Idiosyncratic factors that shape shareholder reward policies in capital intensive companies

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Abstract

This study empirically explores multiple company-specific determinants of dividend distributions and stock buybacks in capital intensive companies, by employing Generalized Method of Moments instrumenting for endogeneity based on a panel dataset of public maritime shipping companies. The results provide evidence that some idiosyncratic factors, such as strong reputation of dividend distribution as well as higher firm market value, free cash flow, firm profitability, analyst's coverage, free float, firm size, firm liquidity, market liquidity, and firm performance, are positively affecting the level of dividend distributions. In addition, lower level of leverage, collateralizable firm assets, risk, investment opportunities, and institutional ownership, are positively affecting the level of dividend distributions. Moreover, strong reputation of stock buybacks as well as higher firm market value, free cash flow, firm profitability, free float, firm size, leverage, firm liquidity, market liquidity, institutional ownership, and firm performance, are positively affecting the level of stock buybacks. Lastly, lower level of analyst's coverage, collateralizable firm assets, and risk, are positively affecting the level of stock buybacks. These empirical findings enrich literature and yield important implications for principal officers and investors as discussed herein.

1. Introduction

Dividend and stock buyback policies, along with capital budgeting and financing decisions, represent an important part of corporate finance decisions (Amar et al., 2018). Developing an optimal dividend strategy can help financial management to strengthen the value of the firm (Barros et al., 2020). In addition, given that dividend policy refers to either distributing or retaining net profits, it constitutes a key financial management decision, which affects companies' future growth and cash liquidity (Battisti et al., 2021). Although there are some interesting studies investigating factors of the external environment that influence companies' dividend policy (see Hu & Chang, 2022 who investigated whether air pollution affects dividend policy), empirical research on company-specific antecedes of dividend policy is lagging behind. Prior studies in the field of finance mainly focus on the effect of dividend policy on various variables, such as equity valuation (see Basse et al., 2022) and share price volatility (Camilleri et al., 2019). However, there are some recent studies that have investigated the effect of company-specific factors on dividend policy. For example, Barros et al. (2021) examined the relationship between CEO turnover and dividend policy, whereas Battisti et al. (2022) explored the association between company's intellectual capital and dividend policy. Moreover, Salah and Amar (2022) investigated the link between CSR practices and dividend policy. Thomson and Manu (2022) studied the connection between board composition and dividend policy. In the same context, the effect of financial reporting quality on dividend policy was analyzed (see Trihn et al., 2022).

Stock buybacks also enable a company to allocate its surplus cash to reward its shareholders. Given that dividend payments are subject to the level of profitability, stock buybacks represent an alternative shareholder reward policy (Dodig & Dzidic, 2022). Stock buyback refers to the policy of a company purchasing its own shares, cancelling the purchased shares and, thus, decreasing its total shares outstanding. As a result, companies are motivated to adopt the stock buyback policy when their shares are undervalued. Stock buybacks, which reduce the number of available shares for trading, also protect a company against the decline of its share price (Guo, 2020). Therefore, buybacks represent a means for corporations to reward shareholders (Guo, 2020). Literature on the antecedents of stock buybacks is scarce. Some studies have investigated some firm-specific factors that influence stock buybacks. Particularly, firms with more organizational capital (such as knowledge, culture, and business processes), which represent no balance sheet asset, seem more likely to choose share repurchases (Hasan & Uddin, 2022). Moreover, in cases when executive compensation is linked to performance measured by earnings per share, managers tend to prefer stock buybacks to support the stock price (Hasan & Uddin, 2022). Additionally, stock repurchases often involve a tax advantage over dividend distributions, thus motivating investors to opt for holding non-paying

stocks (Hasan & Uddin, 2022). Due to limited studies on stock buybacks, Oliveira and Jucá (2021) also argue that there is a gap in literature regarding studies investigating the antecedents of stock buybacks.

Turning to maritime shipping industry, empirical studies on the determinants of dividend policy are also very limited. Ocean going vessels represent the backbone of international trade and support the expansion of the global economy (Christiansen et al., 2013). Alexandridis et al. (2018) suggest that the international maritime transportation industry make a significant contribution to the global welfare and due to its challenging investment environment is of interest to the global investment community. In addition, shipping accounts for 80% of European Union's total exports and imports by volume and almost 50% by value (ICS-Shipping, 2023). Yeo (2018) examined the impact of free cash flow on dividend policy. In addition, Chasiotis et al., (2021a) explored the effect of profitability as well as external and internal financial operations on dividend policy. Apart from the above two shipping studies about the factors that shape dividend policy, there are some shipping studies that examine the effects of dividend policy. Drobetz et al. (2013), among other variables, examined the impact of dividend-paying status on financial leverage. Moreover, Drobetz et al. (2016) investigated the effect of dividend distributions on levels of cash holdings. Drobetz et al. (2019), who studied ownership concentration and capital allocation in maritime shipping companies, also explored the dividend payout ratio as an antecedent of return on assets. Chasiotis et al. (2021b) investigated the impact of dividend payout reduction on total firm investment. Lastly, Andrikopoulos et al. (2022) examined whether dividend yield affects the deviations of market capitalization from NAV. To the best of our knowledge there are no shipping-related empirical studies on stock buybacks. During the 2022 Greek Ship Finance Forum by Marine Money in Athens, we conducted a poll about the shareholder reward policies. The majority of the conference delegates (47%) mentioned as the most appropriate shareholder reward policy the distribution of dividends. Stock buyback came second with 30% of the conference delegates highlighting its appropriateness. Lastly, 23% of the conference delegates provided other shareholder reward policies, such as deleveraging and combination of deleveraging and payment of dividends.

Due to the gap in literature, the purpose of our study, which is explanatory in nature, is to examine multiple company-specific determinants of dividend and stock buyback policies, in the setting of maritime shipping. The rest of the paper is structured as follows: Section 2 reviews prior studies that had investigated the company-specific determinants of dividend distributions and stock buybacks in both the fields of corporate finance and transportation research. In section 3, we present the sample of our empirical research along with the explanatory variables employed in our two models with dependent variables the dividend distribution and the stock buyback. Section 4 provides the panel data analysis to explore the company-specific factors that affect dividend distributions and the stock buybacks, collectively referred hereinafter

as shareholder reward policies. The findings of our empirical study are discussed in section 5, and section 6 draws our concluding remarks.

2. Literature Review

Shareholder reward policies contribute to signaling the quality of the firm (Lucas & McDonald, 1998). Nevertheless, shareholders have different preferences referring to their firm's policy to distribute dividends or to repurchase shares (Lucas & McDonald, 1998).

