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The Impact of Covid-19 on the Dividend Payout Policy: Evidence from the Italian Banking Industry

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Abstract

The paper investigates how the Covid-19 pandemic affected the dividend payout policy of listed financial intermediaries on the Italian stock exchange. Utilising data from the 25 financial intermediaries listed on FTSE Mib, FTSE Mib Mid Cap, FTSE Mib Small Cap and FTSE Italia Star, the paper shows that several listed banks and insurance firms in the sample decided to keep paying dividends to provide the market with good signals during the outbreak. A logit multivariate regression model is performed to analyse the impact of some key metrics (regarding profitability, leverage, and liquidity) to dividend payout policy, before and during the pandemic. The findings show that the capability to generate cash flow is significant when continuing to increase dividend payouts, with respect to leverage and profitability.

Keywords

Financial Regulation, Covid-19 Pandemic, Dividends Policy, Signaling Theory, And Behavioral Finance

1. Introduction

The research intends to analyse the effects of Covid-19 pandemic on the dividend payout policy of the listed financial intermediaries on the Italian stock exchange (FTSE Mib, FTSE Mib Mid Cap, FTSE Mib Small Cap and FTSE Italia Star). In doing this, the research also provides a detailed description of the regulations adopted by Italian banking Authorities in order to protect banks' capital, regarding changes in dividend payout policies, during the Covid-19 pandemic.

The Covid-19 pandemic was a serious outbreak, which was identified in the city

of Wuhan, China, in December 2019. The World Health Organisation (WHO) declared the outbreak to be a "Public Health Emergency of International Concern" on January 30, 2020 and a "proper" pandemic on March 11, 2020 (World Health Organization, 2020). Thus, according to the WHO, the implemented methodology assumes that the pandemic started in 2020 and ended in 2022. Covid-19 impacted several economic areas by involving a broad range of industries, both in the real economy and in the financial markets. At that time, the EU Gross Domestic Product (i.e. GDP) decreased by 6.2%, while the euro area GDP declined by 6.6%. The inflation rate of the euro area contracted by 0.3% (it was 1.2% in 2019). In this regard, the pandemic's effects raised relevant risks to the stability of the financial and banking systems (Emerson, 2021). In this context, the Italian market was deeply impacted by the outbreak, even in comparison with the EU market. For instance, during the worst phase of the pandemic, FTSE Mib decreased by around 26% in the first two weeks of March 2020 and Fitch revised the Italian GDP from 0.2% to -8.0%% in 2020 (Emerson, 2021).

Even if extremely rare, in the past, some other outbreaks impacted the economy, but none of them appear to have required specific restrictions as those adopted during Covid-19. Some of the most relevant pandemics were: the Black Death (1347-1351) that led to the deaths of 75 - 100 million people; the Bleeding Fever (1545-1548) in Mexico; the Cholera epidemic (1899-1923); the AIDS virus (started in 1908); the severe acute respiratory syndrome (i.e. SARS) in Asia and Canada between 2002 and 2003; Ebola, Swine Flu, and others (Zeren & Hizarci, 2020).

Considering the banking industry, in 2020, the IMF required countries to adopt an "appropriate regulatory and supervisory response to deal with the impact of the Coronavirus pandemic that [could] maintain the balance between preserving financial stability, maintaining banking system soundness and sustaining economic activity" (Awad et al., 2020). In this regard, the pandemic impacted the banking quality of assets (i.e. loan portfolios) due to the difficulties of borrowers in repaying their loans. Therefore, supervisory authorities issued ad-hoc regulations and guidelines to keep the capital buffers at a safe level, by instructing shareholders and managers to revise their operational strategies and capital distribution plans, such as dividend payout policies (Awad et al., 2020). However, as described in the following sections, the impact of the pandemic on banking profitability and liquidity is still quite controversial.

It is well known that the banking system's soundness is crucial for assuring the stability of the European Union. On the one hand, financial intermediaries provide most of the credit to businesses and households, to develop the real economy but, on the other hand, they are the deposit-takers from savers. According to Quaglia & Verdun (2023), the pandemic not only created tensions for the economic governance of the EU, "in particular, [for] Economic and Monetary Union (EMU), but it is was also a major challenge for Banking Union, which [was] established in the euro area in various steps between 2010 and 2015" (Quaglia & Verdun, 2023). Thus, at the European level, national banking supervisory author-

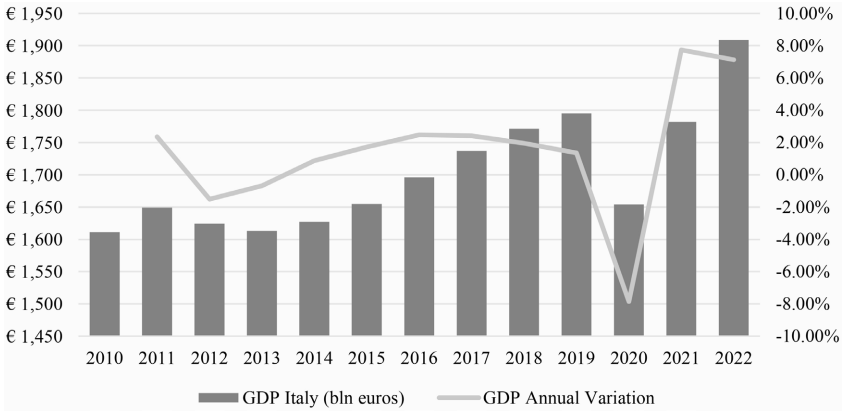
ities tried to coordinate their strategies to support financial intermediaries in preserving capital and liquidity, even at the expense of short-term profitability, to face the pandemic's effects. However, the effectiveness of the financial intermediaries' responses during the pandemic needs to be properly analysed, especially for the Italian banking industry, which was particularly affected by Covid-19. In this regard, the research focuses on the Italian market, since there are no specific contributions about the pandemic's effects on shareholders' profitability, specifically to the dividend payout policy. Most of the literature about the impact of the pandemic to the dividend payout policies mainly focused on American, Asian, and European markets, which also provides controversial points of view about it. Thus, the analysis of the Italian market intends to answer the research question, which arises precisely from the dichotomy between keeping paying dividends to provide the markets with positive signals and omitting dividends to protect liquidity buffers and capital reserves. In this regard, the analysis of the Italian market, by focusing on the banking industry, appears to be relevant in realising the typology of responses to a severely affected area, such as the Italian one; it can also support the research into understanding non-obvious market behaviours of financial intermediaries with respect to shareholder profitability during crisis, such as environmental disasters, further outbreaks, economic crises, etc.

The response of the Italian banking industry appears to be surprising because financial intermediaries seem to pay more attention to market perceptions than fundamental analysis. In this regard, the research question appears to be relevant, not only to clarify what happened during the pandemic in the Italian stock market for the banking industry, but also to provide the literature with further evidence of the level of suitably of the unusual measures adopted by supervisory authorities, in order to support financial intermediaries during systemic crisis.

Thus, the study is organized as follows: section 1 provides the introduction, then section 2 provides a description of the impact of the pandemic on the Italian economy with a focus on the banking industry, while section 3 details the extraordinary measures implemented to face Covid-19 by the European and Italian supervisory Authorities. Then, section 4 provides an extensive analysis of the existing literature in order to develop the research question, which finds answers in section 5 by implementing the regression model to evaluate the impact of key metrics to dividend payouts, before and during the pandemic. Finally, section 6 provides the conclusions to the present research, by explicating both the main limitations of the current research and further research opportunities in the field.

2. The Impact of the Pandemic on the Italian Economic and Banking Context

The outbreak crisis cannot be considered as a self-regulating phenomenon, but effects follow the societies' lifestyles, which also impact on investors' decisions, such as the asset allocation process (World Health Organization, 2019). **Figure 1** shows the trend of Gross Domestic Product, Unemployment, and Public debt to GDP ratio, before and during the pandemic.



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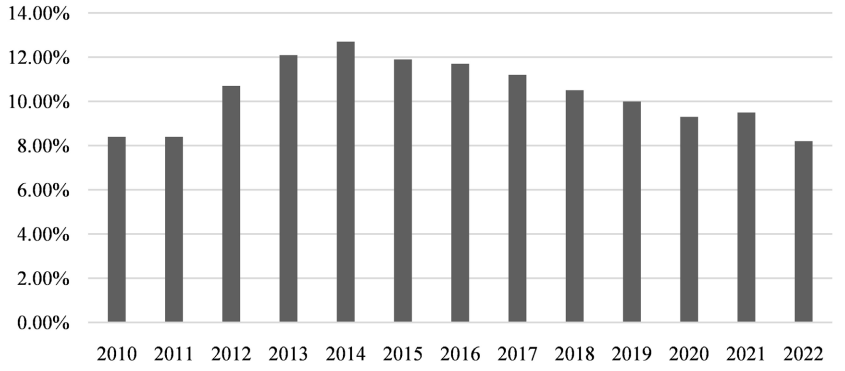

