The propensity to pay dividends: empirical evidence from the MENA region

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Abstract: This paper investigates the relation between stock market sentiment and firms' propensity to pay dividends in the MENA region for the period 2000–2015. Using conventional determinants of cash distributions as control variables, our results show that the tendency to pay dividends is negatively related to the aggregate investors' sentiment but positively related to the dividend premium. Unlike prior literature, we report no association between firms' dividend policy and issues of stock market liquidity. Overall, we suggest that corporate payout policies in the case of the MENA region can best be explained by the dividend catering hypothesis.

Keywords: dividends; payout policy; sentiment index; market volatility.

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1 Introduction

Since the seminal papers in the dividend theory of the late-50s and early-60s (Lintner, 1956; Miller and Modigliani, 1961) there has been, and still is, a considerable debate among researchers on the main drivers that motivate companies to distribute profits to their shareholders. One of the most interesting insights is the dividend-catering hypothesis (Baker and Wurgler, 2004a, 2004b) which suggests that payout policy is strongly correlated with investors' preferences for the dividend payout. These preferences are not stationary but rather continuously changing over time. Hence, corporate managers tend to satisfy the desires and preferences of investors by increasing dividend payments when the markets appear to put a premium on shares that engage in such activity (Baker and Wurgler, 2004a). On the contrary, companies tend to cut down the cash distributions to their shareholders when the latter put a discount on such stocks. As Baker and Wurgler (2004b) argue, investors demand for cash distributions could be the main determinant of firms' propensity to distributing cash profits after controlling for the various firms' micro-characteristics. Nonetheless, not all studies are supportive of this view. Savov and Weber (2006) show that there is a key weakness in the dividend catering model mostly attributed to the selection of the dividend premium as a key explanatory factor given that the same variable can be a proxy of potential growth opportunities in these firms. This criticism agrees with the evidence reached in the study by Fama and French (2001), who found that growth opportunities[1] for companies that never pay cash dividends are relatively higher than those of their non-dividend paying counterparts.

Furthermore, Hoberg and Prabhala (2009) showed that dividend premiums tend to capture the difference between the levels of business risk of dividend- and non-dividend payers. This is further corroborated by Kuo et al. (2013) in their cross-country investigation using a sample of firm-level data from 18 countries around the world. As the latter authors concluded, the relationship between the catering incentive variable (the aggregate premium on dividend-paying stocks) and the annual change in the percentage of companies that pay cash dividends reflects the reward offered by these companies to securities market in light of the level of business risk that a company faces.[2]

On the demand-side, it appears that dividend payments are closely linked to aspects of market sentiment and aggregate market performance with a number of studies showing

that the firms' propensity to pay cash dividends to their shareholders is influenced by individual shareholders' preferences, where such preferences have been time-inconsistent and inversely related to the state of market activity, i.e., individual investors preferring to receive dividends more in declining markets and vice versa (Fuller and Goldstein, 2011; Konieczka and Szyszka, 2013).

Although a plethora of alternative hypotheses exist, most of the prior literature concentrates on the developed markets with only a handful of studies focusing on the catering incentive hypothesis on emerging ones (Denis and Osobov, 2008; Hoberg and Prabhala, 2009; Kuo et al., 2013; Tangjitprom, 2013; Ramadan, 2015). Our current research addresses this important gap in the literature by examining companies' propensity to distribute dividends in the MENA region in line with Fuller and Goldstein's (2011) proposition on the link between dividend premiums and aggregate market activity, i.e., individual investors prefer to receive dividends more in the declining markets. We test whether or not this argument is valid for the case of Middle East capital markets. This is especially important for the period subsequent to the Arabic spring revolution which is strongly characterised by a significant deterioration in economic activity and stock market performance. Furthermore, the lack of informational efficiency in such markets[3] makes a really interesting case to study, as we believe that the prevailing market sentiment probably shows as an influential factor on dividend payout decisions for listed companies in these countries, as opposed to the rest of the alternative hypotheses proposed in the literature primarily focusing on the developed markets. As such, there are important implications regarding international portfolio allocation decisions such as investment timing decisions for emerging markets value funds and ETFs, as well as significant policy implications for the companies' decisions on the dividend policy itself.

Hence, the contribution of this study is threefold. First and in line with the existing criticism on the use of dividend premium as a proxy for companies' propensity to pay dividends, we develop a composite sentiment index for each of the MENA member countries relying on a variety of market indicators. We then investigate whether or not firms in the MENA region respond more positively to investor's preferences for dividend payments during bearish markets, as proxied by the market sentiment index, and vice versa. To limits of our knowledge, this research represents the first attempt in exploring the potential impact of prevailing sentiment in the context of dividend policy on emerging markets. Second, we investigate the link between sentiment index and firms' abnormal returns under conditions of high (low) propensity for dividends' distribution using a firm-matching approach. Third, consistent with the argument that the payout decision is inversely associated with stock liquidity levels (Banerjee et al., 2007; Igan et al., 2010; Kuo et al., 2013) we investigate the possibility of such relationship being present in cases of high (low) market sentiment.

In brief, our results show that the tendency to distribute dividends in the MENA region is positively associated with the overall premium on shares that pay cash distributions as proposed in the dividend-catering theory even after controlling for firm's micro characteristics. Moreover, unlike prior literature on dividend policy, we show that stock liquidity is insignificantly related to the companies' propensity to pay cash distributions (PTPCD) in the Middle East region. In addition, the tendency to distribute dividends is inversely related to the prevailing market sentiment. Finally, in terms of stock market returns, dividend payers tend to outperform non-dividend payers during pessimistic sentiment periods (and vice versa), while the relative excess returns (dividend-payers' stock returns minus non-payers' stock returns) tends to increase in the

subsequent years after the period of positive sentiment, and vice versa, the relative excess returns tends to decrease in the subsequent years after the period of negative sentiment.

The rest of this research is structured as follows. The next section, Section 2 provides an overview of the key theoretical explanations for the declining propensity of companies to pay cash distributions to their shareholders. Section 3 describes our testable hypotheses. Section 4 introduces our data and methodology. Section 5 presents and discusses our empirical results. Section 6 concludes the paper.

2 Literature review

The declining inclination to distribute dividends has represented a clear phenomenon and an unresolved issue in the academic literature for almost two decades. In their seminal study, Fama and French (2001) show that the percentage of the NYSE companies that pay cash distributions had declined significantly during the period 1978 to 1999. Since then, numerous studies tried to provide interpretation to this unresolved issue. One of the earliest attempts that explored the dividend disappearance phenomenon in the US, a study conducted by De Angelo et al. (2004), found that, on the aggregate level, dividend payments for some of the largest companies in the DJIA have increased as opposed to the vast number of smaller firms that delivered smaller dividend payments over time. Their study also showed that dividend payment is negatively associated with the growth prospects, while it was positively associated with the firm profitability. Their results raised further doubts about the validity of the informational content hypothesis of dividends (Bhattacharya, 1979; John and Williams, 1985; Miller and Rock, 1985; Denis et al., 1994) and were more in line with the dividend life-cycle theory (Grullon et al., 2002). Hence, companies in early periods of the life-cycle (start-ups) tend to distribute fewer profits or no profits at all as investment opportunities exceed their internally-generated funds. Conversely, once those firms reach the maturity phase, they will tend to supply more cash distributions to their stockholders in order to reduce surplus funds misuse arising from the absence of suitable and adequate positive-NPV investment opportunities.[4] This is further corroborated in a follow-up study (De Angelo et al., 2006) that shows a positive association between dividend payouts and the ratio of retained earnings-to-equity capital (RE/TE).[5]

Baker and Wurgler (2004b) provided a different interpretation of the observed decline in the tendency to distribute profits. Their study suggested that the appearance and disappearance of dividends can be interpreted by the influence of a catering incentive. Hence, corporate managers tend to accommodate the prevailing demand of investors for receiving cash distribution, especially when those investors put a premium on those shares that distribute profits. On the contrary, firms tend to reduce or ignore dividend payment altogether when investors' preference for shares that do not distribute profits is increased. This hypothesis was further corroborated and extended by Li and Lie (2006) that showed a significant relationship between:

1 the stock market's reaction to the declarations of cash dividends

2 the dividend level with the magnitude of the dividend premium.

Two other possible explanations regarding firms' choice on dividend policy are related to the issues of market liquidity and risk (systematic and unsystematic). According to

Banerjee et al. (2007), low levels of market liquidity result in high transaction costs. Under such market imperfections, investors will prefer to receive cash dividends rather than sell their stocks. Their study confirmed this explanation by showing that the US companies tend to initiate cash dividends during periods of low market liquidity and vice versa. This explanation is further supported by Bulan et al. (2007) who report a negative relation between cash dividends' initiation and stock turnover ratio (a proxy for market liquidity) for the US. Prior studies reported a similar picture with regards to the role of systematic and unsystematic risk (Grullon et al., 2002; Hoberg and Prabhala, 2009; Kuo et al., 2013). This is because firms that have a high level of idiosyncratic risk and high earnings' fluctuation tend to pay a fewer amount of available profits in form of cash distributions and maximise their cash reserves for the years to come.

Despite the numerous theoretical explanations proposed in the literature evidence at the empirical level, especially outside the US, is rather mixed. Denis and Osobov (2008) provide evidence supportive to the agency cost theory over the dividend catering theory in their study of five developed markets. Their results suggest that the disappearance of cash distributions is a prevailing trend globally and that certain micro-characteristics such as the firms' size, profitability, available investment opportunities, and the RE/TE ratio are statistically significant determinants of this phenomenon. On the contrary, in their investigation on cash distributions and shares buybacks for Canada, Baker et al. (2012) show that Canadian companies have the tendency to increase the supply of cash dividends when a dividend premium exists on their shares, as suggested by the catering incentive explanation.

With regards to the emerging markets, prior studies on the determinant of dividend policy also portrayed a similar picture. For example, Ferris et al. (2009) show that the declining propensity to dividend payments is not restricted only to the US market, but also across the globe, mostly driven by an increasing percentage of companies that do not pay cash distributions to their stockholders at all.[6] This is further corroborated by Reddy and Rath (2005) who show that the aggregate supply of dividends in the Indian market is mostly delivered by the largest and most profitable companies, evidence consistent with the firm life-cycle theory of dividends (Grullon et al., 2002). These findings are supported by subsequent authors (Kumar, 2006; Saravanakumar, 2011; Labhane and Mahakud, 2016).