To discuss which firm-specific factors affect shareholder reward policies, we shall first refer to firm size, which is a significant determinant of dividend distributions (Barros et al., 2020). Usually, larger firms avoid high dividend payouts due to the need for preserving liquidity to cover previous investments as well as making new reinvestments to cover their depreciating assets (Barros et al., 2020). Nevertheless, Redding (1997) suggests that there is a positive relation between the dividend payment and the size of the firm. This can be explained, as large firms are usually purchased by large investors who are attracted by dividend payments, thus large firms are more likely to distribute dividends (Redding, 1997).

Investment opportunities are usually negatively related to dividend payments as firms prefer to avoid dividend distribution when they have the opportunity to use retained earnings to support positive NPV investment projects (Dewasiri et al., 2019; Kang & Kim, 2021). Dividends should arise only after the optimum investment level has been reached (Dewasiri et al., 2019; Gugler, 2003). In other words, firms having good investment opportunities tend to prioritize their investment projects over dividend distributions (Dewasiri et al., 2019; Gugler, 2003). Shipping-related studies also concur with the negative relationship between dividends and investment opportunities (see Yeo, 2018). Besides that, Drobetz et al. (2013) suggest that in the shipping industry debt represents the most basic source of external finance, especially when the ship earnings are high.

Prior shipping-related studies indicate that free cash flow generation capacity can influence the shareholder reward policies (Yeo, 2018). The free cash flow represents the excess cash flow after having funded all investments with a positive net present value (Fuller & Blau, 2010). Yeo (2018) highlights that free cash flow can either be distributed to shareholders in the form of dividends, or be retained in the form of precautionary savings, or be utilized to decrease existing financing expenses via reducing leverage. Fuller and Blau (2010) imply that firms with high free cash flow pay more dividends. In maritime shipping companies, high free cash flow levels often represent a common source of conflict between the management and the shareholders because free cash flow is often devoted to investment projects, that do not necessarily have a positive Net Present Value (NPV), a fact that entails a reduction in dividend payments (Yeo, 2018). Consequently, the existence of free cash flow may intensify the conflict of interest between the shareholders

and the management (Fuller & Blau, 2010) a phenomenon that is also present in the shipping industry (Yeo, 2018).

Firm liquidity (available cash balance), which enables the firm to cover its short-term obligations, is also important for shareholder reward policies (Wahjudi, 2020). Referring to the shipping industry, Chasiotis et al. (2021a) imply that firm liquidity affects the dividend payout decisions in a positive way. Given that firms have secured enough liquidity, they will tend to smooth dividends (Asimakopoulos et al., 2021; Chasiotis et al., 2021a). Banerjee et al. (2007) support the view that firms with high liquidity are capable of distributing dividends to send a positive signal to shareholders. However, when a firm prefers to focus on its corporate growth the dividends will be decreased as firm liquidity will be utilized to support investment opportunities (Banerjee et al., 2007).

Firm Risk is another determinant of shareholder reward policies. Specifically, dividends may decrease when firms intend to increase their internal funding to undertake risky investment projects (Camilleri et al., 2018). An increase in dividend distribution leads to declining risk, since higher dividend distribution is the result of the transition from growth to maturity for the firm, as at more mature stages the firms tend to avoid risky investments (Cooper & Lambertides, 2018). Moreover, a decrease in dividend payout ratio represents a negative signal referring to increased systematic risk (Ali & Hegazy, 2022). Referring to the significance of stock prices, Camilleri et al. (2018) and Farooq et al. (2021) argue that higher dividend payout ratios seem to protect their stock prices from downside risk. In general terms, stock price behavior (i.e., securities volatility) can influence dividends policy, as higher dividends payout contributes to volatility reduction (Camilleri et al., 2018). As a result, firms prefer stock buybacks, particularly in cases when the company is undervalued and seeks to reduce its financial risk and improve uncertain debt paying ability (Li & Li, 2021).

Firm value is also related to shareholder reward policies (Barros et al., 2020; Bohnert et al., 2019). The existing literature shows a one-way relationship between firm value and dividends, by supporting the view that firms that pay large amounts of dividends have a higher value than non or low dividend payers (Kim et al., 2021). The reason for this lies on the fact that investors appreciate firms that avoid retention of earnings, utilize free cash flows in ways that meet the shareholders' interests and, thus, decrease the firm's agency costs due to conflicting interests between the management and the shareholders (Kim et al., 2021).

Firm profitability can positively affect the shareholder reward policies of firms (Amar et al., 2018). Chasiotis et al. (2021a) also underscore the importance of this factor for positively affecting shareholder reward policies in the shipping industry. The extant literature suggests that, usually, profitable firms, having high earnings, distribute at least a part of it as dividends, without necessarily implying that firms which choose not to distribute have no profits (Ahmed, 2015). Besides that, firms that have high profitability tend to adopt a quite stable dividend policy (Ahmed, 2015). Moreover, firms seem to use stock buybacks to

indirectly allocate temporary earnings to shareholders and use dividend distributions to directly allocate more permanent earnings to shareholders (Guay & Harford, 2000; Jagannathan et al., 2000).

Firm performance, which refers to the firm returns, seems to have a strong and positive relation with the corporate shareholders reward strategy (Ouma, 2012) The reason for this lies on the fact that, dividends are preferred over capital gains, i.e., stock appreciation, on the grounds that they are more certain and less risky (Ouma, 2012). Additionally, dividend announcements send a positive signal to shareholders that are associated with improved firm performance (Ouma, 2012). In the other hand, improved firm performance does not necessarily lead to higher dividend distributions. The reason for this is that dividends usually entail a tax burden for shareholders, whereas stock buybacks may allow shareholders to avoid taxes on corporate cash distributions (Brockman et al., 2008).

Amar et al. (2018) argue that shareholder reward policies and specifically dividend policy is influenced by antecedents such as the level of debt capital. The literature implies that a change in debt level often occurs in parallel with a change in the corporate shareholders reward strategy since an increase in dividend distribution is normally accompanied by a decrease in leverage (Cooper & Lambertides, 2018). Thus, the relation between changes in the dividend policy and the leverage strategy seems to be a negative one (Cooper & Lambertides, 2018). However, capital structure theories, such as 'pecking order theory', provide puzzling predictions on the relationship between financial leverage and dividend distributions. For those reasons, Frank and Goyal (2003) and Frank and Goyal (2009) have called for further empirical research on the relationship between dividend distributions and financial leverage. Referring to the shipping industry, dividend-paying firms are found to have both low and high leverage, depending on the leverage measures used (Drobetz et al., 2013).