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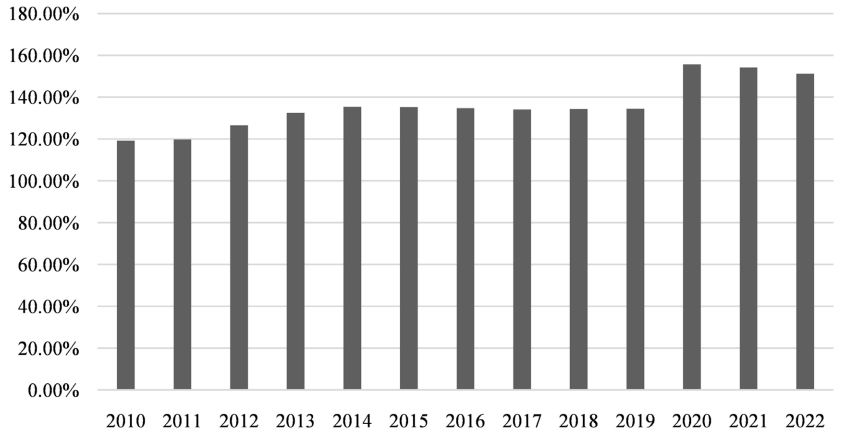
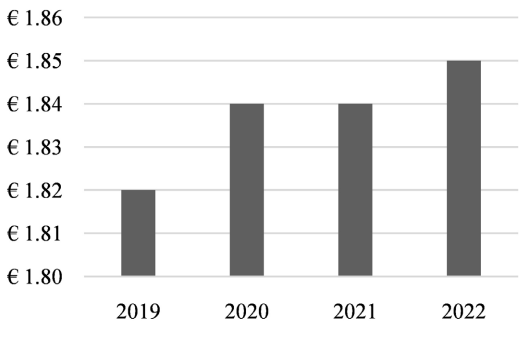


(c)

Figure 1. KPIs of the Italian Economy. (a) Trend of the Italian Gross Domestic Product (in billions of Euros) from 2010-2022. The figure shows the trend of Italian GDP, expressed in billions of euros from 2010-2022 (Statista, 2020a). The reduction in both GDP and consumption was due to the short-term pandemic effects and led to several companies being in financial distress (Statista, 2020b). (b) Trend of the Italian Unemployment Rate from 2010-2022. The figure shows the trend of the unemployment rate in Italy from 2010 to 2022. The increase in 2021 was due to the pandemic effects (Statista, 2020c). (c) Trend of the Italian Public Debt to Gross Domestic Product from 2010-2022. The figure shows the trend of the public debt to GDP ratio in Italy, from 2010 to 2022. The level increased considerably in 2020 due to the pandemic (Statista 2020d).

As in **Figure 1(a)**, before the beginning of the pandemic, the Italian Gross Domestic Product (i.e. GDP) was around €1,79tln in 2019, which dropped at €1,65tln in 2020, as it was in 2015 (Statista, 2020b) The consequences of the pandemic to Italian economy were relevant due to the fact they led several companies in financial distress and worsen the regional disparities between northern and southern Italian regions (i.e. Lombardy, Emilia-Romagna, Veneto and Piemonte contribute for 48,2% of Italy's GDP) (Sanfelici, 2020; Statista, 2020b). Then, as in **Figure 1(b)**, Italy showed the largest regional disparities among OECD countries (OECD, 2020), and "*youth unemployment rates above 50 per cent* [were] *observed in the South of Italy, while the province of Bolzano in the North show*[ed] *the lowest rate in the country (10% in 2017)*" (Sanfelici, 2020). Finally, concerning public debt, as in **Figure 1(c)**, the government debt to GDP ratio increased by 21.25% from 134.56% in 2019 to 155.81% in 2020. Thus, high debt levels created "*serious constraints on government public spending and on the implementation of expansionary fiscal reforms. The number of families and people living below the poverty line grew*" (Sanfelici, 2020). The impact of Covid-19 was relevant on the economy, considering that GDP decreased of around 4.8% during the first quarter of 2020, compared with the first quarter 2019.

The Italian banking industry was highly exposed to the pandemic through the wide support provided to families (Mersha & Worku, 2020). Based on data published from Bank of Italy, this section describes the effects of the pandemic to the Italian banking industry. In particular, **Figure 2** shows four economic dimensions, from 2020 to 2022: 1) Loans; 2) Customers deposits; 3) Wealth management deposits; 4) Profitability (Mersha & Worku, 2020).



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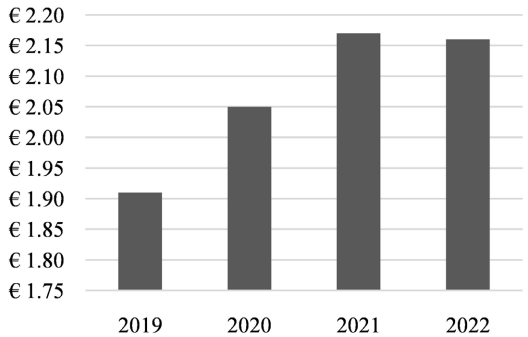

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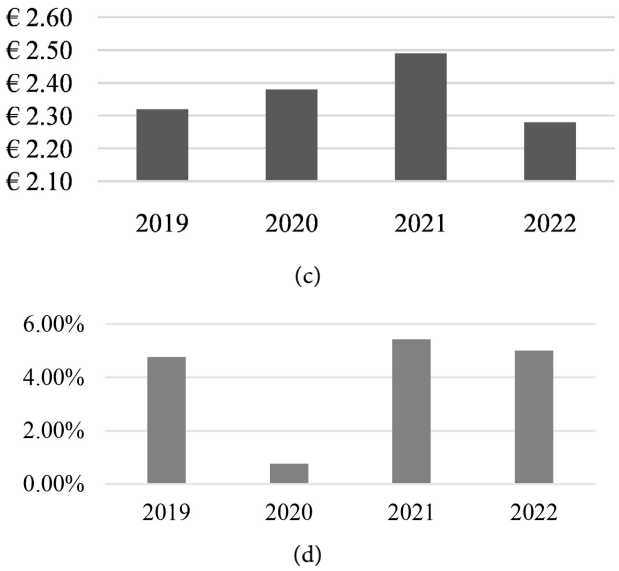

Figure 2. KPIs of the Italian Banking Industry. (a) Trend of the Amount of Loans Granted in Italy from 2019-2022. The figure shows the trend of the amount of loans in trillion of Euros, in Italy from 2019 to 2022. The pandemic increased the volume due to the augmented economy's needs (Bank of Italy, 2023). (b) Trend of the Amount of Customer Deposits in Italy from 2019-2022. The figure shows the trend of the customer deposits in trillion of Euros in Italy from 2019 to 2022. The pandemic pushed customers to increase liquidity due to the high uncertainty in markets (Bank of Italy, 2023). (c) Trend of the Wealth Management Deposits in Italy from 2019-2022. The figure shows the trend of the amount of the wealth management deposits in Italy from 2019 to 2022. The pandemic pushed an increase in the amount (Bank of Italy, 2023). (d) Trend of the Return on Equity of the Banking Industry in Italy from 2019-2022. The figure shows the trend of the Return of Equity (RoE) of the banking industry in Italy from 2019 to 2022. The profitability fell in 2020, due to the outbreak (Bank of Italy, 2023).

During the pandemic (2020-2021), the number of banks decreased by 3.8%, which was quite higher than the previous year (i.e. −2.87%) (Bank of Italy, 2023). During Covid-19, as in **Figure 2(a)** loans increased of around 1.65%, from €1.82tln in 2019 to €1.85tln in 2022. The overall amount was stable at €1.84tln from 2020 to 2021, due to the reduction in economic activity, by following the pandemic's effects. However, policymakers adopted measure to "*strengthen banks' lending capacity by preserving their capital and encouraging flexibility in loss accounting*" (Casanova, Hardy, & Onen, 2021). Total deposits increased of around 13.09%, from €1.91tln in 2019 to €2.16tln in 2022. Customer deposits, **Figure 2(b)**, increased of around 13.61% from 2019 to 2021, then they decreased of around 0.5% in 2022. Even if it provides the real economy with positive signals, it creates pressure on margins for financial intermediaries, which experience minor resources to be intermediated. However, wealth management deposits, **Figure 2(c)**, decreased of around 1.72% from €2.32tln in 2019 to €2.28tln in 2022, which increased of around 7.33% from 2019 to 2021, then they decreased of around 8.43% in 2022. The reduction in both wealth management deposits and customer deposits seems to signal the economic rebound after the pandemic period, which is con-

firmed by the increase in the amount of granted loans. According to Bank of Italy, at the beginning of 2020, investors opted to reduce investments in shares in favour of bonds, relatively less risky, which generated an overall reduction in the amount of wealth management deposits; however, at the end of 2020, the increase in the amount of wealth management deposits counterbalanced the first quarter of 2020, due to the actions, which Authorities adopted at that time (Angelini & Gobbi, 2020). Finally, the Return on Equity (RoE), **Figure 2(d)**, dropped in 2020 due to Covid-19 even though the decrease was not as severe as it happened during the 2008 financial crisis. In particular, in 2021 and 2022, Italy recovered from the shock by experiencing a RoE increase of around 5.04% and 5.00% in 2021 and 2022, respectively (Statista, 2023). In conclusion, the equity of the Italian banking industry decreased of around 1.72% from €0.348tln in 2019 to €0.342tln in 2022, which required to adopt strategies to promote early recapitalization of the banking industry, "*by stopping dividends and by encouraging new equity issues*" (Blank et al., 2020).

