The global preference for dividends in declining markets

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Abstract

We find that investors across the globe differentially prefer dividend-paying stocks over non-dividend-paying stocks more in declining markets than in advancing markets, whether in developed or emerging markets or before or after the 2008 global crisis, even accounting for growth opportunities, size and risk effects. Dividend paying stocks outperform non-dividend paying stocks, by between 0.63% (China) to 3.79% (Canada) more per month in declining markets than in advancing markets. In declining markets, dividend paying firms outperform by more than any underperformance in advancing markets. Our findings show the relative outperformance of dividend paying firms, both prior to and after the 2008 sub-prime crisis, separately assuming a segmented and a fully integrated global equity market, and excluding the month of dividend declaration. The result is also robust across subsets of emerging and developed markets, across legal environments and in respect to high and low levels of dividend payer participation. In summary, we find that it is a global result that dividends do matter to shareholders, but especially so in declining markets.

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1 Introduction

Around the globe, some corporations send returns to their shareholders via dividends, while others to not. These corporations exist in different countries, with different economic systems at different levels of development, different taxation systems, different legal systems and protections, and so on. Investors (whether local or global) in stock markets around the globe therefore have a choice of investing in corporations from which they will receive a dividend and those from which they will not. While the question of the role and importance of dividends has generated hundreds of papers over the decades since Lintner's seminal work, much of this research has been on the corporate, institutional and legal determinants of particular payout policies, the effects of changes in policies on future asset returns, or on the managerial elements of payout policy setting. Much less work has been undertaken on whether dividends are preferred under different market conditions. If we take the Modigliani-Miller propositions as holding, then regardless of whether markets are advancing or declining dividends should not matter to the returns of stocks.[1] Recent research by Fuller and Goldstein (2011) suggests that dividends do matter, and matter more in declining (as opposed to advancing) markets, although those results were only examined in one large developed country (US), and therefore only under one economy and legal system.

In this paper, we evaluate dividend and non dividend paying stocks across the market cycle around the globe, across a variety of developed and emerging economies with different legal systems and tax regimes. We find substantial international evidence that investors differentially prefer dividend-paying stocks over non-dividend-paying stocks, more in declining markets than in advancing markets. This finding is robust across markets at different levels of economic development, different legal environments, and as to the proportion of stocks in a market that are dividend payers. These results therefore have implications for the relative importance that investors place on dividends under different market conditions *regardless* of the tax policies, legal systems, or economic development of the markets.

Specifically, we look at dividend-paying and non-dividend-paying listed firms in seven developed (Canada, France, Germany, Italy, Japan, the UK and the USA) and five developing markets (Brazil, China, India, Russia and South Africa), from January 1995 to December 2011. This sample includes a variety of legal, economic, and tax systems across periods that include boom and bust cycles, including the recent global Great Recession and recovery period. Across all 12 countries, we find that across all months that dividend-paying stocks outperform non-dividend paying stocks.[2] We also find that dividend-paying stocks do better than non-dividend-paying stocks in declining markets (when the local market index is declining), although this effect is stronger in the developed markets. In nine of the

[1] Even allowing for the incompleteness of the MM propositions, as demonstrated by DeAngleo and DeAngleo (2006), dividends matter if only for the ability of dividend paying stocks to destroy wealth via suboptimal payout policies.

[2] Interestingly, the overall stock return for non-dividend-paying stocks was negative for all developed countries, except for the US.

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twelve markets, we find that non-dividend-paying stocks statistically do better in advancing markets. However, notably, we find that the outperformance of dividend-paying stocks over non-dividend-paying stocks by more in declining markets than in advancing markets. This effect is stronger in the developed markets and in South Africa than it is in Brazil, India, and China, but it is statistically significant in all countries.

Fama-MacBeth (1973) regressions controlling for (local market) beta, size, and book value confirm these results, with the US showing a 3.25% per month outperformance of dividend-paying firms in declining markets over advancing markets, followed by Russia at 3.10% and Canada at 3.07%,[3] while the lowest results were 1.40% for the UK and 1.48% for India. The outperformance for dividend-paying stocks over non-dividend-paying stocks in declining over advancing markets held both for the 1995-2007 pre-Crisis period and the 2008 to 2011 Great Recession and recovery period for both developed and emerging nations. The effects were, interestingly, slightly weaker during the more recent period for the developed nations, but not notably different for the emerging markets (except for Brazil, where the effect was slightly stronger in the recent period.) The results also hold if we instead use the MSCI All Country Weighted Index instead of the local country index to determine advancing or declining markets. While we find the results hold for both developed and emerging economies, we find that the outperformance of dividend-paying stocks in declining verses advancing markets over non-dividend paying stocks are even stronger in emerging economies than in the developed markets. Similarly, while we find that the results hold for countries with Common Law legal systems (Canada, India, South Africa, UK, and USA) as compared with Civil Law legal systems (Brazil, China, France, Germany, Italy, Japan, and Russia), the results are slightly larger in the Civil Law countries. Other tests demonstrate that the results are invariant to the proportion of firms in the country paying dividends or the proportion of the market capitalization of the dividend-paying firms in the country.

Overall, our results suggest that around the world investors do care about dividends and more so in declining markets than in advancing ones. Given the variety of legal systems, economies, tax systems, and time periods examined, this differential preference based on the state of the market appears to be a universal preference, and not driven by local particulars. This global result could either be a function of a universal human investor preference, or a globally-integrated financial system where preferences by those with capital are expressed by investing in all markets, or both.

The remainder of the paper is set up as follows. Section 2 provides some motivation for the tests that follow. Section 3 provides some data and some summary statistics on the firms in each of the seven developed nations and the five emerging economies. Section 4 contains the main empirical results. Section 5 provides some robustness checks, including comparisons of the results pre- and post-2008, using the MSCI All country weighted index, not including the dividend declaration month, and comparisons across market development, legal structures, and payout prevalence. Section 6 provides a very brief conclusion.

[3]For the Fama-MacBeth regressions, all markets (including the US) showed outperformance of dividend-paying stocks over non-dividend-paying stocks in both advancing and declining markets.

2 Motivation

Investors face a variety of choices of firms in which to invest in markets around the globe. One area in which these firms may differ is their dividend payout policies. Some firms pay high, others low, others yet no dividend. Indeed, the phenomena of the secular decline in the proportion of dividend paying stocks has been noted across markets, from the initial findings of Fama and French (2001) to the international evidence provided in Fatemi and Bildeck (2011).

Firms that pay dividends now (as compared to their peers) may be attractive for particular clienteles and at different times (see, for example Baker and Wurgler (2004)), but an interesting question arises when we consider market direction. When markets are declining would investors prefer dividend paying stocks (cash flow now versus reduced investment and potentially lower cash flow later) over non payers? A free cash flow approach (as per Jensen (1986)) suggests that there is an increased usefulness in paying dividends and thus binding the managers to avoid waste when the economy is poor. Proponents of a signaling view might suggest that even maintaining dividend payments in a economic downturn signals management confidence in excellent future prospects for the paying company. Thus the two major competing theoretical models around dividends both suggest that investors should favor dividend paying stocks disproportionally over non payers when the economy, proxied by the markets, is in a weaker mode.

This finding has been confirmed for the United States by Fuller and Goldstein (2011). They confirm that dividend payers outperform, by a considerable margin, non payers in declining markets over advancing ones. This overperformance is not explained by firm characteristics other than the dividend payment status, and is robust to a number of specification issues. Crucially, the finding is robust to high versus low Tobins Q and for high versus low cash flow, and it holds for changes as well as levels of dividends. They also find evidence that high cash flow firms cutting dividends outperform while low cash flow firms are penalized when cutting dividends in declining markets relative to cutting dividends in advancing markets.

The results in Fuller and Goldstein (2011), however, are limited to the US, the largest developed economy with one legal system and a relatively similar tax code. An international verification of these findings is particularly useful given that the typical US stock pays dividends on a quarterly basis as opposed to the international norm of semi-annual or annual. Thus, stocks paying identical annual dividend yields, one quarterly - in the USA - and the other annual should be priced differentially if only from a time value of money perspective. One possibility is that in the Fuller and Goldstein results these are being driven, in part, by this "bird in the hand" issue, where investors prefer more frequent and sooner cash payments in uncertain environments. An international check on this question is therefore one way of ascertaining both whether the issue is truly one common across firms and one which is driven by bird in hand considerations.

To see if this preference is universal or instead unique to one particular highly developed

system, we examine these issues across multiple countries with notably different levels of economic development, legal systems, tax codes, etc. We find results that confirm, in an international setting, the Fuller and Goldstein findings. Similar to Denis and Osobov (2008), Chay and Suh (2009), and Brockman and Unlu (2009), we focus on seven of the largest global markets i.e., the G-7 - located in Canada, France, Germany, Italy, Japan, the UK and the USA. In addition, we examine markets located in five of the fastest growing emerging market economies, i.e., the BRICS countries - Brazil, Russia, India, China and South Africa. Across the equity markets of the both the G7 and the BRIC nations, we find that investors differentially prefer dividend-paying stocks over non-dividend-paying stocks, that this is greater in declining markets than in advancing markets. This result is supported across markets at different levels of economic development, located in different background legal environments, and with high and low levels of participation of dividend paying firms.