Collateralizable firm assets, which can be used as security for corporate loans and bonds, usually support lower dividend payout (Wahjudi, 2020). Thus, the presence of collateralizable tangible assets is negatively related to distribution of dividends (Labhane, 2019). Referring to the shipping industry, Drobetz et al. (2019) suggest that vessels, which are highly liquid and very valuable assets, represent the main collateral of debt financing. In other words, shipping firms are characterized by high asset tangibility, which supports financial leverage secured by ship mortgages (i.e., the main collateral for shipping lenders). Therefore, since there is a negative relationship between financial leverage and dividends (Drobetz et al., 2013), one may suggest that collateralizable firm assets are also negatively associated with dividend payments.

The ownership structure of the firm also affects the corporate shareholders reward strategy (Camilleri et al., 2018; Kang & Kim, 2021). Specifically, the level of institutional ownership (i.e., entities that manage funds on behalf of others, such as mutual or pension funds, insurance companies) plays a positive role in shaping the shareholder reward policies (Wahjudi, 2020). The existing literature suggests that the greater

the proportion of shares held by large shareholders (such as institutional shareholders), the more augmented is the dividend distribution (Driver et al., 2020). The reason for this is that institutional investors tend to propel a preference for quick returns and dividend payment (Driver et al., 2020). Thus, institutional ownership is positively associated with the distribution of dividends, given that institutional investors represent major shareholders, who can influence financial management and who are usually pro dividend distributions (Chang, et al., 2016). However, Drobetz et al. (2021) suggest that institutional shareholders are often more focused on value-increasing investments rather than on myopic short-term gains, such as dividend payments. This suggestion is also confirmed by a prior study in the shipping industry (see Drobetz et al., 2019). In parallel to that, free float refers to the portion of corporate shares held by small and non-controlling shareholders (Sakinc & Gungor, 2015) In this regard, Sakinc and Kungor (2015) support the view that as the percentage of the free float increases, the distribution of dividends decreases. The reasoning behind this suggestion lies in the fact that increased free float strengthens the position of the management, which is interested in enhancing its own welfare (Sakinc & Gungor, 2015). This in turn will increase the agency costs deriving from the conflict of interests between the management and the shareholders, leading to lower firm profits and consequently to lower distribution of dividends (Sakinc & Gungor, 2015).

Reputation in terms of shareholders reward track record is also a noteworthy factor of dividend distributions, as firms with consistent prior dividend policy usually pay more dividends (Kang & Kim, 2021). Kim (2021) suggests that companies can build strong dividend reputation by paying non-decreasing dividends for some years in a row, underscoring the importance for shareholders of keeping the stream of dividend payments stable. This dividend reputation shapes the dividend policy in a positive way and conveys a positive signal to both existing and potential investors (Kim, 2021).

Additionally, the existing literature implies that a firm analyst's coverage can considerably affect shareholder reward policies, since reporting standards (i.e., transparent disclosures and good quality of reporting) seem to impact dividend policy (Barros et al., 2020; Camilleri et al., 2018; Wahjudi, 2020). In effect, financial reporting provides information to investors, summarizing the firm's financial performance. In this way, good quality of financial reporting positively affects dividend strategy by reducing agency problems (Trinh et al., 2022). The reason for this is that the quality of a firm's information environment, namely being a transparent one, contributes to increased dividend payout (Li & Zhao, 2008). In other cases, there is information asymmetry, which is measured by the analyst forecast errors (Li & Zhao, 2008). Referring specifically to the shipping industry, Chasiotis et al. (2021b) suggest that in cases of asymmetric information firms prefer internal over external financing. Although analyst's coverage seems to affect corporate dividend strategy, there seems to be no relationship between the asymmetric information and stock buybacks (Li & Zhao, 2008).

Lastly, market liquidity represents another idiosyncratic factor that affects dividend distributions (Brockman et al., 2008). Market liquidity refers to stock trading volume (Sigalas, 2023). High stock trading volume, i.e., market liquidity, allows the company to repurchase more shares in the market. In effect, low market liquidity encourages the use of dividend payments over stock repurchases. The reason is that when market liquidity is low, market transactions increase the transaction cost of trading (Brockman et al., 2008). Thus, share repurchases are avoided and dividend distribution is preferred by firms as the more appropriate shareholder reward policy (Brockman et al., 2008).

Based on our literature review, most prior studies have neglected stock buybacks, as shareholder reward policies, since they focus solely on dividend distributions. Moreover, prior studies in the field of corporate finance have investigated individual firm-specific determinants of dividend distributions. Thus, literature is lacking empirical studies investigating multiple firm-specific antecedents affecting dividend policy. In addition, there is a gap in literature for studies that are simultaneously exploring factors that shape shareholder reward policies, i.e., both dividend distributions and stock buybacks. Lastly, there is a limited body of shipping literature about dividend distributions and no study of stock buybacks. This study aims to fill the gap in the interdisciplinary field of corporate finance and transportation research, by empirically investigating the impact of multiple firm-idiosyncratic factors on shareholder reward policies, i.e., on both dividend distributions and stock buybacks.

3. Methods and Data

3.1 Dataset

The population of our study consists of all the public maritime shipping companies operating in the dry bulk, wet tanker, gas tanker, and container shipping segments, excluding the master limited partnership (MLP) type of companies. MLP maritime shipping companies are excluded from our population because MLPs are obliged, under their bylaws, to make regular cash distributions to their shareholders in case the cash distributions would not cause their liabilities to exceed the fair value of their assets. Therefore, the inclusion of these companies, which their MLP structure determines their shareholder reward policies, would have diluted the results of our study.

The sampling frame of our study was based on the archive of public maritime shipping companies posted on Stockwatch section of TradeWinds. The list of maritime shipping companies from TradeWinds, which is the largest maritime shipping news service provider, has been used in past shipping-related empirical studies (see Andrikopoulos et al., 2022; Mantzari et al., 2023; Pouliasis et al., 2018).

The derived sample of our study includes 101 maritime shipping companies, which were publicly listed companies in 2022, offering shipping transportation services to charterers via ownership of dry bulk, wet

bulk, gas bulk, and container vessels. Out of a total of 101 public maritime shipping companies of our sample, 31companies (30.7%) were operating in the dry bulk shipping segment. Moreover, 8 companies (7.9%) and 9 companies (8.9%) were operating in the product tanker shipping segment and the crude tanker shipping segment, respectively. In addition, 7 companies (6.9%) and 3 companies (3.0%) were operating in the liquefied petroleum gas shipping segment and the liquefied natural gas shipping segment, respectively. Furthermore, 15 companies (14.9%) were operating in container shipping segment. Lastly, 28 companies (27.7%) were operating in more than one shipping segment by owning diversified fleets.

