' investment plans. They may interpret dividends omission as evidence that the firm has strong growth opportunities, and take dividends as evidence that opportunities are weaker.

Product Market competition

The product mix of the firms also affect overall corporate strategy (see Nelson, 1991). In the case of the banks, Marquez (2002) point out that borrower-specific information becomes more disperse with increase in competition and it reduces a bank's competitive advantage. Consequently, more low-quality borrowers are able to obtain financing. Kim et al. (2005) found that banks' ability to avoid loses may act as a strategic variable to make them different and increase their market power and interest rates. The high quality banks with lower loses signal their creditworthiness to other stakeholders (such as shareholders) and through better management of loans change dividends policies.

Regulatory Influence on the Dividends

The regulations on the banks also influence the dividend payouts. Tight money market conditions lower down the interest income from the loans (see e.g., Hülsewig et al, 2006; Kashyap and Stein, 1995). Hosono (2005) finds that the effect of monetary policy is stronger for banks that are smaller, less liquid, and more abundant with capital in Japan. It

can be hypothesized that fall in the banks' income would lead management to revise their earnings' expectations. If a bank's product and financial services portfolio is not diverse, then, such a tight money market condition would hit earnings and dividends. Thus, we hypothesize that during tight money market conditions, bank would be more inclined to cut dividends.

A large number of studies have investigated whether investors value dividends less than capital gains by observing the behaviour of share prices on the day in which shares go ex-dividend. In this regard, the major findings of the studies (mostly for UK and US firms), have found that share price reaction is positively correlated to the size of the dividend change in percentage terms. In the case of financial firms such as banks, Mercado and Willey (1995) suggest that, dividend policy of banks, are determined by the manger's portfolio diversification opportunity set and bank size. Bessler and Nohel (1996) postulate that announcement effect of dividends cuts should be more severe for banks than for non-financial firms due to the fact that 'large' banks may lose large corporate customers if a bank is feared to have financial difficulties as evidenced by the fact that dividends need to be cut. Bessler and Nohel (2000) found that dividends cut announcement by banks can create information externalities for the banks that do not cut dividends. They suggest that if loan portfolios are correlated across banks, then, an announcement of dividend cut by some banks can create contagion i.e., the share prices of the non-dividend cutting banks would also decrease following such announcements because investors panic in reaction to bad news and the bank stocks go down regardless of their financial conditions. Amihud and Murgia (1997) argue that banks have incentive to favour lower dividend ratio and necessarily stable dividend payouts to shield its debt better from bankruptcy risk. The dividend policies of the banking subsidiaries of holding companies are also found to be higher than other banks (Mayne, 1980). Gugler (2003) argue that all firms with little or no growth opportunities should have

desire to pay substantial dividends. Thus, we can hypothesize those banks with low growth opportunities pay substantial cash dividends and vice versa.

From a different perspective, some studies has shown that legal and financial development of a country matters[3] (see Aivazian et al., 2003) in the dividends policy of the firms irrespective of being financial or non-financial. One such example is, La Porta et al (2000) who argue that dividend payout policies around the world are influenced by law protecting the shareholders' rights. Using a large sample of 33 countries, they found that minority shareholders' right affect dividend payout across the world.

3. Estimation Model and Data

We use Lintner (1956) model to investigate dividend policies of banks. The changes in dividends are determined by the difference between last years' dividends and this year's dividends. A bank's target dividend payout is assumed to be a fixed portion of its current year earnings, thus, our model take the following form:

$$D_{i,t}^* = \tau \Pi_{i,t} \tag{1.1}$$

$$D_{i,t} - D_{i,t-1} = \gamma + \alpha(\tau \Pi_{i,t} -)D_{i,t} + \varepsilon_{i,t} \tag{1.2}$$

$$D_{i,t} = \gamma + \alpha \tau \Pi_{i,t} + (1-\alpha)D_{i,t} + \varepsilon_{i,t} \tag{1.3}$$

where $D_{i,t}^*$ is the target dividend payout of a bank i in period t, τ is the target payout, $\Pi_{i,t}$ are the current year earnings, $\Delta D_{i,t}$ changes in the dividend payments from period t to t-1, α is speed of adjustment coefficient, $D_{i,t-1}$ denotes lagged dividends and ε is the normal error term. The most important parameters are -α and τ which indicate the size of dividend payout and smoothing. A higher value of α indicates a speedier adjustment to target payouts and vice versa.