3 Data and summary statistics

We use the Datastream and Worldscope databases to identify a sample of dividend paying and non-dividend paying firms internationally. We extend the existing literature, with regard to dividend payers outperforming in declining markets (Fuller and Goldstein, 2011), by examining related cross-sectional and time-series evidence in several established and emerging financial markets. Following recent international studies, such as Denis and Osobov (2008), Chay and Suh (2009), and Brockman and Unlu (2009), we focus on seven of the largest global markets i.e., the G-7 - located in Canada, France, Germany, Italy, Japan, the UK and the USA. In addition, we examine markets located in five of the fastest growing emerging market economies, i.e., the BRICS countries - Brazil, Russia, India, China and South Africa.[4]

We study listed firms in these countries, with an average price greater than US$ 1.00, during the 17-year period (up to 204 calendar months), from January 1995 to December 2011.[5] We start our period in 1995 due to data limitations, as firm-level coverage for markets beyond the USA is quite limited during the period prior to 1989 and the data for the Chinese, Russian and South African stock exchanges is available only subsequent to 1993. However, the period from 1995 to 2011 is a period that experiences several notable phases of declining and advancing markets.

For each firm, we collect its month-end stock price, market capitalization, book value of equity and share volume data from Datastream.[6] We search the Datastream database

[4]These economies exhibit an average annual GDP growth rate of more than 7% per annum in the past decade.

[5]For example, the data for the RTS Index is available from October 1995 and the data for the FTSE / JSE All Share Index is available from August 1995. As a result, we have only 195 and 197 calendar month observations of data for Russia and South Africa, respectively.

[6]In order to account for outliers, we winsorize our variables, namely the stock return, the firm's beta, the market capitalization and the book value of equity, at the upper and lower 1% levels for each country separately.

for active as well as dead and suspended listings in order to avoid survivor bias and select companies with usable International Securities Identifying Number (ISIN) and industry codes. We eliminate companies with similar ISIN codes and similar names, companies that give error codes in downloading data and companies that report in U.S. dollars or any other foreign currency. The data are denominated in the local currency numeraire.

While Litzenberger and Ramaswamy (1979, 1980, 1982) define a dividend-paying stock-month as exclusively the month in which the firm pays a dividend, due to limitations in available data we adopt a different approach as many of the firms in our sample are only annual dividend payers. Instead, we follow Black and Scholes (1974) and Fuller and Goldstein (2011), and classify a stock as a dividend paying stock if that firm has paid dividends in the recent past and is expected to continue paying on a regular basis. Specifically, we classify a known regular annual dividend payer as a dividend paying stock for all twelve months, not just for the one month of the year in which a dividend is paid. Performing this procedure on a monthly basis, we classify firms as either dividend- paying or non-dividend-paying firms.

We adopt two complementary methods to identify dividend paying stocks. First, both Datastream and Worldscope report the firm-level dividend data at an annual frequency. On a month-by-month basis we download the available annual dividend data viz. dividend per share, dividend yield and total cash dividend paid, in the local currency numeraire, and we consider all the firms with non-zero reported dividends as dividend paying firms. Further, we extend our sample of dividend payers by using the dividend declaration date data from Worldscope. If the firm reports a dividend declaration date, and the dividend pay out on that date is non-zero, we classify the firm as a dividend payer. Those firms for which either the dividend pay out data is zero (from Datastream and Worldscope) or we have a dividend declaration date with no information on dividend payout amount (from Worldscope) are classified as non-dividend payers.

To differentiate between declining and advancing markets, we follow Fuller and Goldstein (2011) and we initially adopt a simple rule. We collect the local value-weighted benchmark index returns for each month from Datastream. We classify an advancing market as a month during which the return on the particular local benchmark index is positive, while a declining market is one where a negative monthly return is posted. We find that except for Japan, all the other eleven markets have more advancing months than declining month.[7]

Finally, to estimate excess returns, we collect the three month local (country-specific) treasury bill return for each month for each country. The return of the treasury bill, like the returns of the stocks, are denominated in the local currency numeraire. In this way, the excess return (calculated as the difference in month t between the stock return in month t and the local country-specific treasury bill in month t) in some sense removes the effects of local inflation and therefore provides for easier comparison across countries/currencies.

[7]Later, as a robustness check, we change this rule to use the MSCI All Country index as the determinant of advancing or declining markets; see Section 5.2. As demonstrated in that section, all results continue to hold.

Overall, our sample includes 16,741 listed firms in seven developed and five developing markets for up to 204 calendar months, from January 1995 to December 2011.[8] In total, we have 1,770,502 firm-months in our sample. We classify each firm as either dividend-paying or non-dividend-paying for every month of the sample period in which data are available. We undertake our analyses in respect to all twelve markets separately to investigate if the differential outperformance of dividend payers in declining markets, observed in Fuller and Goldstein (2011) for the US market, is present internationally.

3.1 Summary statistics

In table 1, we describe the dividend and non-dividend paying months in our sample, for 16,741 publicly traded firms in twelve countries from January 1995 to December 2011 (204 months in total).[9] We find that across the G-7 and BRICS countries, dividend paying firms are not only larger in terms of market capitalization and have higher share prices, but, unlike findings reported in relation to the United States in Fuller and Goldstein (2011), they are also more liquid in terms of their trading volume (except in Japan).[10] Even when dividend paying firms constitute a minority of firms listed on an exchange, they represent the majority of the exchange's market capitalization (e.g. in Canada and in the United States). In unreported results examining advancing and declining markets, we find that the previously mentioned relative relations between dividend paying and non-dividend firm paying months do not vary significantly with overall market movements. Taking these summary statistics together, we show that most publicly listed firms internationally are dividend payers which tend to be relatively large and relatively well traded with higher share prices, and these results don't vary significantly across market movements.

[Please insert table 1 about here]

Similarly, Table 2 demonstrates substantively consistent results in respect to dividend payers and non-dividend payers firms' market beta measurements, across advancing and declining markets internationally. In the full sample, the market beta of dividend payers tends to be lower, or in the instance of firms listed in Brazil and Italy, indistinguishable to the market beta of non-dividend payers. For advancing markets, the situation is reversed, and dividend payers have a higher beta than non-dividend payers. In contrast, it is interesting to note that in declining markets non-dividend payers exhibit significantly higher

[8] While we generally examine each country separately, firms in G-7 countries represent almost 80% of our sample - 13,541 firms - while the remaining 20% of our sample is related to the BRICS countries. By examining each market separately helps prevent the large proportion of G7 firms from swamping the results.

[9] Internationally, it is interesting to note that more of the firm month observations are generally associated with dividend paying firms, except in Canada and in the United States, where less than half of firm monthly observations are associated with dividend paying firms.

[10] Our findings for the US in this regard may be different than in Fuller and Goldstein (2011) due to different time periods, particularly the inclusion of the post 2008 crisis period. In Japan, regular dividend payments and a low volume of trading are associated with firms in keiretsu business groups (Dewenter and Warther 1998).

market beta in each country examined. In fact, the difference-of-difference tests suggest that the observed differential in market beta in declining markets is significantly larger (at the 1% level) than the market beta differential in advancing markets, where dividend payers tend to exhibit a higher market beta.[11] The overall implication is that despite dividend payers showing lower market beta measurements in virtually every instance (except Italy and Brazil) the full sample of market movements, betas may vary across advancing and declining markets differentially across non-dividend paying and dividend-paying stocks.

[Please insert table 2 about here]

4 Empirical results

4.1 Stock returns

To study how investor preferences for cash dividends vary across market movements, we calculate the returns of dividend paying and non-dividend paying firms for all markets, and in advancing and declining markets separately. We present these non-risk adjusted results in Table 3. In the full sample, we show that average dividend payers' stock returns are, across markets internationally, significantly larger than those of non-dividend payers. This outperformance of dividend paying firms arises principally from the periods when the market is in decline. In fact, in line with findings reported in Fuller and Goldstein (2011), the stock returns of non-dividend paying firms tend to outperform significantly in advancing markets, except in the instances of France, Germany and Russia, where the outperformance is not statistically significant. Unsurprisingly, the difference-of-differences tests suggest that the outperformance of dividend payers in the declining markets is significantly larger than the underperformance of these firms in the advancing markets, and that these differences are significant at the 1% level. This significant outperformance ranges from as low as 0.63% per month in China to 3.79% per month in Canada.