Based on the sample of public maritime shipping companies, we compiled an unbalanced panel dataset with 101 companies for 56 quarters of the period 2009 to 2022. The development of dependent and independent variables of our sample was based on financial data that were extracted from the Bloomberg database.

3.2 Variables

3.2.1 Dependent variables

The first dependent variable of our study is the dividend distribution, which is one of the two commonly used shareholder reward policies (Amar et al., 2018). Dividend distributions are quite broad that, among others, include regular cash dividend, special cash dividend, stock dividend, distribution of rights issue, open offer, stock splits, distribution of spin-off shares, return of capital distribution, and bonus dividend. In our study we do not include distribution of rights issue, open offer, stock splits, and distribution of spin-off shares because these are not distributions to reward shareholders. In particular, rights issue is associated with poison pill rights, which are proactive mechanism used by the board of directors of public companies to prevent competitors and activist investors from taking control of the company by buying up large amounts of its stock in the open market. Moreover, open offers are excluded from our study because companies are providing an open offer to facilitate their equity raising activities by allowing existing shareholders to purchase stock at a price that is lower than the current share price. Additionally, stock splits are excluded from our study because companies are issuing more shares to current shareholders not to reward shareholders but rather to offset the artificial decrease in the stock price due to stock splits. Lastly, distributions of spin-off shares are also excluded from our study because companies are granting these shares to compensate their shareholders for the value of the company that has been transferred to the spun-off company. Therefore, in our study we consider regular cash dividend, special cash dividend, stock dividend, return of capital distribution, and bonus dividend as the only dividend distributions to reward shareholders. To measure the amount of dividend distribution, we use as a proxy variable the ratio of dividend per share (Amar et al., 2018). To collect the data for our first dependent variable, we downloaded from Bloomberg the historical record of all dividend distributions, i.e., dividends per share, of all 101

companies in our sample. Then, we diligently excluded the non-qualified dividend distributions described above (i.e., distribution of rights issue, open offer, stock splits, distribution of spin-off shares). For the remainder of the historical records, we classified dividends per share for all qualified dividend distributions per quarter per company for the period 2009 to 2022 to compile the panel data of our first dependent variable. Because our sample includes companies that their stock is publicly traded in stock exchanges of various countries, we converted the amount of dividend per share at local currency to the USD currency (from 17 different currencies).

The second dependent variable of our study is the stock buyback. A stock buyback, which is the purchase of the issuing company's own stock, can take place either by open-market stock repurchases, or via a tender offer (Dodig & Dzidic, 2022). To collect the data for our second dependent variable, we downloaded from Bloomberg the historical record of all stock buybacks of all 101 companies in our sample. Next, we added and the various stock buybacks within a quarter for each company and classified total quarterly amounts of stock buyback per company for the period 2009 to 2022. Like the first dependent variable, we adjusted the amount of stock buyback to the USD currency by using 17 different FX currencies. Lastly, the amount of stock buyback was scaled by total shares outstanding at quarter-end to compile the panel data of our second dependent variable.

3.2.2 Independent variables

Based on our literature review, we introduce several independent variables that may influence the amount of maritime shipping companies' dividend per share and stock buyback per share. The first independent variable for the investigation of dividend distribution's and stock buyback's determinants, is reputation of dividend distribution and reputation of stock buyback, respectively. As per Dewasiri et al. (2019), we use the previous year's dividends, i.e., dividend per share the preceding fourth quarter, as a proxy variable to measure reputation of dividend distribution. We apply the same proxy to measure reputation of stock buyback, by employing the previous year's stock buyback per share. The second independent variable is firm market value. Firm market value is estimated as the natural logarithm of market capitalization (Al-Afeef, 2020), which is calculated as the product of total shares outstanding at quarter-end and share price at quarter-end. The third independent variable is free cash flow as per recent studies (Yeo, 2018). Free cash flow, which represents the cash that a company is able to generate after laying out the money required to maintain or expand its asset base, is calculated as cash flow from operations minus capital expenditures. Free cash flow variable is scaled over revenue to factor in the difference size of the maritime shipping companies. The fourth independent variable is firm profitability. Prior studies measure firm profitability with profit margins (see Ahmed, 2015; Barros et al., 2020). In our study, we use earnings (net income/loss) per share as a proxy variable of profitability to investigate the relationship between dividend per share as

well as stock buyback per share and firm profitability. The fifth independent variable is sell-side analyst's coverage. As per prior studies (see Barros et al., 2020), sell-side analyst's coverage is measured by the number of sell-side analysts covering company's stock and publishing frequent equity reports about the company. The sixth independent variable is free float, i.e., percent of the company stock that is freely traded, a variable used in prior studies (see Barros et al., 2020; Sakinc & Gungor, 2015). We measure free float as the percentage of outstanding stock held by public investors, which are shareholders owning less than 5% of outstanding stock. The seventh independent variable is firm size. Ain et al. (2021) measure firm size as the natural logarithm of total assets. We proxy firm size by the natural logarithm of total invested capital, which is the total amount of money that was endowed into a company by the shareholders, bondholders, and all other interested parties. Total invested capital that includes total debt, plus total shareholders' equity, plus allowance for doubtful accounts, it captures heterogeneity of firm size from a capital provider's perspective. The eighth independent variable is financial leverage, a frequently used variable in shipping-related studies (Andrikopoulos et al., 2021; Andrikopoulos et al., 2022; Mantzari et al., 2023) and prior studies on dividend distributions (Cooper & Lambertides, 2018). We measure financial leverage with the ratio of total short-term and long-term debt over total assets. The ninth independent variable is firm liquidity, i.e., the ability of a firm to meet its short-term liabilities with its short-term assets. Consistent with Wahjudi (2020), who utilizes the current ratio, we measure firm liquidity with the ratio of total current assets (assets that are either readily convertible into cash or convertible into cash the next 12 months) over total current liabilities (liabilities maturing the next 12 months). The tenth independent variable is market liquidity, or how frequently stock is traded. Like Setiawan and Vivien (2021), we use the ratio of quarterly number of shares traded over quarter-end shares outstanding to measure market liquidity. The eleventh independent variable is collateralizable firm assets, i.e., the amount of assets that can be pledged by a company to its creditors as collateral. Contrary to prior studies (Labhane, 2019; Wahjudi, 2020) that scale fixed assets over total assets, we measure collateralizable firm assets as the natural logarithm of net fixed assets (net book value of vessels in our study) to be consistent with other and similar independent variables in our study, such as firm market value and firm size. The twelfth independent variable is firm risk. Amar et al. (2018) measure risk as share price divided by earnings per share. Similar to prior financial studies in maritime shipping (see Mantzari et al., 2023), we measure risk as the annualized standard deviation of daily logarithmic historical price changes for the 360 most recent trading days closing price at the end of each quarter, expressed as a percentage. The thirteenth independent variable is investment opportunities, which is measured as market capitalization over book value of total equity (Kang & Kim, 2021; Perotti & Gelfer, 200). The fourteenth independent variable is institutional ownership, a commonly used variable in both dividend-related studies (Chang et al., 2016) and shipping-related studies (Andrikopoulos et al., 2022; Mantzari et al., 2023; Tsouknidis, 2019). We measure institutional ownership as the percentage ratio of

freely traded shares held by institutions over the number of float shares outstanding. The fifteen and last independent variable is firm performance. Firm performance should not be confused with firm profitability. Firm performance is used in prior dividend-related studies (Ain et al., 2021) as well as stock buyback related studies (Li & Li, 2021). We measure firm performance with the return on assets ratio, i.e., as trailing 12-month earnings (net income/loss) over quarterly average total assets. Table 1 presents the description of the variables used in our study and their descriptive statistics.

