Inzinerine Ekonomika-Engineering Economics, 2025, 36(5), 558–579

Preliminary Insights on Firms' Dividend Policy Financial Drivers, from a Business Resilience Capability Perspective

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https://doi.org/10.5755/j01.ee.36.5.37818

There is a long debate about dividend policy, and indirectly on the level of dividends per share, without a consensus among researchers on the main drivers. The higher instability installed globally, on the ground of multiple consequent crises, has forced firms to pay more attention to the decision of distributing dividends to shareholders, as such a decision limits firms' self-financing financial resources, with potential negative implications for sustainable growth, because of improper project-based investment financing. In a VUCA-BANI corporate environment, it is also mandatory to understand business resilience and how dividend policy could be affected, considering the concerns among investors when addressing the dynamics of dividend per share. With this paper, we come with preliminary insights on how the COVID-19 pandemic has affected firms' dividend policy, but more importantly, on how this decision has affected business model resilience. We therefore assess the impact of several financial drivers of dividend distribution decision for the immediate period after this pandemic has ended, respectively earnings per share, credit risk score, stock market price volatility, or accruals ranking. The study uses a large dataset of data analytics provided through Refinitiv database. We analyse more than 1100 firms selected based on data availability, from developed European economies. Overall, the results suggest a marginal effect of the earnings per share, the variance of earnings per share, the credit risk score, and accruals level on the level of dividends per share. The study adds to the literature valuable information about financial drivers of dividend distribution decision, in the context of the actual high uncertainty in the business environment, because of the multiple overlapping crises. Nonetheless, the study provides some information on the synergy effects of the country- and industry-specific macroeconomic and institutional factors.

Keywords: *Financial Resilience; Dividends Per Share; Earnings Per Share; Accruals; Credit Rating; Crisis.*

Introduction

The activity of financing, investing and distributing dividends greatly influences the market value of a company, the allocation of financial resources in each direction being carried out towards the maximization of shareholders' wealth.

Dividends represent the part of the profit obtained by a company that is distributed to shareholders, thus being a direct way by which investors benefit from the profit recorded by the company, depending on the number of shares held in the capital. Empirical evidence suggests that dividend per share tend to reduce over time and, sometimes being replaced by share repurchases as is the case of G-20 countries over the last two decades (Junior *et al.*, 2024). Instead, looking strictly to the US setting, empirical evidence shows a slight increase on dividend per share along the 20s, mainly explained by numerous delisting determined by M&A transactions (Michaely & Moin, 2022; Pathak & Das Gupta, 2021), or by peers' influence generating increase on dividend per share (Grennan, 2018), as firms learn to follow performers' best practice, or respond to performers' actions, CEOs sometimes prove to be overconfident, or they look to build-up corporate reputation. This evolution follows a slow motion anyway, but with potential long-term negative implications on firms' financial resilience, as this approach supports unsustainable dividend per share and reduces significantly investment opportunities, with implications on the cost of capital or the market value (Learly & Nukala, 2023).

The COVID-19 pandemic has changed the dividend distribution policy for many entities, given the impact of the crisis on the companies' performance, measured by lower profits, higher earnings volatility and lower share prices (Hardy, 2021). Thus, some of the issuers that in the past years had a generous dividend policy when they recorded declining profits, have reconsidered the way in which the shareholders can be rewarded. Moreover, the large distributions of dividends made in the past years, in most situations from the retained profit and reserves, mean that now, following the crisis generated by the new coronavirus and in the sensitive geopolitical context of the war in Ukraine, the financial resources no longer exist necessary to support such a policy (Ed-Dafali *et al.*, 2023). Also, due to the growing uncertainty regarding the predictability of earnings taken as the basis for paying dividends, the management of entities seems to be focused, especially, towards supporting resilience and self-financing measures and less on the policy of granting generous dividends that would it emits positive signals in the market regarding the present and future perspectives on the profitability of the firms, which should, in fact, increase the market value of the firms (Baker & Weigand, 2015; Lofti, 2019). However, practice shows us that although the proportion of dividend

cuts and omissions was higher during the pandemic, measures that emit negative signals in the market related to poor future profitability and earnings volatility, there are also companies that maintain or even increase the level of dividends granted, measures which reflects financial stability and high long run growth (Ali, 2022). This is where the research question arises. *What influences such a decision?* Further, we question *if there are country or industry specific effects, with focus on the institutional forces that could influence this decision*, in this highly volatile business environment.

It seems that there is no consensus in the literature regarding the dividend payout decision on the post pandemic period and the financial main drivers that can influence it (Ed-Dafali *et al.,* 2023). Hence, given the inconclusive results, we respond to the call on addressing this underdeveloped topic along with this study. The aim of the study is to assess the association between the dividend payout decision and several financial firm related drivers, determined based on information disclosed by financial statements in order to provide some preliminary insights on the level of dividends paid to shareholders and main financial drivers considered on management decision making.

So, to achieve the objective and to identify the association between the dividend payout decision and financial firm related drivers, namely to highlight the marginal impact of some aggregate firm-based financial measures on the level of dividends payout, we included in our study 1.105 companies from four main economies in Europe, respectively United Kingdom (52 %), Germany (20 %), France (18 %) and Italy (10 %). The analysis carried out in our research is based on financial information extracted from Refinitiv database, and the period analysed is related to financial information reported for 2022, the first year after the COVID-19 pandemic.

With this paper we contribute to the literature through several aspects. First, as or our knowledge this is the first study analysing the financial drivers of the dividend policy on an ex-post COVID 19 pandemic setting. Second, the paper adds to the discussion on the academic environment that still raises question marks on the nature of the relation between dividend per share and firms' financial constraints, combining both risk-based and profitability-based dimensions into discussion. Third, the paper addresses the link between dividend per share and earnings management, where the literature is still underdeveloped under a crisis economic and institutional framework. Forth, the paper provide evidence concerning the relevance of firms' financial resilience under such crisis contextual approach.

Our paper is structured as follows: the first part, the literature review, presents the current state of knowledge in this field and the hypotheses underlying the research. The second part presents our study, highlighting and analysing the estimated results of the regression models, and the last part of the paper reflects the conclusions, limits, and future directions of research.

Literature Review

Nowadays, companies operate in an environment that is increasingly complex and marked by uncertainties regarding the predictability of continuing the activity and obtaining profits that allow management on the one hand, to create value for shareholders, respectively maximize their wealth (Jensen, 2001) and on the other hand, ensure sustainable development.

The pandemic generated by the novel coronavirus has highlighted the fact that the world we consider normal could change in a second, and adaptation to the new context is the key element that must be obtained so that the financial stability of companies not to be affected.

The economic impact felt due to the pandemic context materialized in a general economic slowdown, caused financial market volatility and erosion, credit deterioration and significant liquidity concerns (Goncalves & Moro, 2023; Khan, 2022; Brodeur *et al.,* 2021; Apedo-Amah *et al.,* 2020), similar with the economic evolution during the prior global financial crisis (Hauser, 2013), prior political crisis (Huang *et al.,* 2015), or other health pandemics (Zhang *et al.*, 2025), that are both modelled by the economic policy uncertainty (Attig *et al.,* 2021), the power of political institutions (Lai *et al.,* 2020), that increases the probability of a dividend cut or omissions. However, larger firms, firms operating in richer countries, firms with longer CEO tenure, or firms with foreign or state ownership seem to cope better with those negative financial implications, their financial resilience being less affected, especially in case of firms with prior crisis lower financial constraints (Fang *et al.,* 2022; Ding *et al.,* 2021), which leads also to better premises for decision on dividend policy. The only concern that remain unanswered on this research setting would be just the quality of earnings reported.

It is known that under financial constraints, when there is not enough cash, investment and dividend payment decisions are not independent. Thus, there are studies that confirm that firms tend to pay dividends from the remaining earnings after meeting investment needs within companies, the dividend policy being influenced by factors such as firms' characteristics, country institutional framework, or industry specific, substituting different forms of dividends (Baker & Weigand, 2015). Among firms' characteristics, a central place is reserved to corporate governance mechanisms (Jabbouri, 2016; Oh & Park, 2021; Mahapatra & Panda, 2022), managerial ability (Jiraporn *et al.,* 2016), or even cultural dimension (Pathak & Das Gupta, 2021).

COVID 19 Pandemic and Dividend Policy

In Table 1 we summarize some of the main findings stated across the literature, looking mainly for papers with international sample composition or papers that cover countries included in our paper as well. Overall, the results are somehow mixed when reviewing the evolution of dividend per share during the COVID 19 pandemic. However, most of the papers have confirmed changes on the dividend policy, mostly consisting of dividend cuts, rather than dividend omissions, in other to transmit positive signals to the market. Those dividend cuts or omissions seem to be even more drastic and implemented on shorter timer-horizon, compared with the prior global financial crisis, which have generated significant cash savings and ensured firms' premises for financial resilience (Pettenuzzo *et al.,* 2023; Dodic & Dzidic, 2022; Krieger *et al.,* 2021).