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[3] Aivazian et al., (2003, p.111) Korea and Malaysia could be characterized as "closest to the USA" with developed market orientation. India and Pakistan are more bank-oriented. Therefore, dividend policy of firms in former countries should be similar to the US and greater banking orientation and more concentrated ownership structure in latter countries would lead to more different dividend policies.

Data

We downloaded financial accounting data of all the listed banks on the Kuala Lumpur stock market over the period of 1995-2005 from *Worldscope* database[4]. We examine this 10-year period of 1995-2005 because first half of this period is characterised by full liberalization of the banking sector in Malaysia (Laeven, 2003), and second half includes the period of the Asian financial crisis, bank restructuring, and economic recovery in Malaysia. Hence, it is likely that banks would have changed their dividend policy due to these economic events. Our sample is highly representative of the total population of listed banks, as it contains more than half of the listed banks and represents more than 53% of the market capitalisation of financial firms.

We obtained the annual data on *Revenue, Earnings, Dividends, Deposits, Loan, Non-Performing Loans (NPLs), Assets,* and *Capital ratios* over the period of 1995-2005. Four foreign banks - Bank of America Bhd Deutsche Bank (M) Bhd. JP Morgan Chase Bank Bhd. and Bangkok Bank Bhd. were excluded from the sample because of non-availability of dividends data[5]. Table 2 shows the yearly distribution of dividend payments (see Panel A). The aggregate dividend payments have shown cyclical movements reflecting first, the impact of financial liberalization on the competition in the banking sector that led to modest increase in total dividend payments. In the aftermath of the Asian financial crises, dividend payments dropped to very low level, for instance, a large number of banks did not pay any dividend over the period of 1999-2000. The dividend policy of banks have changed in the recent times 2001-2005 by observing increase in the dividend payments due to increase in number of banks increasing amount of dividends (see Column 2, Panel A).

Panel B shows the size of the dividend changes. Almost 44% of the dividend increases are between 50%and 100 %, whereas 38% of the dividend cuts are between 50%

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[4] Some of the banks in our sample have been involved in Mergers and Acquisitions deals (see footnote 2)

[5] We are greatly indebted to Mariani Abdul Majeed for providing us data on the Islamic banks in Malaysia.

and 100% over the entire sample period, which seems to suggest that banks find flexibility in their dividend policy. About 33% of the all dividend cuts occurred during the period of 1998-2000 compared to 10% of all the dividend increases during the same period. The dividend payments became more frequent after 2000. For instance, over the period of 2001-2005, 38% of dividend increases were more than 50% mostly by local banks rather than foreign banks which seem to suggest that foreign banks might have been more conservative. One such example is of Citibank Malaysia Bhd. it increased its capital adequacy ratio by more than 20%, from 6% in 2000 to 25% in 2002, even though ratio of its non-performing loans to total loans was on average 4%.

Further interesting results emerge when we take into account product market competition. Irrespective of the bank ownership (i.e., domestic vs. foreign), 34% of all the dividend increases (43% of all the dividend cuts) were made by banks selling both non-Islamic and Islamic banking products compared to 62% of all the dividend increases (53% of all the dividend cuts) by banks selling non-Islamic banking products. This result seems to suggest that even though banks selling non-Islamic banking products have greater tendency to cut dividends compared to banks selling both non-Islamic and Islamic banking products but these banks pay generous dividends when comes to dividend re-initiations. Another reason might be that they have higher optimal dividend payout ratio. We explore this issue further in empirical section. These banks face stiffer competition for bank loans and deposits. The yearly data on the total deposits and loans as percentage of total assets (not reported to save space) shows that, these banks have 74% total deposits and 67% loans as percentage of total assets compared to 68% and 70% respectively for the banks selling both non-Islamic and Islamic banking products. Thus, a relatively lower loan ratio means that these banks do not earn other loan income generated from the Islamic products such as those offered by other banks selling both non-Islamic and Islamic banking products. The latter banks seem to

have an advantage in selling mixture of non-interest/interest-based products to diverse clientele. Therefore, these banks are less likely to cut dividends. We explore this issue of dividend flexibility in section 4.2 later of this paper.

