

DIVIDEND PAYOUT, ABNORMAL RETURNS, AND EARNINGS GROWTH OF CROSS-LISTED FIRMS. THE SITUATION IN THE FOUR TIGERS.

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ABSTRACT. Using a sample of rapidly developing “Four Tigers” (i.e. Hong Kong, Singapore, South Korea, and Taiwan), this paper investigates the influence of the cross-listing effect and the payout policy on a firm performance and valuation. While the payout policy does not significantly affect abnormal returns for both cross-listed and non-cross-listed companies, the payout policy of cross-listed firms is positively correlated with earnings growth. Further investigation reveals that the companies with higher investment opportunities, represented by Tobin’s Q , get positive reaction by foreign investors when they signal about future prospects by paying out more cash dividends. Interestingly, the domestic investors do not share the same opinion and prefer the firms to accumulate the funds for the execution of future investment projects instead of dividend distribution. The results provide evidence that the firms with investment opportunities in combination with positive payouts better stimulate earnings growth if they are cross-listed.

1. INTRODUCTION

The cross-listing in developed and transparent markets has been found to have a positive effect on the firms’ performance, transparency, and as a consequence, firm valuation. This phenomenon becomes even more pronounced if a firm is originated from a less transparent market where local regulations concerning information disclosure are less strict. Investors profoundly rely on the cash dividends in an environment where information is scarce and do not allow building robust forecasts of firm performance and future earnings based on fundamental analysis.

This study examines if the cross-listed companies adjust their payout policies and how is it perceived by the investors, opinions of whom become even more important after an entrance into highly informative market of the US. Another aim of the study lies in the investigation: if the valuation of a cross-listed firm is indeed related to the firm’s earnings growth. Finally, the research separates cross-listed firms from non-cross-listed ones and looks for the differences in the aforementioned circumstances.

The contribution of this research is in widening the knowledge of studies about the cross-listing effect on the firms’ payout policies. While there are many studies concerning these issues individually, this research among the first ones which combine them in order to investigate their

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interrelationships. The results of this article contribute to the existing literature by combining the several subjects and shedding a light to a broader specter of factors which improve a firm performance as well as the returns on stocks. The outcomes might attract the attention of scholars conducting a research on corporate finance on an international scale. Another group of readers, corporate managers whose goals are targeted on the improvement of access to international capitals, may find answers to the issues of funding investment projects through retention of profits or attraction of additional capital. Finally, foreign investors may find it interesting to observe how similar sets of variables affect abnormal returns and future earnings growth. The results suggest to them which factors are neglected in firms' valuation.

The remainder of this paper is structured as follows: Section 2 presents literature concerning three major issues regarding to performance of cross-listing firms, payout policy, and returns on stocks of cross-listed firms ; Section 3 describes the development of hypotheses and simultaneously describes the employed methodology; Section 4 briefly observes the descriptive statistics and announces the result of the regressions; Section 5 discusses results and concludes the research; the list of references finalizes the paper.

2. LITERATURE REVIEW

This research combines several distinctive subjects in the financial literature such as payout policy, cross-listing, stock returns, and earnings growth. In order to focus on the major arguments of each subject, this section will observe them individually in the three following subsections. The subsection 2.1 discusses the general effect of cross-listing on the firm and stock performance. The subsection 2.2 focuses on the abnormal returns generated on cross-listed stocks. The subsection 2.3 presents relevant literature concerning the effect of dividend payout on the firm and stock performance.

2.1. The Cross-listing Effect on a Firm Valuation. Findings of many scholars suggest that cross-listing in developed markets like the United States (US) is advantageous for the companies. Those benefits which developed markets provide have been explored in several dimensions. For instance, Foerster and Karolyi (1999) show that listing on the US stock market not only improve the liquidity of the cross-listed firm's stocks but also linked a positive firm valuation. Fuerst (1998) advocate that another benefit lies in the ability of the US market to filter "bad" firms from "good" ones. He explains it by the result of disclosure requirements and legal liabilities, which make cross-listing much costlier for "bad" firms. Sami and Zhou (2004) assert that the presence of foreign ownership may help to improve the general information environment of public companies. Similarly, an increase in foreign ownership may lead to increased pressure for corporate governance improvements. Non-US firms listed on the US stock exchanges experience more analyst coverage and have more accurate forecasts (Lang et al., 2003).