Table 1

Summary of Relevant Literature on COVID 19 Pandemic on Dividend Policy

Authors	Country listing	Industry	Period	Sample size	Theory	Method	Divided policy construct	Main drivers	Findings
Eugster et. al. (2021)	16 EU countries, incl. the ones anlyzed here	not specified	2018-2020	8479	catering theory	pooled OLS	DPR	abnormal return, stock return volatility	Based on a sample of EU big-firms listed, the results show that investors pay more attention to dividend payout in times of crisis, such the COVID 19 crisis, leading to higher stock market liquidity for firms that continue to pay dividends;
Cejnek et. al. (2021)	Euro Stoxx 50, FTSE 100		2017-2020	142	signaling theory	pooled OLS	cumulative dividend payout drowdown	return volatility, leverage, cash flow	With a separate emphasis on economic implications of COVID 19 pandemic on firms operating in financials sector, the results confirm a dropdown of dividend per share, especially in this sector which is subject to additional regulatory dividend policy restrictions during this pandemic, with potential long-term implications of the cost of capital
Krieger et. al. (2021)	USA	construction, industrials, transportation, utilities, retail etc.	2015-2020	24493	agency theory	pooled OLS	DPS	earings, MTB, cash holdings, leverage, age	Results show higher dividend cuts or omissions during COVID 19 pandemic, compared with the prior literature evidence on the global financial crisis, especially in case of mining, transportation, retail and services sectors
Falavigna & Ippolliti (2021)	Italy	not specified	2015-2019	193970	signaling theory	logit OLS	DPS	sales, fixed asstes ratio, liquidity	Based on a specific SMEs Italian institutional framework, the analysis confirm the role of firms credit ratings on deciding on the dividend policy, especially in times of crisis, such the case of COVID 19 pandemic
Ali (2022)	G-12	energy; financials, health care, manufacturing, technology, utilities, telecommunication etc.	2015-2020	8889	agency theory signaling theory	pooled OLS	DPR	ROA, EPS var., lev., liquidity, MTB, size	The COVID 19 has determined an increase o firms reducing of ommiting dividend per share, however most of the analyzed ones have continued to provide dividends to shareholders, in order to transmit positive signals to the market, or keep their mandate-related benefits
Ntantamis & Zhou (2022)	G-7	technology, chemicals, energy, industrials, health care, telecommunication, retail, etc.	2020	37885	signaling theory	pooled OLS	dividend decrease repurchase decrease	cash holdings, lev., return volatility, ROA, size; retained earnings	The study highlight that EU countries, such UK, Germany, France or Italy proceed to dividend cuts, while USA and Canada prefer to repurchase the stocks, whereas Japan firms opt for either of the two dividend policies
Dodig & Dzidic (2022)	European emerging economies	not specified	2005-2020	3309	dividend relevance theory	pooled OLS	DPR	ROE, leverage, stock market growth	The study reestimate the Lintner (1956) model, whowing that dividend policy depend on firms' financial constraints, such as higher profitability or lower leverage. The estimates confirm both significant impact of financial crisis and COVID 19 pandemic crisis
Sterenczak & Jarosław Kubiak (2022)	European emerging economies	not specified	2010-2020	10666	pecking order theory	pooled OLS DiD OLS	DPR	ROE, leverage, size, MTB, investment	The results confirm a positive impact of firms' liquidity on dividend per share; instead, the reverse causal relation is highly dependend on country institutional framework (e.g.: tick size - difference in Bid and Ask - regulation), as it is draws-up the premises for control on the level of information asimetry among capital market actors.

Authors	Country listing	Industry	Period	Sample size	Theory	Method	Divided policy construct	Main drivers	Findings
Esqueda & O'Connor (2022)	S&P1500		2014-2021	8384	pecking order theory	logit OLS	DPS	ROA, leverage, size, earnings volatility, cash holdings	The analysis confirm the pecking order theory, that emphasize share repurchases are prefered, compared with dividend per share, as it offers higher flexibility on firms' capital investment allocaton
Pettenuzzo et. al. (2023)	USA	oil, textiles, industrials, automotive, utilities, transportation, retail etc.	2008-2009, 2020	694	signaling theory	descriptive statistics	dividend decrease repurchase decrease	not applicable	The study, limited to US sample of firms, underline several differences between the global financial crisis and the COVID 19 pandemic, from the perspective of impact on dividends reductions or cuts, showing corrective measures made by management are made in shorter time and with higher impact on firms' financials, allowing them to survive
Mazur et. al. (2023)	S&P1500		2019-2020	1995	signaling theory	pooled OLS	DPS	EPS, size, cash holdings, MTB, Capex	The study confirms the signaling theory, as firms seem are reluctant on cutting dividend per share, especially in case of the ones subject to negative earnings forecasts, because of the negative context generated by COVID 19 pandemic
Pettenuzzo et. al. (2023)	USA	consumer goods, high tech, manufacturing, healthcare	2005-2020	186	signaling theory	dynamic econometric OLS	dividend suspension volatility	stock return volatility	The analysis underlines differences on the financial implications of COVID 19 pandemic dividend policy, based on industry specific, showing that industries such as consumer goods and manufacturing are more impacted, compared with high tech, or healthcare sectors
AlGhazali & Yilmaz (2023)	China, India and other Asian countries	basic materials, consumer discretionary, consumer staples, energy, healthcare	2015-2020	5869	signaling theory	logit OLS	DPS	ROE, assets turnover, lev., size, liquidity, MTB	The study, limited to 29 emerging economies, provide evidence on the decrease of dividend per share during COVID 19 pandemic, mainly depending on firms' profitability
Theiri et. al. (2023)	France	oil, industrials, healthcare, services, utilities, tech., telecommunication etc.	2016-2021	318	financial constraints theory	System GMM	DPS	ROA, credit score, age, size, MTB, cashflow	The research, limited to French institutional setting, provide evidence on the significant impact of COVID 19 pandemic on dividend per share, dependent as well on firms' credit score (KZ score)
Liang et. al. (2023)	China	manufacturing, utilities, commerce, information technology, real estate etc.	2018-2021	8140	agency theory signaling theory	logit OLS propensity score matching	DCR	ROE, size, lev., assets turnover, Tobin's Q	The study confirms significant dropdown of dividend per share during COVID 19 pandemic, especially in case of firms' with higher financial constraints, among private-wned firms, and with higher international exposure
Maquieira et. al. (2024)	500 largest family-owned firms		2015-2021	584	signaling theory	pooled OLS GMM	DPS	ESG score, leverage. ROA, age, CapEx	The paper confirms the complementary role of firms' sustainability performance, especially in conditions of low financial constraints during COVID 19 pandemic

However, those dividend per share become even more important on investors' decision in times of crisis, deteriorating even worse firms' financial resilience in case of the firms that do not continue to provide dividends (Eugster *et al.*, 2021). This is the reason why there are firms that continue paying dividends, even when coping serious financial constraints (Ali, 2022; Ntantamis & Zhou, 2022), especially in case of firms that are subject to negative earnings forecasts (Mazur *et al.*, 2023), with potential implications on the sustainability of such policy on long-term. Hence, dividend per share could affect negatively firms value and their premises for procuring low cost capital borrowed (Hail *et al.*, 2014), reason why managers tend to meet minimum cash dividend targets (Krieger *et al.*, 2021; Ali, 2022), in order to maintain on the market, the positive perception about the company's financial health situation and future perspectives of sustainable growth. The alternative would be to proceed to stocks repurchase, which seems to be a practice met mainly in the Usa and Canada (Pettenuzzo *et al.*, 2023; Ntantamis & Zhou, 2022; Esqueda & O'Connor, 2022).

The studies have highlighted mainly three major dimensions influencing the decision on the corporate dividend policy. Therefore, dividend per share depend, either on firms' profitability (AlGhazali & Yilmaz, 2023; Dodig & Dzidic, 2022), on stocks liquidity (Sterenczak & Kubiak, 2022), on firms' credit score (Maquieira *et al.*, 2024; Liang *et al.*, 2023; Theiri *et al.*, 2023), credit rating (Falavigna & Ippolliti, 2021), or leverage ratio (Ali, 2022; Dodig & Dzidic, 2022; Ntantamis & Zhou, 2022).

Instead, it is interesting that corporate sustainability performance seems to play a role on the decision concerning dividend policy, behaving as a complementary measure to the profitability performance, as long as the firm does not suffect major financial constraints (Maquieira *et al.*, 2024).

An essential role is played by the institutional setting on country level analysis, modelled by governments' public policy efficiency, enforcement mechanisms effectiveness, or even cultural considerations on financial systems ecosystems design (Zhang *et al.*, 2025; Pathak & Das Gupta, 2021; Booth & Zhou, 2017). For instance, firms operating in the financial sector were subject to various country regulatory dividend policy related restrictions (Cejnek *et al.*, 2021), aimed to limit the negative impact of COVID 19 pandemic on financial systems stability and avoid pro-cyclical countermeasures (Dautovic *et al.*, 2023). Following the unprecedented effects of the novel coronavirus pandemic on the economy, the European Central Bank ordered banks in the euro zone to freeze dividend payments and share buybacks amid the growing need to conserve liquidity (Driver *et al.*, 2020). US banks during the COVID-19 pandemic implemented the authorities' call for dividend distribution and adopted restrictions on their payment precisely to increase stability and provide capital for lending activity. Similar example is given by Sterenczak & Jarosław Kubiak (2022), who have assessed the relevance of the tick-size capital market trading regulation. Additionally, we underline the complementary relation between country-level governance and corporate governance mechanisms, as there are studies that underline that country governance mechanisms could model firms' dividend policy, but in their absence corporate governance mechanisms are the ones aimed to reduce the cost of agency, and limit information asymmetry, leading to higher dividend per share, perceived as cost of agency (Zhang *et al.*, 2025; Ellahie & Kaplan, 2021; Chang *et al.*, 2018). Moreover, we remind the studies of Harakeh et. al. (2019), or Hail et. al. (2014), that confirms the relevance of changes in financial reporting setting on the dividend policy decision, as such change could influence the level of information asymmetry.

Nonetheless, scholars have focused as well on the assessment of the industry specific impact on dividend per share during the COVID 19 pandemic research setting (Pettenuzzo *et al.*, 2023; Krieger *et al.*, 2021). Those studies show that some sectors have been affected more than others, such the case of transportation, mining, retail or manufacturing sectors, compared with healthcare, constructions, or high-tech.

Theoretical Framework and Hypothesis Development

The literature highlights the relevance of firms' dividend policy within the corporate financial policy from the perspective of multiple theories (Ed-Dafali *et al.*, 2023; Pinto *et al.*, 2020; Al-Najjar & Kilincarslan, 2019; Booth *et al.*, 2017; Baker & Weigand, 2015; Al-Malkawi *et al.*, 2010; Bhattacharyya, 2007; Frankfurter *et al.*, 2002). Bird-in-hands dividend theory, irrelevance dividend theory, residual dividend theory, signalling theory or agency theory, describe the traditional perspective on the decision on dividend policy (Al-Najjar & Kilincarslan, 2019; Bhattacharyya, 2007). Catering dividend theory, firm life-cycle theory, or the overconfidence bias theory (Baker & Weigand, 2015). All those review studies have emphasized so far mixed results on confirming any of those theories, because of various reasons, including difficulties on research design replication, research methods used, but also because of theoretical frameworks overlap that sometimes lead to confusion among both scholar and professionals. Those studies underlined there still hasn't been reached on a consensus among researchers, neither on the relevance of the dividend policy, nor on the main drivers of dividends per share decision making process. However, the is a pattern across the literature that shows most frequent theories considered for theoretical framework design are the signalling theory and the agency theory when addressing the problem of dividend policy.