[Insert Table 2 about here]

The summary descriptive statistics shows that, on average *Dividend-earnings ratio* is 30.79% in Malaysia in comparison to other Asian countries such as South Korea 11%, Indonesia 16%, China 21%, India 23%, Sri Lanka 26% and U.S. banks 26%[6](see Panel C). On the other hand, the payout ratio is lower than 45% in the UK and 37% in Japan. Thus, it appears that banks follow different payout policies across countries due to the organization of the capital markets and dividend tax treatments as suggested by Aivazian et al. (2003) and La Porta et al. (2000). Consistent with our earlier findings, both *Dividend-earnings ratio* and *Dividend-revenue ratio* are significantly higher for Non-Islamic banking products selling banks compared to banks selling mix of Islamic/non Islamic products. In terms of total assets, however, latter banks are larger than Non-Islamic counterparts. On average, listed banks which acquired or merge with other listed banks have significantly lower payout ratio 22% compared to 37% for those banks which did not acquire or merge with other banks. Thus, it can be conjectured that mergers and acquisitions might have affected dividend payout policies of these banks.

4. Results

4.1 Optimal Dividend Payout and Adjustment Speed

We estimated the model in Eq. (1.3). For this purpose, we categorized the banks as *Domestic vs. Foreign, Islamic vs. non Islamic* banks, *MA vs. Non-MA* (i.e., the banks involved in Merger/Acquisitions vs. the banks which were not involved in Merger/ Acquisitions over the entire sample period). Table 3 reports the estimation results according

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[6] Based on Author's own calculations

to this classification and Table 4 reports results of hypotheses, which test the impact of growth and monetary policy changes on the dividend policy of the banks. It is important to highlight that model has reasonable explanatory power in explaining dividend policy of the banks[7].

[Insert Table 3 about here]

The foreign banks' dividend policy can be described as the highest dividends payout ratio compared to the domestic banks whose payout policy can be described as significant dividends smoothing i.e., $(1-\alpha)= 0.6573$. The lower speed of adjustment of 0.40 and payout ratio of 32% for the banks selling mixture of both Islamic/Non Islamic banking products compared to relatively higher value of 0.42 and 57% for the banks selling only interest based banking products seem to support hypothesis i.e., product mix of banks has significant influence on the dividend payouts of the banks. Although the speed of adjustment of the banks involved in M&A have been low compared to other banks not involved in M&A but it seem that dividend payout has increased after M&A. Thus, we can only conjecture here that shareholders of the acquired banks might have benefited from the improvements in the organization structure and product developments as a result of M&A, these findings can be further explored in a separate study.

On the other hand, we found that banks with low growth opportunities do not find it optimal to pay substantial amounts of cash dividends (see Table 4). This result suggest that in the absence of the protection to shareholders, the managers expropriate cash which is common in the countries having less shareholders' protection (see e.g., La Porta et al, 2000). On the other hand, shareholders of the banks with more growth opportunities might have benefited from higher payout ratio.

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[7] Unlike previous studies (e.g., Aivazian et al, 2003) which found that model performed poorly for the Malaysian firms. The adjusted *Adj. R^2* is higher compared to the previous studies. Notably our estimation do not have not problem of auto-correlation indicated by Durbin-Watson (DW) test values for each category of bank respectively.

[Insert Table 4 about here]

Lastly, we examine the whether tight money market condition affects the dividend policy of the banks. We used ratio of base money defined as the sum of currency in circulation and the deposits of the commercial banks with the central bank divided by nominal GDP as indicator of tight (lose) monetary policy. This ratio tends to increase during expansionary monetary policy regime and decreases during contractionary policy regime (Hosono, 2005). We interpret the changes in monetary policy will alter the credit demand by the firms, which will affect the loan portfolio of the banks and subsequently earnings. Alternatively, we used base rate used by Bank Negara Malaysia as proxy for monetary policy regime as in Mateut et al. (2006). The results using base money to nominal GDP ratio show that there are significant differences in the speed of adjustment and payout of the banks in the two monetary regimes. However, using the base rate there is no significant influence on either speed of adjustment or payout ratio in the two monetary regimes (see last row Table 4).