On the contrary, studies on the countries of the MENA region are quite limited and rather inconclusive. Using a sample of Jordanian firms, Hamill and Al-Shattarat (2012) show that ownership structure (insiders' vis-à-vis outside institutional shareholders) is a significant determinant of firms' dividend payment ratio, a finding in line with the agency cost hypothesis. On the contrary, Ramadan (2015) suggests that Jordanian companies tend to alter their dividend policies, according to investors' preferences for cash distribution, consistent with the dividend catering perspective. Furthermore, Farooq et al. (2017) report a positive association between dividend payments and the earnings-returns ratio providing further support to De Angelo et al.'s (2006) argument that dividend decisions can be used as a tool to minimise agency conflicts. Recently, Hamouda (2018) examines share repurchases in light of the political instability in the MENA region using a sample of 1,510 share repurchase events from all ten countries in the region (Bahrain, Egypt, Israel, Jordan, Kuwait, Morocco, Oman, Qatar, Saudi Arabia, and Tunisia). Complementary to that study, we also confirm that the use of cash dividends is the most popular approach for distributing wealth back to shareholders in these countries.[7]

We extend this line of enquiry by assessing whether or not companies' dividend policy in the MENA region is driven by:

1 the association between the composite sentiment index and the excess stock returns of such firms (dividend catering hypothesis)

2 stock liquidity (stock liquidity hypothesis)

3 positive and negative market sentiments.

We continue with the formulation of our testable hypotheses.

3 Development of hypotheses

According to the classical perspective for payout policy (Miller and Modigliani, 1961), stock values are not influenced by firms' decision to pay the cash dividends. However, prior empirical evidence refutes that claim. For example, in a seminal study by Long (1978) the author demonstrates significant preference by individual investors for cash dividends over stock dividends even though the cash distributions are subject to higher tax treatment in the USA. Most of these earlier studies on the link between dividend policy and corporate value stemmed from the asset pricing literature. For example, Black and Scholes (1974) argue that the dividend yield is not an appropriate measure for determining the required rate of return in the context of asset pricing theory; while, Litzenberger and Ramaswamy (1982) find that stocks with higher dividend yields tend to require a higher rate of return. Poterba (1986) reports higher stock market returns around the ex-dividend date for those firms that pay stock dividends as opposed to cash dividends (13.9% and 12.4%, respectively) indicating a continuous shift of investors' preferences between capital gains and income from period to period.[8] Moreover, Julio and Ikenberry (2004) report higher cumulative abnormal returns (CARs) for dividend payers on the dividend announcement date. Nonetheless, once these CARs are adjusted for a firm's size and age they become insignificant. As the authors suggest, these findings are in line with the 'free cash flow' hypothesis and the need for the majority of mature firms to re-assure investors that resources are not wasted on value-destroying investments.

On the contrary, other studies are supportive of the catering explanation. Li and Lie (2006) show that the abnormal stock returns during the three-day window around the dividend announcements are positively related to both the dividend premium and the dividend yield. These findings are corroborated by later studies (Bulan et al., 2007; Kale et al., 2012) that report significantly positive CARs around dividend initiation dates for firms with higher dividend premiums and dividend yields, even after controlling for firm-specific factors, such as growth rate and investment policy.

The subsequent literature further supports the view that investors are not indifferent to the choice between cash dividends and capital gains with many instances where shareholders have a clear inclination for preferring cash distributions over other forms of corporate payout. Consistent with the prior evidence, Baker and Wurgler (2004a, 2004b) provide evidence that supports the idea that investors' demand for dividends (measured by dividend premium) not only affects companies' decision to pay cash distributions but also future stock market returns of these firms (dividend payers and non-payers). The PTPCD is also found to be positively related to the dividend premium, while future

returns for dividend payers and non-payers are negatively related to the lagged dividend premium.

Fuller and Goldstein (2011) further suggest that cash distributions are related to stock market movements and appear to be very important for shareholders, especially during periods of bearish markets. Their results indicate that stock market returns of dividend-payers outperformed those of non-payers by approximately 1% to 2% during periods of declining markets (and vice versa). Hence, in line with the aforementioned studies, we examine the potential influence of investors' sentiment on the relative returns of the two groups (dividend payers vs. non-dividend payers) in the Middle East. Our testable hypotheses are therefore:

H1a "Abnormal returns are higher (lower) for dividend-paying stocks when investor sentiment is low (high)."

H1b "Abnormal returns are lower (higher) for non-dividend paying stocks when investor sentiment is high (low)."

In this paper, we also investigate the timing of dividend payments. Bulan et al. (2007) suggest that the US companies have the tendency to initiate dividends during periods accompanied by high levels of dividends premium, even after controlling for idiosyncratic risk. Using a hazard regression model, they show that firms that have similar internal characteristics, i.e., high levels of dividends premium, have a higher propensity to pay cash dividends to their stockholders. In contrast to the catering hypothesis suggested by Baker and Wurgler (2004a, 2004b), Hoberg and Prabhala (2009) argue that the dividends premium plays an important role in explaining the dividend disappearance phenomenon in the absence of business risk. Once they controlled for business risk the explanatory power of the dividends premium vanishes. In addition, they report a positive relationship between future returns for dividend payers and dividends premium. Furthermore, Kale et al. (2012) suggest that firms suffering from lower levels of stock liquidity are less inclined to initiate dividends. Their study shows that dividend initiation announcements are positively related to abnormal returns during the period of the announcement. This indicates a positive investors' reaction toward dividend initiation and reflects their preference to receive cash distributions, as opposed to other forms of corporate payout policy. More recently, Neves (2018) tests the dividend catering hypothesis using a European sample consisting of 635 companies from 12 Eurozone countries and reports a positive relationship between the dividend payment ratio and the dividends premium used as a proxy for investor sentiment. These results are economically and statistically significant even after controlling for firms' micro characteristics.

In line with the aforementioned studies, we test the following hypothesis:

H2 "There is a positive relationship between the propensity to distribute profits and investor demand for dividends (dividend premium) in the MENA capital markets."

Another important factor that determines firms' propensity to distribute dividends to their stockholders is the level of market liquidity. Prior studies suggested that stock liquidity and the cash dividends are inversely related. For example, Banerjee et al. (2007) propose that the declining propensity of the US companies to pay cash distributions can be explained by the increase of market liquidity. Depending on the prevailing market conditions (positive or negative market sentiment), firms tend to respond to investors'

preferences for liquidity by altering their dividend policy to meet those needs for increased liquidity. This is further corroborated by Igan et al. (2010) who show that the payment of cash dividends is positively associated with stock liquidity levels, especially for those firms with high levels of institutional ownership.[9] In line with these studies; we also test the link between market liquidity and firms' propensity to distribute dividends. We suggest that during periods of negative (positive) market sentiment, stock liquidity[10] of dividend-payers will be higher (lower) than that of their non-dividend-payers counterparts. Hence, we test the following hypothesis

H3 "There is a negative relationship between the firms' propensity to pay dividends and the level of stock liquidity in the MENA capital markets."

Lastly, Baker and Wurgler (2004a, 2004b) suggest that corporate manager rationally caters to investor's desire for liquidity by paying cash dividends during periods of economic recession. As such, investors seeking safety are more inclined to hold dividend-paying stocks during such periods, while they prefer to invest in the non-paying stocks mostly during times of economic recovery and/or expansion. In line with this argument, our final hypothesis builds on the idea that corporate management will be more inclined to pay dividends during periods of negative sentiment and vice versa. Hence, our last testable hypothesis is the following:

H4 "There is a negative relationship between firms' propensity to distribute cash to their shareholders in the form of dividend payments and the aggregate investors' sentiment in the MENA region."

4 Data and methodology

4.1 Data

Our data includes the entire population of publicly-listed companies for the period 2000–2015 in the stock markets of all countries that are part of the MENA region, namely Bahrain, Egypt, Jordan, Kuwait, Morocco, Oman, Qatar, Saudi Arabia, Tunisia, and UAE. All data are obtained from Datastream (TDS) and Bloomberg databases including firms that are currently active and those that have become de-listed during the sample period. Hence, our analysis is free from survivorship bias. In line with prior studies (Hoberg and Prabhala, 2009; Tangjitprom, 2013; Jabbouri, 2016), we exclude all financial stocks due to the significant difference in their accounting items. The criterion that was used for sample selection stipulates that a company should have a complete set of observations for each calendar year for the following accounting and financial items (mnemonics): total assets (WC02999), stock price (P), common shares outstanding (WC05301), earnings before interest and taxes (*EBIT*) (WC18191), book value of equity (WC05491), cash balance (WC02003), total debts (WC03255), total cash dividends (WC04551), retained earnings (WC03495), retained earnings-to-equity ratio (*RE*/*TE*) (WC08911) and trading volume (VO). Total assets (WC02999) must be available for both financial periods t (dividend payment period) and $t - 1$ (one year prior), while all other items should be available for period t. All data related to the firm's micro-characteristics are collected annually, whereas market-related data are collected monthly. Our final sample consists of 580 firms corresponding to 9,280 firm-years.

The selection of these variables is based on previous evidence in the field. For example, firms' size is considered as one of the key variables that have been put forward by prior studies as a key determinant of corporate payout policy (Fama and French, 2001; Al-Malkawi, 2007; Denis and Osobov, 2008). This is because larger firms are more inclined to distribute a higher proportion of their profits to their shareholders in the form of dividend payments whereas small-size firms tend not to distribute any dividends at all due to their increased difficulty and higher costs in raising capital through external financing.[11] Extant literature also reports that dividend payment decision is positively associated with firm profitability. This is due to the idea that companies with stable earnings prefer to distribute part of these profits to their shareholders and increase their dividend levels (Li and Lie, 2006; Tangjitprom, 2013; Jabbouri, 2016). The use of the EBIT accounting indicator (WC18191) allows us to test for such a hypothesis. The impact of available growth opportunities for these firms is another key variable that determines firms' dividend policy. According to Rozeff (1982), firms are keener to utilise internal capital for financing any investment opportunities so as to avoid unnecessary transaction costs that are directly related to the use of external financing. Hence, investment opportunities should be inversely associated with the dividend ratio (e.g., Fama and French, 2001; Ferris et al., 2006). Furthermore, total debts (WC03255) and cash (WC02003) are also found to be significant determinants of corporate payout policy and are both used in our study. As prior literature suggests, debt and dividend policies are used interchangeably as means to solve agency problems, when there is an expected relationship between the debt ratio and payment of cash dividends (Grossman and Hart, 1980; Jensen, 1986; La Porta et al., 2000; Farooq and Jabbouri, 2015). This is particularly true for the case of emerging markets where the presence of market frictions (i.e., thin trading and low liquidity) can dramatically increase the cost of external financing.[12] On the contrary, we use cash balance as a proxy of internal liquidity, in line with prior evidence that reports a significant and positive association between this variable and dividend payout ratio (Manos, 2002; Ho, 2003).[13]

In Figure 1, we highlight the proportion of dividend payers in the MENA region during the period 2000 to 2015. Figure 1 shows that the percentage of dividend payers in these ten Arabian countries decreases significantly from about 45% in 2000 to 35.9% in 2004. On the contrary, in the period 2005–2011 the percentage of dividend payers increased sharply reaching a maximum level of 69% by 2009 before decreasing slightly to 59% in the year 2011. Following the 2011 Arab spring movement in Egypt, the proportion of dividend payers started to consistently increase reaching the 70% of all listed companies by 2015.