According to Dehraj et. al. (2024), based on meta-analysis performed on 45 papers addressing the problem of dividend policy, the bird-in-hand theory and signalling theory are confirmed by the results. On one hand, the dividend signalling theory suggests that dividends convey information about firms' future prospects. On the other hand, the bird-in-hand theory indicate that investors would vote for dividend per share, instead of profits reinvesting, obtaining certain gains on the current period, instead of future uncertain higher returns. Therefore, those results emphasize that large firms or profitable firms are expected to distribute dividends to shareholders, otherwise negative signals would be transmitted to the markets. Additionally, the tax effect theory has been confirmed as well, which emphasize that shareholders prefer dividend per share only

as long as the tax rate is lower than for the one applicable for future capital gains. Instead, interesting point of view is expressed by Leaey & Nukala (2023), who have emphasized that recent empirical evidence suggests the decision on dividend policy has become rather influenced by firms' preference for better financial flexibility than the dividend tax burden.

However, the more recent catering dividend policy theory states that managers do not look for a long-term strategy of dividend per share, but rather look for investors demand on market sentiment and investors preferences, aligning their decision to a more behavioral approach that looks for both perception and timing on the decision on the dividend policy. This theory is indirectly reflected in the study of Fernau & Hirsch (2019), which consist as well on a meta-analysis that state that the ownership structure is essential on explaining the decision on dividend smoothing. Indeed, the higher the concentration of ownership structure, the higher the dividends smoothing, showing firms' higher flexibility on decision on dividend per share, based on a low number of investors' preferences. Additionally, the results confirm as well the agency theory and the residual dividend policy theory. While the agency theory refers to the agency problem that describe managers could waste financial resources in case of excess cash flows, the residual theory states that cash flows should be used to finance investment opportunities, but only limited to projects with expected return higher than firm's cost of capital, or a minimum prior decided threshold. Therefore, the excess of cash flows that remain after financing those projects, should be distributed to shareholders via dividend per share, perceived as an agency cost.

Though, apart from the irrelevance theory, the decision on dividend per share is significantly conditioned by institutional factors (Tran, 2024; Pathak & Das Gupta, 2021; He *et al.,* 2017; Booth & Zhou, 2017). The agency problem is influenced indirectly by the institutional theory (La Porta et. al., 2000), which is expected to lead to a degree of dividend policy/practice harmonization through the isomorphism process modelled by regulatory requirements (coercive), professional / social / cultural norms (normative), or peers practice (mimetic) and lower the information asymmetry, increasing dividend per share. For example, the tax dividend theory is related to the adequacy of country tax regulation, whereas investors' protection is related either to country legal investors protection regulation or firms' corporate governance mechanisms.

In this paper, we will focus on two of the aforementioned dividend theories, respectively the agency theory and the signalling theory, by testing the below research hypothesis:

- **H_1**: *Decision on dividend policy is negatively influenced by firms' financial constraints.*
- **H_2**: *Decision on dividend policy is significantly influenced by country economic and institutional factors.*
- **H_3**: *Decision on dividend policy is significantly influenced by industry-specific economic and institutional factors.*

While the signalling theory is related to firms' credit risk, market premium, or pricing trends, the agency theory is referred to firms' profitability, or earnings management.

No matter the theoretical approach considered on the research design, or on professionals' decision on the dividend playouts, the problem of negative implications of the dividend policy on firms' financial sustainability represent a continuous concern, especially because of difficulties on measuring the concepts behind those theories (Gleißner *et al.,* 2022). Additionally, it is of utmost importance to consider investors preferences or behavioural biases on profiling their investment choices (Rubio *et al.,* 2022), in order to have a better understand on the how to model factors that influence the dividend playouts, such the paradigm of dividend playouts vs. repurchase payments.

Methodology Research

The aim of the study is to assess the association between the dividend payout decision and several financial firm related drivers, determined based on information disclosed by financial statements. Therefore, we do not look on the opportunity of dividends payout, or the role of dividend policy within corporate financial policy, but rather on the marginal impact of some aggregate firm-based financial measures on the level of dividends payout. The analysis is limited to the first year of the post COVID 19 pandemic period. The purpose of the analysis is to provide some preliminary insights on the level of dividends paid to shareholders and main financial drivers considered on management decision making.

Design of the Research Framework

The literature underlines the complexity of the decision making on the area of dividends per share, especially because of the mixed results obtained across the empirical studies along the last three decades. Overlapping effects of recent COVID 19 pandemic generated crisis have raised even higher concerns among investors about firms' available resources to pay dividends, because of the higher uncertainty translated into less predictable earnings as basis for dividends payout (Mazur *et al.,* 2020). Even though, this study provides some insights on the increasing dividends per share made by firms included on the S&P500, with a notice of negative association between earnings evolution and dividends payout evolution. This observation is even more relevant in the context of actual multiple crises the economic environment is facing. Therefore, the decision of dividends payout is even more difficult for managers on those circumstances of high economic uncertainty, doubled by concerns of economic effects of the Russia-Ukraine war. On those circumstances, literature shows that management prefers to lower dividend per share, based on a managed dividend policy, rather than a residual dividend policy, which calibrate the level of dividend per share, only based on resources availability after self-financing investment needs, assuring dividends stability and sustainable association between cash dividends and current and anticipated earnings (Baker & Weigand, 2015). Therefore, the link between earnings and dividend per share weakened in the last decades, sacrificing investors' claims in terms of dividend distribution, in favour of major investment needs (Brav *et al.,* 2005; Alves *et al.,* 2021).

However, management understands that shocks on dividend per share could affect negatively firms value and their premises for procuring low cost capital borrowed (Hail *et al.*, 2014), reason why most of them have to meet minimum cash dividend targets, especially on times of crisis, such the recent COVID 19 pandemic crisis (Krieger *et al.*, 2021; Ali, 2022), to keep investors' perception positive on firms' financial health situation and future perspectives of sustainable growth. The way they achieve these targets is ensured managing earnings, mainly through accruals instruments, or proceeding to real activities earnings management.

Based on those premises, we have incorporated in the research design a component of variation of earnings, measured by Refinitiv Starmine analytics for a past period of 5 years. Additionally, we have considered a component of stocks price market dynamics reflecting anticipated one year ahead earnings and price volatility, through the momentum dimensions of the Value-Momentum model proposed by Refinitiv for stocks price evolution assessment (Refinitiv, 2009). Nonetheless, we considered on the research design the level of EPS (earnings per share) for current fiscal period, as it is the basis for calculation of the cash dividends, based on firms' dividend policy and management decision, which are constrained by the sector of activity, and credit risk score (Krieger *et al.*, 2021).

However, we have not incorporated a measure of dividends stability on the research design, mainly because of the highly volatile capital markets during the multiple recent crisis we witnessed during the last 5 years, which could distort significantly the value relevance of the dividends payout related management behaviour.

Dividend distribution decision seem to be highly dependent on multiple factors, reason why it is even difficult to model (Panigrahi & Zainuddin, 2015). In spite of those issues of dividend policy models operationalization, the relevance of the dividend policy persists on investors' decisions, at least from the agency theory perspective, that emphasize the need of dividends to be paid at least to cover agency costs, or from the signalling theory perspective that highlight the fact that firms have to provide positive signals on the markets, which could include even sustainable dividend per share. From this perspective is emphasized the essential role of the management of firms, reason why corporate governance (Jabbouri, 2016; Oh & Park, 2021; Mahapatra & Panda, 2022), managerial ability (Jiraporn *et al.*, 2016), or even cultural dimension (Frankfurter et. al., 2004; Chiang *et al.*, 2006), have a central place on this equation, both for forecasting abilities and optimal financing investment needs strategies. As management is expected to pay attention on sustainable growth of the firms, researchers have outlined as well the important role of the alignment of management strategies to follow sustainable growth principles (Zahid & Taran, 2022), as this approach could ensure the essential premises for corporate financial stability (Gleißner *et al.*, 2022), and stable basis for dividend per share. However, we have decided to leave out these two dimensions of analysis, as the timeframe is limited to one year, period on which we do not expect to witness major changes on management structure, corporate governance mechanisms, or major aspects of firms' ESG philosophy and transition to sustainable growth.

There are also studies that highlight the relevance of firms' financial transparency, through the degree of information disclosed by corporate reporting tools on the decision of dividends payout, as higher information asymmetry (financial opacity) between management and shareholders determines an increase on investors perception of trust, with negative implications on firms' cost of equity, seen as an agency (penalization) cost for management (Hail *et al.*, 2014; Beyer *et al.*, 2019). In the design of the research we do not incorporate information about firms disclose transparency, because of lack of such information for the large sample we consider in our analysis. Instead, we consider an aggregate measure of corporate credit risk, which we consider provide better information on the current and future perspectives of firms analysed. This measure integrates multiple facets of corporate financial management and perspectives of sustainable growth, including information concerning firms' financing decision and differential tax regime implications which seem to play an essential role on dividends payout decision making (Ince & Owers, 2012). This aggregate measure is a metric developed by Refinitiv, through the date set Starmine analytics, which incorporate multiple dimensions of the financial risk firms faced with during 2022, limited to profitability, leverage, coverage, liquidity, growth and stability dimensions (Refinitiv, 2012), which covers most of the dimensions considered by Gleißner et. al. (2022) model for corporate financial stability. Therefore, this metric incorporates both the financial liabilities, through the leverage ratios, and the perspective of sustainable economic growth, drawn-up by the level of assets productivity, distance from break-even level, or stable return on capital growth, with factors included in the model that firm-level adjustments determined by the country and sector specific characteristics.