[Please insert table 3 about here]

These findings underpin our first major empirical prediction - around the world, in very different markets, investors differentially prefer dividend paying stocks more in declining markets than in advancing markets. A natural question arises as to whether this documented performance difference, across dividend paying and non-dividend paying firms in

[11] We note that the difference of differences that we use in this paper is the difference of non-dividend-paying stocks minus dividend-paying stocks in advancing markets minus the difference of non-dividend-paying stocks minus dividend-paying stocks in declining markets. A positive number for this test indicates that dividend-paying stocks exhibit larger test statistics in non-dividend-paying stocks by more in declining markets than in advancing markets. Due to the nature of the data (unequal number of observations across all four potential categories), throughout the paper we use only parametric methods to test the significance of the difference of difference test.

respect to advancing versus declining markets, is resilient to corrections for risk and other possibly mitigating factors.

4.2 Fama and MacBeth (1973) style regressions

In a similar vein to Grinblatt and Han (2005) and Fuller and Goldstein (2011), we conduct Fama and MacBeth (1973) style regressions to determine if dividend paying stocks outperform non-dividend payers in declining markets, while simultaneously controlling for firm size (Keim, 1985 and Christie, 1990) and market effects. We run the regression cross-sectionally for each month for every firm, as in Fama and MacBeth (1973), for all the twelve countries individually. In particular, we estimate the following specification:

$$r_{i,t} - r_{f,t} = \alpha_{i,t} + \gamma_{i,t}\beta_t + \eta_{i,t}LnBVEq._t + \mu_{i,t}LnMV_t + \delta_{i,t}DIV_t + \epsilon_{it}.$$

Where the dependent variable, $r_(i,t) - r_(f,t)$, is the excess monthly return on a stock over the three-month local (country-specific) treasury-bill return in month t, β is the firm's beta measured for the prior year for month t and Ln BVEq is the natural logarithm of the firm's book value of equity for month t in local currency units. Ln MV is the natural logarithm of the firm's market capitalization for month t in local currency units and DIV is an indicator (dummy) variable that equals one if the firm is classified as a dividend paying firm in month t and zero if the firm is categorized as a non-dividend paying firm in month t.

[Please insert table 4 about here]

In table 4, we report the basic results of these regressions across the twelve markets studied. The results show, in each of the twelve markets, irrespective of the market's size or the nature of the market, viz., developing or developed markets, dividend payers outperform the non-dividend payers in declining markets. Although the extent of outperformance varies between the markets of the UK (1.40% per month), India (1.48% per month) and France (1.92% per month) to the markets of the USA (3.25% per month), Russia (3.10% per month) and Canada (3.07% per month), the difference in performance, across declining and advancing markets, is always significant at the 1% level. This clearly supports our hypothesis that investor's value dividend paying firms more in declining markets, and more so than in advancing markets, internationally.

We also perform robustness tests, adopting similar Fama-MacBeth (1973) regression specifications, according to the size of market movements. Specifically, following Fuller and Goldstein (2011), we classify advancing markets into large positive movements (when the local benchmark index return for that month is in excess of +5%) and small positive movements (when the local benchmark index return is between 0% and +5%). For declining markets, we classify movements into small negative movements (when the local benchmark index return for that month is between 0% and -5%) and large negative movements (when

the local benchmark index declined by more than 5%). In results not reported here for space reasons, we find substantively similar results to those reported in Fuller and Goldstein (2011). Overall, the results generally tend to become even more persuasive with larger market movements, albeit there is a small subset of inconsistent findings.[12]

5 Robustness tests

In this section, we present a variety of robustness checks of our main empirical prediction, that investors differentially prefer dividend paying stocks over non-dividend paying stocks more in declining markets than in advancing markets.

5.1 Pre-crisis (1995 to 2007) and crisis (2008 to 2011) periods

To verify that our overall result is not specific to the pre-crisis period, we perform the Fama and MacBeth (1973) style regressions on sub-periods before and after the recent global economic crisis. Since the majority of the stock markets that we study were at their all-time high in December 2007 and showed a steep downturn thereafter, we describe the period from January 1995 to December 2007 as a "Pre-crisis" period and the subsequent period, from January 2008 to December 2011 as a "Post-crisis" period, although we note it clearly contains the crisis itself. An interesting question is whether investor's evident preference for dividend paying firms in declining markets changes significantly during the period of the financial crisis.

In table 5, we report our findings. We show that in our "Pre-crisis" period, the dividend payers significantly outperform the non-dividend payers. Although, as in previously reported findings, there is considerable variety in the extent of the outperformance. For example, it ranges from 0.77% per month in Russia to 3.44% per month in Canada.

[Please insert table 5 about here]

The results during the "Post-crisis" period are generally substantively similar to those during the "Pre-crisis" period.[13] In particular, the difference-of-difference results for the outperformance of dividend payers in declining markets over the two sub-sample periods, suggests a small reduction in the size of the effect in the "Crisis" period, across the G7 markets, except in the instance of the Canadian market where the reduced effect is not statistically significant. It is interesting to note that in the BRICS there is no change in the extent to which investors differentially prefer dividend-paying stocks over non-dividend

[12] These results are available from the authors on request.

[13] All of are the same positive sign in both periods, and all besides Russia are significant in both periods. (The results for Russia is positive in the post-crisis period but is not significant at the 5% level in the post-crisis period.)

paying more in declining markets, except in the instance of Brazil where this preference becomes significantly more pronounced in the "Crisis" period. Taking these findings together, the preference of investors for dividend-paying stocks over non-dividend paying more in declining markets, is evidently resilient to the financial crisis, albeit the preference appears to diminish in the G7.

5.2 MSCI All country weighted index

In the previous tables and analyses, an advancing or declining market was defined relative to the local stock market index of the country in which the stock was listed. In some sense, this is a test assumes either globally segmented markets or that investors' preferences for dividend payments are a function of local market conditions. An alternative possibility is that capital markets around the world are fully globally integrated and what is of concern to investors with respect to their differential dividend preference is the global market movement. One motivation for this possibility is that a global stock market index is an appropriate reference market, rather than the assumption adopted hitherto that the markets studied are effectively segmented from the global market (see, for example, Bekaert and Harvey (1995) or Dimitriou and Simos (2012) for more recent evidence).

To investigate this possibility, in Table 6 we change the definition of whether it is an advancing or declining market from being determined locally (country-specific) to a global definition that is similar in every month for all twelve markets under consideration. Specifically, we use the MSCI All-Country Weighted Index (MSCI ACWI) as our proxy for a global market index to determine a global advancing or declining market.

Using a single index for all twelve countries, however, requires some adjustments due to currencies. In our previous country-by-country tests, each country had a local index and was in local currency. However, the global stock market index adopted here, the MSCI ACWI, is reported in United States dollars. Hence, the control variables, (viz. the monthly book value of equity and monthly market capitalization) have been converted from the local currency unit to the United States dollar, by using the end-of-the-month exchange rates. For consistency, the end-of-the-month stock price in U.S. Dollar was sourced in Datastream to calculate the monthly returns. Simultaneously, the market beta, was recalculated using the newly obtained monthly firm-level stock returns and monthly MSCI ACWI returns.

Even with these adjustments, the reported findings in Table 6 indicate that when we specify a global stock market index instead of a local stock market index as our market of reference, investors still value dividend-paying firms more in declining markets, and more so than in advancing markets. This outperformance of dividend paying firms is consistent across developed and emerging markets alike, albeit the result is slightly less significant in emerging markets.[14] Even so, the results in Table 6 using a single global market and

[14]Only two of the five emerging markets - China and India, show a significant difference-of-differences at the 1% level while the other three markets show a significant result, at the 5% level. In contrast, all the developed markets report a significant difference-of-differences, at the 1% level. In addition, the range of

converting currency into US dollars is remarkably similar and supportive of the results in Table 4 using local market indices and currencies.

Taking these findings and observations together, we show significant support for the central empirical prediction of this article that investors differentially prefer dividend-paying stocks over non-dividend-paying stocks more in declining markets than in advancing markets. The results show this effect is evident internationally, irrespective of whether the benchmark market selected is the local market or a global market index.

[Please insert table 6 about here]

5.3 Dividend declaration month

It is well known that dividend paying stocks show abnormal (better) performance around the dividend declaration date (Dewenter and Warther, 1998 and Chemmanur et al. 2010). To test the validity of our hypothesis that dividend payers outperform non-dividend payers in declining markets more than in advancing markets, we investigate if this phenomenon is not principally driven by the firm-level abnormal return in the dividend declaration month.

We identify a sub-sample of firms for which we have available dividend declaration dates, which limits our sample to 732,754 firm-month observations. We then exclude the dividend declaration months from our sample to remove any firm-level abnormal returns in the dividend declaration month. As a result, our sample now only has months in which there was not a dividend declaration. In Table 7, we report our results for the Fama and MacBeth (1973) style cross-sectional regressions (using local indices and currencies as in Table 4).