Table 1 shows the total number of firms used in our study for each of the ten countries located in the MENA region and for the period 2000–2015. Table 1 indicates that the percentage of companies that distribute profits varies considerably amongst those countries. The highest percentage of the companies that pay dividends exists in Oman, Qatar and Bahrain. On the contrary, companies listed in UAE, Morocco, and Tunisia are found to be the least possible to supply dividends to their shareholders. In terms of firms' size of these firms, companies in Egypt and Saudi Arabia appear to be the largest ones (*5.84 and 5.76*); while those in Tunisia and Jordan the smallest (*4.35 and 4.88*, *respectively*). Most profitable firms are those listed in Qatar and Bahrain while regarding future growth opportunities we find the firms located in Bahrain, Jordan, and Qatar tend to have growth opportunities that exceed those in other countries (*0.14*, *0.15 and 0.15*).

Figure 1 Percentage of dividend payers over time

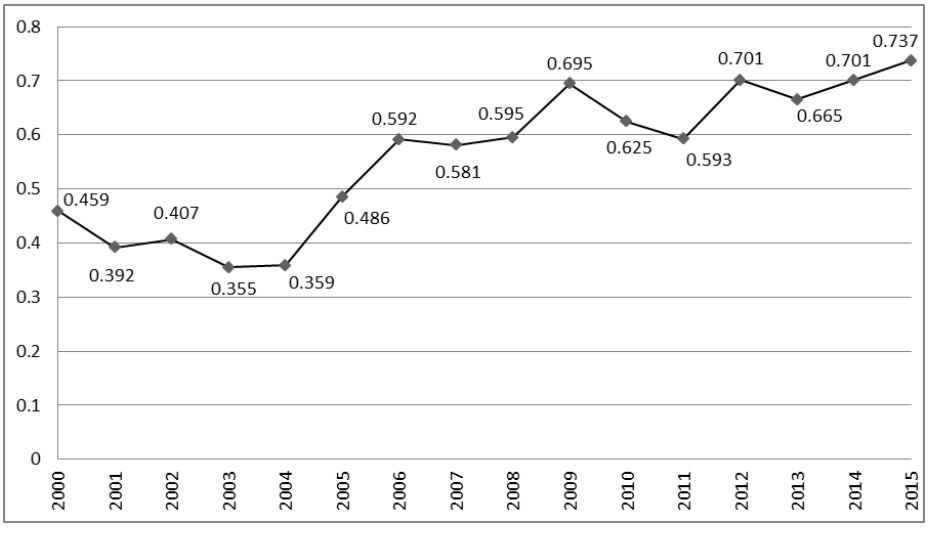


Table 1 Sample characteristics by country

Country	*N*	*SZ*	*PROF*	*GO*	*TDR*	*CASR*	*Payers%*
Bahrain	34	5.25	0.11	0.14	0.33	0.128	0.69
Egypt	109	5.84	0.06	0.09	0.48	0.092	0.59
Jordan	67	4.88	0.05	0.15	0.36	0.123	0.55
Kuwait	65	5.16	0.09	0.12	0.32	0.145	0.61
Morocco	45	4.96	0.07	0.11	0.42	0.104	0.39
Oman	56	5.24	0.05	0.13	0.27	0.118	0.77
Qatar	22	5.52	0.12	0.14	0.38	0.135	0.72
Saudi Arabia	83	5.76	0.10	0.10	0.44	0.112	0.51
Tunisia	35	4.35	0.03	0.08	0.42	0.089	0.48
United Emirates	64	5.22	0.10	0.12	0.41	0.171	0.35
Total sample	580	5.21	0.08	0.11	0.38	0.121	0.56

Notes: All control variables are based on the fiscal year. The firm size (SZ) is the log of the book value of the total assets; profitability (PROF) is defined as the earnings before interest and tax over the value of total assets; the growth opportunities (GO) is defined as the % change in the total asset between period *t and t* – 1; the total debt ratio (TDR) is defined as the total debt over total assets; internal liquidity (CASR) is defined as the cash balance over the total assets (cash ratio). N is the number of companies and Payers% = the proportion of the companies that distribute profits to their shareholders in the form of dividends.

Table 2 Summary statistics for dividend- and non-dividend payers

Panel A: dividend payers										
Variables	*Obs.*	*Mean*	*Median*	*S.D.*	*Min*	*Max*	*Skewness*	*Kurtosis*	*Probability*	*Jarque-Bera*
Firm size	5,072	6.55	6.02	1.21	3.08	9.37	0.04	2.92	0.005	2.20749
Profitability	5,072	0.10	0.09	0.06	–0.42	0.21	0.55	2.01	0.000	462.822
Change in assets	5,072	0.18	0.14	0.44	–0.38	3.54	–0.34	3.05	0.022	98.2449
Total debt ratio	5,072	0.48	0.42	0.25	0.11	0.89	0.01	2.76	0.003	12.2566
Cash ratio	5,072	0.16	0.13	0.32	0.01	0.21	0.52	3.11	0.001	251.814
Panel B: non-dividend payers										
Variables	*Obs.*	*Mean*	*Median*	*S.D.*	*Min*	*Max*	*Skewness*	*Kurtosis*	*Probability*	*Jarque-Bera*
Firm size	4,208	5.29	5.14	0.13	3.22	9.37	0.11	2.78	0.000	16.9721
Profitability	4,208	0.06	0.05	0.17	–0.02	0.25	0.43	3.13	0.004	132.639
Change in assets	4,208	0.23	0.21	0.89	–0.27	4.22	–0.05	2.59	0.019	31.2267
Total debt ratio	4,208	0.27	0.25	0.04	0.01	0.63	0.04	3.06	0.450	12.7533
Cash ratio	4,208	0.14	0.10	0.05	0.03	0.27	0.02	3.42	0.143	31.2091

Panel C: test of significance for differences (Mann-Whitney test)		
Dividend payers-non-payers	*Median*	*Z-stat*
Firm size	0.88	2.88***
Profitability	0.04	2.32**
Change in assets	–0.07	–2.01**
Total debt ratio	0.17	2.98***

Note: *, **, and *** refer to 10%, 5% and 1% significant level, respectively.

Table 3 Pearson correlation matrix

		(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*
1	SZ	1.0000									
2	PROF	0.0351	1.0000								
		0.689									
3	GO	0.0924	–0.1475	1.0000							
		0.361	0.078**								
4	TDR	0.1835	0.2134	0.0961	1.0000						
		0.009***	0.001***	0.216							
5	CASR	0.0213	0.0455	–0.0034	0.0012	1.0000					
		0.991	0.597	0.997	0.998						
6	DP	0.0053	–0.0532	–0.0769	0.0524	0.3452	1.0000				
		0.998	0.503	0.361	0.569	0.000***					
7	RE/TE	0.245	0.342	–0.227	–0.184	0.215	0.169	1.0000			
		0.002***	0.000***	0.006***	0.001***	0.007***	0.027**				
8	TE/TA	–0.188	–0.209	0.587	–0.376	–0.114	–0.427	0.254	1.0000		
		0.001***	0.007***	0.000***	0.000***	0.139	0.000***	0.000***			
9	S_TURNR	0.0528	0.0756	–0.1885	0.0321	0.4532	0.2733	–0.011	–0.405	1.0000	
		0.519	0.389	0.001***	0.698	0.000***	0.000***	0.900	0.000***		
10	IS	0.0044	0.0621	0.0326	0.1459	0.0016	–0.0297	0.010	0.013	0.2933	1.0000
		0.999	0.415	0.692	0.089*	0.999	0.894	0.893	0.874	0.004***	

Notes: SZ = the firm size; PROF = the firm profitability; GO = the growth opportunities; TDR = the total debt ratio; CASR = cash ratio; DP = the dividend premium; RE/TE = the retained earnings over total equity; TE/TA = total equity over total assets; S_TURNR = the stock turnover ratio, and IS = the composite sentiment index.
*, **, and *** refer to 10%, 5% and 1% significant level, respectively.

In terms of corporate leverage, we observe a uniform pattern in the average debt indicators across all countries, although the highest levels of corporate debt are observed in the cases of Egypt and Saudi Arabia (*0.48 and 0.44*, *respectively*). Finally, with regards to internal liquidity, the results indicate that listed firms in the UAE and Kuwait tend to be the ones with the highest liquidity as compared to the rest of the companies in the MENA region. In Table 2, we further report relevant summary statistics between firms that distribute profits and those that do not. As these results show, companies that pay cash dividends are generally larger in size, more profitable, have fewer growth opportunities, higher debt and are more liquid. These findings are in line with prior literature (Fama and French, 2001; Ho, 2003; Ferris et al., 2006; Denis and Osobov, 2008). For example, in the emerging markets' literature, recent studies show that management of large companies in Indonesia and Jordan prefer to pay cash distributions to their shareholders than that of the smaller size-decile firms (Kisman, 2013; Ramadan, 2015). Moreover, our results corroborate the findings of Mehta (2012) and Jabbouri (2016) which show that Arab firms that tend to distribute profits typically are more profitable (Mehta, 2012; Jabbouri, 2016). Arguably, one of the most possible interpretations of the foregoing evidence is that such companies (dividend payers) typically suffer from lack of available growth opportunities; hence, their large internal liquidity allows them the possibility of paying cash dividends.

Table 3 presents the outcomes of Pearson correlation matrix for the independent variables that we used in the current study. The matrix shows that the correlation between the investor sentiment (IS) and the dividend premium (DP) is too low. Specifically, the negative correlation between investor sentiment and dividend premium is about 3% indicating that the investor sentiment index captures the current investors' attitude which does not appear in the dividend premium. In addition, the correlation matrix indicates that there is a positive correlation between the stock liquidity and investors' sentiment, although this is still low (approx. 29%).

4.2 Modelling approach and definition of variables

Our first explanatory variable is the dividend premium. We calculated the dividend premium in line with Baker and Wurgler (2004a) as the difference of the log of the average value-weighted market-to-book ratio (*M*/*BV*) between companies that pay dividends and those that do not pay dividends by computing the following mathematical notation

$$DP_t = \log\left[\frac{1}{n}\sum_{i=1}^{n}\left(\frac{M_{it}^{d}}{BV_{it}^{d}}\right)\right] - \log\left[\frac{1}{n}\sum_{i=1}^{n}\left(\frac{M_{it}^{d}}{BV_{it}^{d}}\right)\right] \tag{1}$$

where DP_t is the dividend premium in year t; $M_{it}^{(\cdot)}$ is the market value of firm i in year t; $BV_{it}^{(\cdot)}$ is the book value of firm i in year t; while d and nd stand for dividend and non-dividend payers. All values had been weighted by the book value of assets in line with Baker and Wurgler (2004a).

Table 4 The aggregate dividend premium across countries 2000–2015

Year	*V-M/BE payers*	*V-M/BE non-payers*	*Dividend premium*
2000	1.78	1.99	–0.112
2001	2.13	2.97	–0.333
2002	1.24	1.23	0.311
2003	1.13	1.37	–0.189
2004	1.22	1.24	–0.016
2005	1.26	1.14	0.103
2006	1.33	1.66	–0.223
2007	2.08	2.10	–0.014
2008	1.72	2.57	–0.400
2009	1.68	1.55	0.082
2010	2.50	1.68	0.394
2011	1.40	1.32	0.054
2012	1.46	1.36	0.071
2013	1.52	1.27	0.178
2014	1.39	1.04	0.285
2015	1.28	1.12	0.132

Notes: V-M/BE payers are the value-weighted market to book ratio for the dividend-payers. V-M/BE non-payers are the value-weighted market to book ratio for the non-payers.