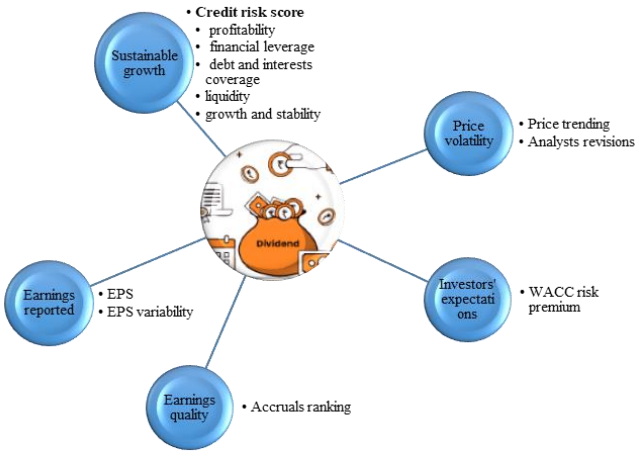

Figure 1. Research Conceptual Framework

In spite of the role of differential tax burden, we did not include on the model individual measure of tax burden on firm level, as governments in countries analysed have provided significant financial support to firms for overcoming the negative effects of COVID 19 pandemic, which could distort the value relevance of this information.

Another element that we consider relevant for decision-making on dividends per share is related to earnings

management. As the basis for cash dividends are the earnings reported, management is expected to assure a stable cash dividends evolution (Krieger *et al.*, 2021; Ali, 2022), which should have behind stable earnings evolution (Lawson & Wang, 2016). Instead, managers proceed to earnings management, especially in times of crisis, to smooth earnings and provide positive signals on the market about firms' long-term growth perspectives (Skinner & Soltes, 2011; He *et al.*, 2017). However, the accruals, which are considered the main instrument of earnings management (Naveen *et al.*, 2008; Dechow *et al.*, 2010; He *et al.*, 2017; Siladjaja & Anwar, 2020), is expected to reverse in time (Perols *et al.*, 2010; Christensen *et al.*, 2023), which could result to situation that management would not be ale anymore to distribute dividends to shareholders, as long as sustainable growth is not achieved (Gleißner *et al.*, 2022).

In spite of the fact that some investors could be convinced by management to suspend dividend per share, at least for temporary period in times of crisis (Alves *et al.*, 2021), it is essential to understand how it influences dividend per share, in times of crisis, especially in case of large firms, as in case of those firms seems the dividend per share do not decline over time (Denis & Osobov, 2008; Fatemi & Bildik, 2012). Furthermore, as noted by Nikolaev (2018), the accounting error component of the accruals, reflecting professionals' inability to observe the expected cash flow consequences of current period transactions, estimating them based on an imperfect measurement process, reverse only overtime. Moreover, the literature provides insights on the weakening of the correlation between accruals and cash flows, which would translate into such an accounting error component even higher (Bushman *et al.*, 2016). In times of crisis, the impact of changes on accruals quality on short-time is even more affected by accountants' anticipated estimations, which could lead to over-estimation of earnings reported and consequently dividend per share that do not have behind real cash based basis. Nonetheless, the level of accruals could be extremely relevant on the decision on dividend payout, as the literature shows accruals are widely used for earning smoothing purpose, either because of changes on regulation (Greusard, 2022), which means that country specific factors are relevant as well in this debate.

Therefore, we underlined that this accounting-based measure becomes even more relevant in times of the recent multiple crisis context, as investors reaction to macroeconomic shocks are expected to amplify their reaction to changes on earnings reported (D'Augusta & Prencipe, 2022), and indirectly, on dividend per share.

Overall, those literature observations have led us to decide on the research design of the study, placing the dividend per share variable in the middle, as dependent variable.

Explanatory variables are represented by Refinitiv database Starmine analytics, that address the influence on dividend per share of corporate credit risk score, accruals ranking, stock price market volatility, investors' expectations and earnings stability, described in Figure 1.

Data and Variables Definition

The analysis in this study is based on financial information extracted from Refinitiv database. The period analysed is related to financial information reported for 2022, the first year after the COVID 19 pandemic. The initial database consisted of 3825 firms with a value of assets reported exceeding the threshold of 1 million US dollars. From this database, based on data availability used on the econometric models planned to be estimated, we have remained with a set of 1105 firms.

The firms selected are limited to four main economies in the Europe, respectively United Kingdom (52 %), Germany (20 %), France (18 %) and Italy (10 %), as represented in Figure 2. A large range of sectors of activity have been considered in the construction of the sample analysed. However, as shown in Figure 2, higher proportion in the sample is covered by firms operating in technology (19 %), industry (18 %), commerce (18 %), or financials (10 %).

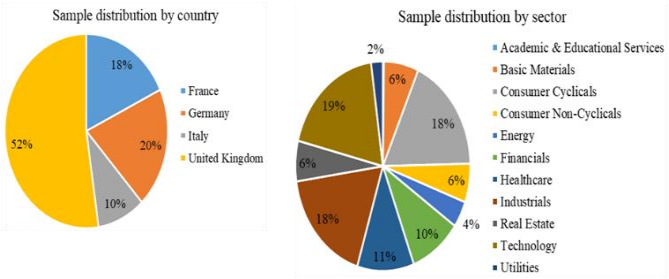

Figure 2. Sample Distribution

Most of the variables included in the analysis represent aggregate measures developed by Refinitiv, through its set of Starmine data analytics, addressing the concerns of firms' financial stability, earnings management, or dynamics of stock prices. In Table 1 we summarize the variables included on the econometric models planned to be estimated.

Econometric Model Design

As a final step of our research, we proceed to estimation of several econometric models to assess the relevance of financial drivers described on the research framework depicted by Figure 1. The general form of the econometric model is described by relation below:

$$DPS_{i,t} = \alpha_0 + \sum_{k=1}^{7} \alpha_k \cdot Explanatory\ variable_{i,t-1}^{(k)} + \varepsilon_{it}$$

where notations used are described in Table 1, whereas for each variable i represent the firm analyzed, t represent the period analyzed (in our case the fiscal year 2022), and k represent the explanatory variable ID. The marginal effect on the $DPS_{i,t}$, per each firm i on year t, is represented by $\frac{\partial\, \sigma(DPS)_{i,t}}{\partial\, Explanatory\ variable_{i,t}^{(k)}} = \alpha_k$. If $\alpha_k < 0$, the result suggests that the k driver included in the econometric model led to a reduction on the level of dividends payout. Therefore, such drivers should be paid special attention from management side. Instead, if $\alpha_k > 0$, we understand this driver rather deteriorate firms' self-financing resources, reason why investors are more interest on such drivers, whereas management should adopt strategies lowering the impact of those drivers, at least on the level of some targets agreed prior with shareholders.

Table 2

Variable	Description	Source
Dependent variable		
Dividend per share **DPS**	it represent the ratio between the dividend decided to be distributed to shareholder and the share value	Refinitiv database
Independent variables		
Earnings per share **EPS**	it represent the ratio between the earnings reported on the financial statements and the share value	Refinitiv database
Earnings per share standard deviation **EPS growth variability**	this is a measure of standard deviation of the EPS growth along the last 5 years, calculated and integrated into the StarMine Credit Risk model, as separate sub-dimension of the Growth and Stability dimension, giving indication on the perspectives of firms' sustainable economic growth	Refinitiv database
Credit rating score **Credit risk**	It represents a composite score, which ca be assimilated with a credit rating, such the ones performed by big rating agencies. It reflects firms' potential to cover its liabilities, as per specific dimensions of profitability, leverage, coverage, liquidity, growth and stability, each calculated based on a cumulus of financial ratios based on both financial position and financial performance information.	Refinitiv database - Starmine model -
WACC risk premium **Risk premium**	it is the stock pricing CAPM component that is added to the risk-free rate of firms' cost of capital, in order to reflect investors' risk assumed; therefore, we go with the premises that investors' expectations are strongly correlated with the risk they assume additional to the state bonds.	Refinitiv database
StarMine ARM **Price revisions**	It is a measure of an analyst revision-based stock ranking system that incorporate more accurate earnings estimates through StarMine's proprietary SmartEstimate earnings prediction service, by including estimates on multiple fiscal periods, useful for anticipation of future stock returns.	Refinitiv database - Starmine model -
StarMine Price Movements **Price trends**	it is a measure of aggregate information about the momentum in security returns and price momentum at the industry level and information on the consistency or volatility of returns; the measure is part of the momentum component of the StarMine Val-Mo model.	Refinitiv database - Starmine model -
StartMine EQ model related accruals component **Acruals rank**	is a composite construct generated by the integration of information on eight balance sheet accounts that contribute to the persistence of earnings, related to changes on firms' working capital and changes on the gap between cash-based versus accounting-based figures concerning the working capital elements.	Refinitiv database - Starmine model -

The econometric model can be reformulated, using Table 1 notations, as follows:

$$DPS_{i,t} = \alpha_0 + \alpha_1 \cdot EPS_{i,t-1} + \alpha_2 \cdot EPS_{variability_{i,t}} + \alpha_3 \cdot Credit\ risk_{i,t-1} + \alpha_4 \cdot Risk\ premium_{i,t-1} + \alpha_5 \cdot Price\ trends_{i,t-1} + \alpha_6 \cdot Price\ revisions_{i,t-1} + \alpha_7 \cdot Accruals\ ranking_{i,t-1} + Governance_{i,t-1} + \varepsilon_{it}$$

A new approach on dividend per share research should be adopted, such as the used of time series techniques to capture the phenomena of dividends evolution, not just timely isolated periods, or cohorts of firms in different country institutional frameworks or sector specific environments. This phenomenon is not limited only to firms' business models, but the scope of the research should rather extend to its macroeconomic and institutional frameworks (Tran, 2024; Pathak & Das Gupta, 2021; Booth & Zhou, 2017; Jabbouri, 2016; Pinto *et al.*, 2020; Greusard, 2022), or even to a cultural dimension (Frankfurter et. al., 2004; Chiang *et al.*, 2006). Furthermore, it is outlined that both investors and managers are aware of the need of dividend per share.

However, the decision on the opportunity and the level of the cash dividends is actually a matter of current context and management ability to provide to investors information about anticipated earnings growth, which could highlight firms' perspectives of sustainable financial stability and stable dividend per share (Alves *et al.*, 2021), which seems that both managers and investors (at least the strategic ones) understand.

Therefore, the analysis of country specific and sector specific characteristics on dividend per share is appreciated to be relevant for the discussion, especially in times of crisis when the states involved more on the market through different supporting public policies and government subsidies.