TABLE 1 Variables

Panel A: Description of variables

Variable	Coding	Definition
Dividend Distribution	**DVD**	Amount of dividend per share
Stock Buyback	**SBB**	Amount of stock buyback per share
Reputation of Dividend Distribution	**RDVD**	Previous year's dividend per share
Reputation of Stock Buyback	**RSBB**	Previous year's stock buyback per share
Firm Market Value	**LMCAP**	Natural logarithm of market capitalization
Free Cash Flow	**SFCF**	Free cash flow over revenue
Firm Profitability	**EPS**	Earnings per share
Analyst's Coverage	**EQAN**	Number of sell-side analysts covering a stock
Free Float	**FFLOAT**	Percentage of free float shares
Firm Size	**LINVCAP**	Natural logarithm of total invested capital
Leverage	**LEV**	Total debt over total assets
Firm Liquidity	**LIQ**	Total current assets over total current liabilities
Market Liquidity	**MLIQ**	Turnover of shares over shares outstanding
Collateralizable Firm Assets	**LPPE**	Natural logarithm of net fixed assets
Risk	**RISK**	Annualized standard deviation of daily stock returns
Investment Opportunities	**MTBV**	Market capitalization over total equity
Institutional Ownership	**INST**	Percentage of institutional shares
Firm Performance	**ROA**	Trailing 12-month earnings over total assets

Panel B: Descriptive statistics

	Mean	Median	Maximum	Minimum	Std. Dev.	N
DVD	3071.457	0	2222633	0	72955.78	5544
SBB	0.054809	0	35.29412	0	0.850666	4785
RDVD	3308.323	0	2222633	0	75712.5	5147
RSBB	0.05457	0	35.29412	0	0.880431	4396
LMCAP	6.000416	6.119612	11.0295	0.238487	1.582394	4749
SFCF	-1.326414	0.015733	6.510863	-1380.93	30.17557	3369
EPS	-21.03953	0.017067	13983	-33920.2	826.1546	4277
EQAN	5.730811	4	33	0	6.316083	5576
FFLOAT	59.50396	58.16780	100.00000	0.13100	25.19475	4719
LINVCAP	7.257873	7.326978	10.81788	-2.41687	1.389172	4292
LEV	0.477837	0.476776	3.344105	0.000391	0.191521	4253
LIQ	2.111641	1.24484	461.949	0.006886	9.792536	4249
MLIQ	3.78E+05	711.0018	7.65E+08	0.002274	12145450	4747
LPPE	6.931305	7.023214	9.73645	-6.16582	1.499565	4325
RISK	53.52502	46.65	285.695	11.688	29.42306	4693
MTBV	3.599971	0.707949	5261.873	-17.8787	115.3768	4029
INST	42.51469	39.128	352.058	0.004	30.58891	4277
ROA	0.588277	1.0807	193.8812	-104.445	11.65111	4153

4. Analysis

We employ panel data analysis to empirically investigate the cross-sectional and time series determinants of shareholder reward policies, i.e., dividend distributions and stock buybacks, in the setting of the shipping industry. The panel data allows empirical investigation of determinants that either change over time, or change among companies, or both. This allows us to explore and, thus, explain companies' heterogeneity regarding the factors that influence their shareholder reward policies. Drawing from literature we specify our model 1 with DVD as the dependent variable and model 2 with SBB as the dependent variable, as follows:

$$DVD_{it} = f \begin{pmatrix} RDVD_{it}, LMCAP_{it}, SFCF_{it}, MARGIN_{it}, EQAN_{it}, FFLOAT_{it}, LINVCAP_{it}, \\ LEV_{it}, LIQ_{it}, MLIQ_{it}, LPPE_{it}, RISK_{it}, MTBV_{it}, INST_{it}, ROA_{it} \end{pmatrix} \quad (1)$$

$$SBB_{it} = f \begin{pmatrix} RSBB_{it}, LMCAP_{it}, SFCF_{it}, MARGIN_{it}, EQAN_{it}, FFLOAT_{it}, LINVCAP_{it}, \\ LEV_{it}, LIQ_{it}, MLIQ_{it}, LPPE_{it}, RISK_{it}, MTBV_{it}, INST_{it}, ROA_{it} \end{pmatrix} \quad (2)$$

i = number of companies in our study, i.e., 101 companies, and

t = number of quarters in our study, i.e., 56 quarters.

First, we run Hausman test to assess whether we should use random effects or fixed effects specification (Wooldridge, 2010). The results of Hausman tests of both models indicate that fixed effects should be used (see Table 2)

TABLE 2 Hausman Test

Dependent Variable	Regression Model	Chi-Sq Statistic	P-value
DVD	Random Effects	80.969	0.000
SBB	Random Effects	77.923	0.000

Second, we estimate model 1 and model 2 with panel least squares (LS) using fixed effects (see column 1, in Table 3 and Table 4). Most of the regressors of model 1 and model 2 were found to be statistically insignificant. The inclusion of independent variables in our models such as free cash flow (SFCF), firm market value (LMCAP), analyst's coverage (EQAN), firm size (LINVCAP), firm liquidity (LIQ), collateralizable firm assets (LPPE), and investment opportunities (MTBV) that may have a bidirectional relationship with dividend distributions and stock buybacks, raises concern about the presence of endogeneity. Based on the above we identified as endogenous variables the SFCF, LMCAP, EQAN, LINVCAP, LIQ, LPPE, and MTBV. We selected as exogenous/predetermined variables the LEV, EPS, ROA, RISK, MLIQ, FFLOAT, and INST. The differences from their means of the exogenous variables were included as instruments.