[Please insert table 7 about here]

The validity of our hypothesis holds. We find that in G-7 countries, in declining markets more than in advancing markets, dividend payers significantly outperform non-payers at the 1% level, with the exception of Italy, where it is significant at the 5% level. In line with the variation reported in Table 4, in regard to the level of outperformance for the full-sample, we find a significant variation from 0.99% per month in the UK to 3.33% per month in Japan. Turning to our set of emerging markets - the BRICS countries, we observe substantively similar results though at the 5% level of statistical significance and with considerably less variation in the level of outperformance, for four of the five markets.[15] Taking these findings together, our hypothesis that investors differentially prefer dividend-paying stocks over non-dividend paying stocks more in declining markets than in advancing markets is supported in the constrained sample of data, and is robust to removing any abnormal returns around dividend declaration dates.

variation in outperformance of dividend payers in declining BRICS markets (0.55% per month for South Africa to 1.89% per month for India) is also not as large as the variation exhibited in the G-7 markets. The result in the G7 varies markedly, from 0.90% per month in Japan to 3.47% per month in the US.

[15] In South Africa, while outperformance is reported, it is statistically insignificant outperformance.

5.4 Market development, Legal structure and Prevalence of Pay out

Do investors' preferences for dividend-paying firms in declining markets over advancing markets vary with respect to market development, the background legal environment, or the prevalence of dividend payers (by count or market capitalization) in the market? Twu (2012) shows that stock market development negatively influences the propensity to pay dividends. The law and finance work of La Porta, Lopez-de-Silanes, Shleifer and Vishny (2000) et seq have shown that the legal environment of firms crucially influences the pay-out policy, with greater creditor rights being associated with greater payout. Finally, the secular decline in payout noted by Fatemi and Bildeck (2011) may reflect either lower payouts overall globally or a differential payout response in different countries.

[Please insert table 8 about here]

In Table 8, we report our findings in respect to these questions. In Panel A, we show that the outperformance of dividend payers, in declining markets more than in advancing markets, is evident across both developed G-7 countries and emerging BRICS countries. The differential effect appears to be about twice as strong in BRICS countries (3.11% per month) than in the G7 countries (1.67% per month), and the difference between the BRICS and the G7 of 1.44% per month is statistically significant at the 1% level. This finding suggests the relative importance of dividend payout to investors in emerging economies, in declining markets, compared to the preference of investors in developed economies. It also reinforces the findings of Twu (2012), as if more developed markets are less dividend inclined then one might reasonably find more impact in markets 'richer' in dividends.

In Panel B, we investigate the importance to investors of dividend payers, more in declining than in advancing markets, across different legal frameworks - common law and civil law countries. Dividend payers outperform non-payers in declining markets, both in civil law and in common law countries. In line with findings presented in La Porta et al. (2000), it is interesting to note that dividends are valued more in civil law countries. Civil law countries tend to exhibit weaker minority shareholder rights compared to common law countries. Using the difference-of differences test, we report a significantly (1% level) better performance, of 0.25% per month, in civil law countries, relative to common law countries.

Finally, we identify subsets of markets predicated on the proportion of firms paying cash dividends and the proportion of market capitalization related to cash dividend payers. In Panels C and D, we report that the outperformance of dividend payers, in declining markets more than in advancing markets, is evident across these subsets of markets. However, while the subsets of markets exhibiting a prevalence of dividend payers (by count or market capitalization) outperform, the level of outperformance is not statistically significant.

These findings show that the principal empirical prediction of this paper, that investors differentially prefer dividend-paying stocks over non-dividend-paying stocks, more in declining markets than in advancing markets, is supported across markets at different levels of

economic development, located in different background legal environments, and with high and low levels of participation of dividend paying firms.

6 Conclusion

Firms pay dividends, and investors invest in these firms over non-dividend paying firms, for a variety of reasons. The two main theoretical arguments, that the dividend acts as a signal for future earnings or that it acts to bind management, both have implications for the role of dividends in declining versus advancing markets. Building on US evidence, we show here that in a wide variety of international markets (from the G7 to the BRICS nations) firms that pay dividends outperform those that do not by more in declining markets than in advancing ones. This finding is robust across countries and institutional settings, and over time. The effect of the 2008 financial crisis is evident here as in so many other areas, with this strong finding being replicated but in a less consistent manner, post 2008 as compared to pre 2008. However, the results are robust to developed or emerging economies, legal structure, time period, payout prevalence, and a variety of other factors. Overall, our findings suggest that the differential preference for dividends in declining markets over advancing markets is a universal trend, and not one that is a function of a particular country's level of development or tax or legal structure. Such a finding helps us understand investor preferences around the world.

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Table 1

Summary statistics. Summary statistics for 16,741 listed firms in twelve countries for the 204 calendar months from January 1995 to December 2011. All data are from Datastream and Worldscope in local currency units (LCU). There are 1,770,502 firm months in total in our sample. The benchmark index is the local (value-weighted) index. No. of firms in sample represents the country specific sample size in this study. Market movement - advancing / declining is the number of advancing and declining months on the respective benchmark index. Advancing markets are the months in the sample when the local benchmark index has a positive return; declining markets are the months in the sample when the local benchmark index does not have a positive return. Types of payers divides the sample into Non-Dividend (Non-div.) and Dividend (Div.) paying firms. Monthly volume is the average monthly trading volume. Market cap. of firm is the average annual market capitalization of the firm in millions of LCUs. Div. per share is the average annual dividend per share in local currency unit. Div. yield is average annual dividend yield in percentage. No. of obs. is the total number of firm-months. Prop. of payer is the average ratio of dividend paying firms to all firms in the corresponding market. Prop. of market cap. for payer is the average of ratio of annual market capitalization for the dividend paying firms divided by the annual market capitalization for all the firms in the corresponding market.

Country (LCU)	Benchmark index	No. of firms in sample	Market movement - advancing / declining (months)	Type of payers	Monthly volume	Market cap. of firm (million LCU)	Div. per share (LCU)	Div. yield (%)	No. of obs. (firm months)	Prop. of payer	Prop. of market cap. for payer
Panel A: Developed markets - G-7											
Canada	S&P /	2125	121 / 82	Non-div.	14266	284	0.00	0.00	106318	0.374	0.883
(Can. $)	TSX 60			Div.	28889	2146	0.69	5.50	63522		
France	CAC 40	1313	112 / 91	Non-div.	10742	220	0.00	0.00	37325	0.694	0.893
(Euro)				Div.	29757	1840	1.45	4.18	86020		
Germany	DAX 30	1324	120 / 83	Non-div.	21234	186	0.00	0.00	51361	0.542	0.914
(Euro)				Div.	26572	1966	1.49	3.61	72623		
Italy	FTSE MIB	388	109 / 94	Non-div.	16355	347	0.00	0.00	9714	0.761	0.872
(Euro)				Div.	39340	2354	0.19	2.91	31029		
Japan	Nikkei 225	2868	98 / 105	Non-div.	30477	38007	0.00	0.00	51398	0.875	0.800
(Jap. Yen)				Div.	26753	151802	106.03	1.64	361829		
U.K.	FTSE 100	1993	121 / 82	Non-div.	12483	228	0.00	0.00	38974	0.757	0.854
(GB Pound)				Div.	35098	1334	9.67	3.73	134610		
U.S.A.	S&P 500	3530	122 / 81	Non-div.	31545	1674	0.00	0.00	251628	0.486	0.744
(U.S. $)				Div.	43932	4856	0.68	3.01	238049		
Panel B: Emerging markets - BRICS											
Brazil	Indice	421	114 / 89	Non-div.	11988	963	0.00	0.00	5925	0.812	0.744
(Braz. Real)	Bovespa			Div.	14605	2800	1.29	6.34	24937		
China	CSI 300	1156	107 / 96	Non-div.	15147	2981	0.00	0.00	21688	0.709	0.652
(Renminbi)	Index			Div.	18929	5593	0.10	1.08	52961		
India	BSE 100	1210	112 / 91	Non-div.	24708	14805	0.00	0.00	13103	0.866	0.650
(Ind. Rupee)	National			Div.	28920	27529	3.21	2.59	84712		
Russia	RTS Index	117	120 / 75	Non-div.	6003	36361	0.00	0.00	2141	0.592	0.893
(Rus. Ruble)				Div.	16304	304349	64.68	3.55	3100		
South Africa	FTSE / JSE	296	115 / 82	Non-div.	4769	2304	0.00	0.00	3566	0.870	0.810
(SA Rand)	All share			Div.	12142	9843	1.28	5.01	23969		

Table 2

Average beta with respect to different market movements. The table reports the average monthly beta for dividend- and non-dividend-paying stocks for the 204 calendar months from January 1995 to December 2011. Beta is the average end-of-the-month estimate of beta calculated using the end-of-the-month firm specific stock return, the return on the underlying benchmark index and the local (country-specific) three-month treasury-bill return. Advancing markets occur during months in our sample when the local benchmark index has a positive return; declining markets occur during months in our sample when the local benchmark index does not have a positive return. Difference of difference is the difference of beta of non-dividend-paying stocks minus beta of dividend-paying stocks in advancing markets minus the difference of beta of non-dividend-paying stocks minus beta of dividend-paying stocks in declining markets.