The effects generated by industry and country characteristics are analysed estimating a MANOVA model, described by the following relation.

$$DPS_{i,t} = \alpha_0 + \sum_{k=1}^{7} \alpha_k \cdot Explanatory\ variable_{i,t-1}^{(k)} + \alpha_8 \cdot Country\ effects + \alpha_9 \cdot Industry\ effects + \alpha_{10} \cdot Country\ effects \cdot \alpha_9 \cdot Industry\ effects + \varepsilon_{it}$$

The aim of this study is to review if country specific and sector specific characteristics generate significant effects on DPS level, reason why we resume the analysis only to the MANOVA tests of difference. Furthermore, we have an interest as well on reviewing the significance of the

marginal synergy effect determined both by country and sector specific on the DPS level.

Results and Discussion

The analysis is focused on reviewing some of the main drivers of decision on dividend policy on the period after COVID 19 pandemic. Therefore, the models estimated are aimed to provide some insights on the actual status of the decisions on paying dividends to shareholders, as the post pandemic period seems to create the premises for higher firms' profitability. However, a sustainable dividend policy should look not only for short-term perspective on firms' profitability, but rather on long-term perspectives of the firm, including with reference to financial risks and uncertainty in the market.

Exploratory Statistical Analysis

In Table 3 we provide the main statistics of the variables included in the econometric model designed to be estimated, based on the research framework described in the previous section.

Table 3

Descriptive Statistics

Variable	Mean	Std. Dev.	Median	Percentiles	
				1st	3rd
DPS_t	0,458	1,370	0,031	0,000	0,336
DPS_{t-1}	0,424	0,885	0,041	0,000	0,388
DPS variability $_t$	0,050	0,143	0,002	0,000	0,027
EPS_{t-1}	0,888	2,849	0,240	0,002	1,103
EPS variability $_t$	7,621	18,04	0,701	0,439	3,286
Credit rating	0,006	0,006	0,004	0,002	0,007
Risk Premium	0,082	0,008	0,085	0,078	0,085
Price trends	0,359	0,280	0,300	0,100	0,570
Price revisions	0,536	0,270	0,580	0,330	0,760
EQ accruals	0,501	0,276	0,490	0,270	0,730
Governance	62,58	19,69	64,87	48,34	78,74

The results show an overall high heterogeneity in the sample reviewed, as the standard deviation measure of most of the variables is high, compared with their mean value, especially in case of DPS (dividend per share), earnings per share (EPS), or the measure of EPS variability. Therefore, the post pandemic business environment seems to affect firms in different ways. If some of them have achieved to reach higher profitability rates, others have not been able to overcome the issues faced during COVID 19 pandemic (Dodic & Dzidic, 2022; Attig *et al.*, 2021; Apedo-Amah *et al.*, 2020), mainly because of the insufficient capabilities of resilience, which include even the need in some case of business models redesign.

However, on average the statistics emphasize a relatively high rate of earnings per share decided to be distributed to shareholders through dividend payments, which indicate that approximately half of the earnings are distributed to shareholders. Therefore, firms' profitability represent a key element on deciding on corporate dividend policy (Dehraj *et al.*, 2024). Instead, we observe high heterogeneity in case of the measure of EPS variability, which reflect the average of the standard deviation of EPS reported along the last 5 years. This result gives relevant indication on the high uncertainty firms have faced during COVID 19 pandemic period, reason why for mangers is even more difficult to decide on the dividend payout, in order to ensure sustainable dividend policy and transmit positive signals on the market, because of the positive impact on the price earnings ratio, essential for investors' decision making process.

Instead, the results show a relatively homogenous sample from the perspective of financial risks firms indicate through the information disclosed by financial statements, with a mean of 0.006 and a small standard deviation of 0.006. Therefore, firms analysed seem to face similar financial risks on the post pandemic period.

This status quo seems to be reflected as well on the level of WACC risk premium, as it is used in this study as a measure of investors' expectation on risk retribution the assume on buying a stock. Therefore, the higher the risk perceived for a stock, the higher the risk premium is expected. As the mean of 0.082 is associated with a standard deviation of only 0.008, this indicates a high level of homogeneity on the sample analysed even in terms of level of investors' expectations concerning stocks returns.

The accruals level describes as well a relative homogeneity on our sample analysed. This results are somehow expected, as managers use accruals for earnings smoothing especially in times of higher uncertainty, in order to show relatively stable earnings level and good perspectives of firms' sustainable economic growth.

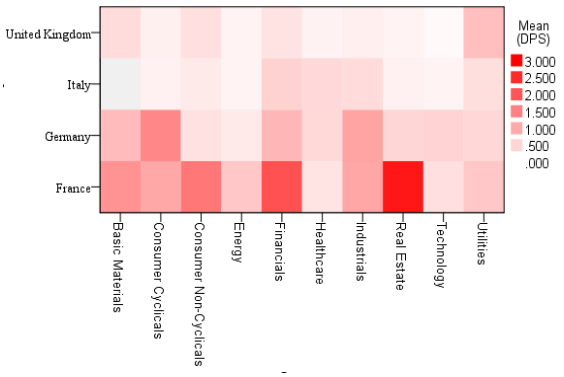

Figure 3. DPS Average Representation

Additionally, we observe from Table 1 a relation of inequality between the momentum components of the Value-Momentum model proposed by Refinitiv through the Startmine analytics. Therefore, the mean of 0.359 of the component showing trend on the stock price evolution (Price trends), which is lower than the mean of 0.536 of the component showing the analysis revisions on the stock price (ARM revisions), suggest a higher volatility of the stocks in the market. Part of this higher volatility in the market could be explained by the Russia-Ukraine war which affected the markets along the 2022 year. However, along 2022 we have been witnessed of multiple local, regional or even forms of global crisis, which translated into higher inflation rate, marginal increase of macroeconomic indicators that lead to

higher economic instability and uncertainty etc. All those macroeconomic constraints lead to restrictions on the dividend policy (Ali, 2022; Ntantamis & Zhou, 2022), including via regulatory measures (Sterenczak & Jarosław Kubiak, 2022; Cjnek *et al.*, 2021).

Looking on Figure 3, we observe that the higher DPS values are found in case of real estate firms, operating in France, whereas firms operating in UK show rather lower values, therefore more conservative approach on the decision to distribute dividends. On one hand, this average value of DPS has behind a relatively high heterogeneity across the sample, because of the specific of each firm's business model and its related idiosyncratic risk. On the other hand, those figures should be carefully viewed, as including according to Eugster et. al. (2021), consistency on dividend policy during the crisis could lead as well to higher stock prices and stock liquidity, which affects the ratio of DPS. Additionally, once the crisis is finished, it is expected an increase on dividends, otherwise capital markets would react negatively, which could lead to higher DPS because of higher stock price reduction. Therefore, shareholders should find out the optimal decision on ensuring a sustainable dividend distribution level, which could generate significant changes on stocks liquidity and market price as well.

Analysis of Correlations

In Table 4 we provide the statistics of the Person correlation. The results show a high positive correlation between DPS and EPS (0.684), which is expected as dividend per share increase as long firms' profitability increases. However, the dynamics of the two measures are different, because of various reasons and especially based on management decision that look for long-term perspective of the decision on the level of dividend payout. We can observe a significantly high positive correlation between contemporary DPS and DPS variability variables (0.623), which describes the longer-term perspective of the dividend policy decision. Instead, the correlation between the historical DPS and the historical EPS (0.523) is lower than the association with the contemporary EPS. At a first glance, the lower correlation between EPS variability and DPS suggests already the confirmation of the signaling theory, considering potential corporate practice of dividends smoothing.

There are also statistically significant positive correlations between the DPS and price trends (0.154), or ARM revisions (0.102) variables. All these correlations indicate the need of higher dividend payout, results that indicate dividends distribution influences analysts' revisions on stock prices, including and stock price trending.

Statistically significant correlations, but with low intensity, appear between DPS and credit risk score (-1.175), which suggest that the higher firms' credit rating the lower is the level of dividends payout. Despite a higher credit rating, that means better financing conditions for firms and investors' expectation to get higher level of dividends, managerial ability and corporate governance mechanisms can play a leading role in this equation, shareholders' decision for dividends distribution being highly influenced by either managers' power of negotiation on defending positive NPV projects, or by limitations established by corporate policies. The governance pillar considered in the analysis shows a relatively low association with the DPS value (-0.152). These results indicate that firms facing significant financial risks for the next period would not sacrifice their self-financing capacity to distribute dividends to shareholder, but rather conserve them for future use, despite the positive financial resilience perspective.

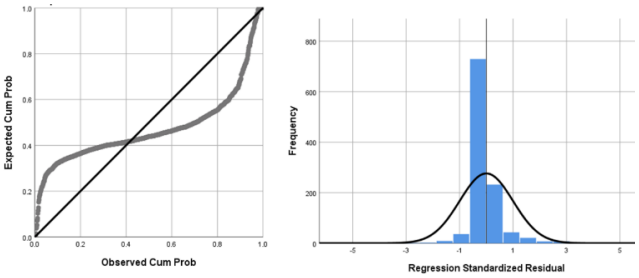

Figure 4. Estimation Residuals Representation

Based on the results from Table 4, seems that both the risk premium and the EPS growth variability measure correlate significantly with the DPS, which indicate that investors' expectations come into the first plan, as the main concern managers and strategic investors have is to ensure firms' sustainable growth on long-term. Based on such long-term related measures, shareholders could identify opportune minimum dividend per share distribution thresholds (Mazur *et al.*, 2023). The only question that remains on this equation is how the managerial ability play on identifying the optimal solution, as the lower dividend per share raise among investors concerns based on agency theory, which could lead to higher cost of equity capital because of asymmetric information.

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Dividend Policy Versus Earnings Reported

The next step in the study is the estimation of the econometric model, designed to understand the marginal effects of both EPS and other financial drivers on firms' dividend payout for the post pandemic period. All models are statistically significant ($p < 0.01$), with high level of models' rate of determination (R^2), that show major part of the variance shared between DPS and the explanatory variables are described by the estimated econometric models, except for the fifth model.