Table 4 presents the aggregate value-weighted market to book ratios for both groups of companies (dividend payers and non-dividend payers). All values of the *M*/*BV* ratios are calculated according to the fiscal year-ends and for all countries in our sample. Prior literature has used dividend premium as a proxy for investors' desire for dividends (Baker and Wurgler, 2004a, 2004b; Li and Lie, 2006; Savov and Weber, 2006; Hoberg and Prabhala, 2009; Kale et al., 2012; Neves, 2018). Those studies overwhelmingly suggested that the dividend premium can be used as a reliable proxy for investors' need for cash dividends.[14]

In line with prior literature for the developed markets, we also test the link between the companies' PTPCD and stock liquidity. This allows us to investigate the extent to which market liquidity (or lack of) has a significant effect on payout decisions in the case of those emerging markets of the MENA region. Based on traditional finance theory we should expect such a relationship to be positive and statistically significant. Stock liquidity is measured using the stock turnover ratio (S_{TURNR}) in line with Amihud (2002) and Kuo et al. (2013). This indicator is calculated as the ratio between the number of traded shares (trading volume) and the total number of outstanding shares. Similarly, the influence of investment sentiment on the propensity of firms to distribute dividends is explored using the approach of Baker and Wurgler (2006) and Baker et al. (2012). Hence, in line with these studies, we construct a composite index for investors' sentiment using a set of alternative proxies. The first variable is the volatility premium (VP_{it}), which was defined as the logarithmic value of the ratio between the value-weighted[15] average market-to-book ratio (*M*/*BV*) of high volatility stocks and those stocks that exhibit low volatility. This is done by sorting all our sample data country by country and then

estimating the variance of the previous year's monthly returns for each stock. In line with Baker et al. (2012), high (low) volatility represents one of the top (bottom) three deciles of the variance of the previous year's monthly returns, where all decile breakpoints are determined country by country. The total volatility will define as the standard deviation of previous year's monthly returns. All, data on stock market returns and the M/BV ratio are collected from the Datastream. Our second and third proxies are:

1 the number of initial public offerings (*NIPO*) defined as the log of total numbers of IPOs

2 the initial average returns on those IPO activities (*RIPO*) calculated as the average returns (difference between offering price and closing price) on the first day of the IPOs.

All data for IPOs in the MENA region are collected from Bloomberg.

The last two variables used are the market liquidity (*STURN*) which is defined as the number of traded shares over the number of outstanding shares, and the dividend premium describes with equation (1). To eliminate information that may be contained on those proxy variables which are not associated with stock market sentiment but to wider economic fundamentals we follow the Baker and Wurgler (2006) approach and regress each sentiment proxy on a set of macroeconomic indicators; namely, the consumption growth rate, the industrial production growth rate, the employment growth rate, inflation rate, and the short-term interest rate.

The whole process of constructing the sentiment index is accomplished by employing a principal component analysis (*PCA*) that helps us to estimate the composite index based on the common component within the aforementioned five proxies. We define IS_t as the first principal component of these five variables and we then obtain the first sentiment index by regressing each sentiment proxy to the macroeconomic variables mentioned above in order to remove relevant business cycle effects. Our sentiment index is estimated as

$$IS_t = -0.134DP_t + 0.152STURN_t + 0.141NIPO_t + 0.123RIPO_t - 0.183VP_t \quad (2)$$

Consistent with the extant literature, our explanatory variables control for various firm micro-characteristics. Specifically, we included the log of the total assets as a measure of firms' size (SZ_{it}). Profitability ($PROF_{it}$) is measured as a percentage of the earnings before the interest and taxes (*EBIT*) over the firm's total assets. As a proxy for growth opportunities (GO_{it}) we use the percentage of change in assets, while short-term liquidity is captured by the use of the cash ratio ($CASR_{it}$) estimated as cash balance over the total value of assets. Finally, firms' leverage is captured using the debt ratio (TDR_{it}) calculated as the firms' total debt over the total assets.[16]

The propensity of MENA firms to distribute profits in the form of dividends is estimated using the modelling approach introduced by Fama and French (2001) calculated as the difference between the actual percentage of dividend payers and the expected percentage of dividend payers (PTP_{it}) during each year of our sample period 2000–2015. The latter is estimated using a logit model that employs various firm micro characteristics as independent variables mathematically defined as:

$$PTP_{it} = a_t + b_1 SZ_{it} + b_2 PROF_{it} + b_3 GO_{it} + b_4 TDR_{it} + b_5 CASR_{it} + \mu_{it} \quad (3)$$

where PTP_{it} is a binary variable for the likelihood of a firm i paying dividend (1 for dividend payers, 0 otherwise) at year t. All independent variables are defined previously.

Figure 2 The propensity to pay dividends over time

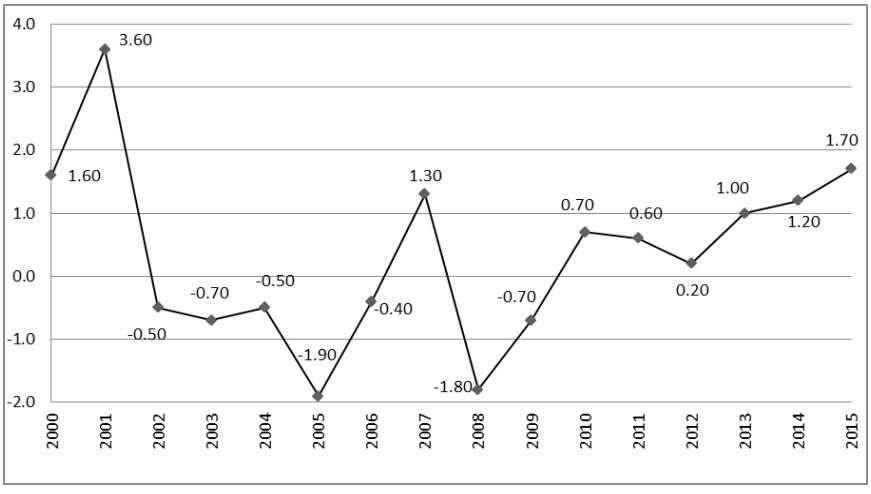


Figure 2 shows the change in propensity to pay dividends over time, a clear decline in the propensity to pay dividends is observed between 2002 and 2008, while the trend line of propensity to pay dividends start to take the opposite shape from 2009 until 2015.

Table 5 The propensity to distribute profits

Year	*No of firms*	*Payers*	*Actual PTP%*	*Expected PTP%*	*PTP*
2000	411	189	45.9	47.5	1.6
2001	428	168	39.2	42.8	3.6
2002	484	197	40.7	40.2	–0.5
2003	495	176	35.5	34.8	–0.7
2004	478	172	35.9	35.4	–0.5
2005	524	255	48.6	46.7	–1.9
2006	527	312	59.2	58.8	–0.4
2007	552	321	58.1	59.4	1.3
2008	576	343	59.5	57.9	–1.8
2009	558	388	69.5	68.8	–0.7
2010	571	357	62.5	63.2	0.7
2011	546	324	59.3	59.9	0.6
2012	513	360	70.1	70.3	0.2
2013	574	382	66.5	67.5	1.0
2014	560	397	70.1	71.3	1.2
2015	545	402	73.7	75.0	1.7

Notes: Actual PTP = the actual proportion of the dividend payers. Expected PTP = the expected proportion of the dividend payers; *PTP* = the propensity to distribute profits (the difference between the expected proportion and the actual proportion).

Table 5 compares firms' actual versus expected percentage to pay cash distributions from 2000 to 2015. We initially estimate the expected propensity to distribute profits for each firm individually and for each year under examination, then we obtain the expected percentage by computing the average propensity to distribute profits across firms year by year. According to our results, the percentage of companies that pay cash distributions in the MENA region increases from 45.9% in 2000 to 73.7% in 2015. This is a stark contrast to the results reported for the UK and the US. For example, Ferris et al. (2006) found that the percentage of dividend payers has declined in the UK from 75.9% in 1988 to 54.4% in 2002. However, this proportion of the UK dividend payers is still large compared with the US market which has experienced a clear decrease in the proportion of firms that pay cash dividends (about 20.8%) as reported in Fama and French (2001). It is our view that such a large difference in corporate payout policies is mainly attributable to the impact of tax exemption on cash dividends which is a key characteristic of most stock markets in the MENA region. We think that the tax exemption is one of the main reasons that lead MENA corporations to distribute funds back to their shareholders in the form of dividend payment as eight countries from our sample set tend to provide relevant tax exemptions to dividend payment (Kuwait, Jordan, Oman, Qatar, UAE, Egypt, Bahrain, and also Morocco exempt dividends from tax treatment for local investors); while, dividend payments in Saudi Arabia and Tunisia are subject to a tax bracket of 5% and 15%, respectively.

Conversely, the situation in the USA is fundamentally different with cash dividends been subject to tax treatment at 15% after the tax cut from the Bush government in 2003. As a conclusion, we suggest that the phenomenon of dividend disappearance before 2000 in the US stock markets could be attributed to tax considerations[17] motivating the US companies to switch to shares buybacks in the last two decades as a substitute to cash dividends (Julio and Ikenberry, 2004).

To investigate the extent to which the sentiment index can explain the return differential between dividend and non-dividend payers we run the following regression

$$AR_{jt}^{d} - AR_{jt}^{nd} = a + \beta_1 IS_{t-1} + \mu_{jt} \tag{4}$$

where AR_{jt}^{d} is the abnormal returns on dividend-paying stocks at time t; AR_{jt}^{nd} is the abnormal returns on non-dividend paying stocks at time t; IS_{t-1} and is the lagged investor sentiment index. Abnormal stock returns are calculated as the difference between actual and expected monthly returns for security i at time t using the market model.

Furthermore, to assess the impact of the market sentiment alongside the current firm micro characteristics on companies' propensity to pay dividends we use the following logistic regression

$$\begin{aligned} PTP_{it} = {} & a_t + b_1 SZ_{it} + b_2 PROF_{it} + b_3 GO_{it} + b_4 TDR_{it} + b_5 CASR_{it} + b_6 DP_{t-1} \\ & + b_7 STURN_{it-1} + b_8 IS_{it} + \mu_{it} \end{aligned} \tag{5}$$

where PTP_{it} is a binary variable equal to 1 for all firms that distribute profits at time t (0 otherwise); all firms' micro characteristics (size, profitability, growth opportunities, total debt ratio, cash ratio) are defined previously; DP_{t-1} is the lagged dividend premium; $STURN_{it-1}$ is the lagged stock turnover; and IS_{t-1} is the lagged composite sentiment index. It should be noted that the use of lagged variables (dividend premium, stock liquidity, and investor sentiment index) allows better prediction of possible changes in the firms'

propensity to pay dividends at year *t*; such decisions are, to some extent, also influenced by the prevailing market sentiment.