The pandemic made pressure on margins, which resulted in a considerable decrease in equity stocks, however, it did not push financial intermediaries in financial distress due to liquidity leakages. Thus, pandemic slowed down the Italian production, but it did not weakened confidence in the banking industry. This could be mainly due to the fact that several governments adopted provisional credit guarantees in order to provide financial intermediaries with the liquidity required by companies, and cash flows took time to change by supporting indirectly banks in avoiding liquidity shocks (Bénassy-Quéré & Di Mauro, 2020). Clearly, during the pandemic, liquidity was one of the most relevant indicators, which was constantly monitored by national banking Authorities that required to governments to adopt liquidity support initiatives to reduce "*the liquidity premium*". […] In this regard, "*banks with less liquid assets respond*[ed] *more strongly to* [the] *announcements*" (Demirgüç-Kunt, Pedraza, & Ruiz-Ortega, 2021). Credit, instead, was relevant in order to show financial institutions' robustness to the market; in fact, "*credit default swap (CDS) spreads rose the most for those banks that had entered the crisis with the highest level of credit risk*". However, after the outbreak, CDS spreads started stabilizing, even though "*CDS spreads of the riskiest banks continued increasing even through the stabilization phase*". In this regard, governments' policy supported banks "*with higher profitability and healthier balance sheets*" (Aldasoro et al., 2020). On the other hand, pandemic effects can impact on equity in the long run, considering that "*losses from loan defaults and increases in risk-weighted assets*" can deplete banks' capital. However, according to Buehler et al., the extent of it, seems to be limited, since the effectiveness of the public-health response and mitigating interventions appeared to be appropriate. Regarding this, data during the beginning 2023 points out that financial recovery of the banking sector has started again, so that the "*banking systems seem adequate to the challenge*" (Buehler et al., 2020).

During the outbreak, banks' performances on equity and debt markets were

incredibly troublesome, as it happened after the collapse of Lehman Brother in 2008. However, "*the subsequent stabilization, brought about by forceful policy measures,* […] *has favored banks with higher profitability and healthier balance sheets,* [while] *less profitable banks saw their long-term rating outlooks revised to negative*" (Aldasoro et al., 2020). According to Bank of Italy, at the start of the pandemic, in 2020, the Italian economy was still experiencing the effects of the previous recessions so it was in a stagnation phase. However, before the pandemic, households and firms were quite sound and banks strengthened their financial statements. Thus, at the beginning of the outbreak, financial institutions appeared to be stronger than they were in 2008. The leverage ratio was 10% lower than it was in 2007, the profitability margins were higher and the liquidity buffers were good (20% of GDP, compared with 13% in 2007). The pandemic increased the risk aversion of investors (both retail and institutional), deteriorated liquidity buffers and increased the non-performing loans. In this regard, Italian governments and Bank of Italy had to adopt extraordinary measures, in accordance with the European Institutions, in order to support households and firms to protect their income and business (Angelini & Gobbi, 2020).

3. The Extraordinary Measures Implemented by the European and Italian Authorities

As well as the economy, the banking industry was severely impacted by the Covid-19 crisis, so much so that international supervisory authorities implemented extraordinary financial measures in 2020 and 2021. The Bank for International Settlements (BIS) published research that showed how several authorities implemented strong supervisory and financial measures to restrict dividend payouts, in order to enhance bank resilience and support lending. From 2020-2021, BIS also observed that "bank equity prices fell with dividend restriction announcements, but credit default swap (CDS) spreads indicated that default risk either fell or was unaffected, even in the face of the economic downturn". In addition, BIS pointed out that "bank capitalisation rose in jurisdictions which restricted payouts, supporting institutional and system wide stability; the increased capital was more likely to support greater lending with restrictions present". In this regard, banks' dividend payouts decreased from $45 billion in 2019 to $30 billion in 2020 in the US, while it decreased from $30 billion in 2019 to $5 billion in 2020 in the Euro area (Hardy, 2021). In 2020, the European Central Bank issued a recommendation to warn significant credit institutions to "exercise extreme prudence when deciding on or paying out dividends or performing share buy-backs aimed at remunerating shareholders" (European Central Bank, 2020a). In the same year, even the IMF publicly recommended supervisory authorities to "take actions to preserve banks' capital resources by temporarily limiting the distribution of capital (dividends, share buybacks, and discretionary bonus payments) for all banks" (Awad et al., 2020). On April 2, 2020, the European Insurance and Occupational Pensions Authority published a statement to require re/insurers to "suspend all discretion-

ary dividend distributions and share buybacks aimed at remunerating shareholders" (Jakubik & Teleu, 2022).

At an international level, authorities aligned their strategies to support financial industries and preserve public savers. However, the strategy's results appear to be contradictory. For instance, research performed by Matyunia in 2022 showed that "the introduction of the dividend ban caused a surge in regulatory uncertainty and undermined banks' market valuation raising the expected funding costs and contributing to the banks' reluctance to make use of the capital buffers" (Matyunina & Ongena, 2022). Regarding this, analysis of the relevance of metrics, which impacted on the strategies' results, was conducted across several industries, especially focusing on shareholders' remuneration. In this regard, several financial features appeared to be significant when setting up the dividend payout policies during the pandemic, considering that profitability and size of corporations appeared to be two key variables. In 2021, Kilincarslan and Demiralay stated that "more profitable and larger […] corporations are more likely to pay cash dividends", considering that size and profitability have always been significant over time, before and during the pandemic (Kilincarslan & Demiralay, 2021). However, Covid-19 considerably impacted dividend payout policy, making it even more significant in avoiding severe distress (Sari et al., 2022).

The relevance of financial characteristics was linked to the actions taken by supervisory authorities, which tried to grant financial systems stability and soundness during the pandemic. Authorities tried to be as effective as possible in promoting the "reduction of bank capital buffers, the redefinition of non-performing loans and the limitations on dividends and bonuses paid by banks" (Quaglia & Verdun, 2023). In this regard, the European Central Bank was one of the most important authorities in proposing effective responses to the pandemic's effects which, in turn, triggered the others (Jones, 2020). However, markets did not initially perceive the ECB's intervention as being as effective as it was, due to misperceptions in the public announcements. For instance, on March 12, 2020, the ECB's President said "we are not here to close spreads", making the international interventions weak and uncoordinated "that sent the Italian bond yields sharply up" (Thomson Reuters, 2020). In fact, newspapers described the public statement by the ECB President as a way to provide weak support to some countries in financial distress, like Italy. However, after the interventions of several national authorities, the European Central Bank clarified its strategies and goals and confirmed the adoption of some relevant extraordinary measures, such as the Pandemic Emergence Purchase Program (PEPP) and the Expanded Asset Purchase Programme (APP). In addition, the ECB implemented Longer-Term Refinancing Operations (LTRO) to support banks' liquidity in the long-run (Quaglia & Verdun, 2023). The temporary asset purchase programs aimed to: 1) Provide access to liquidity to financial intermediaries at competitive interest rates; 2) Monitor the member States' bond yield spreads in the euro area; 3) Create conditions for the European institutions and the member States to act.

In accordance with the European Central Banks, the Bank of Italy also implemented national programs to support the Italian banking industry in four main fields: 1) Monetary policy; 2) Prudential supervision; 3) Household information; and 4) Facing illegal economic activities (Angelini & Gobbi, 2020). Concerning monetary policy, the European Central Bank provided the APP with €120 billion and the PEPP with €750 billion in order to buy both public and private assets. In this regard, the Bank of Italy acted in the Italian secondary markets, including the market of sovereign bonds, as part of the Euro-system repurchase programmes. The value of Italian government bonds (purchased by implementing the APP) was approximately €382 billion, of which €346 billion was purchased by the Bank of Italy in 2020. In addition, the European Central Bank allowed national central banks (e.g. the Bank of Italy) to weaken the eligibility criteria of collaterals for acceding to refinancing programmes (European Central Bank, 2020b). The Bank of Italy was also involved in adopting some prudential supervision criteria, in order to strengthen the bank's equity. Firstly, micro and macroprudential capital buffers were authorised to be used for providing the economy with the required loans and for facing losses due to credit downgrading. In fact, moratoriums did not entail the automatic classifications of credit as non-performing loans. In 2020, the Bank of Italy recommended that financial intermediaries avoid any binding commitment to pay dividends in 2019 and 2020; it also advised to refrain from the buyback of firms' stocks, in order to remunerate shareholders. In this regard, the authorities' recommendations were directed to spur banks to implement conservative remuneration schemes, in order to preserve equity. The request to postpone 2019 dividend payments allowed financial intermediaries to strengthen equity for around €5.5 billion in 2020, which allowed the Bank of Italy to estimate an increase of CET1 ratio of around 0.5% at that time (Angelini & Gobbi, 2020). Regarding this, the Bank of Italy allowed banks to postpone the transfer of supervisory data to competent authorities, in order to ensure financial intermediaries continue with their ordinary activities (Bank of Italy, 2020). Moreover, the Bank of Italy adopted strategies oriented to inform households through ad-hoc "listening channels". Firstly, the Bank of Italy implemented a channel to systematically analyse "private complaints" and customers' requests, which banks received at that time. It also activated a system to control customers' feedback related to the banking branches' activities and it started a daily communication strategy by social media (e.g. Twitter and Facebook). Specific e-mail addresses were also created to answer questions about the effects of the special regulations adopted to protect savings and businesses. The Bank of Italy then implemented strategies to coordinate financial intermediaries, in order to assure cash withdrawal even when branches were closed due to intense Covid-19 infections. In particular, the Bank of Italy assured the cash withdrawal activities and payments through strengthening on-line platforms and supporting smart-working (Angelini & Gobbi, 2020). On April 10, 2020, the Bank of Italy recommended that financial intermediaries apply all of the anti-money laundering procedures. With regard to state-guaran-

teed loans to companies, banks had to assess whether the funds were actually used to meet operating costs or to carry out industrial restructuring plans. Bank of Italy was also in charge of monitoring banks as they granted loans to high-risk individuals. The implemented measures intended to facilitate ex-post checks in order to speed up effective responses to the economy and financial markets during the Covid-19 pandemic (Angelini & Gobbi, 2020).