Country	Full sample			Advancing markets			Declining markets			
	Beta of non - div. payers	Beta of dividend payers	Difference	Beta of non - div. payers	Beta of dividend payers	Difference	Beta of non - div. payers	Beta of dividend payers	Difference	Difference of difference
Panel A: Developed markets - G-7										
Canada	0.724	0.535	0.189 *	0.385	0.579	-0.194 *	1.224	0.470	0.754 **	-0.948 **[a,b]
France	0.452	0.423	0.028 *	0.078	0.439	-0.362 **	1.062	0.404	0.659 **	-1.020 **[a,b]
Germany	1.100	0.518	0.582 **	0.609	0.957	-0.348 **	1.285	0.388	0.898 **	-1.246 **[a,b]
Italy	0.495	0.653	-0.158	0.220	0.514	-0.293 **	1.264	0.816	0.448 **	-0.741 **[a,b]
Japan	1.030	0.731	0.299 **	0.522	0.521	0.001	1.502	0.931	0.571 **	-0.570 **[a,b]
U.K.	0.993	0.806	0.187 *	0.242	0.931	-0.689 **	1.576	0.617	0.959 **	-1.648 **[a,b]
U.S.A.	1.231	0.736	0.494 **	0.830	1.307	-0.477 **	1.126	0.604	0.523 **	-0.999 **[a,b]
Panel B: Emerging markets - BRICS										
Brazil	0.063	0.433	-0.370	0.550	0.714	-0.164 *	0.871	0.707	0.164 **	-0.328 **[a,b]
China	0.990	0.668	0.322 **	0.675	1.024	-0.349 **	1.392	1.137	0.255 **	-0.604 **[a,b]
India	1.362	1.063	0.299 **	1.032	1.286	-0.253 **	0.877	0.746	0.132 **	-0.385 **[a,b]
Russia	0.949	0.709	0.240 *	0.870	1.088	-0.218 *	0.713	0.417	0.296 **	-0.513 **[a,b]
South Africa	0.953	0.824	0.129 *	0.358	0.863	-0.505 *	1.533	0.770	0.764 **	-1.269 **[a,b]

[a] Significance was tested using parametric tests for the differences of differences.
[b] Indicates the Wilcoxon sign-rank test is significant at the 1% level.
** indicates t-test is significant at the 1% level
* indicates t-test is significant at the 5% level

Table 3

Average stock returns with respect to different market movements. The table reports the average monthly return for dividend- and non-dividend-paying stocks for the 204 calendar months from January 1995 to December 2011. Advancing markets occur during months in our sample when the local benchmark index has a positive return; declining markets occur during months in our sample when the local benchmark index does not have a positive return. Difference of difference is the difference of stock return of non-dividend-paying stocks minus dividend-paying stocks in advancing markets minus the difference of stock return of non-dividend-paying stocks minus dividend-paying stocks in declining markets.

Country	Full sample			Advancing markets			Declining markets			
	Stock return of non - div. payers (%)	Stock return of dividend payers (%)	Difference (%)	Stock return of non - div. payers (%)	Stock return of dividend payers (%)	Difference (%)	Stock return of non - div. payers (%)	Stock return of dividend payers (%)	Difference (%)	Difference of difference (%)
Panel A: Developed markets - G-7										
Canada	-0.209	0.234	-0.443 **	3.373	2.285	1.089 **	-3.990	-1.287	-2.703 **	3.792 **,a,b
France	-0.929	0.149	-1.078 **	2.541	2.538	0.003	-3.436	-1.299	-2.137 **	2.140 **,a,b
Germany	-0.412	0.735	-1.147 **	2.043	2.038	0.006	-4.405	-1.569	-2.837 **	2.842 **,a,b
Italy	-1.041	0.164	-1.205 **	3.445	2.618	0.827 **	-4.722	-2.873	-1.849 **	2.676 **,a,b
Japan	-1.051	0.442	-1.493 **	4.459	3.433	1.026 **	-4.667	-2.616	-2.051 **	3.077 **,a,b
U.K.	-0.123	0.170	-0.293 **	2.217	1.448	0.769 **	-3.540	-1.409	-2.131 **	2.900 **,a,b
U.S.A.	0.097	0.300	-0.204 **	4.249	3.021	1.228 **	-4.082	-2.043	-2.039 **	3.267 **,a,b
Panel B: Emerging markets - BRICS										
Brazil	0.583	0.906	-0.323 *	5.109	4.950	0.160 *	-3.673	-2.868	-0.805 **	0.964 **,a,b
China	0.087	0.591	-0.505 *	7.717	7.464	0.252 **	-6.373	-5.999	-0.373 **	0.625 **,a,b
India	0.105	0.838	-0.733 **	7.194	6.867	0.327 **	-7.169	-6.267	-0.902 **	1.229 **,a,b
Russia	0.665	1.757	-1.092 *	6.606	6.338	0.269	-7.517	-5.510	-2.007 *	2.276 *,a,b
South Africa	-1.068	0.662	-1.730 **	3.459	2.155	1.305 **	-3.996	-1.729	-2.268 **	3.572 **,a,b

[a] Significance was tested using only parametric tests for the differences of differences.
[b] Indicates the Wilcoxon sign-rank test is significant at the 1% level.
** indicates t-test is significant at the 1% level
* indicates t-test is significant at the 5% level

Table 4

Fama-MacBeth (1973) returns using the local benchmark index. This table contains the average Fama and MacBeth (1973) coefficients of monthly ordinary least squares regressions run cross-sectionally for every dividend-paying and non-dividend-paying firm in the sample. The dependent variable is the excess return on a stock in month t, Beta (β) is the firm's beta measured for the prior year prior to the month t. Ln(MktCap.) is the natural log of the firm's market capitalization for month t in local currency units. Ln(BVEq.) is the natural log of the firm's book value of equity for month t in local currency units. Dividend is an indicator (dummy) variable that equals one if the firm is a classified as a dividend-paying firm in month t and zero if the firm is classified as a non-dividend-paying firm in month t. Obs. is the number of firm month observations. Avg. R^2 is the average R-squared for monthly ordinary least squares regressions. Declining markets are when the local benchmark index return is zero or less and advancing markets are when the local benchmark index return is greater than zero.

Country		Beta (β)	Ln(Mktcap.)	Ln(BVEq.)	Dividend	Constant	Obs.	Avg. R^2
				Panel A: Developed markets - G-7				
Canada	Full samp.	0.0005 **	0.0086 **	-0.0052 **	0.0043 **	-0.0386 **	169840	0.010
	Dec. mkts	-0.0072 **	0.0050 **	-0.0013 **	0.0135 **	-0.0681 **	68662	0.373
	Adv. mkts	0.0040 **	0.0083 **	-0.0065 **	-0.0172 **	-0.0024 *	101178	0.211
	Difference	**	**	**	0.0307 **	*		
France	Full samp.	-0.0004 **	0.0034 **	0.0009 **	0.0033 **	-0.0244 **	123345	0.005
	Dec. mkts	-0.0100 **	-0.0018 **	0.0051 **	0.0102 **	-0.0418 **	55824	0.365
	Adv. mkts	0.0049 **	0.0071 **	-0.0039 **	-0.0090 **	0.0047 **	67521	0.163
	Difference	**	**	**	0.0192 **	**		
Germany	Full samp.	-0.0007 **	0.0042 **	-0.0002	0.0054 **	-0.0300 **	123984	0.009
	Dec. mkts	-0.0102 **	-0.0010 **	0.0025 **	0.0179 **	-0.0481 **	52348	0.372
	Adv. mkts	0.0023 **	0.0074 **	-0.0022 **	-0.0101 **	-0.0070 **	71636	0.064
	Difference	**	**	**	0.0281 **	**		
Italy	Full samp.	0.0006 **	0.0032 **	-0.0007	0.0101 **	-0.0341 **	40743	0.009
	Dec. mkts	-0.0130 **	-0.0001	-0.0002	0.0128 **	-0.0481 **	19005	0.338
	Adv. mkts	0.0024 **	0.0048 **	-0.0012 *	-0.0099 **	0.0023	21738	0.109
	Difference	**	**		0.0227 **			
Japan	Full samp.	-0.0008 **	0.0041 **	-0.0002	0.0009	-0.0469 **	413227	0.007
	Dec. mkts	-0.0059 **	0.0022 **	0.0003	0.0140 **	-0.0749 **	212375	0.291
	Adv. mkts	0.0075 **	0.0030 **	-0.0025 **	-0.0111 **	0.0263 **	200852	0.313
	Difference		**		0.0251 **	**		
UK	Full samp.	0.0004 **	0.0045 **	-0.0017 **	0.0077 **	-0.0333 **	173584	0.008
	Dec. mkts	-0.0097 **	0.0007 **	-0.0011 **	0.0113 **	-0.0418 **	69840	0.399
	Adv. mkts	0.0030 **	0.0056 **	-0.0013 **	-0.0026 **	-0.0107 **	103744	0.126
	Difference	**	**	**	0.0140 **	**		
USA	Full samp.	0.0000 **	0.0049 **	-0.0031 **	0.0016 **	-0.0238 **	489677	0.004
	Dec. mkts	-0.0068 **	0.0020 **	-0.0020 **	0.0159 **	-0.0584 **	204949	0.289
	Adv. mkts	0.0030 **	0.0058 **	-0.0018 **	-0.0166 **	0.0068 **	284728	0.121
	Difference	**	**	**	0.0325 **	**		

** indicates t-test is significant at the 1% level
* indicates t-test is significant at the 5% level

Table 4 contd.