Lastly, in order to investigate the year- and country-fixed effects, we use a panel fixed regression model that allows us to include the year name and the country name as dummy variables in our analysis. In addition, in line with De Angelo et al. (2006) we test the effect of a firm's maturity on dividend payout by adding two life-cycle proxies (RE/TE and TE/TA). We also proxy the volatility of cash flows, measured by the standard deviation of operating profitability, as a substitute to risk factor in line with Chay and Suh (2009).

The statistical equation of panel fixed regression is formulated as follows:

$$\begin{aligned} Div_{it} = {} & \beta_0 + \beta_1 SZ_{it} + \beta_2 PROF_{it} + \beta_3 GO_{it} + \beta_4 TDR_{it} + \beta_5 CASR_{it} + \beta_6 \frac{RE}{TE_{it}} \\ & + \beta_7 \frac{TE}{TA_{it}} + \beta_8 Div_{it-1} + \beta_9 CASHvol_{it} + \beta_{10} DP_{t-1} + \beta_{11} IS_{t-1} + \lambda_2 EGY_{DUMMY} \\ & + \ldots + \lambda_9 UAE_{DUMMY} + \delta_2 Y2001_{DUMMY} + \ldots + \delta_{15} Y2015_{DUMMY} + \mu_{it} \end{aligned} \quad (6)$$

where Div_{it} is dividend payout ratio measured as total dividends over operating profits, Div_{it-1} is a binary variable taking the value of 1 if the firm paid dividends in the last year and 0 otherwise, $CASHvol_{it}$ is the standard deviation of the operating profits ratio and a proxy for cash flow volatility, RE/TE_{it} is the ratio of retained earnings over total equity, TE/TA_{it} is the ratio of total equity over total assets. All other dummy variables are related to country and year fixed effects.

5 Results discussion

5.1 Composite sentiment index and relative returns

Table 6 reports the results on the relationship between stock market performance and investor sentiment. We regress the abnormal returns for the two groups of companies on the lagged composite sentiment index. To do so, we divide market conditions depending on the sentiment index with $IS_{t-1} > 0$ that is considered as indicator of a bullish market (positive sentiment) and ($IS_{t-1} < 0$) that is considered an indicator of a bearish market (negative sentiment). Accordingly, we observe that the abnormal returns of non-dividend-payers are clearly outperforming the abnormal returns of dividend payers during the period of positive sentiment.

In detail, we observe that an increase by one standard deviation of composite sentiment increases abnormal returns for non-dividend payers by 5.34% and decrease abnormal returns for dividend payers by 4.11%. The relative difference in excess returns of two groups of companies is –9.45%, result which is significant at 5% level. On the contrary, according to Panel B during a negative market sentiment dividend paying companies enjoy, on average, an abnormal return of 3.12% as opposed to non-dividend payers (–2.56%). The overall difference in market performance between the two groups of firms is 5.68%, significant at the 5% level during the periods of the bearish market. Hence, we conclude that investors in the MENA region tend to overvalue dividend-paying stocks during periods of negative sentiment. This is inconsistent to the findings of Baker and Wurgler (2006), they showed that the returns of

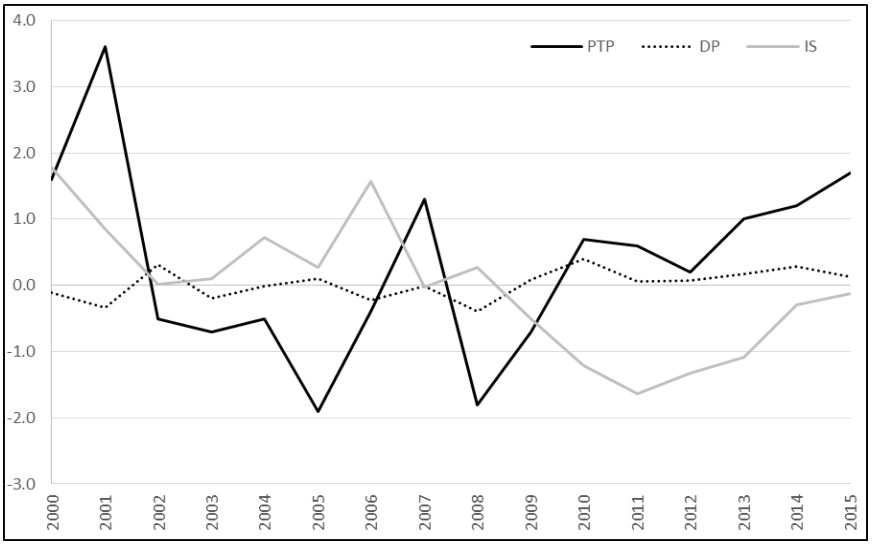
non-dividend-paying stocks tend to be higher when the investor sentiment at the beginning of the estimation period is negative and vice versa. On the contrary, our findings consistent with evidence reached by Fuller and Goldstein (2011) who found that abnormal returns for dividend payers (compared to non-dividend payers) during periods of a declining market. Based on these results, our first two hypotheses H1a and H1b are accepted.

Table 6 The regression of the abnormal returns on composite sentiment index

	N	*Coef.*	*P-value*	R^2	*Adj.* R^2
		Investor sentiment > 0			
AR_{jt}^{d}	15	–4.11	(0.00)***	0.31	0.34
AR_{jt}^{nd}	15	5.34	(0.10)*	0.29	0.28
$AR_{jt}^{d} - AR_{jt}^{nd}$	15	–9.45	(0.04)**	0.27	0.30
		Investor sentiment < 0			
AR_{jt}^{d}	15	3.12	(0.01)***	0.25	0.27
AR_{jt}^{nd}	15	–2.56	(0.05)**	0.36	0.39
$AR_{jt}^{d} - AR_{jt}^{nd}$	15	5.68	(0.03)**	0.33	0.32

Notes: *N* is number of years; AR_{jt}^{d} is the abnormal returns for dividend payers; AR_{jt}^{nd} is the abnormal returns for non-payers; $AR_{jt}^{d} - AR_{jt}^{nd}$ is the relative abnormal returns between the both two groups of companies. *, **, and *** refer to 10%, 5% and 1% significant level, respectively.

Figure 3 The propensity to pay dividends, dividend premium and investors' sentiment index



In Figure 3 we visually depict the time trend for the relationship between the propensity to pay dividends and two proxies of market sentiment (dividend premium and composite sentiment index). We observe that the relationship between the propensity to pay dividends and dividend premium is tend to be positive in majority of sample periods

unless the period from 2005 to 2008 where it was tends to be negative, while the association between the propensity to pay dividends and aggregate market sentiment tends to be negative in the period from 2000 to 2011 unless the period between 2011 and 2014.

Table 7 Logistic regression between the propensity to pay dividends, dividend premium, stock liquidity and investor sentiment

	2000–2015	*2000–2004*	*2005–2009*	*2010–2015*
Dividend premium (*DP*)	1.952**	1.335*	1.988*	1.411**
	[2.145]	[1.802]	[1.732]	[2.089]
Stock liquidity	0.342	0.174	0.516	0.951
	[1.126]	[0.941]	[1.009]	[1.162]
Investor sentiment (*IS*)	–0.256*	–0.705**	–0.225*	–0.168*
	[–1.911]	[–2.218]	[–1.819]	[–1.743]
Firm size (*SZ*)	0.304***	0.771***	0.749***	0.268***
	[4.523]	[4.104]	[6.228]	[3.201]
Profitability (*PROF*)	10.991**	11.721***	12.517**	12.103**
	[2.117]	[4.932]	[2.099]	[2.257]
Growth opportunities (*GO*)	–0.095**	–0.074**	–0.275**	–0.254*
	[–2.117]	[–2.312]	[–2.197]	[–1.954]
Total debt ratio (*TDR*)	–0.448	–0.511	–0.671	–0.227
	[–0.991]	[–1.326]	[–1.054]	[–0.475]
Cash ratio (*CASR*)	0.671	0.321	0.149	0.406
	[1.032]	[1.147]	[1.228]	[1.007]
Constant	–0.243**	–0.320**	–0.234	–0.987
	[–2.039]	[–2.046]	[–2.234]	[–0.755]
Pseudo R^2	29.12%	32.71%	25.19%	28.68%

Notes: The firm size (SZ) is the log of the book value of the total assets; profitability (PROF) is defined as the earnings before interest and tax over the value of total assets; the growth opportunities (GO) is defined as the % change in the total asset between period t and $t – 1$; the total debt ratio (TDR) is defined as the total debt over total assets; cash ratio (CASR) is defined as the cash balance over the total assets (cash ratio); dividend premium (DP) is the difference of the log of the average value-weighted market-to-book ratio (M/BV) between companies that pay dividends and those that do not pay dividends; stock liquidity is defined as stock turnover ratio (trading volume over number of outstanding shares); investor sentiment is a composite index of five sentiment proxies, which are dividend premium, market liquidity, number of IPOs, first-day return on IPOs, volatility premium. T-statistics are in parentheses after clustering the standard errors for firms and years using procedures of Peterson (2009). *, **, and *** refer to 10%, 5% and 1% significant level, respectively.

Table 7 presents the logistic regression results for the propensity to distribute profits for the period 2000–2015. The dependent variable is a binary variable equal to 1 for firms i that distributed profits at year t and 0 otherwise.

According to Table 7, dividend-paying firms are on average larger firms, in terms of size, and more profitable. The coefficients for both variables are positive and statistically

significant. For example, the coefficient for size is reported as 0.304 significant at the 1% level, while for profitability the relationship is also positive (10.991), significant at 5% level. We also report an inverse relationship between the PTPCD and growth opportunities (coefficient of –0.095 significant at 5% level). This is consistent with the life-cycle theory of dividend policy (Fama and French, 2001; De Angelo et al., 2006) which suggests that mature firms with low investment opportunities are more inclined to pay dividends. Lastly, the impact of both the debt and cash ratios appears to be statistically insignificant to the propensity to distribute dividends for both the full sample and the individual sub-samples in our analysis.

Overall, our empirical findings overwhelmingly support the relationship between dividend premium and the PTPCD. All coefficients are found to be positive and statistically significant across all sub-periods under examination (1.335, 1.988 and 1.411, respectively). This is consistent with the dividend catering hypothesis, which argues that firms have a tendency to respond to investors' demand through paying cash distributions when the aggregate dividend premium is positive (Baker and Wurgler, 2004a, 2004b). As a result, we can conclude that the dividend premium is a reliable proxy for explaining the propensity to distribute profits in the Middle East as firms, on average, tend to pay dividends during periods that are characterised by an increase in the dividend premium. These results are in line with the evidence reached in the case of the developed markets. For example, Baker and Wurgler (2004a, 2004b) showed that the dividend premium is the main driver for the propensity to distribute profits in the US companies listed in the NYSE, while Ferris et al. (2006) reported similar results for the UK market.[18] Therefore, on the basis of these findings, we can accept hypothesis H2.