In conclusion, on March, 29, 2020, the Italian Ministry of Economy and Finance announced the establishment of a Task Force (with representatives of the Ministry of Economy and Finance, Bank of Italy, Italian Banking Association, and Mediocredito Centrale) to ensure an efficient and rapid use of the financial support measures to households and companies, by following the Legislative Decree n. 18. The Task Force oversaw the exchange of information between participants, in order to identify the most appropriate solutions to problems. The Task Force allowed the coordination, collection and communication of useful information provided by the specific Covid-19 legislation. Then, the Ministry for Economic Development and SACE joined the Task Force with the Legislative Decree n. 23. Simplification and accountability were the two main drivers that characterised the measures adopted during the pandemic. The measures were intended to enhance the responsibility of individuals, in order to speed up the lending procedures (relying on self-declarations), as well as strengthen the monitoring tools to prevent illegal activities (in the event of mendaciousness, both for moratoriums and for the issue of guarantees). In this regard, banking activity was included in the list of "essential services" by the Italian government (Gualtieri, 2020).

4. The Literature Review

The European Union adopted extraordinary fiscal and monetary measures in order to support member States in response to the economic crisis caused by the pandemic. As described in the previous sections, the impact of these measures was tremendously important for the national economy, considering that it suffered a dramatic decline in GDP and a further rise in the government debt to GDP ratio. There is still an ongoing debate about the effectiveness of the described actions, which Italy adopted to support its economy on a path of sustainable growth and to support the recovery (Canelli et al., 2021).

Following the expected profitability and sustainability, in terms of future economic prospects during the pandemic, corporations experienced different payout policies, which allowed analysis of the effects of the pandemic on the reduction in dividend payouts against opposite strategies, across different markets. Regarding this, the literature does not seem to have completely analysed the effects on the Italian economy, as happened with some other countries. The available literature focuses on the effects of both traditional and behavioural sides of the outbreak on dividend payout policies for the major European countries, even though the effects on the Italian market were even worse. In 2020, around 41% of the listed financial firms on the Italian market stopped paying dividends, compared with a

European average of 35% (Affinito, 2020).

According to Krieger et al. (2021), the pandemic impacted deeply on the payout dividend policies across all industries. Considering a sample of 1400 dividend paying firms in the USA, 213 reduced their dividends and 93 did not pay dividends at all, in the second quarter of 2020. The authors specified that the comparison between financial firms that reduced and omitted to pay dividends was three to five times higher than any other quarter since 2015 (Krieger, Mauck, & Pruitt, 2021). Similarly, in 2022, Heba implemented a logit regression model to show that dividend cuts and omissions were relevant during the pandemic, considering a sample of 8,889 firms, even if many corporations preserved or raised dividends to assure good signals to the market (Ali, 2022). Even Mazur et al. (2023) pointed out that many S&P 1500 firms either maintained or increased the level of dividends (82%) during the pandemic. In addition, they found a negative relationship between dividend payout and reported earnings during the outbreak (Mazur, Dang, & Vo, 2023). Following this broad analysis of a critical stock exchange, in 2022, Tinungki et al. focused on Indonesia, revealing that IDX-listed firms maintained high dividend distribution policies to provide markets with positive signals in both 2020 and 2021 (Tinungki et al., 2022b).

From a first analysis, the literature shows contradictory views between choices of increasing or reducing dividend payouts to preserve market perceptions, which do not appear to be aligned with the fundamental financial metrics that should drive financial decisions, particularly in financial distress. Additional confirmation was provided in the research by Cejnek in 2021, who pointed out that the percentage of index values, for the major of equity markets, referred to the first 5 years of dividends, but decreased sharply in the first quarter of 2020; the fall was not recovered by the end of 2020 (Cejnek, Randl, & Zechner, 2021). This was proved in some countries: Kluzek & Schmidt-Jessa (2022) analysed the dividend payout levels of a sample of companies (457 observations) incorporated in Poland that received state aids as anti-crisis support. They showed that the likelihood of paying dividends was lower for corporations, which received State aid. Regarding this, the variable of the regression model used by authors was statistically significant and the impact was considerable (Kluzek & Schmidt-Jessa, 2022). Similar research was also performed in Finland, by Lindén et al. (2022), who pointed out that the pandemic impacted the level of dividend payout policies, especially considering different typologies of ownership. In this regard, companies in the sample (i.e. 152 companies listed on the OMX Helsinki in 2017-2020) with concentrated shareholder structures appeared to pay lower dividends in uncertain situations, such as during the outbreak (Lindén et al., 2022).

The relevance of investors' behaviour is confirmed in the current literature, even in countries outside of the European Union. In particular, a second study performed by Tinungki et al. (2022a) confirmed their previous research, which considered that, in Indonesia, SRI-KEHATI indexed companies (for a sample of 1,484 observations) tended to distribute dividends during the crisis, in order to

give positive signals to markets, supporting high trading activity (Tinungki, Robiyanto, & Powell, 2022b). A study performed by Ataullah et al. (2022), on a sample of 330 listed companies on the LSE, showed that the likelihood of reducing payouts was related to the holdings and types of institutions during Covid-19. In particular, institutional investors, which look for short-term value, tended to reduce the probability of cuts in dividends during the outbreak. They found that firms which focus on regular income (e.g. pension funds), seemed to avoid dividend cuts. However, companies which dynamically involve managers, resulted in a reduction in shareholders' payouts, to allow institutions to deal with increased uncertainty during the pandemic (Ataullah, Le, & Wood, 2022). Husain & Abdulla (2020) analysed how dividend payout policies of a sample of 43 Bahraini firms (data from 2017-2020) were influenced by the pandemic. They found that non-financial intermediaries had a "higher percentage of dividends payers and smooth dividends compared to financial firms during the pre-COVID-19 period" (Husain & Abdulla, 2020). A study was performed by Xixiong in 2023, on data from Chinese listed companies. The sample included 5,768 firm observations listed on the Shanghai and Shenzhen Stock Exchange for the period 2018-2019; however, the sample did not consider firms from the financial industry because their financial ratios were not comparable with firms from other industries. In addition, firms that had been listed for less than one year were not included, and a negative relationship was found between the effects of the pandemic and cash dividend payments. In particular, the relationship appeared to be more significant for large-scale firms and state-owned enterprises (Xu et al., 2023).

Even though the effects of the pandemic on dividend payout policies (either increasing or decreasing dividends) appear to be contradictory, the available literature seems to be unanimous in recognising the tremendous impact of the outbreak on dividend payout decisions, which provides different insights, according to the chosen analytical models. Regarding this, in 2022, Ntantamis and Zhou analysed the impact of the outbreak on the adjustment of dividends and share repurchase of listed companies in the G7 countries (i.e. Japan, Germany, France, Italy, the United Kingdom, Canada, and the United States), considering annual data ending between April 2015 and March 2021. In this way, the authors showed that firms reduced dividends in the UK, Germany, France, and Italy, while companies in the USA and Canada experienced a cut payout through share repurchases (Ntantamis & Zhou, 2022). In 2020, Jebran and Chen researched a sample of Chinese firms (i.e. data from "A-share" non-financial firms listed on the Shenzhen and Shanghai Stock Exchange for the first three quarters of 2020 31st March, 30th June, and 30th September), pointing out that the pandemic considerably impacted corporate policies, such as the dividend payout policies. In particular, they focused on the impact of managerial skills on corporate policies. In this regard, they found that corporations with more capable managers increased the dividend payouts during the outbreak, due to higher performances (Jebran & Chen, 2022).

As mentioned, the available literature mainly focuses on the magnitude or the effects of the pandemic on dividends; however, it would be relevant to research the change in the significance of key metrics on dividend payout policies, before and during the pandemic. In this regard, Heba analysed the effects of the pandemic in Pakistan in 2022, confirming the findings in the US, Poland, and Finland. In particular, the authors pointed out that the considered corporations (i.e. annual data from 360 companies from the Pakistan Stock Exchange over the period 2015-2020) either omitted or reduced to pay dividends during the pandemic, in comparison with the trends during the years 2015-2019 (pre-Covid-19). In the second section of their study, Ali also analysed the relevance of some key metrics, in order to show that firms with higher profitability, asset turnover, and size were less likely to choose a reduction in paying dividends at that time (Ali, 2022). However, Pettenuzzo et al. (2020) performed a similar analysis, which found that companies did not pay dividends in an unprecedented number of cases, due to the Covid-19 pandemic, by applying a multivariate dynamic econometric model (Pettenuzzo, Sabbatucci, & Timmermann, 2020). In addition to the research carried out by Jebran and Chen in 2022, who analysed the impact of managerial skills on dividend payouts during the outbreak, Lindén et al. (2022) researched the significance of the type of ownership on the dividend payout strategies during the pandemic. The research identified that corporations (analysing quarterly data from 152 companies listed on OMX Helsinki in 2017-2020), which were dominantly held by individual owners, showed relevant effects on dividend payout policies during the pandemic (Lindén et al., 2022).

From the literature review, the impact of the pandemic on dividend payout policies seems to be contradictory, even if confirmed in some specific cases. A reduction or an increase in dividend payouts depends on the company decision to follow fundamental or behavioural financial drivers, which allows the classification of the current scientific literature into two main categories: 1) Negative impact on dividend payout policy; 2) Positive impact on dividend payout policy.

Table 1 provides a literature review summary in addition to relevant literature's aspects for each cited paper (i.e. authors, main findings, model/methodology, market and geographic area, and publication year).

Table 1. Summary of the literature review.