Overall, companies have a better performance and they are more appreciated by investors after being cross-listed in more developed markets. Doidge et al. (2004) found that the value of firms which list in the US is higher than firms that do not list in the US. The difference is established to be 16.5 percent on average. Lang et al. (2003) established that relative to non-cross-listed firms cross-listed firms tend to have stronger earnings performance. They are higher valued and smooth their earnings less aggressively than non-cross-listed firms and as a result, their financial reports are better reflected on share prices and returns on their stocks. Chang and Corbitt (2012) collated the 'bonding effect' between cross-listed and domestic firms. The results reveal that the likelihood of cross-listing increases with firm size and growth opportunities. Besides being significantly larger in terms of market capitalization and total assets cross-listed firms have similar performance to domestic firms, but a lower cost of debt and exposure to a more in-depth analyst coverage. Karolyi (1996) documented the post-listing companies' liquidity improvement, increase in total trading volume on average, and for many issues increase in home trading volume.

Several studies show that cross-listing can be more beneficial if a country of origin is less developed than a country of cross-listing. Hargis (1997) and Smith and Sofianos (1997) found that cross-listing results in volume and liquidity improvement even though a foreign market dominates trading. According to Coffee (1999, 2002) and Stulz (1999), the bonding hypothesis suggests that firms in countries with weaker investor protection can cross-list on markets with stricter regulations and better enforcement to signal their intent to improve investors' protection. Improved investors' protection results in increased stock returns, other empirical support for the bonding hypothesis has been provided by Reese and Weisbach (2002), Doidge (2004) and Doidge et al. (2004). Empirical evidence wires the notion that non-US firms, that cross-list in US exchanges, experience a positive average abnormal return (Foerster and Karolyi, 1999; Miller, 1999), enjoy a lower cost of capital than non-cross-listed firms (Errunza and Miller, 2000; Hail and Leuz, 2004), and have higher Tobin's q ratios (Doidge et al., 2004). Cross-listing in the US exchanges improves corporate transparency and shareholders' rights along several dimensions. The rights of shareholders in companies listed on the US exchanges are guaranteed by the US law enforcement agencies and the capital market regulators. In addition, cross-listed firms become more transparent as they have to disclose additional information, in accordance with the U.S. Securities and Exchange Commission's (SEC) policy which corresponds to the assertion of Sami and Zhou (2004) that foreign ownership expands firms' information accessibility.

2.2. Abnormal Returns on Cross-listed Stocks. The outcomes of being cross-listed in the US have been examined by many scholars and generally, they are similar. Most of the findings state that the cross-listing in the US has a positive effect both on the company's performance and its shareholders. Jayaraman et al. (1993) found that the listing on the US stock exchanges is associated with a positive significant daily excess return which is explained by the fact that the listing provides the company with access to another capital market, thus allowing it to lower the cost of capital. Lang et al. (2003) found that non-US firms listed on the US exchanges experience more analyst coverage whose forecasts are more accurate. Lau et al. (1994) studied the valuation effects of international stock exchange listings of the US companies. A statistically significant negative abnormal return is detected on the first trading day as well as the interval $[-5, +3]$ days around it. This temporary negative valuation impact contradicts the results of a positive daily excess return found by Jayaraman (1993). Martell et al. (1999) examined the risks and returns of shares in Latin America after the issue of American Depositary Receipts (ADR) on the US market and found positive returns and no significant systematic changes in returns variance. Pagano et al. (2002) compared cross-listed companies in the US and Europe. Their main finding is that the companies cross-listed on the European market have lower market-to-book ratios than companies cross-listed on the US.

Cross-country patterns of firm-specific return variation also correspond to patterns of price's informativeness. Morck et al. (2000), Jin and Myers (2006) established a high firm-specific stock return variation in developed markets but low firm-specific return variation in emerging markets. They argue that when a country's environment is characterized by poor governance and opaque accounting methods, stock prices fail to reflect events accurately and in proper time. Fernandes and Ferreira's (2008) primary empirical result displays that non-US firms, cross-listed on US exchanges, have higher firm-specific return variation than other non-US firms. Firm-specific return variation is the most increased for firms in developed countries with the strong investors' protection.

To demonstrate the difference between ADRs listed on the over-the-counter (OTC) market and ADRs listed on the US stock exchanges, Miller (1999) tested different price responses to cross-listings, depending on the ADR type. He found that foreign firms which list on the US Stock Exchanges experience more sensitive stock price response.

2.3. Payout Policy and a Signaling Theory. The payout policy in the current context refers to the managers' decision concerning dividend distribution, the difference of dividend payout ratio for cross-listed and non-cross-listed periods. If the dividend payout ratio is significant for

different subsamples this signifies that managers adjust their payout policy after cross-listing in order to satisfy foreign investors.