Further examination of the link between stock liquidity and composite sentiment index with the propensity to distribute profits report mixed results. For example, we report a positive but statistically insignificant relationship between stock liquidity and the propensity to distribute profits in the case of the full sample 2000–2015 and the three sub-samples. These results contradict prior evidence from the developed markets. Banerjee et al. (2007) found negative relationship between payout policy and market liquidity. As the authors argued, the owners of stocks with low liquidity tend to prefer receiving cash distributions and vice versa. Hence, the US companies appear to respond to investors' preference for liquidity in a favourable manner.

In terms of the link between firms' PTPCD and the composite sentiment index, Table 7 reports a negative relationship after controlling for all firm micro characteristics. The coefficient for the entire sample period 2000–2015 appears to be negative (–0.250) and significant at 10% level. This result was reached across all different sub-periods. Overall, the composite sentiment index appears to explain only 29.12% of the changing propensity in the full sample and about 32.71%, 25.19%, and 28.68% in the various sub-periods. Such a result implies that during periods of negative sentiment, investors seeking safety will hold the dividend-paying stocks in their portfolio for too long into the future. On the contrary, during periods of positive sentiment, investors are more willing to tolerate risk and take long positions in the non-dividend paying stocks. As such, corporate managers perceive the prevailing sentiment in the stock market as a window of opportunity to boost the share price of their companies by initiating dividend payments when the prevailing sentiment is negative.

This finding is not unexpected but in line with results reported in Table 6 and consistent with the evidence reported by Hoberg and Prabhala (2009) for the US. In their study using three alternative proxies for market sentiment (closed-end fund discount,

sentiment index, initiator announce index), the authors reported a negative association of the propensity to pay dividends with all sentiment proxies, especially with the investor sentiment index (R^2 of 27.8%) and closed end fund discount (R^2 of 22%). Hence, in light of the results reported in our study, hypothesis H3 is rejected but hypothesis H4 is accepted.

5.2 Other explanations

According to De Angelo et al. (2004), the dividend payout behaviour in the US is concentrated among larger and mature firms in line with the 'life-cycle' hypothesis. In a subsequent study, De Angelo et al. (2006) empirically test this hypothesis using two main proxies for corporate life-cycle, namely, the retained earnings-to-total equity and the total equity-to-assets ratios.

Their study finds a positive association between the propensity to pay dividends and the ratio of retained earnings-to-equity indicating that firms' life cycle could possibly explain the declining propensity to pay dividends among the US companies.

To address this issue, we conduct a panel-fixed effect regression analysis between the dividend payout ratio (total dividends over operating profits) and the set of independent variables discussed earlier. In addition, we incorporate relevant life-cycle proxies (*RE*/*TE* and *TE*/*TA*) in line with De Angelo et al. (2006) and a measure of cash flow volatility (standard deviation of the operating profits ratio) in line with Chay and Suh (2009). Our lagged dividend payout is a binary variable equal to 1 if the firm *i* paid a cash dividend at $t - 1$ and 0 otherwise. We also control for country and year fixed effects using binary variables with the value of 1 when the observation occurs in country *x* (or year *t*) and 0 otherwise.

Table 8 reports the results on the relationship between the dividend payout ratio with the two main proxies for firm life-cycle (*RE*/*TE*, *TE*/*TA*) and the market sentiment (*DP*, *IS*). It shows that firms with high RE/TE ratio are more likely to provide higher dividends to their shareholders (coefficient of 0.0653, t-value of 2.2526). In terms of the other proxy for corporate life-cycle (*TE*/*TA*), the results appear to be statistically insignificant. Hence our findings are only partially consistent with that of De Angelo et al. (2006), who found that both *RE*/*TE* and *TE*/*TA* ratios are economically and statistically significant explanatory variables of the decision of the US firms to pay dividends to their shareholders. The current findings are more compatible with prior studies on the developing markets. For example, El-Ansary and Gomaa (2012) provide clear evidence in support of the firm's life-cycle hypothesis when testing the propensity of the Egyptian listed firms to pay dividends.

Regarding the dividends-catering hypothesis, both coefficients for the dividend ratio and the dividend premium are positively related to the dividend payout ratio (0.4635 and 1.8132, t-values of 1.7866 and 2.0761, respectively). This suggests that the Arabian firms are more likely to distribute a large amount of operating profits when the stock market has placed a premium on the shares that already paid cash dividends to their shareholders in the past. Conversely, we find that the dividend payout ratio is negatively related to the prevailing market sentiment (–0.3465, t-value of –2.1371). Such results provide clear support for both the corporate life cycle and the catering explanations in the case of the MENA region.

Table 8 Panel regression with fixed effect for time and country

Dependent variable: dividend payout	*Model (1)*		*Model (2)*	
	Coef.	*T-stat.*	*Coef.*	*T-stat.*
Dividend premium (DP)	2.8573	1.8851*	1.8132	2.0761**
Investor sentiment (IS)	–0.7569	–3.8972***	–0.3465	–2.1371**
Retained earnings-to-equity (RE/TE)	0.0443	1.8354*	0.0653	2.2526**
Equity-to-assets (TE/TA)	0.0531	0.3847	0.0508	0.0321
Firm size (SZ)	0.2375	5.8473***	0.4765	3.5746***
Profitability (PROF)	12.8570	1.9473*	10.6470	2.0120**
Growth opportunities (GO)	–0.0832	–1.7784*	–0.0685	–5.1154***
Total debt ratio (TDR)	–0.6473	–1.5642	–0.7564	–1.1729
Cash ratio (CASR)	0.8473	1.6574	0.3985	1.1123
Cash flow volatility	–0.3721**	–2.0364	–0.5742	–1.8694*
Lagged dividend payout	0.8761	2.8949***	0.4635	1.7866*
Egypt			0.4453	1.9632*
Jordan			0.2352	2.2153**
Kuwait			1.1642	1.8695*
Morocco			0.7321	3.9852***
Oman			0.8574	5.4631***
Qatar			0.9685	1.7958*
Saudi Arabia			0.2913	1.8946*
Tunisia			1.1473	2.0231**
United Emirates			0.3872	1.5743
2001			0.8165	3.6531***
2002			0.4632	1.7432*
2003			0.3421	1.2321
2004			1.4536	3.5647***
2005			0.0382	1.8821*
2006			0.7659	4.3651***
2007			0.2435	1.1857
2008			1.4536	2.1186**
2009			0.7437	1.8642*
2010			1.5784	3.1123***
2011			0.8957	1.2543
2012			0.6451	1.0276
2013			0.4168	1.8764*
2014			0.9207	2.1982**
2015			0.5783	1.9182*

Notes: This table reports the results on the relationship between the dividend payout ratio with the two main proxies for firm life-cycle (*RE*/*TE*, *TE*/*TA*) and the market sentiment (*DP*, *IS*). All dummy variables are introduces to control for time and country fixed effects. *, **, and *** refer to 10%, 5% and 1% significant level, respectively.

5.3 Dividend increases, decreases, initiations and omissions

For many reasons, the propensity to pay dividends does not give a full image of dividend decisions inside the firms (Hoberg and Prabhala, 2009). To explore further dividend decision in the MENA region, we divide the full dataset into different sub-samples covering 1,931 firm-year observations related to dividend increases, 1,482 observation for dividend decreases, 928 observations for dividend initiation, and 770 observations for dividend omission. The dependent variables in the panel-logistic analysis are the probability of dividend change reflecting the propensity to increase or decrease dividends.

Cases of initiating or omitting dividends are scarcer in our sample with dividend initiation capturing the first cash dividend for each firm in the available dataset and dividend omission the cases where a sample firm decides to cut down the cash dividends after paying a regular stream of cash dividends in the prior years.

Table 9 Likelihood of dividend changes, dividend initiations, and dividend omissions

	Model (*1*)	*Model* (*2*)	*Model* (*3*)	*Model* (*4*)
	Dividend increase	*Dividend decrease*	*Dividend initiation*	*Dividend omission*
Intercept	–3.4463***	–1.4429**	–2.7468***	–2.1201**
	–4.3527]	[–2.1186]	[–5.4827]	[–2.2513]
DP_{t-1}	0.5748**	–0.8942	0.7214***	–0.3821*
	[2.1345]	[–1.4381]	[3.0134]	[–1.9512]
IS_{t-1}	–1.6097*	1.0415***	–1.0012**	1.8155
	[–1.7811]	[3.0012]	[–2.1691]	[1.4112]
RE/TE_{it}	0.0392***	–0.0017	0.0109*	–0.0038***
	[6.4672]	[–1.6219]	[1.9138]	[–2.9718]
TE/TA_{it}	0.7484	–0.2769	0.07621	–0.2918
	[0.8903]	[–1.4351]	[0.3501]	[–1.5611]
SZ	1.8755***	–1.3874***	1.2837**	–1.4726*
	[5.4932]	[–3.2914]	[2.1276]	[–1.7915]

Notes: This table reports the results of a panel logistic regression analysis for the cases of dividend increases (model 1), decreases (model 2), initiations (model 3) and omissions (MODEL 4). Dividend premium (DP_{t-1}) is the lagged dividend premium; IS_{t-1} is the lagged investor sentiment index; RE/TE_{it} is the ratio of retained earnings over total equity; TE/TA_{it} is the ratio of total equity over total assets; firm size (SZ) is the log of the book value of the total assets; profitability (PROF) is defined as the earnings before interest and tax over the value of total assets; the growth opportunities (GO) is defined as the % change in the total asset between period t and $t-1$; the total debt ratio (TDR) is defined as the total debt over total assets; cash ratio (CASR) is defined as the cash balance over the total assets (cash ratio); Div_{it-1} is a binary variable taking the value of 1 if the firm paid dividends in the last year and 0, otherwise, $CASHvol_{it}$ is the standard deviation of the operating profits ratio and a proxy for cash flow volatility. T-statistics are in parentheses after clustering the standard errors for firms and years using procedures of Peterson (2009). *, **, and *** refer to 10%, 5% and 1% significant level, respectively.