N.	Authors	Main Findings	Model	Market and Geo. Area	Pub. Year
		Negative Impact on Dividend Payout Policy			
1	Husain and Abdulla	Non-financial firms have a higher percentage of dividends payers and smooth dividends compared to financial firms during the pre-Covid-19 period.	Descriptive Analysis	Bahrain market (listed companies on Bahrain Bourse)	2020
2	Pettenuzzo, Sabbatucci and Timmermann	Companies did not pay dividends due to Covid-19 pandemic.	Multivariate Dynamic Econometric Regression Model	US market (listed companies on the NYSE, NASDAQ, or AMEX exchanges)	2020

Continued

3	Krieger, Mauck and Pruitt	Pandemic impacted on the payout dividend policy across all industries.	Ordinary Least Squares Regression Model	US market (listed companies)	2021
4	Cejnek, Randl and Zechner	Major of equity markets, referred to dividends, decreased sharply in the first quarter of 2020.	Ordinary Least Squares Regression Model	International market (exchange-listed index dividend futures on the Euro Stoxx 50, the FTSE 100, and the S&P 500).	2021
5	Heba	Dividend cuts and omissions were relevant during pandemic.	Logit Regression Model	G-12 market (listed companies)	2022
	Heba, Muhammad, Badar, and Falik	Corporations omitted or reduced to pay dividends during the pandemic.	Logit Regression Model and Descriptive Analysis	Pakistan market (listed companies)	2022
6	Jebran and Chen	Skilled managers increased the dividend payouts during the outbreak, even if the pandemic's impact was relevant.	Ordinary Least Squares Regression Model	Chinese market (A-share non-financial firms listed on the Shenzhen and Shanghai stock exchanges)	2022
7	Kluzek and Schmidt-Jessa	Probability of paying dividend was lower for companies that were granted state aid.	Logit Regression Model	Polish market (listed companies)	2022
8	Lindén, Lehner, Losbichler and Martikainen	Pandemic impacted on the level of dividend payout policies in 2020, under different ownership type.	Analysis of Covariance Model (ANCOVA)	Finnish market (OMX Helsinki listed companies)	2022
9	Ntantamis and Zhou	G-7 firms reduced dividends, even by shares repurchasing	Logit Regression Model	G-7 market (listed companies)	2022
10	Xixiong, Cuiliang and Youliang	Negative significant relationship between the effects of the pandemic and cash dividend payment.	Ordinary Least Squares Regression Model	Chinese market (listed companies on Shanghai and Shenzhen Stock Exchange)	2023
11	Mücke et al., 2023	Negative relationship between payout restriction announcement cumulative abnormal returns and the percentage of fund owners per bank.	Event Study Analysis	Eurozone market (listed financial intermediaries)	2023
		Positive Impact on Dividend Payout Policy			
1	Husain and Abdulla	Higher percentage of dividends payers and smooth dividends compared to financial firms during the pre-Covid-19 period.	Descriptive Analysis	Bahrain market (listed companies on Bahrain Bourse)	2020
2	Ataullah, Le and Wood	Institutions that focus on regular income (e.g. pension funds) seem to resist cuts dividends during the pandemic.	Logit Regression Model	UK market (listed companies on the London Stock Exchange—LSE)	2022
3	Tinungki, Powell, Agus, and Lydia	The Covid-19 crisis led to higher dividend distribution.	Ordinary Least Squares Regression Model	Indonesian market (listed companies on the Indonesia Stock Exchange—IDX)	2022
4	Tinungki, Robiyanto and Powell	Companies maintained the dividend level as a positive signal for investors during Covid-19 pandemic.	Ordinary Least Squares Regression Model	Indonesian market (listed companies on the Indonesia Stock Exchange—IDX)	2022
5	Mazur, Dang and Vo	Great majority of firms either maintain or increase the level of dividends during the crisis period.	Logit Regression Model and Descriptive Analysis	US market (listed companies on S&P 1500)	2023

The table summarizes the available literature classified by author, main finding, model/methodology, market and geographic area, and publication year.

Following the analysis of the literature review, the main findings were that restrictions on dividend payout policy followed the need to preserve capital, in order to prepare for the greater possibility that adverse unforeseen events could occur during the pandemic. However, the relevance of paying dividends to shareholders followed the need to issue positive signals to markets, to keep the confidence of stakeholders high at that time.

The literature review shows that further analysis is required, to research the significance of key variables (such as profitability, leverage, firm type, market value, etc.) for dividend payouts during Covid-19. Most of the researchers found that Covid-19 significantly impacted on firms' dividend payout policies, by drastically reducing the amount of dividend payouts during 2019-2021, compared with 2015-2018. However, there are no specific studies focusing on the banking industry, especially the Italian market, with a complete view of the pandemic time-window (i.e. 2020-2022). As described in the previous sections, the management of Italian banking activities, particularly the dividend payout policy, experienced fast and relevant changes during the pandemic, due to institutional ad-hoc regulations, which impacted on banking resilience and shareholders' profitability. In this regard, "the Covid-19 pandemic exerted a profound adverse influence on corporate dividend policy".

Thus, the paper provides an analysis of the relevance of variables on changing the dividend payout policy, through a logit regression model (Ali, 2022).

5. The Impact of Key Metrics on the Italian Dividend Payout Policies

This section explores the determinants of the change in dividends by analysing the features of the different dividend-change groups of financial intermediaries listed on the Italian stock exchange. In particular, all of the listed firms classified as Financial Services, Banks and Insurance, are extracted from the respective four indexes: 1) FTSE Mib; 2) FTSE Mib Mid Cap Italia; 3) FTSE Small Cap Italia; and 4) FTSE Italia Star.

These indices were selected because each one showed specific market responses to the pandemic so the sample provides a view of what happened at the Italian banking sector, before and during the pandemic. In particular, the index FTSE Mib is the main benchmark index of the Italian stock markets. This index, which captures approximately 80% of the internal market capitalisation, is composed of 40 leading and highly liquid companies in various industries, while FTSE Mib Mid Cap Italia is made up of the top 60 stocks in the company capitalisation ranking (i.e. before the application of any weightings outside the FTSE Mib Index), which qualifies after the application of the liquidity and free float screening. Foreign companies and branches are not eligible for inclusion. FTSE Italia Mib Small Cap captures the performance of all other small shares, outside the FTSE Mib index and the FTSE Mid Cap Italia index, which are qualified after the application of the liquidity and free float schemes. Even this index cannot include foreign companies

and branches. FTSE Italia Star is an index of the Star segment (that is an acronym for a securities segment with high requirements), which includes medium-sized joint-stock companies (with capitalisation of up to one billion euros) (FTSE Mib, 2023).

The analysis considers the four main indexes, in order to study the effects of the pandemic on the dividend payout policies as a function of the market capitalisation and the size of primary Italian corporations in the financial industry. In fact, as stated by the World Bank Group in 2020, "firm size matters for the intensity of the different channels of transmission and firms' responses. Small and medium enterprise sales shrink by more and their cash drains faster than large firms in the same sector and country" (Ikmal et al., 2020).

As described, at the beginning of the pandemic, international and national supervisory banking authorities recommended to financial firms not to pay out dividends from March 27, 2020 to October 1, 2020, in order to save liquidity and capital for facing future risks. Regarding this, according to the European Central Bank in 2023, "complying banks' lending was around 2.2 percentage points stronger than lending by banks not affected by the recommendation" (Dautović, Gambacorta, & Reghezza, 2023). This effect could have affected the analysed sample, however, no considered financial intermediaries paid dividends before the ECB announcement on March 27, 2020. Based on the sample dataset, the 2020 paying dividend financial firms (Azimut, Generali and Poste Italiane listed on the FTSE Mib, Unipol listed on the FTSE Mid Cap, Equita Group listed on the FTSE Mib Small Cap, and Mutuionline listed on FTSE Star) started paying dividends from May 2020.

5.1. Data and Methodology

Following the methodology of Krieger et al. (2021), the sample period was extended from 2013 to 2022 and data were extracted from Morningstar. According to the study by Ali (2022), the sample period was divided into two distinct time-windows, before and during the pandemic (2013-2019 and 2020-2022). Considering the components of the FTSE Mib index (40), 27 non-financial firms were eliminated from the considered sample. After cleaning out incomplete and missing values, there were 115 observations from 2013-2022; of these, there was only one firm that did not pay dividends in 2022. Considering the FTSE Mib Mid Cap Italia, the sample comprised 7 firms, yielding 55 final observations from 2013-2022, of which there was one firm that did not pay dividends in 2022. Considering the FTSE Small Cap Italia's components, four financial firms were taken into consideration, which gave 27 final observations from 2013-2022, of which zero firms did not pay dividends in 2022. Finally, for FTSE Italia Star's components, five financial firms were taken into consideration, giving 27 final observations from 2013-2022, of which there were two firms that did not pay dividends in 2022. Thus, the final sample, with data from 2013-2022, was reduced to 224 observations.

Table 2 summarises some key statistics of the sample, classified for each index. In particular, total assets and average assets are expressed in millions of euros. Considering total assets, FTSE Mib dominated the sample by including the big financial firms (93.54%), followed by Mid Cap financial firms (6.28%), Small Cap financial firms (0.16%), and Stars financial firms (0.01%). The same pattern was confirmed by analysing total revenues, even though profitability (as Basic EPS) appeared to be higher for medium and small segments than the others. According to Mansikkamäk, this is due to the earlier life and size configurations of a business' evolution over time (Mansikkamäki, 2023).

Table 2. Sample summary statistics.