Country		Beta (β)	Ln(Mktcap.)	Ln(BVEq.)	Dividend	Constant	Obs.	Avg. R^2
				Panel B: Emerging markets - BRICS				
Brazil	Full samp.	0.0008 **	0.0036 **	0.0012 *	0.0009 *	-0.0291 **	30862	0.009
	Dec. mkts	-0.0333 **	0.0011 *	0.0025 **	0.0199 *	-0.0472 **	13615	0.528
	Adv. mkts	0.0017 **	0.0058 **	0.0002 *	-0.0063 **	0.0061	17247	0.057
	Difference	**	**	*	0.0262 **			
China	Full samp.	0.0014 **	0.0177 **	-0.0043 **	0.0108 **	-0.1284 **	74649	0.015
	Dec. mkts	-0.0130 **	0.0095 **	-0.0086 **	0.0158 *	-0.1322 **	33854	0.214
	Adv. mkts	0.0069 **	0.0108 **	-0.0013 *	-0.0105 **	-0.0128 *	40795	0.166
	Difference	**	**	*	0.0263 **	*		
India	Full samp.	0.0006 **	0.0032 **	-0.0007	0.0101 **	-0.0341 **	40743	0.009
	Dec. mkts	-0.0130 **	-0.0001	-0.0002	0.0128 **	-0.0481 **	19005	0.338
	Adv. mkts	0.0024 **	0.0048 **	-0.0012 *	-0.0020 **	0.0023	21738	0.109
	Difference	**	*	*	0.0148 **			
Russia	Full samp.	-0.0008 *	0.0041 **	-0.0006	0.0042 **	-0.0350 *	5241	0.003
	Dec. mkts	-0.0350 **	0.0046 *	0.0009	0.0281 *	-0.1188 **	1895	0.315
	Adv. mkts	0.0016 **	0.0035 *	-0.0006	-0.0029 *	0.0256	3346	0.007
	Difference	**	*		0.0310 *			
South Africa	Full samp.	0.0012 **	0.0058 **	-0.0007	0.0074 **	-0.0545 **	27535	0.015
	Dec. mkts	-0.0190 **	0.0015 **	0.0005	0.0147 **	-0.0445 **	11528	0.533
	Adv. mkts	0.0046 **	0.0069 **	-0.0020 **	-0.0094 **	-0.0280 **	16007	0.160
	Difference	**	**	*	0.0241 **	**		

** indicates t-test is significant at the 1% level
* indicates t-test is significant at the 5% level

Table 5

Fama-MacBeth (1973) returns using the local benchmark index for the pre-crisis (1995 to 2007) and the crisis period (2008 to 2011). This table contains the average Fama and MacBeth (1973) coefficients of monthly ordinary least square regression run cross-sectionally for every dividend-paying and non-dividend-paying firm in the sample for two sub-periods. The dependent variable is the excess return on a stock in month t, Beta (β) is the firm's beta measured for the prior year for month t. Ln(MktCap.) is the natural log of the firm's market capitalization for month t in local currency unit. Ln(BVEq.) is the natural log of the firm's book value of equity for month t in local currency unit. Dividend is an indicator (dummy) variable that equals one if the firm is a classified as a dividend-paying firm in month t and zero if the firm is classified as a non-dividend-paying firm in month t. Difference of difference is the difference of the dividend co-efficient for declining markets minus the dividend co-efficient for advancing markets for the pre crisis period (1995 to 2007) minus the difference of dividend co-efficient for declining markets minus the dividend co-efficient for advancing markets for the post-crisis period (2008 to 2011). Declining markets are when the local benchmark index return is zero or less and advancing markets are when the local benchmark index return is greater than zero.

Country		Beta (β)	Ln(Mktcap.)	Ln(BVEq.)	Dividend	Constant	Beta (β)	Ln(Mktcap.)	Ln(BVEq.)	Dividend	Constant	Difference of difference
		Pre - crisis period - 1995 to 2007					Post - crisis period - 2008 to 2011					
		Panel A: Developed markets - G-7										
Canada	Dec. mkts	-0.0075 **	0.0025 **	-0.0014 **	0.0180 **	-0.0476 **	-0.0065 **	0.0110 **	-0.0057 **	0.0129 **	-0.1170 **	
	Adv. mkts	0.0037 **	0.0077 **	-0.0067 **	-0.0164 **	-0.0024	0.0054 **	0.0092 **	-0.0048 **	-0.0207 **	0.0005	
	Difference	**	**	**	0.0344 **	*	**	**	**	0.0336 **		0.0008
France	Dec. mkts	-0.0100 **	-0.0013 **	0.0055 **	0.0101 **	-0.0412 **	-0.0098 **	-0.0023 **	0.0036 **	0.0066 **	-0.0462 **	
	Adv. mkts	0.0045 **	0.0072 **	-0.0043 **	-0.0098 **	0.0051 **	0.0080 **	0.0057 **	-0.0022 **	-0.0061 *	0.0075 **	
	Difference	**	**	**	0.0199 **	**	**	**	**	0.0127 **	**	0.0072 *
Germany	Dec. mkts	-0.0094 **	-0.0007 *	0.0019 **	0.0136 **	-0.0490 **	-0.0244 **	-0.0015 **	0.0032 **	0.0089 *	-0.0417 **	
	Adv. mkts	0.0030 **	0.0074 **	-0.0019 **	-0.0123 **	-0.0080 **	0.0014 **	0.0070 **	-0.0021 *	-0.0036	-0.0079 **	
	Difference	**	**	**	0.0258 **	**	**	**	*	0.0124 *	**	0.0134 **
Italy	Dec. mkts	-0.0111 **	-0.0006 **	-0.0002 **	0.0135 **	-0.0418 **	-0.0301 **	0.0010 **	-0.0005	0.0040	-0.0452	
	Adv. mkts	0.0018 **	0.0046 **	-0.0020 **	-0.0018 **	0.0021 **	0.0044 **	0.0048 **	0.0007	-0.0069 *	0.0102	
	Difference	**	**	**	0.0153 **		**	**		0.0109 *		0.0044 **
Japan	Dec. mkts	-0.0053 **	0.0015 **	0.0018 **	0.0146 **	-0.0745 **	-0.0128 **	0.0017 **	-0.0001	0.0101 **	-0.0689 **	
	Adv. mkts	0.0071 **	0.0037 **	-0.0042 **	-0.0093 **	0.0261 **	0.0117 **	0.0026 **	0.0004	-0.0063 **	0.0173 **	
	Difference	**	**	**	0.0239 **	**	**	**		0.0164 **	**	0.0075 *
UK	Dec. mkts	-0.0092 **	-0.0001 **	-0.0005 **	0.0139 **	-0.0357 **	-0.0125 **	0.0041 **	-0.0030	0.0041 **	-0.0622 **	
	Adv. mkts	0.0025 **	0.0055 **	-0.0023 **	-0.0047 **	-0.0101 **	0.0071 **	0.0033 **	0.0014	-0.0074 **	0.0035	
	Difference	**	**	**	0.0186 **	**	**	**		0.0115 **		0.0071 *
USA	Dec. mkts	-0.0082 **	0.0007 **	0.0004 **	0.0092 **	-0.0409 **	-0.0050 **	0.0049 **	-0.0019	0.0059 **	-0.0995 **	
	Adv. mkts	0.0023 **	0.0057 **	-0.0039 **	-0.0088 **	0.0061 **	0.0153 **	0.0028 **	-0.0004	-0.0050 **	0.0179 **	
	Difference	**	**	**	0.0179 **	**	**	**		0.0109 **	**	0.0071 **

** indicates t-test is significant at the 1% level
* indicates t-test is significant at the 5% level

Table 5 contd.