4.2 Flexibility of Dividend policy

In this section, we examine whether banks have flexibility to change their dividend policy or not. Specifically, we investigate whether decision to increase, decrease or maintain dividends depends on past earnings (*EARNINGS)*, investment opportunities[8] (*MTB)*; total deposits to assets ratio (*DEPOSITS)*, capital adequacy ratio (*CAP)*, non-performing loans to total loans (*NPL)* and total loans to total assets ratio (*LOANS).* The loan products are the important inputs in the banks production function, and variation in the income from these products cause earnings volatility. On the other hand, capital adequacy ratio provides protection against bank run, and reflects bank ability to continue to operate in future. Previous studies (see e.g., Dickens et al, 2003; Mayne, 1980) have shown that capital adequacy has a major influence on a banks' dividend policy. Casey and Dickens (2000) find

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[8] Barclays et al (1995) measure for a firm's investment opportunities is its market price per share divided by book value per share is used in this paper.

that the dividend payout is affected by the banks' current and anticipated need for capital in relation to growth in assets, and expected future earnings. We argue that economic rationale of selecting these variables can be tested in our unique setting of Malaysia, where banks have seen quite ups and downs in recent period. We also include dummy variable (*DLOSE*) to investigate whether a fall in earnings triggers dividend reductions, which is set to 1 if the current net income is negative. These variables are used in ordered probit model also applied by Goergen et al. (2003). The underlying model is:

$$y^* = \beta X + \xi$$

where, y^* is an unobserved variable, X is a set of explanatory variables and ζ is the residual. The decision to cut dividends takes the value of 0; maintain the dividend take the value of 1 and increase takes the value 2. Although y^* is not observed, we observe y:

$$y = 0 \text{ if } y^* \leq 0 \tag{2.1}$$

$$y = 1 \text{ if } 0 < y^* \leq \mu \tag{2.2}$$

$$y = 2 \text{ if } \mu \leq y^* \tag{2.3}$$

μ is an unknown parameter to be estimated with β'. Assuming that ζ is normally distributed across observations (as in the binomial probit model) and the mean and the variance of are set to 0 and 1 respectively. With the normal distribution we have the following probabilities:

$$P = (y = 0) = \Phi(-\beta'X) \tag{2.4}$$

$$P = (y = 1) = \Phi(\mu - \beta'X) - \Phi(-\beta'X) \tag{2.5}$$

$$P = (y = 2) = 1 - \Phi(\mu - \beta'X) \tag{2.6}$$

where Φ is the cumulative standard normal. The coefficients are estimated by using the maximum likelihood function. The model is estimated assuming multiplicative

heteroskedasticity (i.e. $\text{var}[\zeta] = \exp[\chi z_i^*]$, essentially adding an additional parameter to the model)

The explanatory variables denoted by X (defined above) are used not in levels but in *changes*. We argue that the changes in the deposits, loans, loans quality and concentration of loan portfolio of the banks will significant affect the choice to cut, maintain or increase dividends. Thus, explanatory variables X are:

$$X = (EAR_{i,t}, \Delta EAR_{i,t}, \Delta DEPOSITS_{i,t}, \Delta CAP_{i,t}, \Delta NPL_{i,t}, \Delta LOANS_{i,t},)$$

There are some caveats to our results i.e., lack of data or dividend non-payments of Islamic and foreign banks. Therefore our results should be interpreted with caution. The estimation results are shown in Table 5 using several specifications.

[Insert Table 5 about here]

First, we examine the effect of current earnings on the dividend decision (specification a). The results show that the probability of a dividend increase by a bank is higher when there are positive earnings in the current year. From the inclusion of an earnings loss dummy and changes in earnings variables (specification b and c), we found that banks incurring loses are significantly likely to reduce dividends. This result is consistent with earlier studies. The results show that increase in the ratio of non-performing loans in the bank portfolio significantly reduces the bank's dividends (specification d). It is important to note here that by inclusion of the bank specific growth variables, explanatory power of the model has increased from 12% to 15%.