Scholars highlight several potential explanations for why high dividend payout is beneficial. One of them is the use of the dividends as the signaling tool of management's optimistic visions on the firm's future performance (Bhattacharya, 1979; John and Williams, 1985). This motivation finds support from the literature which suggests that dividend payout ratios have a positive association with future earnings growth (Ap Gwilym et al., 2006; Arnott and Asness, 2003). Zhou and Ruland (2006) revealed that this phenomenon remains constant even under a situation of total dividends. One of the major advantages of substantial dividend distributions lies in the theory of 'free cash flow' hypothesis which claims that cash dividends may diminish agency problems and restrain overinvestments. La Porta et al. (2000) think that this phenomenon depends on the country legislation. They found that dividends significantly mitigate agency problems on markets with a strong investor protection while they are less distinguished on markets with lower investor protection. Finally, less rational but closer to the behavioral finance theory, Elgers and Murray (1985) offered another reason for companies to pay out high dividends in order to reduce their stock price, so the stocks will become seemingly affordable not only for high-scale individuals and institutional investors but also for smaller individual investors.

3. HYPOTHESES DEVELOPMENT AND METHODOLOGY

This section first develops the hypotheses and introduces proposed models under each of the hypotheses. The second part of the section contains information supporting the choice of the control variables as well as the source of data.

3.1. Hypotheses Development. Lam et al. (2012) state that, in accordance with the signaling role of dividends, cross-listed firms should be considerably pressured by the rules and practices of the overseas market to adjust their payout policies. This is consistent with Petrsek's (2012) findings suggesting that a company being cross-listed on a market with high information disclosure requirements, like the US market, can improve dividend payout ratios. La Porta's (2000) 'Outcome Model' proposes an alternative agency cost model of dividend policy with fundamentally different empirical implications. Doidge's (2004) findings reveal that cross-listing reduces private benefits of control. Lal and Miller (2007) evidenced that cross-listing mitigates some agency problems, by aligning managers' compensations with the interests of shareholders. Elgers and Murray (1985) found that the reason for companies paying out high dividends is not only to convey optimistic future profitability but also to reduce their stock price to a reasonable level. Taking all into the consideration, the first hypothesis is developed:

Hypothesis I:

Dividend payout of a cross-listed company have a negative effect on the abnormal returns.

$$\mathbf{AR}_{i,t} = \beta_i + \beta_1 \mathbf{Payout}_{i,t} + \beta_2 \mathbf{Size}_{i,t} + \beta_3 \mathbf{ROE}_{i,t} + \beta_4 \mathbf{Beta}_{i,t} + \beta_5 \mathbf{AG}_{i,t+1} + \beta_6 \mathbf{Yield}_{i,t} + \beta_7 \mathbf{EPSGR}_{i,t} + \beta_8 \mathbf{EM}_{i,t} + e_{i,t}$$

where $\mathbf{AR}_{i,t}$ is abnormal returns on stock i at the period t ; β_i is an unobserved time-invariant individual fixed effects; \mathbf{Payout} stands for the payout ratio; \mathbf{Size} implies the logarithm of Total Assets; \mathbf{ROE} is the Return on Assets; \mathbf{Beta} - annual beta; \mathbf{AG} - assets growth rate; \mathbf{Yield} - dividend yield; \mathbf{EM} - equity multiplier; e_i is a residual.

Contemporary scholars (Arnott and Asness, 2003; Huang et al., 2009; Zhou and Ruland, 2006) have established that dividend payouts are positively associated with the future earnings growth. Those findings are totally opposite to the earlier findings (Gordon, 1962; Gul, 1999; Myers, 1984) which suggest that dividend payouts decrease the funds for future reinvestments and that they are detrimental to the future earnings growth. All those findings may be contradictory due to several reasons: time trends which lead to the market evolution, evolving corporate strategies and investors' perception of payout policies. Above mentioned studies observed only one country's data at a time. Observation of several countries, with different

degrees of development, and especially cross-listed companies can enlarge the observation area and curb those factors. Arnott and Asness (2003), Huang et al. (2009), and Zhou and Ruland (2006) carried out their research more recently than the other mentioned studies. If it is a trend and managers indeed, in the contemporary world, use dividends to inform the public about their optimistic perspectives, the results of this research should be consistent with their results. Summarizing all above mentioned, the following is expected:

Hypothesis II:

Earnings growth of cross-listed companies, similarly to other companies, have positive association with dividend payout.

$$EPSGR_{i,t+1} = \gamma_i + \gamma_1 \mathbf{Payout}_{i,t} + \gamma_2 \mathbf{Size}_{i,t} + \gamma_3 \mathbf{ROE}_{i,t} + \gamma_4 \mathbf{Beta}_{i,t} + \gamma_5 \mathbf{AG}_{i,t+1} + \gamma_6 \mathbf{Yield}_{i,t} + \gamma_7 \mathbf{EPSGR}_{i,t} + \gamma_8 \mathbf{EM}_{i,t} + \zeta_{i,t}$$

where $EPSGR_{i,t+1}$ represents earnings growth on stock i at the period $t+1$; γ_i is an unobserved time-invariant individual fixed effects; \mathbf{Payout} stands for the payout ratio; \mathbf{Size} implies the logarithm of Total Assets; \mathbf{ROE} is the Return on Assets; \mathbf{Beta} – annual beta; \mathbf{AG} – assets growth rate; \mathbf{Yield} – dividend yield; \mathbf{EM} – equity multiplier; $\zeta_{i,t}$ is a residual.