Sample Summary Statistics						
Sample Category		Financial Services, Banks and Insurance				
Sample Categories	**Number of Companies**	**Total Revenue (Mil EUR)**	**Total Basic EPS**	**Total Assets (Mil EUR)**	**Total Liabilities (Mil EUR)**	**Total Equity (Mil EUR)**
		Avg. Revenue (Mil EUR)	**Avg. Basic EPS**	**Avg. Assets (Mil EUR)**	**Avg. Liabilities (Mil EUR)**	**Avg. Equity (Mil EUR)**
FTSE Mib	13	180696.00	8.08	3378147.00	3171636.00	206512.00
		13899.69	0.62	259857.46	243972.00	15885.54
FTSE Mid Cap Italia	7	17885.00	7.78	226955.00	211074.00	15881.00
		2555.00	1.11	32422.14	30153.43	2268.71
FTSE Small Cap Italia	4	838.00	0.83	5925.89	7109.00	703.00
		209.50	0.21	1481.47	1777.25	175.75
FTSE Italia Star	5	1312.00	5.37	25319.00	22136.00	3183.00
		262.40	1.07	5063.80	4427.20	636.60
Total	25	199481.00	16.93	3611443.89	3390018.00	223313.00

Description of the sample using key statistics. There are 224 observations for 25 financial intermediaries. The overall time window is 2013-2022, where 2013-2019 is the pre-Covid period and 2020-2022 represents the Covid period.

After analysing each index, the composition of the sample includes all the financial intermediaries listed on the Italian stock exchange as shown in Table 3. The market capitalization and Earning per Share (EPS—Trailing Twelve Months) are also provided for each financial firm on March 31, 2024. The sample intends to well represent the Italian banking sector in order to study the impact of the Covid-19 pandemic on the dividend payout policy of the industry.

The needs to include the listed financial firms is due to the available data on Morningstar, which allow to make a harmonized and consistent dataset. This simplifies the implementation and improves the precision of the econometric model. In this regard, through the quantitative econometric analysis, the sample described in Table 3 intends to provide a comprehensive overview of what happened in the overall Italian banking sector, during that extraordinary time.

Table 3. The sample composition.

Sample Composition									
	Azimut		**BPER Banca**		**Unicredit**		**Illimity Bank**		**Banca Sistema**
	AZM.MI		**BPE.MI**		**UCG.MI**		**ILTY.MI**		**BST.MI**
1	Market Cap: €3.671B	6	Market Cap: €5.314B	11	Market Cap: €52.161B	16	Market Cap: €388.123M	21	Market Cap: €95.367M
	EPS (TTM): €3.05		EPS (TTM): €1.07		EPS (TTM): €4.71		EPS (TTM): €1.25		EPS (TTM): €0.21
	Banca Generali		**Finecobank**		**Unipol**		**Bff Bank**		**Bca Profilo**
	BGN.MI		**FBK.MI**		**UNI.MI**		**BFF.MI**		**PRO.MI**
2	Market Cap: €3.915B	7	Market Cap: €7.842B	12	Market Cap: €5.344B	17	Market Cap: €2.031B	22	Market Cap: €137.075M
	EPS (TTM): €2.86		EPS (TTM): €0.45		EPS (TTM): €1.02		EPS (TTM): €1.29		EPS (TTM): €0.02
	Banca Mediolanum		**Generali Ass**		**Poste Italiane**		**Credem**		**Dovalue**
	BMED.MI		**G.MI**		**PST.MI**		**CE.MI**		**DOV.MI**
3	Market Cap: €7.378B	8	Market Cap: €33.855B	13	Market Cap: €14.619B	18	Market Cap: €3.004B	23	Market Cap: €163.595M
	EPS (TTM): €0.96		EPS (TTM): €2.99		EPS (TTM): €1.22		EPS (TTM): €1.66		EPS (TTM): -€0.22
	Banca Monte Paschi Siena		**Intesa Sanpaolo**		**Banca Ifis**		**Mutuionline**		**Equita Group**
	BMPS.MI		**ISP.MI**		**IF.MI**		**MOL.MI**		**EQUI.MI**
4	Market Cap: €4.878B	9	Market Cap: €54.853B	14	Market Cap: €888.81M	19	Market Cap: €1.271B	24	Market Cap: €178.05M
	EPS (TTM): €1.63		EPS (TTM): €0.39		EPS (TTM): €3.06		EPS (TTM): €1.01		EPS (TTM): €0.25
	Banco BPM		**Mediobanca**		**Banca Pop Sondrio**		**Unipolsai**		**Revo Insurance**
	BAMI.MI		**MB.MI**		**BPSO.MI**		**US.MI**		**REVO.MI**
5	Market Cap: €8.226B	10	Market Cap: €10.611B	15	Market Cap: €3.184B	20	Market Cap: €7.552B	25	Market Cap: €212.48M
	EPS (TTM): €0.84		EPS (TTM): €1.28		EPS (TTM): €0.55		EPS (TTM): €0.25		EPS (TTM): €0.20

The sample is composed of 25 financial intermediaries listed on the Italian stock exchange, with a market capitalisation and Earning per Share (EPS) shown in the table, to show the dimension of the market size and profitability of each company on March 31, 2024.

In line with the cited literature, and with a specific focus on Mazur et al. (2023), Krieger et al. (2021), Ali (2022), and Pettenuzzo et al. (2020), explanatory variables that hypothetically influence financial firms' dividend payout policies covered the technical, fundamental, regulatory, and market characteristics. Accordingly, the following variables were taken into consideration: 1) Debt/Equity Ratio; 2) Return on Assets; 3) Return on Equity; 4) Asset Turnover; 5) Price/Fair Value Ratio; and 6) Average Free Cash Flow per Share, in addition to dummy variables for Covid-19 effects.

Consistent with the dependent variable, data were collected from Morningstar for the mentioned time-windows. A detailed description of the variables used in the regression models is provided in Table 4.

Table 4. Description of regression model variables.

Description of Variables		
Variable	**Definition**	**Description**
DIV	Dividend (%)	Annual variation of paid dividends on annual basis
DER	Debt/Equity Ratio (%)	Annual variation of the ratio of liabilities to shareholder equity to estimate the financial leverage
ROA	Return on Asset (%)	Annual variation of the ratio of net income to total assets
ROE	Return on Equity (%)	Annual variation of the ratio of net income to equity
AT	Asset Turnover (%)	Annual variation of the ratio of revenues' value to total assets
PFV	Price/Fair Value Ratio (%)	Annual variation of the ratio of stock's price to fair value to estimate the intrinsic worth
AFCF	Average Free Cash Flow/Share (%)	Annual variation of the free cash flow per share
SE	Size Effect	A dummy variable that equals 1 if the firm is a FTSE Mib component, and 0 otherwise
DOM	Dividend Omission	A dummy variable that equals 1 for dividend omissions, and 0 otherwise
DDC	Dividend Decrease	A dummy variable that equals 1 for dividend decreases, and 0 otherwise
DNC	Dividend No-Change	A dummy variable that equals 1 for dividend no-changes, and 0 otherwise
DIC	Dividend Increase	A dummy variable that equals 1 for dividend increases, and 0 otherwise

The table provides the definition and description of the dependent and independent variables included in the logit regression model to clarify the dividend payout policy decisions, before and during the outbreak.

Table 5 shows the main descriptive statistics for the regressors that have been used to implement the logit multivariate regression model in the next sections, as described in Table 4. In particular, for each variable, the table points out mean, median, minimum value, maximum value, standard deviation, skewness, and Kurtosis for the observations from 2014 to 2022. The table describes the main statistics, which represent the profitability (i.e. ROE, ROA and AT), leverage (i.e. DER), market value (i.e. PFV), and liquidity (i.e. AFCF) dimensions, used in the next analytical sections to estimate the regression coefficients.

Table 5. Summary statistics of the regressors.

Variable	Mean	Median	Minimum	Maximum	Std. Dev.	Skewness	Ex. kurtosis
DER	0.79972	0.0020239	−0.10801	6.6892	2.2148	2.4483	4.0488
ROA	0.00074173	0.00079048	−0.0064273	0.0061762	0.0041357	−0.17579	−0.89618
ROE	0.0089005	0.013004	−0.029783	0.053445	0.026098	0.15695	−0.88680
AT	−0.0055886	−0.00028734	−0.091318	0.076280	0.071669	−0.034093	−1.8081
PFV	−0.032427	0.0033179	−0.21010	0.14417	0.12831	−0.21280	−1.2884
AFCF	−0.44907	0.087257	−4.3916	1.4727	1.9946	−0.97745	−0.29539

The table provides the main summary statistics of the regressors described in Table 2.4, using 224 observations from 2014-2022.

To examine dividend changes, annual data were used to consider the presence "of potential seasonality in the dividend growth patterns. Thus, at the beginning of every year t, the dividend change rate is defined as the percentage difference

between the dividends in fiscal year t, and the previous fiscal year t-1" (Ali, 2022). Then, logit regressions were implemented in order to explain dividend policy decisions before (2013-2019) and during the pandemic (2020-2022), by clustering corporations' data into: 1) Increased dividends; 2) Decreased/no-change/omitted dividends. In particular, the binary dependent variable was a dummy variable showing a firm's decision relating to the change in dividends. The dependent dummy variable equals 1 if dividends increase and 0 if dividends decrease (or are omitted/no-change). Accordingly, the collected data allowed to analyse the periods before and during Covid-19 and then the logit regression was implemented to explore what mainly drives the change (Ali, 2022). Considering the analysed sample, **Table 6** shows the dividend change groups, as a percentage of the four index samples. In 2020, most of the firms, across the groups, did not pay any dividends to shareholders, even though they started paying again from 2021, at a higher rate than the prior periods. On average, 69% of financial firms increased dividends in 2021, compared with 28% in 2019. This shows that, on the one hand, what happened to the financial and insurance industry samples was comparable with the findings of the second section of **Table 1** (i.e. Positive impact on dividend payout policy). On the other hand, small and mid-capitalisation segments showed the highest rates altogether, considering the dividend variation the very next year (before and during the pandemic). This appeared to be consistent with the research by Mansikkamäki (2023).