Table 9 Likelihood of dividend changes, dividend initiations, and dividend omissions (continued)

	Model (1)	*Model (2)*	*Model (3)*	*Model (4)*
	Dividend increase	*Dividend decrease*	*Dividend initiation*	*Dividend omission*
PROF	0.1902***	–0.0486***	0.02357*	–0.0281**
	[4.2718]	[–6.7501]	[1.7891]	[–2.1432]
GO	–0.0532**	–0.0127	–0.03756**	–0.0165
	[–2.0462]	[–0.3351]	[–2.2199]	[0.3521]
TDR	–0.0237	–0.8742	–0.9283	–0.4561
	[–1.6542]	[–1.4591]	[–1.1273]	[–0.7642]
CASR	0.0028	–0.0384	0.0012	–0.0376
	[1.1103]	[–0.6291]	[1.5342]	[–1.2137]
Div_{it-1}	–0.0387	0.1763**		0.1253*
	[–1.4117]	[2.2435]		[1.9051]
CASHvol_{it}	–0.9583***	–0.4631***	–0.7482**	–1.6431***
	[–4.3657]	[–7.1182]	[–2.1431]	[–3.5401]
Systematic risk	–1.8601*	–4.8671***	–5.0116**	–1.8845**
	[–1.9143]	[–3.9512]	[–2.2991]	[–2.1743]
Idiosyncratic risk	–12.7966***	–2.6601**	–6.2617*	–18.9311**
	[–3.5611]	[–2.1013]	[–1.8793]	[–2.2214]
Observations	1,931	1,482	928	770
Pseudo R^2	23.17%	21.86%	24.03%	29.38%

Notes: This table reports the results of a panel logistic regression analysis for the cases of dividend increases (model 1), decreases (model 2), initiations (model 3) and omissions (MODEL 4). Dividend premium (DP_{t-1}) is the lagged dividend premium; IS_{t-1} is the lagged investor sentiment index; RE/TE_{it} is the ratio of retained earnings over total equity; TE/TA_{it} is the ratio of total equity over total assets; firm size (SZ) is the log of the book value of the total assets; profitability (PROF) is defined as the earnings before interest and tax over the value of total assets; the growth opportunities (GO) is defined as the % change in the total asset between period t and $t-1$; the total debt ratio (TDR) is defined as the total debt over total assets; cash ratio (CASR) is defined as the cash balance over the total assets (cash ratio); Div_{it-1} is a binary variable taking the value of 1 if the firm paid dividends in the last year and 0, otherwise, $CASHvol_{it}$ is the standard deviation of the operating profits ratio and a proxy for cash flow volatility. T-statistics are in parentheses after clustering the standard errors for firms and years using procedures of Peterson (2009). *, **, and *** refer to 10%, 5% and 1% significant level, respectively.

Table 9 reports the results of panel logistic regression analysis. The first two columns present the findings for both dividend increases and decreases. We restrict our analysis only on those firms that pay dividends at year *t*, while eliminating all non-dividend-payers from our dataset. We examine the catering hypothesis alongside the life cycle hypothesis and control for both country and time fixed effects. Model (1) shows that firms located in the MENA region tend to increase their cash dividends if they are larger in size, have more profits and have lower growth opportunities. In regards to the firm life cycle, the coefficient for *RE*/*TE* is positive and statistically significant (0.0392 at

the 1% level) indicating that firms with a high level of retained profits are more likely to increase the level of their dividends, as proposed by De Angelo et al. (2006). With regards to investors' demands for dividend payment, our results using *DP* and *IS* as proxies for market sentiment are supportive of our earlier finding. The coefficient of dividend premium (*DP*) is positive (0.5748) and significant at the 5% level, while the coefficient of sentiment index (*IS*) is negative (–1.6097) and significant at the 10% level. This shows that firms cater for investors' demands by increasing the cash dividends when the dividend premium is high and the prevailing market sentiment is low. In line with prior studies (Hoberg and Prabhala, 2009; Chay and Suh, 2009) we adopt three measures of risk (systematic risk, idiosyncratic risk and cash flow volatility). All coefficients indicate that risk can significantly explain firms' dividend decisions as credibly as other explanations such as the firms' life cycle and the catering hypothesis. On the contrary, the results using Model (2) indicate that firms' maturity does not influence firms' decisions to decrease dividend payments as both life cycle proxies are negative but insignificant in statistical terms. Furthermore, the catering incentive appears not to be related to the probability of dividend decrease with dividend premium being negatively associated with the dividend decrease (–0.8942, t-value of –1.4381). Firms' decisions to cut down on dividend payments appear to be strongly related to the prevailing market sentiment with a coefficient of 1.0415 significant at the 1% level.

Models (3) and (4) report the outcome of dividend initiation and dividend omission events. For the case of dividend initiation, the coefficients for the dividend premium and *RE*/*TE* ratios show that firms that do not pay dividends at $t - 1$ are more likely to initiate dividend payment if they have a large amount of retained earnings in their capital base and when the dividend premium on payers is positive. Furthermore, the probability of initiating dividends is inversely related to the prevailing sentiment in the stock market (coefficient of –1.0012 with a t-value of –2.1691) suggesting the possibility that dividends could possibly be used by corporate managers as a signal of financial health during down markets and to benefit from possible mispricing in the stock market.

Finally, model (4) reports the results in case of dividend omission. Our findings suggest that dividend payers are more likely to omit dividend payments when there is a decrease in the dividend premium and when the prevailing market sentiment is positive. With regards to the firms' life-cycle hypothesis, the coefficient of *RE*/*TE* is negative (–0.0038) and statistically significant at the 1% level (–2.9718) indicating that former payers with low levels of retained earnings are more inclined to cut down their cash dividends, compared to the rest of the firms in the market.

5.4 Robustness checks

We repeated the logistic regression for the propensity to distribute profits while controlling for various firm characteristics and risk. We examined whether all

1 dividend premium

2 stock liquidity

3 investor sentiment can predict the propensity to distribute profits after controlling for risk.

Table 10 The propensity to distribute profits with control for firms' micro characteristics and business risk

Regressions	*Firm characteristics*					DP_{t-1}	$STURN_{t-1}$	IS_{t-1}	*Risk*	
	SZ	*PROF*	*GO*	*TDR*	*CASR*				*Systematic*	*Idiosyncratic*
					Panel A: 2000–2004					
Model 1	0.421***	12.121***	–0.071**	–0.412	0.210					
	(4.237)	(6.984)	(–2.154)	(–1.354)	(0.986)					
Model 2	0.534***	10.123***	–0.210*	–0.523	0.112	1.145**			–34.120*	–23.105*
	(11.432)	(7.432)	(–1.789)	(–0.857)	(1.231)	(2.139)			(–1.983)	(–1.872)
Model 3	0.342***	11.345***	–0.256**	–0.544	0.123		0.021		–45.230*	–36.150*
	(8.236)	(5.463)	(–2.281)	(–0.167)	(0.843)		(0.193)		(–1.894)	(–1.763)
Model 4	0.423***	12.001***	–0.234*	–0.505	0.237			–0.112*	–24.123*	–14.172*
	(4.872)	(7.150)	(–1.707)	(–1.123)	(0.912)			(–1.901)	(–1.861)	(–1.770)
					Panel B: 2005–2009					
Model 1	0.465***	11.134**	–0.034**	–0.321	0.115					
	(6.584)	(2.053)	(–2.112)	(–1.423)	(0.569)					
Model 2	0.507***	10.851**	–0.312***	–0.645	0.324	1.122*			–31.161	–21.190
	(5.321)	(2.224)	(–6.722)	(–1.129)	(1.213)	(1.721)			(–1.002)	(–1.201)
Model 3	0.214***	11.576*	–0.342*	–0.589	0.541		0.031		–25.030	–37.152**
	(7.533)	(1.765)	(–1.980)	(–1.326)	(1.237)		(1.508)		(–1.440)	(–1.213)
Model 4	0.411***	12.355***	–0.225**	–0.805	0.213			–0.212*	–14.081	–16.351*
	(4.532)	(7.113)	(–2.217)	(–1.115)	(1.428)			(–1.974)	(–1.532)	(–1.765)
					Panel C: 2010–2015					
Model 1	0.435***	11.177*	–0.081*	–0.423	0.287					
	(5.325)	(1.762)	(–1.891)	(–0.895)	(1.321)					

According to the study by Hoberg and Prabhala (2009), the risk is a significant factor in explaining firms' propensity to distribute dividends to their shareholders. We estimate systematic risk by regressing daily stock returns for individual firms on market portfolio return (stock market index) using the standard deviation of the expected returns estimated by the market model as a measure for systematic risk. In addition, the idiosyncratic risk (unsystematic risk) is proxied using the standard deviation of the residuals value (μ_{it}) from the previous regression.[19]

Consistent with Hoberg and Prabhala (2009), we report that both systematic and idiosyncratic risks are negatively associated with the propensity to distribute profits in the MENA region. Table 10 reports these results in three panels (2000–2004, 2005–2009, and 2010–2015, respectively). For all sub-periods, we find that the company size, its profitability, and the growth opportunities are all significant variables. The *PTPCD* appears to be positively associated with company size and profitability, but negatively associated with growth opportunities. As in the previous results from Table 7, the relationship between total debt ratio and cash ratio to the propensity to distribute profits are all insignificant across all different periods.

In terms of the link between *PTPCD* and dividend premium after controlling for both firms' micro-characteristics and risk, we find that the dividend premium still has significant explanatory power (1.145 significant at 5% level, 1.122 significant at 10% level and 1.395 significant at 10% level in panel A, B, and C, respectively). The results for the cases of stock liquidity and market sentiment are also similar to the ones reported in Table 7. After controlling for both systematic and idiosyncratic risk, the coefficient for stock liquidity remains still positive and statistically insignificant; while, the link between investor sentiment and *PTPCD* appears to be positive and significant in statistical terms. These results are contradictory to the findings of Banerjee et al. (2007) in the US who showed that low liquidity firms are inclined to initiate dividends or continuing to distribute profits to their shareholders. Similarly, our evidence on the investor sentiment proxy is also contradictory to the findings of Hoberg and Prabhala (2009) that showed that the effect of a sentiment index on the changing propensity to distribute dividends is insignificant after controlling for risk.

5.5 Investor sentiment and future abnormal returns

We now conduct further tests to investigate whether or not the investor sentiment index can be used as a profitable investment strategy by examining future abnormal returns for both groups of stocks, dividend-payers and non-dividend payers. This is done by regressing future excess returns of the two groups of stocks for the periods $t + 1$, $t + 2$ and $t + 3$ (dependent variable) on the lagged investor sentiment index (independent variable) using a univariate regression model. This is mathematically formulated as

$$AR_t = a_t + bIS_{t-1} + \mu_{it} \tag{7}$$

where AR_t is the abnormal returns for each portfolio (dividend paying stocks and non-dividend paying stocks), IS_{t-1} is the lagged sentiment index.