In the final specification (e), after controlling for a bank's growth opportunities, we find that changes in the deposits and non-performing loans significantly induce dividends cuts. Thus, it can be conjectured that deposits and non-performing loans variables provides better description of the dividend flexibility of the banks in Malaysia. We did not find any significant effect of the changes in the capital adequacy ratio in any of the specifications (d

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and e). We suspect that capital injections by the Malaysian government might have provided safety cushion for the banks against bankruptcy and to maintain depositor's trust in the banks to avoid bank runs.

4.3 Robustness Tests

In the previous section, we found that NPLs have significant effect on dividends, but we suspect this finding might be due to the Asian financial crisis. In order to test the crisis impact, we included a dummy variable denoted by *CRISIS* equal to 1 for the years 1997-1998, and zero otherwise. The results remain unchanged and the coefficient on *CRISIS* variable is not significant (see Table 6 column a). Most of the NPLs in Asian countries were the outcomes of excessive corporate borrowings financed by banks through short-term borrowing from the international financial markets. It might be possible that banks which were more (less) exposed to corporate sector, their dividend payout decisions might have been more (less) sensitive to total exposure to corporate sector. For this purpose, we calculated ratio of banks' loans to corporate sector to total assets denoted by *CPL.* We used average of this ratio over the past three years for each bank. The estimation results (see column b) in Table 7 shows a significant negative coefficient on *CPL*, suggesting that the reduction in dividends payments of the banks were strongly related to the exposure to corporate sector.

[Insert Table 6 about here]

It has been argued that high exposure of some banks to real-estate sector was also a major cause of deterioration of some banks. Therefore, in our final specification (see column c), we included each bank's ratio of real-estate loans as a percentage of total assets, denoted by *REL* and again used the average over past three years instead of contemporaneous values.

We find that a significant negative coefficient for the variable *REL*, thus, the exposure of the banks to real-estate sector significantly influenced the dividends cut by banks. The last

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two findings taken together suggest that there is a higher probability of dividend cuts due to high exposure to corporate and real estate sector. This finding is also supported by argument of loan-portfolios correlation across banks as in Bessler and Nohel (2000).

5. Conclusion

This paper investigates the dividend policy of listed banks in Malaysia. We analyze the impact of product market competition and regulation on the optimal payout of the banks. We found that although banks have been affected by changes in the financial market environment but they maintain flexibility in the changing the dividends. In particular, product market competition plays an important role.

Our results seems to suggest that, besides net earnings as key determinant of the dividends, earnings loses and banks' specific variables such as changes in the deposits and non-performing loans ratios significantly affect banks' dividends irrespective of their product mix. The composition of the banking sector loan portfolios, in particular, high exposure to corporate and real-estate sector, created deadweight costs for the banks which created bias toward dividends cut. These findings have implication for the regulators. First, shareholders have the right to know about non-performing loans of the banks. In this regards, appropriate disclosures in the annual reports of the banks should be enforced by the regulators. Shareholders and depositors should be informed regarding the financial risks assumed by the banks. It would be interesting to explore in future work are there any effect of dividend changes on the depositors behaviour? The bank would face high bankruptcy risk as depositors withdraw money after knowing about deteriorating loan performance of banks. Therefore, banks would need other governance to resolve dual agency problems.

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Table 1

Structure of Banking sector in Malaysia

Local Commercial Banks	Islamic Banks	Foreign Banks
Affin Bank Bhd.	Bank Islam (M) Bhd.	ABN Amro Bank Bhd.
Alliance Bank Malaysia Bhd.	Bank Mualamat (M) Bhd.	Bangkok Bank Bhd.
Arab-Malaysian Bank Bhd.		Bank of America (M) Bhd.
Bumiputra-Commerce Bank Bhd.		Bank of China (M) Bhd.
EON Bank Bhd.		Bank of Tokyo-Mitsubishi (M) Bhd.
Hong Leong Bank Bhd.		Citibank Bhd.
Malayan Banking Bhd.		Deutsche Bank (M) Bhd.
Public Bank Bhd.		HSBC (M) Bhd.
RHB Bank Bhd.		JP Morgan Chase Bank Bhd.
Southern Bank Bhd.		Bank of Nova Scotia Bhd.
		OCBC Bank (M) Bhd.
		Standard Chartered Bank (M) Bhd.
		United Overseas Bank (M) Bhd.