Table 4

Pearson Correlation Matrix

	EPS $_{t-1}$	EPS variability $_t$	DPS variability $_t$	Credit rating	EQ accruals	Risk Premium	Beta	Governance	Price trends	Price revisions
DPS	.684**	-.095**	.623**	-.175**	0,017	-.221**	-.117**	.152**	.203**	.126**
EPS $_{t-1}$	1	-.138**	.523**	-.301**	-.069*	-.137**	-.104**	.121**	.145**	0,046
EPS variability $_t$	-.138**	1	-0,018	.186**	0,036	0,013	.212**	-0,030	-.079**	0,010
DPS variability $_t$	.523**	-0,018	1	-.100**	0,010	-.183**	-0,055	.098**	.162**	.069*
Credit rating	-.301**	.186**	-.100**	1	-.067*	-.098**	.076**	-0,027	-.160**	-.122**
EQ accruals	-.069*	0,036	0,010	-.067*	1	.068*	.074*	0,035	.125**	0,052
Risk	-.137**	0,013	-.183**	-.098**	.068*	1	.069*	-.099**	.076*	0,047
Beta	-.104**	.212**	-0,055	.076**	.074*	.069*	1	0,045	-0,023	-0,031
Governance	.121**	-0,030	.098**	-0,027	0,035	-.099**	0,045	1	.147**	0,018
Price trends	.145**	-.079**	.162**	-.160**	.125**	.076*	-0,023	.147**	1	.237**
Price rev.	0,046	0,010	.069*	-.122**	0,052	0,047	-0,031	0,018	.237**	1

** statistical significance at 0.01; ** statistical significance at 0.05; *** statistical significance at 0.10.*

In Figure 3 we represent the residuals of the last econometric model estimated. Overall, the model could be considered as statistically relevant and with high model fit, as the residuals follow a normal distribution with null mean value. Based on the Durbin-Watson test, there is no indication of autocorrelation, therefore the integration of the historical DPS information does not deter model estimates significantly.

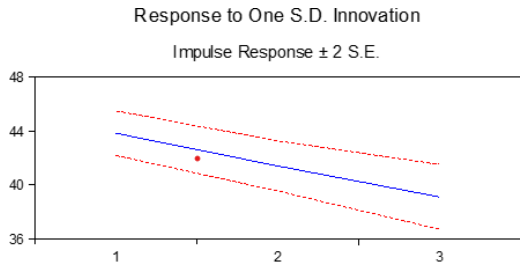

Figure 5. AR(1) Impulse Response

The results show that the main explanatory variable for DPS is the historical DPS variable, followed by the EPS variable, together with their variability measures (AlGhazali & Yilmaz, 2023; Dodig & Dzidic, 2022). On one hand, these results suggest the practice of potential dividend smoothing practice (0.857), as the evolution of the dividends seem to be rather linked to the historical dividends distributed than the earnings basis for dividends distribution (0.018). Those results confirm the signalling theory, especially in times of crisis. On the other hand, , as the historical DPS seems to impact more the contemporary DPS, compared with the DPS variability measure, the dividend policy is rather described by a more conservative approach, focused on a short-term perspective (see Figure 5). Therefore, the dividend smoothing could be oriented to avoid abnormal dividend per share immediately after the crisis has ended.

Instead, the impact of either the historical EPS or the EPS variability measure are less relevant for the contemporary DPS value, compared with the DPS historical information. Whereas the historical EPS impact positively the contemporary DPS (0.171), the EPS variability generate a negative marginal effect (-0.003). However, when integrated together all those variables, the EPS variability measure become irrelevant, therefore the dividend policy does not follow a sustainable evolution based rather long-term planning EPS evolution, but rather on DPS variability measure, which confirms again the signalling theory. Therefore, the higher the variability in dividends evolution generates higher investors' expectation (no matter EPS evolution), as firms are less probable to decide on lowering and investors' are less likely to accept such reduction, confirming this way the bird-in-hands dividend policy hypothesis.

This decision is a complex one, depending on numerous factors, among which we highlight the managerial ability to predict firm's future perspectives and manage the relation with shareholders carefully. Otherwise, such direction of action could install panic on the market, especially when investors observe a pattern of low dividends payout, which could lead to decrease of stock prices and negative perspectives on financing solutions. These results concerning the marginal effect of DPS or EPS historical information on the DPS value persist across all econometric models estimated, no matter we introduce additional variables.

Several Financial Policy Drivers

In the Table 6 we summarize the econometric models that integrated additional corporate financial drivers, such as corporate financial resilience, marginal effect of markets expectations or financial statements quality.

Concerning the influence of firms' capital market risk exposure from investors' expectations perspective, and financing strategy risk exposure on the dividend policy decision, the results highlight several aspects.

On one hand, the cost of capital component of risk premium generate a negative impact on DPS as long as the measures of DPS or EPS variability are incorporated in the econometric models. Though the results could be perceived as surprising, as higher risk premium is expected to lead to higher dividends, actually they reflect investors' preference to incorporate their expectations rather on the cost of equity, than receiving dividends in times of crisis. The marginal effect is higher in case of incorporating rather the EPS measure of variability than the DPS similar measure, which explains better the previous statement, as investors understand the need of a sustainable dividend policy, therefore a higher connection of the dividend per share to the corporate financial performance reflected through earnings reported. As long as there is present higher variability on earnings reported, investors are inclined to understand the decision of reduction of dividends or omission is rationale and ensure firms' sustainable growth.

On the other hand, firms credit score plays as well a significant role on corporate dividend policy, especially in times of crisis (Falavigna & Ippolliti, 2021). The higher corporate credit rating leads to lower level of dividends per share, the results confirm the better the firms' financial resilience, the lower the dividends will be. The higher the level of credit score means the better the financing perspectives, through higher firm's profitability, higher debt and interest coverage, better liquidity, and stable economic growth. Though firms' lower exposure to financial risks is expected to allow the firms to distribute higher level of dividends to shareholders, our results confirm the residual hypothesis of dividend policy, which highlight that internal financing resources go first to cover financial needs for projects with positive NPV for the firms. Despite the presence of dividends smoothing treatment, reflected by the significant influence of historical DPS information on the contemporary DPS level, the credit rating measure has a higher negative impact, which confirms investors' more conservative approach, who are inclined to sacrifice short-term gains for the benefit of higher cost-of equity increases on long-term. Based on the marginal effect on DPS, the credit score variable has the highest impact, compared with the other variables. This confirms managers' orientation on decision making, which seems to pay high attention to the financial risks of the firm. It is more important to ensure firms' existence, by ensuring sufficient resources to cover debt obligations.

However, the negative impact of credit rating on the contemporary DPS value is valid in case of models controlling for the influence of historical DPS related information. Models isolating only the role of historical EPS related information on the level of contemporary DPS, show a positive impact of earnings reported. Therefore, when no information on historical DPS is incorporate into the models, the corporate credit rating leads to higher DPS value. These results suggest the controversial nature of dividends policy decision (Al-Najjar & Kilincarslan, 2019), as managers look for influencing shareholders to decide on earnings retention for financing projects with positive NPV, whereas shareholders rather look for having gains from their capital investing. On those circumstances, the results emphasize the need of minimum thresholds of dividends distributed, which ensure at least a constant dividend per share decision, but abnormal dividend per share are challenged, despite higher earnings reported, especially in times of crisis and recovery on post-pandemic period. The surplus of earnings is rather viewed to be invested on the firm profitable projects and ensure higher dividend per share on a long-term horizon.

Table 5

Estimations of Econometric Models

Dimension	Model	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*
Sustainable growth	Const.	0.063** (0.030)	0.254* (0.022)	0.044* (0.011)	0.289* (0.019)	0.529* (0.180)	0.290* (0.021)	0.067*** (0.038)	0.041* (0.015)
	DPS $_{t-1}$	0.924* (0.012)	-	0.895* (0.015)	-	-	-	0.878* (0.016)	0.857* (0.022)
	DPS variability $_t$	-	3.756* (0.143)	0.343* (0.088)	-	-	-	-	0.388* (0.115)
	EPS $_{t-1}$	-	-	-	0.171* (0.006)	-	0.174* (0.006)	0.019* (0.004)	0.018* (0.006)
	EPS variability $_t$	-	-	-	-	-0.003** (0.001)	-0.001 (0.001)	-	0.000 (0.001)
Country effects		RE	FE	FE	FE	RE	FE	RE	RE
Model validation	Adj. R^2	0.810	0.361	0.851	0.437	0.096	0.447	0.812	0.848
	DB stat.	1.967	1.736	2.005	1.904	1.845	1.873	1.964	1.990
	F-stat.	5931.6*	688.0*	1384.8*	270.4*	36.22*	215.7*	3003.9*	1662.8*
	H. stat.	1.258	47.33*	12.40*	24.99*	0.057	15.39*	1.062	1.849
	BP stat.	28.79*	1370.6*	8.312*	1059.3*	5881.3*	1160.0*	40.51*	9.443*