Table 11 Future excess returns and investor sentiment index

	N	*Coef.*	*P-value*	R^2	*Adj.* R^2
Panel A: investor sentiment > 0					
Dividend-payers returns					
r_{Dt+1}	14	0.0354	(0.0000)***	0.1815	0.2158
r_{Dt+2}	13	0.0535	(0.7401)	0.3412	0.3094
r_{Dt+3}	12	0.0671	(0.0612)**	0.2336	0.2614
R_{Dt+3}	12	0.1436	(0.0130)***	0.2912	0.3178
Non-payers returns					
r_{NDt+1}	14	–0.0512	(0.5208)	0.0536	0.0402
r_{NDt+2}	13	–0.0638	(0.0026)***	0.1201	0.1383
r_{NDt+3}	12	–0.0575	(0.0213)**	0.3864	0.3711
R_{NDt+3}	12	–0.1709	(0.0000)***	0.3105	0.3572
Relative returns					
$r_{Dt+1} - r_{NDt+1}$	14	0.0866	(0.0110)***	0.3711	0.3404
$r_{Dt+2} - r_{NDt+2}$	13	0.1154	(0.0345)**	0.1925	0.2276
$r_{Dt+3} - r_{NDt+3}$	12	0.1223	(0.6598)	0.5386	0.4912
$R_{Dt+3} - R_{NDt+3}$	12	0.3037	(0.0430)**	0.4102	0.3875
Panel B: Investor sentiment < 0					
Dividend-payers returns					
r_{Dt+1}	14	–0.0519	(0.8432)	0.2132	0.2370
r_{Dt+2}	13	–0.0605	(0.0000)***	0.2706	0.2834
r_{Dt+3}	12	–0.0827	(0.0105)***	0.1518	0.1791
R_{Dt+1}	12	–0.1646	(0.0711)*	0.3523	0.3422
Non-payers returns					
r_{NDt+1}	14	0.0423	(0.0152)***	0.1804	0.1983
r_{NDt+2}	13	0.0391	(0.0975)*	0.1472	0.1612
r_{NDt+3}	12	0.0512	(0.0615)**	0.2913	0.2517
R_{ND+3}	12	0.1328	(0.0000)***	0.3301	0.3294
Relative returns					
$r_{Dt+1} - r_{NDt+1}$	14	–0.0942	(0.0385)**	0.2422	0.2142
$r_{Dt+1} - r_{NDt+2}$	13	–0.0996	(0.0100)***	0.1191	0.1439
$r_{Dt+1} - r_{NDt+3}$	12	–0.1339	(0.0543)**	0.3901	0.4100
$R_{Dt+3} - R_{NDt+3}$	12	–0.2843	(0.5367)	0.4286	0.3832

Notes: This table reports excess returns of dividend-payers and non-dividend payers on the lagged investor sentiment. The dependent variables are the dividend payer returns r_D in $t + 1$, $t + 2$, $t + 3$, the non-payer returns r_{ND} in $t + 1$, $t + 2$, $t + 3$, and the relative returns between payers and non-payers $r_D - r_{ND}$ in $t + 1$, $t + 2$, $t + 3$ and the cumulative returns R_{Dt}, R_{NDt}, $R_{Dt} - R_{NDt}$ from $t + 1$ *through* $t + 3$. ***, **, * indicate significance at the 1%, 5%, and 10% levels.

Table 11 presents the results of the univariate regression distinguished into two panels, the period subsequent to a positive investor sentiment (*panel A*) and the period following a negative market sentiment (*panel B*). According to panel A, future abnormal returns for dividend-paying stocks increase by 3.54%, 5.35% and 6.71%, respectively, while the

opposite finding emerges for the case of non-payers with a coefficient of –5.1%, –6.38% and –5.75%. Apart from the period $t + 2$ for dividend-paying shares and $t + 1$ for the non-dividend paying shares, other results are significant at the 5% or the 1% level. The relative returns on a strategy that goes long on the dividend payers and short on the non-paying firms generate an excess profit of 8.66%, 11.54% and 12.23% for the first three years after portfolio formation. In terms of cumulative returns, this strategy can generate CARs of 30.37% over these three years, a result which is significant at the 1% level.

An exact opposite picture is reported for the case of a negative market sentiment (*sentiment* < 0). According to our results on panel B, future excess returns for non-dividend payers increase by 4.23%, 3.91%, and 5.15% in the three years following portfolio formation. The portfolio of dividend payers reports an increasing abnormal loss of 5.19%, 6.05% and 8.27% in the periods $t + 1$, $t + 2$ and $t + 3$. Finally, the difference in the average CARs between these groups of firms is –28.43% but insignificant in statistical terms. These results are consistent with the evidence provided by extant studies in the US market (Baker and Wurgler, 2006, 2007). In a similar line, we can also conclude that during periods of positive market sentiment in the MENA region non-dividend paying stocks tend to earn relatively low abnormal returns compared to their dividend-paying counterparts with the relative CARs between the two groups of companies being positive.

6 Conclusions

This study investigates whether dividend premium, stock liquidity, and investor sentiment can explain firms' propensity to distribute dividend payments in the MENA region. We propose a composite sentiment index that consists of five sentiment proxies (dividend premium, NIPOs, RIPOs, VP, market liquidity). Our results briefly indicate that the firms' tendency to pay dividends increases during periods of negative market sentiment and especially after Arabic spring revolution in the period 2010–2015. Our results also provide support for the catering incentive by showing that firms in the MENA tend to satisfy investors' desire for receiving cash distributions. In addition, the dividend premium appears to have significant predictive power in explaining the propensity to distribute profits in the MENA region. In detail, we find that stock liquidity has no significant explanatory power for firms' tendency to distribute dividends, hence refuting the hypothesis that companies tend to use cash dividends as an alternate for liquidity in the equity market. Further robustness checks indicate that business risk is negatively associated with firms' propensity to pay dividends. On the contrary, the composite sentiment index and the dividend premium are all had a positive effect on companies' tendency to pay cash distributions with control for various firm micro-characteristics and risk. Last but not least, we test the relation between lagged sentiment index and future excess returns for both dividend- and non-dividend payers and report that the relative excess returns between the two groups are negatively associated with lagged market sentiment in the period of three years after portfolio formation.

Our findings are of interest to both finance academics and practitioners/investors in the MENA stock markets. According to conventional finance theory, investors' expectations and preferences are characterised by relative homogeneity while the trading behaviour of individual investors cannot affect individual stock prices. Our findings on

firms' attitude on dividend policy in the MENA region do not support such assumptions. For example, we observe that investors in the Arab countries tend to prefer cash dividends during periods of the market downturn (where the prevailing sentiment is negative). This might be attributed to the tendency of those investors to seek financial safety during periods of recession. In terms of asset pricing, we show that both the relative valuation of dividend-paying stocks (dividend premium) and the composite sentiment index are all significant explanatory factors of companies' tendency to pay cash distributions, even after controlling for business risk.

This finding implies that although risk is an influential factor in determining the intrinsic value of common shares, it is not the only variable that could explain changes in stock market returns. Moreover, in contrast to the standard view that dividend payments and market liquidity are considered to be substitutes (Banerjee et al., 2007; Kuo et al., 2013), our results suggest that listed firms in the MENA region still pay cash dividends to their shareholders during periods of high market liquidity.

Our results on the relationship between dividend payments and stock excess returns under different periods of market sentiment suggest that MENA companies can adopt a market timing strategy and alternate their dividend policy depending on the wider market conditions. Hence, the best time for declaring cash dividends and/or increase the relevant dividend payments are that of a declining market. During periods of increase of investor sentiment firms could cut their cash dividends short, as according to our findings this will maximise the abnormal returns on their stock. This is attributed to the fact that investors in the MENA region appear to undervalue 'safe'[20] stocks in periods of positive market sentiment and vice versa. As such there are significant arbitrage profits to be made by investors when trading against the prevailing sentiment by rebalancing their asset portfolios in holding high growth (large-size) stocks during periods of negative (positive) market sentiments.

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Notes

1 As captured by the use of the book to market indicator (B/MV).

2 These studies generally contradict prior findings showing that dividend premiums can be used as a proxy of investors' demand for cash payments. For example, Bulan et al. (2007) shows a positive and statistically significant association between dividend premiums and firms' tendency to initiate cash dividends after controlling for business risk.

3 As documented in prior literature, for example Omran and Farrar (2006); Lagoarde-Segot and Lucy (2008) and El-Ansary and Mohsen (2017).

4 This is in line with agency cost theory and the overinvestment hypothesis (Jensen and Meckling, 1976; Jensen et al., 1992). At the empirical level, the overinvestment hypothesis is tested by Lang and Litzenberger (1989) who report that the abnormal returns around announcements of regular dividend increases are positively related to a firm's potential to overinvest. Nonetheless, Denis et al. (1994) and Yoon and Starks (1995) find that this relation is rather spurious.

5 Retained earnings over equity capital has used by the authors as a measure of the firm life cycle.

6 In this study, the authors explore the pattern of dividend payments over the period 1994–2007 using a sample of nine common law and 16 civil law stock markets.

7 Our sample of cash dividends is 5,072 compared to 1,510 observations for the case of share repurchases.

8 Poterba's (1986) findings contradict those of Long (1978).

9 According to Igan et al. (2010), the presence of a large number of institutional investors can be a reliable proxy for large shareholder power and increased levels of managerial monitoring.

10 As proxied by the stock turnover ratio.

11 Similar evidence is also produce from studies in the emerging markets (Mehta, 2012; Kisman, 2013; Ramadan, 2015).

12 In a study by Aivazian et al. (2003), the authors report a negative relationship between firms' debt ratios and the level of dividend payments in eight emerging markets (Korea, India, Malaysia, Thailand, Zimbabwe, Jordan, Pakistan and Turkey). This result is also corroborated by Kisman (2013) in his study of dividend policy for the Indonesian companies.

13 Nevertheless, a few studies in emerging markets also report a positive but insignificant relationship between these two variables (Mehta, 2012; Kisman, 2013).

14 There are few exceptions such as the studies by Savov and Weber (2006) and Hoberg and Prabhala (2009) which show that the dividend premium is a statistically insignificant proxy of investors' attitude for dividends at the aggregate level.

15 By total market volatility.

16 All variables and expected signs are presented in Appendix.

17 The tax bracket on dividend payout was about 38.1%.

18 Evidence that supports the catering theory came from the emerging markets (Tangjitprom, 2013; Ramadan, 2015).

19 The standard deviation of the difference between individual stock's returns and the expected returns derived from the market model.

20 Stocks of large-size firms which are more profitable in terms of earnings' generation ability.

Appendix

Table A1 Variables definition and expected relationships

Variables	*The ratios* (*the used equations*)	*Expected relationship*
Dependent variables		
The propensity to pay dividends	PTP = is binary variable equal 1 if the firm pays dividends and zero otherwise	
Dividend payout ratio	Total dividends over operating profits	
The probability of dividend initiation	A binary variable equal 1 if the firm pays the initial dividends in year *i* and zero otherwise.	
The probability of dividend omission	A binary variable equal 1 if the firm that already paid a cash dividend in the prior year is decided to omit the cash dividend in year *t* and zero otherwise.	
The probability of dividend change	1 Probability of dividend increase = is a binary variable equal 1 in case of dividend increase and zero otherwise	
	2 Probability of dividend decrease = is a binary variable equal 1 in case of dividend decrease and zero otherwise.	

Table A1 Variables definition and expected relationships (continued)

Variables	*The ratios* (*the used equations*)	*Expected relationship*
Independent variables		
Firm size	Logarithm of the total assets	+
Profitability	Earnings before interest and taxes over the total assets	+/–
Growth opportunities	Change in the total assets between the current year and the previous year	–
Total debt ratio	Total debts over the total assets	–
Cash ratio	Cash balance over the total assets	+
Dividend premium	Log difference between the value-weighted market to book for dividend-payers and non-dividend payers	+
Stock liquidity	Stock turnover ratio estimated as the number of traded stocks(trading volume) over the number of outstanding stocks	–
Life-cycle proxies	1 RE/TE = is the retained earnings over total equity	+/–
	2 TE/TA = is the total equity over total assets	
Cash flow volatility	The standard deviation of operating profits ratio	–
Composite sentiment index	Dividend premium, NIPOs, RIPOs, VP, market liquidity	–
Risk		
1 Systematic risk	The standard deviation of the predicted values from the regression between daily excess stock returns and market returns.	–
2 Idiosyncratic risk	The standard deviations of the residuals from the previous regression	–