Source: Bank Negara Malaysia

Note: Ten banking groups or anchor banks were formed as a result of merger drive: 1)Arab Malaysian Bank Bhd., 2)Bumiputra-Commerce Bank Bhd., 3)RHB Bank Bhd., 4)Southern Bank Bhd., acquired Ban Hin Lee Bank; 5)Malaysian Banking Bhd., acquired The Pacific Bank and Phileo Allied Bank; 6)Public Bank Bhd., acquired or merged with Hock Hua Bank; 7)Multi-Purpose Bank Bhd.., merged or acquired International Bank Malaysia Sabah Bank; 8)Hong Leong Bank merged/acquired Wah Tat Bank; 9)Perwira Affin Bank acquired/merged with BSN Commercial Bank, 10)EON Bank Bhd., with Oriental Bank Bhd.

Table 2 Distribution of Dividends and Descriptive Statistics

This table shows the yearly distribution of the dividend payments of the listed Malaysian banks from 1995 to 2005 (Panel A). Dividend payments are defined as total cash dividend payments to preferred and ordinary shareholders. The column changes in dividend payments shows the number of banks increasing (decreasing) and not paying cash dividends in columns 2, 3, and 4. Panel B reports the results of difference in the dividend payouts of the banks using *t-test. Islamic/non Islamic* banks are those listed banks which sell both Islamic complaint and traditional interest bearing products, and *Non-Islamic* banks are those which do not sell Islamic products. *MA* are those banks which have acquired other listed banks (see footnote) and *Non-MA* are those banks which did not take over any bank during the sample period. *Dividend-earnings ratio* defined as the total cash dividend paid to preferred and common shareholders divided by *Earnings* defined as profits after tax; *Dividend-revenue ratio* defined as the as the total cash dividend paid to preferred and common shareholders divided by total interest income; *Market-to-book ratio* is ratio of market value of equity to book value of equity (proxy for future growth opportunities); *Profit Margin* is the ratio of profit after tax to total revenue, *Capital Adequacy ratio* is ratio of capital to assets ratio of the banks. [a] [b] [c] shows statistical significance at 1, 5, ad 10 percent level respectively.

Panel A

Distribution of banks with yearly changes (increase, decrease, non-payment over the period of 1995-2005

Year	Number of banks	Dividends RM. Mill	Changes in Dividend payments		
			Increase	Decrease	Non-payment†
1995	-	1,297.02	-	-	-
1996	11	1,671.66	6	2	3
1997	10	1,572.52	2	4	4
1998	10	721.05	-	6	4
1999	14	590.33	2	5	7
2000	14	1,217.79	4	2	8
2001	13	2,152.12	7	1	5
2002	21	2,184.32	8	5	8
2003	19	3,979.08	11	2	6
2004	20	4,057.58	7	7	6
2005	18	4,278.83	8	4	6

Panel B

Distribution of changes in the dividends

Range of changes in Dividends	Increases	% of total increases	Decreases (cuts)	% of total decreases (cuts)
0 <10%	14	25.45	5	12.82
10-<20%	6	10.90	7	17.95
25-50%	11	20.00	12	30.76
50-100%	24	43.64	15	38.46
Total	55		39	

†Non-payments also includes missing data on dividend payments

Panel C
Sample descriptive statistics on the Dividend payouts and bank characteristics

Variables	All banks	Islamic/non-Islamic	Non-Islamic	t-test	MA	Non-MA	t-test
Dividend-earnings ratio	0.3079 (0.5134)	0.2124(0.2900)	0.6550(0.9338)	-2.5360 [a]	0.2247(0.2809)	0.3710(0.6562)	-1.7781 [c]
Dividend-revenue ratio	0.0450(0.7516)	0.0239(0.0239)	0.1218(0.1165)	-4.5369 [a]	0.0310(0.0489)	0.0557(0.0889)	-2.0891 [b]
Market-to-book ratio	1.8423 (1.2432)	1.8945(1.5825)	1.8171 (1.0618)	0.7937	1.9948(1.2944)	1.6548(1.1688)	1.4390
Profit Margin	0.1365 (0.1502)	0.1237(0.1170)	0.1447 (0.1682)	0.8698	0.1065(0.0917)	0.1593(0.1799)	-2.2514 [a]
Capital Adequacy ratio	0.1019 (0.0833)	0.0761(0.0987)	0.0982(0.0724)	0.2912	0.0755(0.0313)	0.1060(0.1149)	0.4592
Total Assets	10423(9881.59)	12710.73(10274.64)	3497.315(3217.83)	8.2211 [a]	16411.28(11374.18)	6423.12(5706.64)	6.8640 [a]