** statistical significance at 0.01; ** statistical significance at 0.05; *** statistical significance at 0.10.*

Table 6

Robustness Analysis

Dimension	Model	(9)	(10)	*(11)*	*(12)*	*(13)*	(14)	(15)	*(16)*	*(17)*	*(18)*
	Dependent variable	*DPS*	*DPS*	*DPS*	*DPS*	*DPS*	*DPS*	*DPS*	*DPS*	*DPS*	*DPS*
	Method	**OLS**	**OLS**	**OLS**	**OLS**	**OLS**	**OLS**	**OLS**	**OLS**	**OLS**	**2OLS**
	Const.	0.114	0.063	1.323*	1.401*	0.093	0.087	1.228*	0.629**	0.038	0.398*
		(0.109)	(0.152)	(0.212)	(0.299)	(0.113)	(0.153)	(0.233)	(0.267)	(0.154)	(0.226)
Sustainable growth	DPS_{t-1}	0.876*	0.874*	-	-	0.876*	0.884*	-	-	0.848*	0.065*
		(0.016)	(0.021)			(0.037)	(0.018)			(0.023)	(0.033)
	DPS growth variability $_t$	-	-	3.571*	3.589*	0.403**	0.412*	-	-	0.356*	-
				(0.146)	(0.171)	(0.154)	(0.108)			(0.110)	
	EPS_{t-1}	0.019*	0.025*	-	-	-	-	0.195*	0.253*	0.021*	0.944*
		(0.005)	(0.008)					(0.022)	(0.009)	(0.008)	(0.011)
	EPS growth variability $_t$	-	-	-0.003*	-0.004*	-	-	0.000	-0.002**	0.000	-
				(0.001)	(0.001)			(0.001)	(0.001)	(0.001)	
Financial risk	Credit rating	-1.481	-0.255	-16.24*	-17.99*	-3.432**	-2.305**	3.679*	10.35**	-0.269	-
		(1.945)	(2.551)	(3.841)	(5.062)	(0.598)	(0.529)	(3.477)	(4.537)	(2.677)	
Investor's expectations	Risk premium	-2.184	-1.431	-14.03	-16.71*	-1.749	-1.330	-15.15*	-11.44*	-1.067	-
		(1.276)	(1.651)	(2.511)	(3.261)	(1.364)	(1.674)	(2.752)	(2.875)	(1.673)	
Market evolution	Price trends	0.147*	0.150*	0.263*	0.205**	0.141*	0.140*	0.330*	0.219**	0.134*	-
		(0.038)	(0.050)	(0.077)	(0.101)	(0.043)	(0.051)	(0.084)	(0.088)	(0.051)	
	ARM revisions	0.138*	0.179*	0.200*	0.218**	0.126*	0.169*	0.267*	0.323*	0.179*	-
		(0.039)	(0.051)	(0.078)	(0.101)	(0.047)	(0.051)	(0.069)	(0.089)	(0.051)	
Accounting implications	Accruals rank	-	0.042	-	0.057	-	0.028	-	0.192**	0.042	-
			(0.051)		(0.102)		(0.051)		0.090	(0.052)	
Information asymmetry	Corporate governance	-	-0.001	-	0.003**	-	-0.001	-	0.002***	-0.001	-
			(0.001)		(0.001)		(0.001)		0.001	(0.001)	
Model validation	Adj. R^2	0.849	0.862	0.428	0.456	0.848	0.862	0.479	0.572	0.862	0.829
	DB stat.	1.870	2.048	1.991	1.785	1.921	2.085	2.048	1.951	2.069	-
	F stat.	1093.7*	639.8*	142.6*	85.9*	1060.6*	632.5*	179.2*	137.8*	509.3*	3477.5*

Additionally, we have controlled to the relevance of the capital markets on the dividend policy. We did not assess the value-relevance of dividend per share, but rather to understand how volatility on the capital markets influence shareholders' decision to distribute dividends. On those models we add the components of the Value-Momentum model proposed by Refinitiv through the Starmine analytics, to review the implications of the dynamics of the stocks evolution in capital markets and the marginal effect on the dividend payout decision. If the price global rank reflects the stock price trending in the market component of the Value-Momentum model, the ARM revisions component describe the analysts' revisions on stock prices. The results show that statistically significant marginal effect on DPS is generated by both the price trends and the ARM revisions components, no matter the influence of historical DPS or historical EPS information incorporated in the estimated models. The positive marginal effect on the DPS reflect better the signalling theory outcome and the fact that shareholders consider in their dividend payout decision making also the capital markets implications. Therefore, the higher the score reflecting revisions on stock prices, the higher is expected the level of dividends payout, as there is present higher volatility of the market, most cases indicating less firms' ability to forecast future earnings and dividends per share. Indeed, analysts' revisions indicate higher uncertainty, which could be tempered on investors' perception on investing decision, through positive signals that firms' have positive future perspectives, including financial resources to pay dividends. On those circumstances, shareholders (especially the strategic investors, with higher power on voting the dividend distribution decision) are careful on the level of dividends payout, as investors' behaviour is sensitive on patterns of dividend per share. Therefore, paying dividends should provide positive signals on the markets, but should ensure as well firms' sustainable growth, and lower financial risk exposure, avoiding abnormal and unreasonable dividends per share. Once a new higher dividend payout level is recorded, in the next period investors would be less likely willing to accept reduction of the previous level of dividends per share.

Additionally, we have controlled for the relevance of historical EPS information on contemporary DPS value. As noted in the literature, the accruals component of the earnings reported is widely used by managers for earnings smoothing purpose. Consequently, more stable earnings reported lead to into positive future perspectives of the firm and possibility of the firm to finance itself. A sustainable growth of the firm determines investors to claim for higher dividends payout, as firm is perceived to be capable to finance itself and pay its shareholders as well.

The impact of the accruals on earnings reported is expected to be even higher in times of crisis, especially to keep the pattern of earnings evolution and avoid any negative signals on the market. However, as noted by Perrols et. al. (2011), the level of accruals reverses in time, which could negatively affect dividends payout pattern, with negative implications on investors' perception on stocks. Therefore, managerial ability to calibrate the level of accruals is essential for long-term perspective. The results confirm a positive marginal impact of accruals quality measure, but only in case of incorporating in the models the historical EPS information. The lower the EPS variability (-0.002) leads to more likely managed earnings and higher accruals (0.192), generating higher level of dividends per share. This higher level of contemporary dividends distributed is even higher in case of better more effective corporate governance framework and mechanisms (0.002), as they are aimed to reduce the information asymmetry and the impact of earnings management, showing through financial statements the real economic results of the financial exercise. Instead, once controlled those relations with the contemporary DPS values when incorporating the information about historical DPS, the marginal effects are significantly lower, as based on the bird-in-hand theory investors are expecting at least a minimum level of dividend per share, less conditioned by firms' financial performance (Ali, 2022; Ntantamis & Zhou, 2022).

The Role of the Macroeconomic Environment

A new approach on dividend per share research should be adopted, such as the used of time series techniques to capture the phenomena of dividends evolution, not just timely isolated periods, or cohorts of firms in different country institutional frameworks or sector specific environments. This phenomenon is not limited only to firms' business models, but the scope of the research should rather extend to its macroeconomic and institutional frameworks, or even to a cultural dimension (Tran, 2024; Pathak & Das Gupta, 2021; Booth & Zhou, 2017; Jabbouri, 2016; Pinto *et al.*, 2020; Greusard, 2022).

As a last step of data analysis, we proceed to an ANOVA analysis, to understand the role of the specific of the industry, or the specific of the country of origin of the firms analysed. In Table 5 we provide the results obtained on revieing the significance of the differences generated by the county specific and industry specific characteristics, without a decomposition on individual characteristics.

Overall, the results show significant impact on the DPS determined both by the industry specific and country specific characteristics. Furthermore, we observe a synergy effect of the two driving factors. Therefore, the analysis on managers' decision on dividends payout is subject not only to financial firm-based drivers, but also macroeconomic drivers. This is one reason why the R^2 is only moderate.

The list of macroeconomic drivers is long, among which we remind some of the most relevant ones, such as: dividend tax policy, country risk, economic diversity, capital markets capitalization and maturity, presence of institutional investors on the markets, public policies directed towards supporting business environment etc. (AlGhazali & Yilmaz, 2023; Sterenczak & Jaroslaw Kubiak, 2022; Cejnek *et al.*, 2021).

In Figure 6 we highlight those difference on DPS level. Based on the representation, we observe that the highest DPS is obtained in case of French firms, operating in the real estate sector (2.302), whereas the highest DPS rate in Germany is reported by firms operating in the financial sector (1.614). Instead, we observe lower DPS rates in case of Italian or UK firms.

Additional to those results, we highlight in Table 8 the heterogeneity among countries and among firms on the same country when assessing the connection between DPS and EPS, showing that the a minimal level of dividends payout generally lead firms to unsustainable dividend policy, as especially in times of crisis when firms suffer from lack of liquidities, dividends become a burden behaving like a fixed cost, which is rather associated with a cost of agency claimed by shareholders.

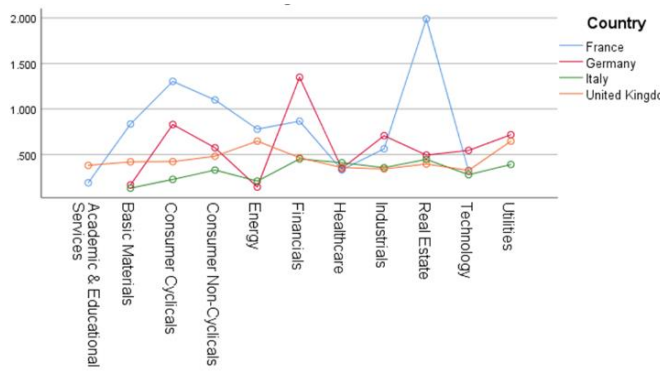

Figure 6. Estimated Marginal Means of Dividend Per Share

The coefficient of variation, which shows how much of the average explains the standard deviation, highlight the highest heterogeneity in case of UK (4.195) and in case of the Energy sector (3.477). The differences on dividend policy consist of consistent idiosyncratic risk related to firms' business model specific. However, the lower variation among firms could indicate more effective and timely public policies released on country level, or subsidies programs supporting different strategic sectors, which the risk of generating externalities, including associated with the reduction of competitiveness on the market because of state intervention. Similar studies have emphasized that during the COVID 19 pandemic, the sector specific risks generate significant and systematic issues for firms (Pettenuzzo *et al.*, 2023).