The previous two hypotheses are emphasizing on the relationship of cash dividend payout with a firm valuation and its future earnings growth. Those factors can be sustained under the stable growth when managers and shareholders see their future growth plans equal, but companies in fast emerging countries have plenty investment opportunities and they need to accumulate sources to fund them. Generally, managers have two main ways to do it: 1) to retain cash by distributing fewer cash dividends; 2) to pay out more dividends in order to signal about optimistic future prospects and to fund them by attracting more investors. According to the traditional signaling theory, managers of public firms can use stock dividends to signal optimistic insider information to the market (Grinblatt et al., 1984), but legislation of “Four Tigers” and the US are different in terms of stock dividends, that is why stock dividends are excluded from the model. According to La Porta (2000), companies pay out more in the countries with stronger investors’ protection. The US stock market is generally considered to have a strong investors’ protection legislation.

In conclusion, companies which are cross-listed on the US market will be constrained by foreign investors to level up a cash dividend distribution. Companies which are in need of funds to support their new investment projects will not be able to source their investment opportunities by retaining a majority of earnings and will have no other choice as to attract more investors through signaling about their potential earnings growth. Thus, the next hypotheses are:

Hypotheses III and IV:

The signal of investment opportunities through dividend payout have positive effect on abnormal returns and earnings growth.

$$AR_{i,t} = \pi_i + \pi_1 \mathbf{Payout}_{i,t} + \pi_2 \mathbf{Tq}_{i,t} + \pi_3 \mathbf{Payout}_{i,t} * \mathbf{Tq}_{i,t} + \pi_4 \mathbf{Size}_{i,t} + \pi_5 \mathbf{ROE}_{i,t} + \pi_6 \mathbf{Beta}_{i,t} + \pi_7 \mathbf{AG}_{i,t+1} + \pi_8 \mathbf{Yield}_{i,t} + \pi_9 \mathbf{EPSGR}_{i,t} + \pi_{10} \mathbf{EM}_{i,t} + \varphi_{i,t}$$

$$EPSGR_{i,t+1} = \omega_i + \omega_1 \mathbf{Payout}_{i,t} + \omega_2 \mathbf{Tq}_{i,t} + \omega_3 \mathbf{Payout}_{i,t} * \mathbf{Tq}_{i,t} + \omega_4 \mathbf{Size}_{i,t} + \omega_5 \mathbf{ROE}_{i,t} + \omega_6 \mathbf{Beta}_{i,t} + \omega_7 \mathbf{AG}_{i,t+1} + \omega_8 \mathbf{Yield}_{i,t} + \omega_9 \mathbf{EPSGR}_{i,t} + \omega_{10} \mathbf{EM}_{i,t} + \theta_{i,t}$$

where $AR_{i,t}$ is an abnormal return on a stock i at the period t ; $EPSGR_{i,t+1}$ represents earnings growth; π_i and ω_i are an unobserved time-invariant individual fixed effects; \mathbf{Tq} – Tobin’s q which characterizes investment opportunities; \mathbf{Payout} stands for the payout ratio; \mathbf{Size} implies the logarithm of Total Assets; \mathbf{ROE} is the Return on Assets; \mathbf{Beta} – annual beta; \mathbf{AG} – assets growth rate; \mathbf{Yield} – dividend yield; \mathbf{EM} – equity multiplier; φ and θ are the residuals of the respective models.

3.2. Sample Selection and data structure. The data is obtained from the DataStream database. Due to an insignificant number of companies with ADRs before the 2000s and contradictive results of previous studies, the sample period is chosen to be from 1st of January, 2000, until 1st of January, 2013, comprising of thirteen years. The data searching criteria were:

1. A company should have issued an ADR and be listed at least in one of the stock exchanges (NYSE; NASDAQ); 2. A company should be listed in a home country; 3. The country of origin should be one of the “Four Tigers”. The sample consists of 101 companies with 73 from Hong Kong, 12 from Singapore, 10 from South Korea and 6 from Taiwan. Names and definitions of the variables are presented in Table I.