Table 3
Optimal Dividend payout and speed of adjustment of Malaysian Listed Banks
The table reports the estimation result of Eq (1.3):

$$D_{i,t} = \gamma + \alpha \tau \Pi_{i,t} + (1-\alpha)D_{i,t} + \varepsilon_{i,t}$$

where $D_{i,t}$ is the dependent variable defined as the total cash dividend to preference and common share holders.

α is the speed of adjustment and τ is optimal dividend payout ratio. The standard errors are heteroscedastic-consistent and shown in the parenthesis. *DW* is the Durbin-Watson test for testing first order auto-correlations in the residuals of the estimated model.

		α	τ	*Adj. R²*	*DW*
All banks	21	0.4262 [a]	0.5445 [a]	0.5786	1.9834
		(0.1330)	(0.1068)		
Domestic banks	12	0.3427 [a]	0.5137 [a]	0.5946	1.9937
		(0.1540)	(0.1935)		
Foreign banks	9	0.9050 [a]	0.7023 [a]	0.5442	1.8443
		(0.1741)	(0.0897)		
Islamic/Non Islamic banks	10	0.4014 [a]	0.3257 [a]	0.3246	2.2893
		(0.1116)	(0.1157)		
Non-Islamic banks	11	0.4240 [a]	0.5761 [a]	0.6143	2.0521
		(0.1651)	(0.1651)		
MA banks	7	0.3837 [a]	0.6104 [a]	0.5744	1.9493
		(0.2133)	(0.2348)		
Non-MA banks	14	0.4454 [a]	0.3352 [a]	0.4353	2.2642
		(0.0971)	(0.0821)		

[a, b, c] shows statistical significance at 1, 5, ad 10 percent level respectively.

Table 4

Growth opportunities and Monetary Policy Effects on the Dividend payout

This table reports the values of the speed of adjustment to optimal dividend denoted by α and optimal payout of the firms denoted by τ. *Growth* is defined as the market value of equity to book value of equity of a bank at the year end. We used median of *Growth* to divide banks into high growth *H-GROWTH* and low growth *L-GROWTH* banks. We used ratio of base money to nominal GDP to define monetary policy regime as tight money *T-MONEY* and loose money *L- MONEY*. The last row of the table shows results using alternate measure of tight (lose) monetary policy using base interest rate used by Bank Negara Malaysia. The data on base money, GDP and interest rates was obtained from *IMF International Financial Statistics* and Bank Negara Malaysia respectively. *Chi-test* gives value of chi-square test of the difference in the speed of adjustment and optimal payout of the banks.

	α	τ	*Chi--test*
H-GROWTH	0.3683(0.2376)	0.6167(0.2745)	16.2753 [a]
L-GROWTH	0.3315(0.0988)	0.3846(0.0843)	
T-MONEY	0.0634(0.0274)	0.1741(0.0134)	18.6195 [a]
L-MONEY	0.3808(0.1369)	0.4399 (0.1434)	
T-MONEY2	0.1134(0.1211)	0.1341(0.0404)	2.3390
L-MONEY2	0.1808(0.1369)	0.3399 (0.2434)	

[a, b, c] shows statistical significance at 1, 5, ad 10 percent level respectively.

Table 5
Ordered Probit Analysis of decision to decrease, maintain and increase dividends
The dependent variable equals 0 if the dividend is cut, 1 if maintained and 2 if increased. The sample consists of 17 listed banks and data cover the period 1995–2005. The sample size is firm-year observations in all regressions. *Earnings* defined as profits after tax; *DEPOSITS* is the ratio of total deposits to total assets, *CAP* is the total equity to total assets ratio, *NPL* is the ratio of total non-performing loans to total loans, *LOANS* is the ratio of total loans to total assets. *DLOSE* is equal to 1 if the current profit after tax is negative. All models are estimated with a correction for multiplicative heteroskedasticity. *LR* stands for the likelihood ratio test for zero effect of explanatory variables on dividends. Standard errors are between parentheses. [a, b, c] stand for statistical significance at the 1%, 5% and 10% level, respectively, for the two-tailed test.