Table 7

ANOVA Results on Drivers of Dividend Policy Decision

Effect	Value	F	Df	Partial Eta Squared	Noncent. Parameter	Observed Powerd
Intercept	0,001	0,404	2	0,001	0,809	0,116
DPS $_{t-1}$	0,627	637,1	2	0,627	1274,2	1,000
EPS $_{t-1}$	0,241	120,4	2	0,241	240,9	1,000
EPS variability $_{t}$	0,001	0,190	2	0,001	0,380	0,080
DPS variability $_{t}$	0,013	5,143	2	0,013	10,29	0,825
Credit rating	0,033	12,92	2	0,033	25,83	0,997
EQ accruals	0,004	1,669	2	0,004	3,339	0,353
Governance score	0,002	0.697	2	0,002	1,394	0,168
Price trends	0,019	7,333	2	0,019	14,67	0,938
Price revisions	0,019	7,471	2	0,019	14,94	0,942
Country	0,023	4,342	4	0,011	17,37	0,934
Sector	0,059	2,562	18	0,029	46,11	0,997
Country * Sector	0,134	2,105	52	0,067	109,4	1,000

Table 8

Homogeneity Analysis on the Dividend Policy (Coefficient of Variation Analysis)

Country	DPS>EPS		Sector	DPS>EPS	
	No	*Yes*		*No*	*Yes*
France	1.034	2.041	Basic Materials	1.350	1.752
Germany	1.179	1.887	Consumer Cyclicals	1.668	2.465
Italy	1.910	1.331	Consumer Non-Cyclicals	1.605	2.880
United Kingdom	1.893	4.195	Energy	1.557	3.477
			Financials	1.807	2.759
			Healthcare	1.447	2.231
			Industrials	1.522	1.682
			Real Estate	1.927	2.561
			Technology	1.914	2.539
			Utilities	1.631	1.930

Based on those drivers, the level of their impact on the corporate dividend policy and their interaction across sectors and along the period, the institutional framework, which includes the legal, regulatory and capital market structures, plays an essential role on how firms can override the pandemic crisis negative impact. There are various channels of transmission of the public policies on the decision on corporate distribution of dividends, such as: (i) policies that set-up a favourable tax regulation environment (at least on a limited period), such no changes made on dividends taxation; (ii) regulatory limitations on dividend per share, as in case of firms operating in the financial sector, or in case of firms that received state subsidies, but with the condition no dividends are distributed within a limited period of the pandemic crisis; (iii) capital markets liquidity which influences firms market value through the gap between the bid and ask spread of each stock return, together with the systemic market risk exposure; (iv) credit rating announced by various specialized agencies, who have indirectly influenced firms' dividend policy transmitting on the markets signals about firms' financial resilience and strengthen or worsened investors' confidence; or even (v) investors short versus long-term orientation, where the institutional (speculative) investors put higher pressure on receiving higher dividends on short-term, compared with the strategic ones.

Table 10

Heterogeneity Analysis

Dimension	**Model**	**(19)**	**(20)**	**(21)**	***(22)***	***(23)***	***(24)***	***(25)***
	Dependent variable	*DER*	*DER*	*DER*	*DER*	*DPS*	*DPS*	*DPS*
	Method	**FRM**	**FRM**	**FRM**	**FRM**	**OLS**	**OLS**	**OLS**
Const.		-1.394*	-0.645*	-1.561*	-1.265*	0.034	0.034	0.030
		(0.044)	(0.031)	(0.059)	(0.111)	(0.053)	(0.098)	(0.052)
Sustainable growth	DPS $_{t-1}$	1.496*	-	3.324*	1.307*	0.914*	-	0.926*
		(0.103)		(0.173)	(0.127)	(0.017)		(0.021)
	DPS growth variability $_{t}$	-	-	-	-	0.359*	-	-
						(0.096)		
	EPS $_{t-1}$	-	0.042*	0.008	0.008	-	0.273*	0.013***
			(0.015)	(0.014)	(0.007)		(0.009)	(0.007)
	EPS growth variability $_{t}$	-	-	-		-	-0.001	-
							0.001	
Financial risk	Leverage $_{t-1}$	-	-	-	-0.140	0.042	0.320**	0.064
					0.013	0.066	0.126	0.066
Market evolution	Beta $_{t-1}$	-	-	-	-0.061	0.011	-0.094**	0.016
					0.054	0.021	0.040	0.021
Accounting implications	Accruals rank $_{t-1}$	-	-	-	0.048	0.012	0.174***	0.015
					0.099	0.049	0.090	0.048
Information asymmetry	Corporate governance $_{t-1}$	-	-	-	0.001	0.000	0.003**	0.000
					0.001	0.001	0.001	0.001
Model validation	Adj. R-squared	0.238	0.001	0.036	0.201	0.881	0.577	0.880
	Durbin-Watson stats.	-	-	-	-	2.385	2.037	1.568
	F-statistic	-	-	-	-	959.0*	180.7*	971.2*
	Log pseudolikelihood	-609.1	-806.9	-598.29	-415.53	-	-	-

Additional Analysis

Additional analysis were made, to look for results consistency, either by changing the independent variable definition, or changing the moderating variables.

First, the results summarized in Table 10 confirm the results previous econometric models estimated, when keeping the same dependent variable, the dividend per share, showing a positive impact of both the relevance of historical DPS and EPS information on the level of contemporary DPS level.

Second, the results confirm the positive marginal impact of those variables, but this time, on the ratio of dividends distributed on earnings reported (DER). As per DER variable type, we have estimated a fractional regression (Ramalho *et al.*, 2011; Ramalho, 2019), looking for the marginal effect of the stochastic evolution of DER and the influence of the historical EPS information on the contemporary DER ratio. Therefore, with those results we can confirm the bird-in-hand theory and the signalling theory as well, which should raise awareness on firms level that dividend policy should be sustainable and cautiously founded on highly accurate forecasts, including by adopting various emerging technologies and data analytics solutions.

Conclusions

It seems that it is difficult to choose between distributing dividends and reinvesting the profit obtained. The decision seems even more difficult to take in an environment marked

by uncertainty, such as the recent pandemic context, caused by the novel coronavirus.

The aim of our study was to assess the association between the dividend per share decision and several financial firm related drivers, determined based on information disclosed by financial statements in order to provide some preliminary insights on the level of dividends paid to shareholders and main financial drivers considered on management decision making.

In order to achieve our objective, we included in our study 1.105 companies from four main economies in Europe, respectively United Kingdom (52 %), Germany (20 %), France (18 %) and Italy (10 %). The analysis carried out in our research was based on financial information extracted from Refinitiv database, and the period analysed is related to financial information reported for 2022, the first year after the COVID-19 pandemic.

Our results highlight the fact that high uncertainty firms have faced during COVID 19 pandemic period, created to manager's difficulties to decide on the dividend payout, in order to ensure sustainable dividend policy and transmit positive signals on the market, because of the positive impact on the price earnings ratio, essential for investors' decision making process.

Also, our study highlights that the decision on dividends distribution is rather linked with firms' financing strategy and the risk associated. Therefore, **H_1** is confirmed. Based on the marginal effect on DPS, the credit score variable has the highest impact, compared with the other variables. This confirms managers' orientation on decision making, which seems to pay high attention to the financial risks of the firm. It is more important to ensure firms' existence, by ensuring sufficient resources to cover debt obligations. Moreover, higher credit rating could indicate some constraints (or opportunity) on firms' dividend policy, which can be conditioned by creditors, based on achievement of several objectives monitored through different debt of capital covenants agreed prior on the moment of contracting financing resources. Thus, managers consider of first priority the capability that firms can pay their obligations, through a sustainable growth, and as long as there a reconciliation between them and the shareholders, the last ones can understand the need of short-term sacrifice on their potential gains, which could be complemented by higher management commitment (Alves *et al.,* 2021). As second priority, managers look for meeting investors' expectations, especially for the institutional and strategic ones. Nonetheless, with this study we confirm the institutional theory that emphasize the role of both country and industry institutional factors on the decision of dividend policy, validating hypothesis **H_2** and **H_3**.

Theoretical Implications

With this paper, we add to the literature by confirming several dividend theories under a particular research setting, such the ex-post COVID 19 pandemic economic landscape.

First, we confirm that, as long as firms are profitable, they decide to distribute dividends, transmitting positive signals on the market. Second, based on analysts' revisions to earnings reported, we confirm the catering dividend theory, looking for the market sentiment reflected by analysts' forecasts. Third, we reveal several agency theory-related channels of uncertainty transmission on dividend per share, such as the negative impact determined by firms' credit rating, or the positive impact of earnings quality, or corporate governance mechanisms. However, the practice of dividend smoothing (Mrzyglod *et al.,* 2021; Skinner & Soltes, 2011), with subsequent implications on expected higher market liquidity and lower cost of equity, does not affect investors' behaviour, highly influenced by the firms' idiosyncratic risk (business model related characteristics) and investors' biases as well (Michaely & Moin, 2022; Rubio *et al.,* 2022), prevalent even after the crisis period, as there is needed a period of adjustment to the new capital market landscape and regulatory framework.

Practical Implications

Based on results of this study, we appreciate investors should be careful on building-up their mix of stocks portfolio, considering not only a short-time horizon of analysis, but rather a longer one, as the political and economic uncertainty describing the current business environment landscape describe a significant evolution in time. Additionally, we emphasize that individual investors should consider the use of more sophisticated financial instruments evaluation models and merging technologies, including ones integrating various machine learning and data analytics solutions. Investment decision should be less conditioned by analysts' forecasts and more aligned to macroeconomic context, but much more with market sentiment of the moment.

Limitations of the Study

The aim of the study was to understand the association between dividend policy and related firm specific financial drivers, country and industry-specific economic and institutional factors. However, there are several limitations of the study. First, we analyse only the first ex-post COVID 19 pandemic financial exercise. Second, we do not decompose country or industry specific factors into macroeconomic contextual factors, public policy efficiency or public enforcement factors. Third, our analysis does not consist of a deep-dive into various channels of public policies and enforcement mechanisms impact on firms' dividend policy. Forth, the study is limited to a sample of only four highly developed economies, without controlling for major differences that could be generated by the institutional framework between such a developed economy and emerging economies. Nonetheless, the behavioural proxy considered in the analysis reflects analysts position, not investors' biases on investment decision.

Future Research Agenda

There are several direction of future research we already consider to continue the idea of this study. First, we look for extension of the time horizon, to assess the bi-directional causality between dividend policy and firms' profitability and financial constraints. Second, we plan to perform a comparison between highly developed economies and emerging economies, to control for the role of institutional framework under different research set-up describing crisis context, such the global financial crisis, different political

crisis, or military conflicts. Notheless, we aim to follow a mixed-research approach, combing econometric analysis with survey-based data collection and analysis methods, to gather a better understanding on the channels of transmission of corporate investment and financing policies unto the dividend policy. Nonetheless, we foresee a research project that addresses the role of artificial intelligence on earnings forecasting and more sustainable projections of dividends distribution for corporate finance planning purposes.

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The article has been reviewed.
Received in July 2024; accepted in October 2025.