Variable	Definition
AR	Abnormal returns = $\text{Ln}(\text{Stock}_{t+1}/\text{Stock}_t) - \text{Ln}(\text{Index}_{t+1}/\text{Index}_t)^*$
EPSGR	Earnings per share growth = $\text{EPS}_{t+1}/\text{EPS}_t$
Payout	Payout ratio = $(\text{Cash Dividends} \cdot 100) / \text{Net Income}$
CL	Dummy variable, 1 if the company is cross-listed in given year and 0 otherwise
Size	Natural log of firm's Market value
ROE	Return on Equity = $\text{Net Income} / \text{Total Equity}$
Beta	Annualized Beta**
AG	Assets growth = $\text{Total Assets}_{t+1} / \text{Total Assets}_t$
Yield	Dividend Yield = $\text{Dividends per share} / \text{Adjusted Stock Price}$
EM	Enterprise multiple = $\text{Enterprise value} / \text{EBITDA}$
Tq	Tobin's q = $(\text{Market value} + \text{Preferred shares} + \text{Total Liabilities}) / \text{Total Assets}$

*The prices for stocks and indices are obtained through the website: finance.yahoo.com. The following indices were chosen: HSI – Hong Kong; TWSE weighted index – Taiwan; KOSPI – South Korea; FTSE ST – Singapore.

**For a proper comparison of companies' risks, for estimating all betas, Standard & Poor's 500 or NASDAQ indices were chosen.

Following the methodology of relatively recently conducted and related studies (Huang *et al.*, 2009; Zhou and Ruland's, 2006), the study employs a panel regression model with fixed effects. The results of the Hausman test (Chi-square 156.30 with probability 0.000 of H0: Random effects are preferred) confirm the appropriateness of fixed effects rather than random effects.

3.3. Variables definition and justification of the choice. The main purpose of this study is to investigate the effect of cross-listing and firms' payout policies on overall corporate performance as well as to a firm's stock value, specifically on the abnormal returns. In order to distinct pre and post-cross-listing periods, the study employs a binary variable (CL) which takes the value of 0 for a pre-cross-listing period and 1 after cross-listing. Because valuation of a firm's stocks is theoretically highly correlated with the firm's future earnings, earnings per share growth rate (*EPSGR*) will be simultaneously tested. In the estimation of abnormal returns (*AR*), Market Adjusted Model is employed. As suggested by Brown and Warner (1980), there are a several ways of estimating the abnormal returns under different models. Moreover, they insisted that the Market Adjusted Model is also consistent with the Asset Pricing model if all securities have a systematic risk of unity.

Cross-listing is preceded by a strong price run-up, which imparts a downward bias to excess returns calculated with the alternative market model procedure. Reasoning the second dependent variable, according to the Huang *et al.* (2009) earnings-per-share ratio is the most suitable measurement of future earnings.

The key independent variable is the payout ratio (*Payout*) and its interaction with Tobin's q ($\text{Payout}_t \cdot \text{Tq}_t$). Because a negative payout ratio has no economic sense, only payout ratios which are equal to or greater than 0 were left in the sample.

Tobin's q ratio is widely known as the proxy for investment opportunities. As it was defined by Tobin (1969), high levels of q ratio imply high investment opportunities and efficient use of resources by the firm, while the opposite is correct for the firms with low q ratio. The efficiency of a firm's productivity is highly valued by the investors and usually leads to higher earnings.

Commonly, blue-chip companies are less risky, slow-growing giants which generate predictable earnings with relatively small growth. On the other hand, smaller companies in order to

facilitate growth accept riskier projects and constantly improve their current efficiency. Cross-listing in the US stock markets is quite costly, that's why it can be assumed that cross-listed firms consist only of big, mature companies which generate stable mid-level earnings (they cannot afford to generate low-level earnings, otherwise there is no point of cross-listing), while smaller companies have the opportunity to provide higher returns. To estimate the size of a company, the natural log of a company's market value was taken.

Another issue related to the growth is highlighted by Zhou and Ruland (2006) who underlined that *ceteris paribus* when profitability is already high, companies should find it difficult to demonstrate higher future earnings. This paper uses return on equity (*ROE*) as the firms' profitability measurement. While it is expected to see the negative relation to the earnings growth, it is worth to notice that *ROE* is a strong benchmark for the investors and it is assumed that keeping high *ROE* from period to period inspires investors to value those stocks higher.

Beta is a measure of systematic risk and one of few indicators which are presented by all stock screeners, stock brokers, mass media and other information portals to current and potential investors. There is no surprise that companies with low betas have higher abnormal returns, due to their higher resistance to external systematic factors. On the other hand, if the Beta represents a risk factor, then a higher beta should imply higher earnings.