Country		Beta (β)	Ln(Mktcap.)	Ln(BVEq.)	Dividend	Constant	Beta (β)	Ln(Mktcap.)	Ln(BVEq.)	Dividend	Constant	Difference off difference
		Pre - crisis period - 1995 to 2007					Crisis period - 2008 to 2011					
		Panel B: Emerging markets - BRICS										
Brazil	Dec. mkts	-0.0358 **	0.0012 **	0.0028	0.0090 *	-0.0398 **	-0.0287 **	0.0041 **	0.0057 **	0.0112 *	-0.0920 **	
	Adv. mkts	0.0019 **	0.0059 **	0.0006	-0.0049 **	0.0046	0.0011 **	0.0054 **	-0.0025	-0.0103 *	0.0175 *	
	Difference	**	**		0.0139 **		**	**		0.0215 *	*	-0.0076 *
China	Dec. mkts	-0.0103 **	0.0141 **	-0.0049 **	0.0195 *	-0.1499 **	-0.0223 **	0.0147 **	0.0292 **	0.0172 **	-0.2269 **	
	Adv. mkts	0.0055 **	0.0160 **	-0.0019	-0.0130 **	-0.0593 **	0.0094 **	-0.0012	-0.0109 **	-0.0070	0.0970 **	
	Difference	**	**	*	0.0325 **	**	**	*	**	0.0242 *	**	0.0083
India	Dec. mkts	-0.0187 **	0.0006	-0.0023 *	0.0055 **	-0.0530 **	-0.0194 **	0.0051 **	0.0061 **	0.0073 **	-0.1504 **	
	Adv. mkts	0.0058 **	0.0041 **	-0.0095 **	-0.0073 **	0.0595 **	0.0032 **	0.0001	-0.0015	-0.0134 **	0.0694 **	
	Difference	**	*	*	0.0128 **	**	**	*		0.0206 **	**	-0.0079
Russia	Dec. mkts	-0.0254 **	-0.0012	0.0013	0.0023 *	-0.0205 **	-0.0613 **	0.0053 *	0.0041	0.0085	-0.1543 **	
	Adv. mkts	0.0014 **	-0.0006	-0.0005	-0.0055 *	0.0672 *	0.0018 **	0.0055 **	-0.0008	-0.0025	0.0071	
	Difference	**			0.0077 *	*	**	*		0.0111		-0.0033
South Africa	Dec. mkts	-0.0190 **	0.0012 **	0.0003	0.0062 **	-0.0449 **	-0.0191 **	0.0009 **	0.0004	0.0097 *	-0.0321 **	
	Adv. mkts	0.0054 **	0.0074 **	-0.0021 **	-0.0097 **	-0.0281 **	0.0031 **	0.0072 **	0.0001	-0.0069 *	-0.0510 **	
	Difference	**	**		0.0159 **	**	**	**		0.0166 *	**	-0.0007

** indicates t-test is significant at the 1% level
* indicates t-test is significant at the 5% level

Table 6

Fama-MacBeth (1973) returns using the MSCI All Country Weighted Index (MSCI ACWI) instead of the local benchmark value-weighted indices. This table contains the average Fama and MacBeth (1973) coefficients of monthly ordinary least squares regressions run cross-sectionally for every dividend-paying and non-dividend-paying firm in the sample. The dependent variable is the excess return on a stock in month t calculated using a US$ numeraire. Beta (β) is the firm's beta measured for the prior year for month t calculated using the monthly stock return in US$ and the MSCI All Country Weighted Index as the benchmark index. Ln(MktCap.) is the natural log of the firm's market capitalization for month t in US$. Ln(BVEq.) is the natural log of the firm's book value of equity for month t in US$. Dividend is an indicator (dummy) variable that equals one if the firm is classified as a dividend-paying firm in month t and zero if the firm is classified as a non-dividend-paying firm in month t. Obs. is the number of firm month observations. Avg. R^2 is the average R-squared for the monthly ordinary least squares regressions. Declining markets are when the local benchmark index return is zero or less and advancing markets are when the local benchmark index return is greater than zero.

Country		Beta (β)	Ln(Mktcap.)	Ln(BVEq.)	Dividend	Constant	Obs.	Avg. R^2
				Panel A: Developed markets - G-7				
Canada	Dec. mkts	-0.0064 **	0.0053 **	-0.0021 **	0.0069 **	-0.0723 **	71591	0.317
	Adv. mkts	0.0042 **	0.0074 **	-0.0066 **	-0.0160 **	0.0115 **	96220	0.228
	Difference	**	**	**	0.0229 **	**		
France	Dec. mkts	-0.0074 **	-0.0018 **	0.0042 **	0.0102 **	-0.0397 **	52893	0.342
	Adv. mkts	0.0038 **	0.0065 **	-0.0030 **	-0.0121 **	0.0045 **	70248	0.187
	Difference	**	**	**	0.0223 **	**		
Germany	Dec. mkts	-0.0073 **	0.0001 *	0.0019 **	0.0146 **	-0.0484 **	53900	0.341
	Adv. mkts	0.0042 **	0.0051 **	-0.0031 **	-0.0116 **	0.0093 **	69913	0.199
	Difference	**	*	**	0.0263 **	**		
Italy	Dec. mkts	-0.0059 **	0.0010 *	-0.0016 *	0.0155 **	-0.0562 **	17341	0.227
	Adv. mkts	0.0019 **	0.0040 **	0.0005	-0.0062 **	0.0046 *	23153	0.079
	Difference	**	*		0.0217 **	*		
Japan	Dec. mkts	-0.0046 **	0.0014 **	0.0006 **	0.0071 **	-0.0502 **	170523	0.352
	Adv. mkts	0.0046 **	0.0037 **	-0.0003 *	-0.0019 **	-0.0194 **	238090	0.224
	Difference	**	**	*	0.0090 **	**		
UK	Dec. mkts	-0.0077 **	0.0016 **	-0.0009 **	0.0129 **	-0.0520 **	70316	0.335
	Adv. mkts	0.0024 **	0.0050 **	-0.0016 **	-0.0047 **	0.0029 **	99605	0.153
	Difference	**	**	**	0.0175 **	**		
USA	Dec. mkts	-0.0064 **	0.0020 **	-0.0025 **	0.0173 **	-0.0596 **	208743	0.308
	Adv. mkts	0.0037 **	0.0042 **	-0.0026 **	-0.0173 **	0.0178 **	280882	0.210
	Difference	**	**	**	0.0347 **	**		
				Panel B: Emerging markets - BRICS				
Brazil	Dec. mkts	-0.0237 **	0.0006	0.0007	0.0019 *	-0.0459 **	13384	0.517
	Adv. mkts	0.0008 **	0.0086 **	0.0030 **	-0.0040 *	-0.0142 **	17029	0.030
	Difference	**	*	*	0.0059 *	**		
China	Dec. mkts	-0.0118 **	0.0066 **	-0.0062 **	0.0050 **	-0.0548 **	33504	0.483
	Adv. mkts	0.0004 **	0.0192 **	0.0055 **	-0.0120 **	-0.1277 **	38652	0.030
	Difference	**	**	**	0.0171 **	**		
India	Dec. mkts	-0.0105 **	0.0060 **	-0.0074 **	0.0041 **	-0.0743 **	42023	0.402
	Adv. mkts	0.0008 **	0.0029 **	0.0002 *	-0.0148 **	0.0407 **	53510	0.020
	Difference	**	**	*	0.0189 **	**		
Russia	Dec. mkts	-0.0137 **	0.0053 **	-0.0002 *	0.0086 **	-0.1095 *	2479	0.344
	Adv. mkts	0.0011 **	0.0029 *	0.0006	-0.0076 *	0.0329	2687	0.025
	Difference	**	*	*	0.0162 *	*		
South Africa	Dec. mkts	-0.0184 **	-0.0001 *	-0.0007	0.0039 *	-0.0341 **	11349	0.543
	Adv. mkts	0.0006 **	0.0093 **	-0.0013	-0.0016 *	-0.0429 *	15400	0.029
	Difference	**	*		0.0055 *	*		

** indicates t-test is significant at the 1% level
* indicates t-test is significant at the 5% level

Table 7 - Robustness test

Fama-MacBeth (1973) returns.

This table contains the average Fama and MacBeth (1973) coefficients of monthly ordinary least squares regressions run cross-sectionally for every dividend-paying and non-dividend-paying firm in the sample for which we have a dividend declaration date. Here we only include the firm-years for which we have at least one dividend declaration date for the firm in that financial year. To test the robustness of our results we exclude the month of dividend payout from the regression analysis. The dependent variable is the excess return on a stock in month t, Beta (β) is the firm's beta measured for the prior year for month t. Ln(MktCap.) is the natural log of the firm's market capitalization for month t in local currency units. Ln(BVEq.) is the natural log of the firm's book value of equity for month t in local currency unit. Dividend is an indicator (dummy) variable that equals one if the firm is classified as a dividend-paying firm in month t and zero if the firm is classified as a non-dividend-paying firm in month t. Obs. is the number of firm month observations. Avg. R^2 is the average R-squared for monthly ordinary least squares regressions. Declining markets are when the local benchmark index return is zero or less and advancing markets are when the local benchmark index return is greater than zero.