Therefore, we re-estimate model 1 and model 2 with panel two-stage least squares (2SLS) using fixed effects (see column 2, in Table 3 and Table 4). However, most of the regressors of model 1 and model 2 were also found to be statistically insignificant. The fact that our estimates are not efficient indicates that there is serial correlation between some of our regressors with the error term in both models.

For that reason, we resort to the estimation of model 1 and model 2 with Arelano-Bond (A-B) dynamic generalized method of moments (GMM) (see column 3, in Table 3 and Table 4). GMM is more efficient than 2SLS because it addresses arbitrary patterns of autocorrelation and heteroskedasticity (Ahn & Schmidt, 1999). In addition, A-B methodology on dynamic panels with lagged levels of the dependent variable as

regressors and with first difference of the regression equation leads to instrument exogeneity and eliminates the individual effects (Arellano & Bond, 1991).

TABLE 3 Determinants of DVD

	LS (1)		2SLS (2)		A-B GMM) (3)	
C	-1.969	***	-20.061	***		
	(0.6888)		(3.1311)			
DVD(-1)					-0.077	***
					(0.0002)	
RDVD	0.001		-0.003		0.000	***
	(0.0043)		(0.0056)		(0.0000)	
LMCAP	0.053		-0.710		0.099	***
	(0.0617)		(0.8552)		(0.0003)	
SFCF	0.000		-0.001		0.018	***
	(0.0009)		(0.0013)		(0.0004)	
EPS	0.000		0.000		0.000	**
	(0.0000)		(0.0001)		(0.0000)	
EQAN	-0.008		-0.003		0.003	***
	(0.0093)		(0.0132)		(0.0001)	
FFLOAT	0.005	*	0.000		0.009	***
	(0.0025)		(0.0049)		(0.0000)	
LINVCAP	0.529	***	5.653	***	0.635	***
	(0.1617)		(1.1549)		(0.0013)	
LEV	-0.753	**	-3.626	*	-0.567	***
	(0.3415)		(1.9897)		(0.0051)	
LIQ	0.000		0.004		0.006	***
	(0.0031)		(0.0040)		(0.0001)	
MLIQ	0.000		0.000		0.000	***
	(0.0000)		(0.0000)		(0.0000)	
LPPE	-0.259	**	-2.171	***	-0.343	***
	(0.1084)		(0.3337)		(0.0008)	
RISK	-0.003	*	-0.009	**	-0.007	***
	(0.0016)		(0.0037)		(0.0000)	
MTBV	-0.007		0.435		-0.002	***
	(0.0205)		(1.1542)		(0.0002)	
INST	-0.001		-0.006	**	-0.006	***
	(0.0017)		(0.0027)		(0.0000)	
ROA	0.017	***	-0.020	**	0.040	***
	(0.0037)		(0.0077)		(0.0001)	

*Note: Figures in ( ) are standard errors. *, ** and ***, indicate significance at the 10%, 5% and 1% levels, respectively.*

TABLE 4 Determinants of SBB

	LS (1)		2SLS (2)		A-B GMM) (3)	
C	-9.381		-13.044			
	(10.7917)		(43.3532)			
SBB(-1)					-0.084	***
					(0.0010)	
RSBB	0.191	***	0.191	***	0.325	***
	(0.0220)		(0.0247)		(0.0003)	
LMCAP	0.208		4.746		0.213	***
	(0.9662)		(11.8426)		(0.0301)	
SFCF	-0.001		-0.004		0.003	**
	(0.0140)		(0.0185)		(0.0017)	
EPS	0.000		0.000		0.000	***
	(0.0006)		(0.0009)		(0.0000)	
EQAN	-0.115		-0.106		-0.031	***
	(0.1450)		(0.1823)		(0.0014)	
FFLOAT	0.007		-0.024		0.007	***
	(0.0392)		(0.0683)		(0.0007)	
LINVCAP	3.533		1.096		0.487	***
	(2.5326)		(15.9631)		(0.0976)	
LEV	5.460		14.376		1.097	***
	(5.3501)		(27.5250)		(0.0807)	
LIQ	0.003		0.003		0.016	***
	(0.0481)		(0.0549)		(0.0043)	
MLIQ	0.000		0.000		0.000	***
	(0.0000)		(0.0000)		(0.0000)	
LPPE	-2.764		-3.078		-0.694	***
	(1.6968)		(4.6259)		(0.0233)	
RISK	-0.032		-0.014		-0.008	***
	(0.0256)		(0.0506)		(0.0002)	
MTBV	0.065		-7.730		0.066	
	(0.3214)		(15.9955)		(0.0401)	
INST	0.053	**	0.040		0.006	***
	(0.0268)		(0.0376)		(0.0004)	
ROA	0.073		0.078		0.005	***
	(0.0573)		(0.1069)		(0.0017)	

*Note: Figures in ( ) are standard errors. *, ** and ***, indicate significance at the 10%, 5% and 1% levels, respectively.*

The selected method of estimation (i.e., A-B GMM) indicates that the regressors for all the determinants of DVD are statically significant at the 1% level, except for EPS that is statically significant at 5% level. The p-value of J-statistics is 0.462, suggesting satisfactory instruments specification for model 1 with DVD as

dependent variable. Turning to the determinants of SBB, all regressors are statically significant at the 1% level, apart from SFCF that is statically significant at the 5% level, and MTBV that is borderline not statistically significant at 10% level (p-value of 0.1025). The p-value of J-statistics is 0.209, also suggesting satisfactory instruments specification for model 2 with SBB as dependent variable. Our results reveal that the reputation of dividend distribution (RDVD) and the reputation of stock buyback (RSBB) are positively related to DVD and SBB, respectively. Firm market value (LMCAP) and Free Cash Flow (SFCF) are positive antecedents of both DVD and SBB. Firm profitability (EPS) seems to have a positive effect on both DVD and SBB. Analyst's coverage (EQAN) is a positive factor for DVD and negative factor SBB. Free float (FFLOAT) and firm size (LINVCAP) are positively associated with both DVD and SBB. Leverage (LEV) has a negative impact on DVD and a positive impact on SBB. Firm liquidity (LIQ) and market liquidity (MLIQ) are positive factors of DVD and SBB, whereas collateralizable firm assets (LPPE) and risk (RISK) are negative factors of DVD and SBB. Investment opportunities (MTBV) seem to be a statistically significant and negative factor of DVD as well as not statistically significant factor of SBB. Institutional ownership (INST) is negatively affecting DVD and positively affecting SBB. Lastly, Firm performance (ROA) is an important and positive antecedent of both DVD and SBB.