In their paper, Huang et al. (2009) noted that current profits will raise assets (cash, receivables) and by this, they supplement funds intended to be reinvested in future projects and improving earnings growth.

It is assumed that managers increase dividend yield ratios when the firms are not able to generate enough growth in order to keep their stocks attractive. If in early stages of stock market development high dividend yield stock was highly valued by investors due to conservatism, however, in recent years, investors are more interested in growth potential rather than in dividends. Graham and Kumar (2006) found empirical evidence that institutional and young investors are among those who prefer growth over dividends while the opponents are represented by old and low-income investors. Because of institutional investors' ability to form the prices, it is expected to see the detrimental effect of dividend yields on abnormal returns as well as on earnings growth.

Another control variable adapted to the model is the Enterprise Multiple (*EM*) or also known as *EBITDA* Multiple. A ratio is used to determine the value of a company. Unlike other similar ratios, *EM* takes debt into account. This indicator can be very useful for transnational comparisons, like the sample of this study, because it ignores the distortion effects of the individual country's taxation policy. A high ratio can indicate a company's overvaluation and low if the company is undervalued. Because this ratio includes earnings to the denominator, it can be predicted that this variable will be negatively correlated with the future earnings growth. This ratio considers investors' hidden expectations and high expected returns will lower abnormal returns. For this reason, a negative association of *EM* with the abnormal returns is forecasted.

Current earnings growth is included due to the ability to mitigate any potential bias caused by the omission of certain variables. Earnings per share (*EPS*) is one of the major ratios which are analyzed by investors and ought to have a positive impact on both abnormal returns and future earnings.

4. DESCRIPTIVE STATISTICS AND RESULTS

4.1. Descriptive Statistics. Table II illustrates descriptive statistics of the variables. Among 1313 observations of year/company, 69% of them are cross-listed firm/years. Negative mean and median of 'abnormal returns' (*AR*) implies that, in general, the sample companies do not generate appropriate returns to their investors as their country averages do. The average EPS growth rate (*EPSGR*) is 1.417 which should be positively perceived by investors. As for the payout ratio (*Payout*), the mean and median are 49.88 and 37.98, respectively. High payout ratio might imply the preference of payout policy which would attract more investors and

signal about a firm's optimistic prospects. An explanation for this phenomenon might be the escalation of dividends after the companies have cross-listed in the US. Petrasek (2012) found a significant increase in payouts after companies pass through cross-listing procedures in US's stock market. Mean and median of Tobin's q (Tq) are 0.211 and 0.200, which suggests that the companies are dramatically undervalued, which also indicates that they have to provide some incentives in order to attract new investors. *Size*, *Yield*, *Beta*, *ROE* and *EM* variables can be informative only in comparative analysis. Mean and median of assets growth (AG), 1.11 and 1.08 respectively, point out that on average, the companies still evolve in sizes.

Variable's name	Mean	Median	Max	Min	Std. Dev.	P-value	Observations
AR	-0.056	-0.032	1.35	-2.411	0.645	0	1037
PAYOUT	49.88	37.98	499.9	1.584	51.89	0	859
TQ	0.211	0.200	0.772	0.000	0.158	0	1068
SIZE	14.20	14.76	19.66	3.016	2.471	0	1079
ROE	0.086	0.102	0.999	-1.65	0.193	0	1188
BETA	0.968	0.932	4.755	-2.317	1.141	0	1089
AG	1.111	1.082	4.348	0.458	0.273	0	1089
YIELD	0.043	0.025	0.701	0.000	0.084	0	1031
EPSGR	1.417	1.000	10.37	0.000	1.620	0	659
EM	12.51	9.060	87.75	-3.982	13.22	0	983
CL	0.692	1.000	1.000	0.000	0.462	0	1313

Significance level: *** indicates significance at the 1% level; ** at 5% level and * at 10%, respectively. All variables were winsorized at 1st and 99th percentiles. Elevated values of the dividend payout ratio, even after winsorizing, might imply that the firms distribute high levels of dividends even in the periods of low revenues.

According to the Pearson's correlation matrix (not presented), the highest correlation is between *Size* and *Yield* variables. There is no strong correlation (>0.4) between any of the variables, which suggests that multicollinearity is not a problem (Berry and Feldman, 1985).