Table 6. Breakdown of firms in the sample by dividend policy over time.

Breakdown of Firms in the Sample by Dividend Policy over Time																
	Dividend Increase (in perc.)				Dividend Decrease (in perc.)				Dividend No-Change (in perc.)				Dividend Omitted (in perc.)			
Year	FM	MC	SC	IS	FM	MC	SC	IS	FM	MC	SC	IS	FM	MC	SC	IS
2013	31%	29%	25%	20%	15%	14%	0%	0%	0%	14%	0%	20%	54%	43%	75%	60%
2014	46%	43%	0%	20%	0%	0%	0%	0%	8%	29%	25%	20%	46%	29%	75%	60%
2015	69%	43%	25%	20%	0%	14%	0%	0%	0%	14%	0%	20%	31%	29%	75%	60%
2016	77%	43%	25%	60%	0%	14%	25%	0%	8%	14%	0%	0%	15%	29%	50%	40%
2017	46%	29%	25%	60%	31%	29%	0%	0%	0%	14%	25%	0%	23%	29%	50%	40%
2018	62%	71%	100%	40%	8%	0%	0%	0%	15%	14%	0%	20%	15%	14%	0%	40%
2019	38%	29%	25%	20%	15%	14%	25%	0%	31%	43%	50%	40%	15%	14%	0%	40%
2020	0%	14%	0%	0%	23%	14%	25%	20%	0%	0%	0%	0%	77%	71%	75%	80%
2021	77%	86%	75%	40%	0%	0%	0%	0%	8%	0%	0%	0%	15%	14%	25%	60%
2022	54%	43%	75%	20%	38%	14%	0%	20%	0%	29%	25%	20%	8%	14%	0%	40%

FTSE Mib (FM); FTSE Mib Mid Cap (MC); FTSE Mib Small Cap (SC); FTSE Italia Star (IS).

The financial intermediaries of the sample have been clustered in four groups in function of the change in the dividend payout policy from the previous year, from 2013 to 2022. Thus, the breakdown shows the number of firms (expressed in percentage) of the sample sorted by group of dividend policy, over time. In 2020, at the beginning of the pandemic, 77% of financial intermediaries listed on the FTSE Mib (FM) did not pay dividends (Dividend Omitted), while, 23% of financial intermediaries listed on the FTSE Mib (FM) decreased dividends from the previous year (Dividend Decrease). The very next year, in 2021, 77% of financial intermediaries listed on the FTSE Mib (FM) increased dividends, while 15% of financial intermediaries did not pay dividends (Dividend Omitted).

Table 6 shows that the beginning of the pandemic (2020) severely impacted the analysed industries' profitability, considering that 77% of the financial firms of the FTSE Mib sample omitted to pay dividends and 23% decreased dividends. A punctual analysis of 2020 confirmed the results of the first section of Table 1 in the literature review section. However, the result changes if the analysis focuses on the overall pandemic time-window. In this regard, the findings appear to be consistent with the results of Mazur et al. (2023) and Tinungki et al. (2022a), who focused their research on the US and Indonesian markets, respectively. Regarding this, the analysis of the overall pandemic period confirmed that the majority of firms either maintained or increased dividends during the Covid-19 pandemic, see the second section of Table 1. This was also confirmed for the four analysed indices, supporting the idea that dividend omissions are perceived as a more negative signal than dividend reductions. The average of the dividend change rate of FTSE Mib and FTSE Mid Cap was 27%, which is higher than the 23% average of dividend change rate of FTSE Mib Small Cap and FTSE Italia Star 2020-2022. Firms appear to be in favour of reducing dividends, rather than avoiding bad market signals regarding future revenues and earnings.

5.2. Descriptive Statistics and Trends

To inspect if and how the outbreak influenced dividend payments, the sample is described on a yearly basis over time, as shown in Table 7. As expected, all financial firms in the analysed indices show a higher mean and standard deviation of the dividend change rate during the pandemic than the period before, except FTSE Mib Small Cap, which experiences a high turnover to enter and exit the index (around 80% of financial firms entered in 2017). Financial intermediaries, included in the FTSE Mib, do not appear to be the most influenced by the pandemic. The standard deviation increased twice, from the pre-Covid-19 period (2013-2019) to during Covid-19 (2020-2022), while the mean increased around six times during the analysed time-windows. The same effect appears to be stronger in the other samples. These statistics were particularly affected by dividend omissions, which occurred in 2020, since it was "*perceived as more profoundly negative signal*" even if strongly advised by the supervisory authorities. In this regard, financial intermediaries were "*not only reluctant to decrease dividends to avoid signalling bad news about future earnings, but they* [were] *also especially reluctant to cease dividends*" (Ali, 2022). The pandemic did not only reduce the stock of dividends paid, but it also increased the uncertainty about the stock of dividends, as shown by the sharp increase in the volatility from 2020 to 2022.

Moreover, the pattern seems to be more incisive for small and young financial intermediaries (Small and Mid Cap) than for the well-established ones. In this regard, the findings are similar to those found for US corporations, as described by Krieger et al. (2021), who found that the dividend reductions accounted for 17% of the dividend changes and an increase in uncertainty of dividends paid, during the second quarter of 2020 (Krieger et al., 2021).

Table 7. Preliminary sample description by mean and standard deviation.

FTSE Mib Dividend Change Rate		FTSE Mib Mid Cap Dividend Change Rate		FTSE Mib Small Cap Dividend Change Rate		FTSE Italia Star Mib Dividend Change Rate	
Pre Covid-19		Pre Covid-19		Pre Covid-19		Pre Covid-19	
Mean (M)	20.79%	Mean (M)	25.54%	Mean (M)	294.57%	Mean (M)	20.18%
Std. Dev. (S)	22.20%	Std. Dev. (S)	25.61%	Std. Dev. (S)	399.11%	Std. Dev. (S)	12.60%
M/S Ratio	93.65%	M/S Ratio	99.75%	M/S Ratio	73.80%	M/S Ratio	160.10%
During Covid-19		During Covid-19		During Covid-19		During Covid-19	
Mean (M)	54.16%	Mean (M)	331.68%	Mean (M)	57.49%	Mean (M)	474.07%
Std. Dev. (S)	144.50%	Std. Dev. (S)	657.99%	Std. Dev. (S)	118.50%	Std. Dev. (S)	925.12%
M/S Ratio	37.48%	M/S Ratio	50.41%	M/S Ratio	48.51%	M/S Ratio	51.24%

The table shows the description of the sample by considering the mean and the standard deviation, before and during the outbreak. The M/S Ratio is the proportion between the mean and the standard deviation.

Considering the fact that the trend in dividends changed over time, the pattern is similar among all indices, as shown in Figure 3, which points out the trend of the annual change rate of the dividend payout for the four considered indices, constrained between −100% to +100%. The annual increase in paying dividends appears to be sensibly higher for financial firms in the Small Cap and Star groups, instead of the well-established firms in the FTSE Mib and Mid Cap groups. The main cause appears to be related to the higher level of riskiness of smaller and younger firms than the others, which is also consistent with the results in Table 6.

The ratio between the mean and the standard deviation (i.e. the M/S Ratio) shows that, on the one hand, well-established firms provide a lower shareholder return per unit of risk in comparison with smaller firms but, on the other hand, the shareholder return per unit of risk during the pandemic appears to be lower than before. Thus, the pandemic has increased uncertainty, which is reflected in higher volatility rates.

Following the similarities in trends shown in Figure 3, analysis of the correlation in Table 8 provides additional confirmation of the parallels between FTSE Mib and FTSE Mib Mid Cap (92.95%), compared with the correlation between Small Cap and Star financial firms (−4.20%). However, the correlation between Mid Cap and Star (99.85%) is not significant because 95% of firms are listed in both indices. Thus, Figure 3 shows similar trends across the analysed indices, as confirmed by high correlations in Table 8, which aggregate the financial intermediaries into an overall sample.

The aggregation (cleaned by multi-listing financial firms) allows increased numbers of observations (224), when performing the regression analysis.

To gain insights into the features of the different dividend-change samples, the Appendix provides the average of the explanatory variables to better understand the effects of the pandemic on dividends. In particular, it compares the average statistics as a function of dividend paying policies, before and during the pandemic.

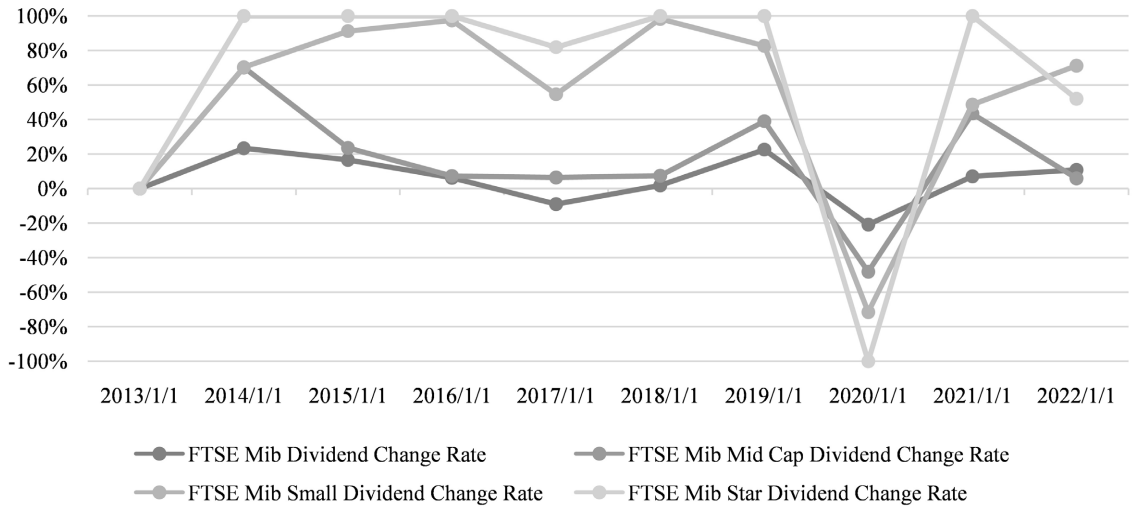

Figure 3. Trend of the Change Rate of Dividend Payout for the Four Indices. The figure shows the trend of the change rate of the dividend payout for the four indices, from 2013-2022. The pandemic impacted negatively on all the considered indices in 2020. Data are constrained between −100% to +100%.