5. Discussion

Our results show that reputation is positively related to dividend distributions and stock buybacks. On the one hand, companies which pay stable dividends are highly appreciated by shareholders (Basse et al., 2021; Battisti et al., 2021). In this context, the 'stickiness of dividends theory' refers to the phenomenon which describes the inclination of shareholders to anticipate a particular level of dividend payment (Thompson & Manu, 2021). Besides that, firms operating in markets with asymmetric information tend to pay higher dividend yields to protect their reputation and prevent negative investor sentiments (Kim et al., 2021). The shipping industry is characterized by intense information asymmetry and thus firms need to protect their reputation in the eyes of their shareholders (Andrikopoulos et al, 2013). Thus, the importance of shareholders sentiments triggers the adoption of a behavioral aspect regarding dividend strategy of firms (Thompson & Manu, 2021).

The findings of our study also reveal a positive association of market value, firm liquidity, firm performance and firm profitability with dividend distributions and stock buybacks. Our study concurs with a prior study in shipping, suggesting that firm profitability positively affects dividend distribution (Chasiotis et al., 2021a). Our results are in accordance with the 'signaling theory', which states that shareholder reward policies disseminate information regarding firm's good economic condition to investors (Dewasiri et al., 2019). Information in the shipping industry is unevenly shared between shareholders (Andrikopoulos et al., 2013). Thus, investors usually lack data about a firm's growth prospects. However, taking care of such

information asymmetry problems is essential, as firms need to provide positive signals to existing and prospective investors (Basse et al., 2021; Thewissen et al.,2023). Shareholder reward policies represent powerful tools for communicating signals of positive perspectives to investors (Amar et al., 2018; Sami & Abdallah, 2021). In this respect, investors are inclined to observe the shareholder reward policies of firms, attempting to reduce their information disadvantage (Amar et al., 2018). High/low dividend payout is generally translated in positive/negative firm prospects and good/bad quality of business (even though dividends are expensive in terms of personal income taxation) (Ali, 2022; Battisti et al., 2021; Salah & Jarboui, 2021). Moreover, the percentage of dividend payout ratio disseminates credible information between insiders (senior managers and controlling shareholders) and other stakeholders (Athari, 2021; Barros et al., 2021; Trinh et al., 2022). Generally, dividend cuts or cancels are interpreted by investors as a warning of future problems, triggering negative sentiment that in turn negatively affects the stock price (Basse et al., 2021).

Moreover, our study indicates that free cash flow is positively related to dividend distributions and stock buybacks. Our findings contradict a prior study in the shipping industry. Yeo (2018) showed that firms with high free cash flow usually increase investment and reduce dividend distribution. Nevertheless, our finding can be explained by the 'agency theory', which underscores that managers have an inclination for over-investment of excessive cash flow (Driver et al., 2020). The agency theory, deriving from the separation of management and ownership in firms, describes the conflict of interests between managers and shareholders, especially in cases where the company generates substantial cash flows (Amar et al., 2018; Salah & Jarboui, 2021). In this respect, managers do not necessarily act in such a way as to protect the interests of shareholders (Basse et al., 2021). Instead, managers usually prefer to allocate retaining earnings in favor of their own interests (Liu & Shu, 2022). Focusing on reducing the conflict of interest between agents (managers) and principals (shareholders), the agency theory suggests that shareholder reward policies can be used as way to control the management and reduce the free cash flow that could be allocated in opportunistic and unprofitable investments (Amar et al., 2018; Atanassov & Mandell, 2018). Given that dividends and stock buybacks are essentially distribution of excess earnings and retained earnings, respectively, our results are accordance with 'free cash flow theory', stating that dividends are distributed to serve the shareholders while minimizing agency costs, instead of investing in plans with negative net present value (Dewasiri et al., 2019).

Moreover, our results reveal that free float has a positive relationship with dividend distributions and stock buybacks, whereas institutional ownership has a negative and positive relationship with dividend distribution and stock buybacks, respectively. Contrary to our results, firms with high ownership concentration tend to distribute more dividends (Song et al., 2021). Similarly, a prior study focused on the

shipping industry states that the presence of large shareholders usually prevents firms from investing in value reducing projects and, thus, protects firm performance, which in turn entails higher profitability and distribution of dividends (Drobetz et al., 2019). However, Song et al. (2021) support the view that the majority shareholders face the dilemma of either acquiring shared benefits from the distribution of dividends, or enjoying private benefits from controlling corporate cash reserves. In particular, the 'tunneling model' suggests that large shareholders that can exercise control over business decision making, tend to extract/tunnel to themselves fees via related party transactions (see Andrikopoulos et al., 2021) and appropriate firm resources, whereas free float shareholders are mainly interested in higher distribution of dividends to enhance their own welfare (Atanassov & Mandell, 2018). Likewise, the 'rent extraction hypothesis' claims that the presence of powerful shareholders prefer to acquire or maintain private control advantages and disregard dividends, which are common to all common shareholders (Dewasiri et al., 2019), or stock buybacks, which have a positive effect for all common shareholders. Thus, tunneling model and rent extraction hypothesis confirm the positive and negative effect of free float and institutional ownership, respectively, on dividend payments and stock buybacks.

Next, our results suggest that leverage has a negative relationship with dividend distributions and a positive relationship with stock buybacks. Notwithstanding the existing capital structure theories that have ambiguous predictions on the relationship between financial leverage and dividend distributions, our finding concurs with a prior study in finance (Frank & Goyal, 2003; Frank & Goyal, 2009). Dividend distributions and stock buybacks lead to lower retained earnings, requiring firms to access external financing, such as debt financing, to cover their needs. Thus, pecking order theory predicts a rather positive relationship between financial leverage and shareholders reward policies, since debt is preferred to equity in the financing hierarchy. However, dividend-paying shipping companies have better access to equity raisings from capital markets (Drobetz et al., 2013). The above proposition explains our finding that there is a negative relationship between dividend payment and leverage since debt and equity are competing sources of capital. In addition, our results shed some light on the mixed results of a prior study in the setting of shipping industry (see Drobetz et al., 2013). High levels of financial leverage result in high debt service costs (i.e., interest expenses and installments). High debt service costs may lead to financial distress since operating cash flows may not be sufficient to cover the inflated installments and interest expenses due to high leverage. Obviously, in cases operating cash flows are not sufficient to meet debt obligations due to high leverage, dividend distributions will be elusive as well. Thus, 'financial distress proposition' explains the negative relationship between financial leverage and dividend distributions.