4.2. Results of the regression models.

Name	Model 1		Model 2		Model 3		Model 4	
	CL=0	CL=1	CL=0	CL=1	CL=0	CL=1	CL=0	CL=1
Dependent	AR		EPSGR $_{t+1}$		AR		EPSGR $_{t+1}$	
PAYOUT	0.000 (0.662)	0.001 (0.744)	0.002*** (0.001)	-0.01 (0.189)	-0.000** (0.012)	0.005 (0.104)	-0.006*** (0.000)	-0.017* (0.081)
SIZE	0.495*** (0.000)	0.688** (0.012)	-2.362*** (0.000)	0.337 (0.662)	0.476*** (0.000)	0.761*** (0.005)	-2.519*** (0.000)	0.594 (0.479)
ROE	-0.064 (0.510)	-0.421 (0.762)	0.473 (0.651)	-2.505 (0.555)	-0.007 (0.94)	-0.311 (0.81)	2.315** (0.014)	-2.923 (0.496)
BETA	0.005 (0.818)	0.034 (0.622)	0.094 (0.678)	1.068*** (0.000)	0.006 (0.787)	0.011 (0.863)	0.059 (0.76)	1.041*** (0.000)
AG $_{t+1}$	0.125 (0.14)	-0.022 (0.947)	0.321 (0.723)	3.784*** (0.001)	0.136 (0.102)	-0.17 (0.594)	0.619 (0.427)	3.995*** (0.001)
YIELD	0.054 (0.926)	-4.33 (0.139)	-4.357 (0.483)	8.308 (0.312)	-0.599 (0.311)	-5.296* (0.061)	-21.184*** (0.000)	12.317 (0.168)
EPSGR	-0.011 (0.405)	0.038 (0.601)	-0.261* (0.052)	-0.042 (0.849)	-0.011 (0.393)	0.018 (0.794)	-0.252** (0.029)	0.000 (0.999)

Name	Model 1		Model 2		Model 3		Model 4	
Condition	CL=0	CL=1	CL=0	CL=1	CL=0	CL=1	CL=0	CL=1
Dependent	AR		EPSGR _{t+1}		AR		EPSGR _{t+1}	
EM	0.001	0.01	0.009	0.038	0.001	0.004	0.013	0.048
	(0.734)	(0.406)	(0.693)	(0.31)	(0.625)	(0.74)	(0.529)	(0.217)
TQ					-0.654*	1.797	-8.319***	1.29
					(0.057)	(0.157)	(0.009)	(0.762)
PAYOUT*TQ					0.003***	-0.028**	0.067***	0.035
					(0.001)	(0.010)	(0.000)	(0.315)
Adj. R2	0.804	0.7	0.193	0.498	0.814	0.743	0.404	0.492
F-value	17.001	5.487	1.92	2.954	17.566	6.27	3.544	2.811
# of observations	320	72	324	72	320	72	324	72

The significance level is set at the conventional level: *** indicates significance at the 1%; ** at 5% and * at 10%. The table consists of four models, where each of them is related to the respected hypothesis. Every regression has been run twice and separated into two columns where 'CL=1' observes only years when the companies are cross-listed and 'CL=0' otherwise. In general, the cross-listed years prevail over non-cross-listed.

Model 1 – an insignificant and almost equals to zero coefficient for *Payout* implies that investors do not heavily rely on a payout ratio of foreign cross-listed companies while evaluating their stocks. *Size* is the only variable which has the significant impact on the returns of the stocks both, before and after cross-listing. Despite the decrease in its contribution to the abnormal returns after cross-listing, *Size* increases its significance implying that investors are ready to pay more for stocks of large companies especially if they are located abroad. This might be caused by a feeling of safety, consistent with the idea – too big to fail. The other variables do not demonstrate any significance suggesting that in general, investors do not value stocks regarding the factors of firm performance, dividends distribution, and even susceptibility to the respective market risks.

Model 2 – significant and positive coefficient of *Payout* is consistent with the expectations and previous findings which assert that dividend payout is positively associated with the future earnings growth (Arnott and Asness, 2003; Huang *et al.*, 2009; Zhou and Ruland, 2006). This was not a case for the firms before the cross-listing. This might suggest that signaling theory is linked to the markets and local customs. A dividend distribution is not perceived as a positive signal of future growth on the markets of the Four Tigers as it does in the US. There is no surprise that the coefficient of *Size* is negative and significant for the cross-listed firms which is consistent with the conventional theory of diminishing growth at later stages of a firm's life, the bigger the firm the less its growth rate. Non-significance of the *Size* for the non-cross-listed years may be explained by the fact that they were still in the phase of growth in order to afford to be cross-listed on the US market. The *Beta* has no significant contribution to the earnings growth for the cross-listed years while it is strongly significant for the non-cross-listed years. It is worth to remind that the *Beta*'s estimation was based on the firms' domestic indices representing their respective stock markets. The Four Tigers are well known for the pace of their economic growth and a strong correlation with the market indices imply growth of the firms' earnings. This strong linkage is disrupted when the firms become cross-listed. A potential explanation is that cross-listed firms are exposed to various international factors and cannot be affected only by the domestic environment. Similar to the *Beta*, growth of assets (*AG*) is significant only for the non-cross-listed firms. The explanation is close to the explanation of the *Size* variable, before the cross-listing the firms were passing through an intense growth period with a similar growth of their earnings. After reaching some scale and passing the cross-listing process, the firms switched their preferences on other issues rather than the expansion of their

assets. Finally, the last significant factor in Model 2 is the current EPS growth rate which has a negative impact, indicating cyclicity of growth for the cross-listed firms.