Country		Beta (β)	Ln(Mktcap.)	Ln(BVEq.)	Dividend	Constant	Obs.	Avg. R^2
				Panel A: Developed markets - G-7				
Canada	Dec. mkts	-0.0065 **	0.0021 **	0.0002	0.0115 **	-0.0520 **	17438	0.299
	Adv. mkts	0.0023 **	0.0048 **	-0.0042 **	-0.0139 **	0.0110 **	25064	0.126
	Difference	**	**	*	0.0254 **	**		
France	Dec. mkts	-0.0091 **	-0.0026 **	0.0042 **	0.0045 *	-0.0314 **	24035	0.327
	Adv. mkts	0.0037 **	0.0061 **	-0.0039 **	-0.0079 **	0.0096 **	31231	0.119
	Difference	**	**	**	0.0124 **	**		
Germany	Dec. mkts	-0.0105 **	-0.0022 **	0.0033 **	0.0137 **	-0.0401 **	20488	0.370
	Adv. mkts	0.0032 **	0.0070 **	-0.0020 **	-0.0074 **	-0.0101 **	32711	0.115
	Difference	**	**	**	0.0211 **	**		
Italy	Dec. mkts	-0.0124 **	-0.0018 *	-0.0028 *	0.0081 *	-0.0256 *	3704	0.389
	Adv. mkts	0.0027 **	0.0055	-0.0021 *	-0.0059 *	0.0072 *	5126	0.097
	Difference	**	*	*	0.0140 *	*		
Japan	Dec. mkts	-0.0051 **	0.0031 **	0.0042 **	0.0146 **	-0.1115 **	70424	0.279
	Adv. mkts	0.0080 **	0.0041 **	-0.0060 **	-0.0184 **	0.0452 **	56437	0.298
	Difference	**	**	**	0.0330 **	**		
UK	Dec. mkts	-0.0100 **	0.0000 **	-0.0015 **	0.0091 *	-0.0354 **	42064	0.394
	Adv. mkts	0.0024 **	0.0045 *	-0.0019 **	-0.0009 **	-0.0073 *	63609	0.096
	Difference	**	**	**	0.0099 **	*		
USA	Dec. mkts	-0.0075 **	0.0009 **	-0.0015 **	0.0126 **	-0.0473 **	108002	0.314
	Adv. mkts	0.0027 **	0.0056 **	-0.0018 **	-0.0184 **	0.0103 **	155617	0.097
	Difference	**	**	**	0.0311 **	**		
				Panel B: Emerging markets - BRICS				
Brazil	Dec. mkts	-0.0322 **	0.0009 *	0.0021 **	0.0113 *	-0.0562 **	6391	0.492
	Adv. mkts	0.0012 **	0.0041 **	-0.0011 *	-0.0078 *	0.0054	8006	0.040
	Difference	**	**	**	0.0191 *	*		
China	Dec. mkts	-0.0154 **	0.0103 **	0.0091 **	0.0058 *	-0.1504	4790	0.262
	Adv. mkts	0.0052 **	0.0067 **	-0.0100 **	-0.0055 *	0.0238	5457	0.148
	Difference	**	**	**	0.0114 *			
India	Dec. mkts	-0.0198 **	0.0057 **	-0.0057 **	0.0011 **	-0.0920 **	14228	0.360
	Adv. mkts	0.0046 **	0.0016 **	-0.0050 **	-0.0168 *	0.0803 **	19710	0.103
	Difference	**	**	**	0.0179 *	**		
Russia	Dec. mkts	-0.0381 **	0.0045 **	0.0058	0.0038 *	-0.1558 **	467	0.253
	Adv. mkts	0.0030 **	-0.0014 *	-0.0052	-0.0098	0.0880 **	778	0.025
	Difference	**	*		0.0136 *	**		
South Africa	Dec. mkts	-0.0195 **	0.0011 **	0.0010	0.0084	-0.0457 **	7064	0.514
	Adv. mkts	0.0037 **	0.0049 *	-0.0037 **	-0.0146 *	0.0078	9913	0.130
	Difference	**	*	*	0.0230			

** indicates t-test is significant at the 1% level
* indicates t-test is significant at the 5% level

Table 8 - Robustness test

Fama-MacBeth (1973) returns.

This table contains the average Fama and MacBeth (1973) coefficients of monthly ordinary least square regression run cross-sectionally for every dividend-paying and non-dividend-paying firm in the sample. To test the robustness of our results we group the data using different criteria - market development, legal structure, proportion of dividend paying firms and proportion of market capitalization of dividend payers. The dependent variable is the excess return on a stock in month t, Beta (β) is the firm's beta measured for the prior year for month t. Ln(MktCap.) is the natural log of the firm's market capitalization for month t in local currency unit. Ln(BVEq.) is the natural log of the firm's book value of equity for month t in local currency unit. Dividend is an indicator (dummy) variable that equals one if the firm is a classified as a dividend-paying firm in month t and zero if the firm is classified as a non-dividend-paying firm in month t. Difference of difference is the difference of the dividend co-efficient for declining markets minus the dividend co-efficient for advancing markets in the first panel (Panel A1, B1, C1 and D1) minus the difference of the dividend co-efficient for declining markets minus the dividend co-efficient for advancing markets for the second panel (Panel A2, B2, C2 and D2), respectively. Declining markets are when the local benchmark index return is zero or less and advancing markets are when the local benchmark index return is greater than zero.

	Beta (β)	Ln(Mktcap.)	Ln(BVEq.)	Dividend	Constant	Beta (β)	Ln(Mktcap.)	Ln(BVEq.)	Dividend	Constant	Difference of difference
	Panel A: Market development										
	Panel A1: Developed markets - Canada, France, Germany, Italy, Japan, UK, USA					Panel A2: Emerging markets - Brazil, China, India, Russia, South Africa					
Dec. mkts	-0.0072 **	0.0006 **	-0.0009 **	0.0080 **	-0.0510 **	-0.0184 **	0.0012 **	-0.0041 **	0.0170 **	-0.0634 **	
Adv. mkts	0.0036 **	0.0055 **	-0.0023 **	-0.0087 **	0.0054 **	0.0038 **	0.0060 **	-0.0013 **	-0.0141 **	0.0164 **	
Difference	**	**	**	0.0167 **	**	**	**	**	0.0311 **	**	-0.0144 **
	Panel B: Legal structure										
	Panel B1: Common law - Canada, India, South Africa, UK, USA					Panel B2: Civil law - Brazil, China, France, Germany, Italy, Japan, Russia					
Dec. mkts	-0.0076 **	0.0018 **	-0.0060 **	0.0143 **	-0.0521 **	-0.0075 **	-0.0016 **	0.0029 **	0.0136 **	-0.0514 **	
Adv. mkts	0.0034 **	0.0062 **	0.0009 **	-0.0092 **	0.0002	0.0043 **	0.0063 **	-0.0049 **	-0.0124 **	0.0075 **	
Difference	**	**	**	0.0235 **	*	**	**	**	0.0260 **	**	-0.0025 **
	Panel C: Proportion of firms paying dividend										
	Panel C1: Low proportion - Canada, China, France, Germany, Russia, USA					Panel C2: High proportion - Brazil, India, Italy, Japan, South Africa, UK					
Dec. mkts	-0.0076 **	-0.0008 **	0.0029 **	0.0120 **	-0.0499 **	-0.0075 **	0.0015 **	-0.0012 **	0.0129 **	-0.0593 **	
Adv. mkts	0.0034 **	0.0076 **	-0.0043 **	-0.0067 **	0.0004 *	0.0042 **	0.0043 **	-0.0009 **	-0.0125 **	0.0052 **	
Difference	**	**	**	0.0188 **	*	**	**	**	0.0254 **	**	-0.0067
	Panel D: Proportion of market capitalization of dividend payers										
	Panel D1: Low proportion - Brazil, China, India, USA					Panel D2: High proportion - Canada, France, Germany, Italy, Japan, Russia, South Africa, UK					
Dec. mkts	-0.0077 **	-0.0003	-0.0030 **	0.0073 **	-0.0465 **	-0.0075 **	0.0001 *	-0.0005 **	0.0172 **	-0.0485 **	
Adv. mkts	0.0031 **	0.0073 *	-0.0009 **	-0.0114 **	-0.0013 *	0.0040 **	0.0052	-0.0020 **	-0.0119 **	0.0033 **	
Difference	**	*	**	0.0188 **	*	**		**	0.0291 **	**	-0.0103

** indicates t-test is significant at the 1% level
* indicates t-test is significant at the 5% level