	(a)	(b)	(c)	(d)	(e)
Constant	-0.1441	-0.1389	-0.1071	0.3852 [b]	0.5282
	(0.1800)	(0.2041)	(0.2070)	(0.2081)	(0.6144)
Earnings	0.0433 [a]	0.0434 [a]	0.0404 [a]	-	0.0233
	(0.0140)	(0.0156)	(0.1155)		(0.0133)
Change in Earnings	-	-	0.0693 [a]	-	0.0281
			(0.0250)		(0.0167)
Change in Deposits	-	-	-	-2.5213	-5.9971 [c]
				(1.4681)	(3.3127)
Change in CAP	-	-	-	-0.3093	-1.2044
				(0.5043)	(1.0387)
Change in NPL	-	-		-0.7248 [a]	-0.7400 [b]
				(0.3495)	(0.4312)
Change in Loan	-	-	-	-0.5647	-1.8494
				(1.2988)	(1.6234)
DLOSE	-	-0.1232 [a]	-0.3806	-	-0.0622b
		(0.0419)	(0.7060)		(0.0321)
Log-likelihood	-74.6023	-73.9910	-72.3770	-30.8789	-21.9698
Pseudo R^2	12.84%	12.32%	10.11%	15.89%	35.26%
LR Test(zero sloped)	12.5518 [a]	11.9528 [a]	9.4062 [a]	7.3654 [a]	14.3906 [a]

Table 6
Ordered Probit Analysis of decision to decrease, maintain and increase dividends
The dependent variable equals 0 if dividend is cut by a bank, 1 if dividend is maintained and 2 if dividend is increased. The sample consists of 17 listed banks and data cover the period 1995–2005. *Earnings* defined as profits after tax; *DEPOSITS* is the ratio of total deposits to total assets. *CAP* is the ratio of total equity to total assets, *NPL* is the ratio of total non-performing loans to total loans, *and LOANS* is the ratio of total loans to total assets. *DLOSE* is equal to 1 if the current profit after tax is negative. *CRISIS* is a dummy variable equal to 1 for the period 1997-1998 and zero otherwise. *CPL* is the ratio of total corporate loans to total assets. *REL* is the ratio of total real-estate loans to total assets. All models are estimated with a correction for multiplicative heteroskedasticity. *LR* stands for the likelihood ratio test for zero effect of explanatory variables on dividends. Standard errors are between parentheses. [a, b, c] stand for statistical significance at the 1%, 5% and 10% level, respectively, for the two-tailed test.

	(a)	(b)	(e)
Constant	0.6770 [c]	0.5282	0.5411
	(0.4000)	(0.6144)	(0.6144)
Earnings	0.0142	0.0322	0.0239
	(0.0200)	(0.0233)	(0.0222)
Change in Earnings	0.0266	0.0281	0.0244
	(0.0690)	(0.0767)	(0.0767)
Change in Deposits	-9.5941 [c]	-5.9971 [c]	-0.8221 [b]
	(5.7839)	(3.3127)	(0.3127)
Change in CAP	-1.7520	-1.2044	-0.9158
	(1.1803)	(1.0387)	(1.0164)
Change in NPL	-0.8484 [b]	-0.7400 [b]	-0.8756 [b]
	(0.4232)	(0.4312)	(0.3952)
Change in Loan	-1.7152	-1.9454	-1.4920
	(1.7862)	(1.7304)	(1.5515)
DLOSE	-0.4548	-0.0522	-0.5841 [b]
	(1.4641)	(0.0421)	(1.0321)
CRISIS	-0.0082	-0.0078	-0.0009
	(0.1144)	(0.1144)	(0.0065)
CPL		-0.0212 [b]	-0.0198
		(0.0113)	(0.0100)
REL	-	-	-0.0281 [b]
			(0.0167)
Log-likelihood	-20.7017	-25.3412	-19.9698
Pseudo R²	49.97%	33.13%	33.76%
LR Test(zero sloped)	23.9168 [a]	15.2032 [a]	15.4839 [a]