Model 3 – as it was expected, cross-listed companies with relatively high payout ratio and high investment opportunities have a positive market reaction ($Payout * Tq = 0.003$). Although the preferable value of Tobin’s q ratio is about 1, some investors may believe that the ratio does not disclose all investment opportunities of the companies. In this case, some local investors can see positive trends of local companies and do not rely on the ratio, which is demonstrated by positive but insignificant Tq (1.797) for non-cross-listed years. This changes when the companies start being listed in the US market. Negative and significant Tobin’s q ($Tq = -0.437$) implies that foreign investors do not share optimistic views on the firms’ investment opportunities and consider the firms to be overvalued. In the ‘ $CL = 0$ ’ column, the interaction of $Payout$ and Tq shows the negative result (-0.028), which can be linked to the local customs to fund firms’ investment opportunities by retained earnings. Another significant variable is $Yield$ (-5.296), which infers that domestic investors also appreciate firms which reinvest their earnings rather than distribute them. Overall the fact that the key interaction ($Payout * Tq$), which is significantly different for both columns, indicates that the funding strategies of future investment projects are differently perceived by investors in the Four Tigers’ markets and in the US market.

Model 4 – The key interaction $Payout * Tq$ (0.067) is positively significant at 1% and consistent with the Hypothesis 4. Payout ratio of the cross-listed companies can be used as a signal of optimistic prospects of future earnings. The Tobin’s q ratio shows the negative and significant result ($Tq = -8.319$). The comparison of these results with the respective results of the Model 3 suggests that in cases of investment opportunities the significance of payout policies is correctly reflected in stock returns, key variables in both models show similar, in terms of relationship, impact on the dependent variables. The $Payout$ variable shows significant differences with the results of Model 2. In Model 4, the coefficient of the $Payout$ is significant and negative for both subsamples, investment opportunities noticeably alter the relationship of dividends payout and further earnings growth suggesting that the firms can facilitate future earnings by retention of capital. Significant control variables $Size$, AG and $EPSGR$ show similar results as in the Models 2. The coefficient of the ROE suggests that management’s efficiency is an important factor in the case of the cross-listed firms which take investment opportunities in order to increase their future earnings. The dividend yield shows a significant and negative effect on the future earnings implying that investors foresee growth of the future earnings and ready to pay more for the stocks of cross-listed firms with investment opportunities. Overall, the comparison of subsamples in the Model 4 suggests that while the firms are at a growth stage the most important factors regarding future earnings growth are the expansion of assets and general environment on the domestic market. The picture dramatically changes after the firms cross-list on the US market. Ability to efficiently manage the firm, payout policy, and amount of investment opportunities come to the forefront.

5. CONCLUSION AND DISCUSSION

Using the sample of “Four Tigers”, this paper investigates the influence of cross-listing effect and payout policy on firms’ performance. Abnormal returns and earnings growth are employed as proxies of firm performance. Earnings’ growth relates to the performance of managers while abnormal returns represent investors’ perception of it.

An investment opportunity has a significant moderating effect on the relationship of dividend payout and abnormal returns of cross-listed companies. Investment opportunities, represented by Tobin’s q, are negatively related to the abnormal returns and to the future earnings’ growth. This might mean that foreign investors undervalue the firms and consider their stocks to be risky. Investors change their perception when managers convey their optimism by paying out cash dividends. This fact signifies that foreign investors are cautious about the stocks from the countries of the sample. They do not easily trust the corporate forecasts and start buying

stocks only when the companies positively convey dual signals (i.e. payout increases together with increased investment opportunities).

Overall, the cross-listing significantly affects the firms' payout policy and the preferences of the US investors are different from domestic. According to the results, it can be inferred that the companies, before being cross-listed on the US market, use as a source of financing their investment plans wealth of outstanding shareholders by distributing less or no dividends. This investment-funding scheme changes after the companies become listed on the US stock market. US investors value higher the companies which distribute part of their earnings, so later they can reinvest funds back to the companies on their own free will.

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