Regarding the collateralizable firm assets, our results show a negative relation with dividend distributions and stock buybacks. This finding can be explained by the fact that the presence of collateralizable assets go

hand in hand with leverage, which is used to finance investment projects. Thus, firms with high level of collateralizable firm assets will refrain from distribution of dividends (Salah & Jarboui, 2021). The main assets of maritime shipping, which is an asset intensive industry, are vessels. Maritime shipping firms partially fund a significant part of the acquisition price of their vessels with debt capital. It is customary for debt capital providers in the shipping industry to request a ship mortgage, which serves as their main collateral and security, to provide debt financing to ship-owning companies. Therefore, it is expected that almost all assets, i.e., vessels, of a maritime shipping company will be collateralized (Drobetz et al., 2013). In view of the above, the negative relationship between collateralizable firm assets and shareholder reward policies for shipping firms is hardly a surprise.

Next, our results reveal that investment opportunities have a negative relation with dividend distribution. Initially, the residual dividend policy argues that higher dividend payments are the result of excessive cash after investments and expenditures (Hu & Chang, 2022). In parallel to that, the 'dividend irrelevancy hypothesis' implies that, under perfect market circumstances where taxes are absent, dividends should not affect investors on the basis that increased dividends would entail lower capital gains for stockholders, thus the received dividend would be neutralized (Basse et al., 2021). In an imperfect market though, the dividend strategy can indirectly affect shareholders wealth by influencing investment options, given that distribution of dividends would logically hinder attractive investment opportunities (Amar et al., 2018; Battisti et al., 2021; Tran, 2021). Besides that, the 'bird in the hand theory' outlines the shareholders' preference in dividends over uncertain retained earnings that would be the result of speculative investments (Camilleri et al., 2018; Dewasiri et al., 2019; Hu & Chang, 2022; Setiawan & Vivien, 2021). Based on the above, our finding, i.e., investment opportunities are negatively associated with the distribution of dividends, is in line with mainstream theories in corporate finance.

Referring to the risk as a determinant of shareholder reward policies, our results suggest that it has a negative impact on both dividend distributions and stock buybacks. This result seems rational since risky business, as measured by the volatility of their stock returns, would compromise shareholder reward policies. In this respect, firm risk, which may lead to financial distress and shortage of capital, impels parsimonious financial management with no or limited shareholder reward policies to protect the financial stability of firms (Asif et al., 2011).

The firm size was found to have a positive relationship with dividend distributions and stock buybacks. The finding that larger firm size is positively related to dividend distributions and stock buybacks seems logical, on the grounds that such firms may have more retained earnings to distribute in the form of dividends or to allocate in stock buybacks. Additionally, referring to the 'firm's life cycle', we need to underscore the fact that it can greatly affect dividend strategy, given that mature firms tend to distribute more dividends

pertaining to their high earnings and decreased investment opportunities (Barros et al., 2020; Sami & Abdallah, 2021). On the contrary, young firms have more investment options and lower earnings, thus they are paying less dividends (Sami & Abdallah, 2021).

Our results indicate that analysts' coverage has a positive and negative relationship with dividend distributions and stock buybacks. In this regard, higher analysts' coverage reduces information asymmetry and, through the 'clientele effect' triggers the distribution of dividends (Barros et al., 2020). Firms with more transparent information environments distribute larger dividends, while the same does not apply in stock buybacks (Li & Zhao, 2008). On the one hand, this proposition is in accordance with the signaling theory of dividends, which reflects the necessity for firms to confirm to the market the positive information about their sound financial condition by distributing more dividends. On the other hand, the absence of equity analysts covering a stock seems to propel the initiation of stock buyback programs by the companies to attract the interest of investors.

Lastly, our results show a positive relationship between market liquidity and distribution of dividends as well as between market liquidity and stock buybacks. Prior studies suggest that higher market liquidity triggers more stock repurchases compared to the alterative shareholder reward policies, i.e., distribution of dividends (Brockman et al., 2008). The reasoning for this proposition is that managers are not willing to repurchase shares of their company when market liquidity is low because such a trading activity could increase their transaction costs (Brockman et al., 2008). In addition, our results imply that companies distributing dividends enjoy better stock liquidity compared to companies with lower or no dividend distributions. In turn, increased stock liquidity leads to increased dividend distributions to satisfy the expectations of the investors who recently became shareholders.

6. Concluding Remarks

Our literature review indicates that there is a lack of empirical studies in the academic fields of corporate finance and transportation research on firm-specific factors that influence shareholder reward policies in capital intensive companies. The purpose of this study is to fill this gap by employing panel data analysis in the setting of maritime shipping industry.

The results of the study indicate that strong reputation of dividend distribution as well as higher firm market value, free cash flow, firm profitability, analyst's coverage, free float, firm size, firm liquidity, market liquidity, and firm performance, are positively affecting the level of dividend distributions. In addition, lower level of leverage, collateralizable firm assets, risk, investment opportunities, and institutional ownership, are positively affecting the level of dividend distributions. Moreover, strong reputation of stock buybacks as well as higher firm market value, free cash flow, firm profitability, free float, firm size,

leverage, firm liquidity, market liquidity, institutional ownership, and firm performance, are positively affecting the level of stock buybacks. Lastly, lower level of analyst's coverage, collateralizable firm assets, and risk, are positively affecting the level of stock buybacks. These findings, apart from enriching the body of literature about the idiosyncratic factors that shape shareholder reward policies in capital intensive companies, provide some important insights that are consistent with major theories in finance, such as stickiness of dividends theory, signaling theory, agency theory, free cash flow theory, tunneling model, rent extraction hypothesis, pecking order theory, bird in the hand theory, dividend irrelevancy hypothesis, firm's life cycle, and the clientele effect.

The results of the study also have some important managerial implications. Principal financial officers should be aware that dividend reductions or suspensions are considered by investors as a warning of future problems, triggering negative sentiment that in turn negatively affects stock prices. Investor should be alerted that since managers are inclined to either over-invest their companies' excessive cash to justify their increased compensation or retain excessive liquidity as a cushion of their ineffective management, dividend distributions and stock buybacks can alleviate the conflict of interest between agents and principals. In addition, both financial managers and investors should appreciate that analysts' coverage reduces information asymmetry and, through the clientele effect triggers the distribution of dividends. Executives heavily involved with the financial and strategic management of their firms should also note that in case there are no equity analysts covering their company's stock, they can launch stock buyback programs to attract the interest of potential investors.

Due to the lack of combined empirical studies on dividend distributions and stock buybacks, the results presented herein beckon replication. Even though the findings of this study offer empirical evidence of several firm-specific factors that affect the shareholder reward policies in capital intensive companies, future researchers are encouraged to further investigate empirically these factors by using datasets in other asset-intensive industries and broader industries to generalize our results. Lastly, future scholars may want to employ qualitative research designs to further explain the causal relationships between the factors identified in this study and the shareholder reward policies. Doing so, literature in corporate finance and will have more rigorous evidence not only about the determinants of shareholder reward policies, but also on how firm-idiosyncratic factors are shaping shareholder reward policies.

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