Table 8. Correlation matrix of the indices.

	FTSE Mib Dividend Change Rate	FTSE Mib Mid Cap Dividend Change Rate	FTSE Mib Small Dividend Change Rate	FTSE Mib Star Dividend Change Rate
FTSE Mib Dividend Change Rate	100.00%	92.95%	17.64%	92.09%
FTSE Mib Mid Cap Dividend Change Rate		100.00%	−2.39%	99.85%
FTSE Mib Small Dividend Change Rate			100.00%	−4.20%
FTSE Mib Star Dividend Change Rate				100.00%

The table shows the correlation matrix of dividend changes for the four indices. FTSE Mib Star and FTSE Mib show a high correlation coefficient (92.09%) and the coefficient of FTSE Mib Star and FSTE Mib Mid Cap is 99.85%.

Overall, dividend-paying firms, compared to the other groups, have better profitability (RoE) and liquidity (cash flow) growth rates per year. For instance, the free cash flow per share growth rate of the dividend increase group is 25.59%, compared to −13.29% for the dividend decrease group, before the pandemic. Considering the dividend omission group, the free cash flow is −60.12%, compared to −153.36% of the dividend omission group. Comparing the growth rate of profitability and liquidity ratio in Appendix, it is evident that financial intermediaries follow financial circumstances, instead of economic ones, to define dividend policies over time. As expected, the financial intermediaries that omitted dividends exhibited poor performance. For example, the FTSE Mib dividend omission group showed a RoE growth rate of 2.53%, compared to −266.80% before and during the pandemic.

Table 8 shows the correlation matrices of the variables considered in the anal-

ysis, after merging the four groups into a single sample, cleaned of any multi-listing firms. The matrix shows that dividends are positively correlated to the return on equity at 5%, while they are negatively correlated to Return on Assets at 5%, from 2014-2022.

This is due to multicollinearity, as confirmed by the following tables, focusing on the situation before the pandemic and during the pandemic. Table 9 shows the correlation matrix of the sample considering the overall sample observations (i.e. 224), with significance levels at 1% and 5%.

Table 9. Correlation matrix of the sample.

Correlation Coefficients, using the observations 2014-2022							
Two-tailed critical values for: 5% 0.6664 (*), 1% 0.7977 (**)							
	DIV	DER	ROA	ROE	AT	PFV	AFCF
DIV	1	0.4896	−0.7165*	0.7131*	0.1562	0.4706	−0.2635
DER		1	−0.3403	0.6405	−0.3863	0.3321	−0.089
ROA			1	−0.551	−0.0161	−0.1616	0.6594
ROE				1	0.377	0.3734	−0.2885
AT					1	0.3082	0.0718
PFV						1	0.3289
AFCF							1

The table shows the correlation coefficients for the overall sample, with significance levels at 1% and 5%, after merging the four indices into a sample, cleaned of any multi-listing firms. The number of observations used to estimate the correlation matrix is 224.

Table 10 explodes the correlation coefficient matrix of the overall period in Panel A (before Covid-19) and Panel B (during Covid-19). In this regard, the findings show that profitability (ROE and AT) leads the dividend decisions, considering that they are distributed if financial firms are profitable.

However, the correlation matrix does not indicate a significant correlation with liquidity (AFCF), either before or during the pandemic, at a 5% significance level. Thus, Table 10 shows the correlation matrix of the sample (224 observations) clustered in two panels: Panel A shows the correlation coefficients before the Covid-19 pandemic by using observations from 2014 to 2019 (152 observations), while Panel B shows the correlation coefficients during the Covid-19 pandemic by using observations from 2020 to 2022 (72 observations).

Considering how relevant the subset of dividend omission is to the research, Table 11 shows the correlation matrices of the explanatory variables limited to the group of financial intermediaries, which omitted dividends, exploded to reflect the situation before and during the pandemic period. The results show that dividend omissions are consistently negatively correlated to the liquidity, particularly during the pandemic. A comparison between Table 10 and Table 11 shows that profitability becomes less relevant than liquidity when the dividend omission

group is taken into consideration during the pandemic. It is clear that financial intermediaries care a lot more about having a proper liquidity buffer than generating earnings, especially when they are in financial distress (Bhattacharya, 2012).

Next, the research focused on the relevance of the considered explanatory variables to the overall sample, through the implementation of a multivariate logit regression model. The analysis allows a better comprehension of the impact of dividend payout policy to the changes before and during the pandemic, as well as the way that firms' variables drive their dividend change policies (e.g. omissions). As widely described in the literature review section, the Covid-19 outbreak exerted a deeply contradictory influence on corporate dividend policy, so the following analysis clarifies the impact on the dividend payout policies for financial intermediaries in the Italian market.

Table 10. Correlation matrix of the sample before and during the pandemic.

Panel A: Correlation coefficients before Covid, using the observations 2014-2019							
Two-tailed critical values for 5% 0.8114 (*), 1% 0.9172 (**)							
	DIV	DER	ROA	ROE	AT	PFV	AFCF
DIV	1	0.5017	−0.8734*	0.6895	−0.1182	0.4315	−0.115
DER		1	−0.5888	0.7929	−0.6079	0.3256	−0.2233
ROA			1	−0.5441	0.5555	−0.213	0.4637
ROE				1	−0.1297	0.2987	−0.0298
AT					1	0.1948	0.7238
PFV						1	0.7108
AFCF							1
Panel B: Correlation coefficients during Covid, using the observations 2020-2022							
Two-tailed critical values for 5% 0.9969 (*), 1% 0.9999 (**)							
	DIV	DER	ROA	ROE	AT	PFV	AFCF
DIV	1	0.4478	−0.922	0.9977*	0.9986*	0.7201	−0.9589
DER		1	−0.7591	0.5072	0.3995	−0.2979	−0.1759
ROA			1	−0.946	−0.9	−0.3952	0.7743
ROE				1	0.9927	0.6716	−0.9376
AT					1	0.7561	−0.9727
PFV						1	−0.8873
AFCF							1

The table shows the correlation coefficients for the overall sample, with significance levels at 1% and 5%, before and during the pandemic. The findings show that profitability (ROE and AT) leads the dividend decisions, instead of liquidity (AFCF). The total number of observations used to estimate the correlation matrices is 224 (Panel A: 152 and Panel B: 72).

Table 11. Correlation matrix of the sample for the dividend omission group.

Panel A: Correlation Coefficients before Covid, using the observations 2014-2019							
Two-tailed critical values for: 5% 0.8114 (*), 1% 0.9172 (**)							
	DIV	DER	ROA	ROE	AT	PFV	AFCF
DIV	1	0.0111	0.1893	0.2348	−0.0571	0.2756	0.2673
DER		1	0.5455	0.3837	0.0545	0.3874	0.4031
ROA			1	0.9825**	0.7526	−0.1478	−0.0298
ROE				1	0.8142*	−0.2516	−0.0895
AT					1	−0.3728	−0.0665
PFV						1	0.1172
AFCF							1
Panel B: Correlation Coefficients during Covid, using the observations 2020-2022							
Two-tailed critical values for: 5% 0.9969 (*), 1% 0.9999 (**)							
	DIV	DER	ROA	ROE	AT	PFV	AFCF
DIV	1	−0.815	0.1639	0.3731	0.3589	0.3711	−0.9943
DER		1	0.438	0.2334	−0.8333	0.2356	0.7489
ROA			1	0.9764	−0.8619	0.9769	−0.2677
ROE				1	−0.732	1**	−0.4696
AT					1	−0.7335	−0.2578
PFV						1	−0.4676
AFCF							1

The table shows the correlation coefficients for the dividend omission group, with significance levels at 1% and 5%. Profitability becomes less relevant than liquidity when the dividend omission group is considered. The total number of observations used to estimate the correlation matrices is 75 (Panel A: 42 and Panel B: 33).

5.3. Multivariate Analysis

Table 12 shows the coefficients of a series of logit regression models. In particular, the dependent variables (DIC, DDC, DNC and DOM) are shown as functions of the coefficients of the selected explanatory variables (Const., DER, ROE, AT, AFCF and TE). The logit model equation is:

$$\ln\frac{p}{1-p} = a + b_1X_1 + b_2X_2 + \cdots + b_NX_N \tag{2.1}$$

where "ln" is the natural logarithm, p is the probability that the dependent variable (Y) for cases equals 1, p ($Y = 1$), and "1 − p" is the probability that Y for cases equals 0, 1 − p ($Y = 1$). So, ln[p/1 − p] is the log odds, or "logit". The sequence of X_N are the selected explanatory variables, b_N are the estimated slope coefficients, and "a" is the estimated intercept.

Table 12. Significance of explanatory variable coefficients.

	DIC	DDC	DNC	DOM
Const	−1.4031***	−0.7523	−1.0508**	−1.7875***
DER	0.3090*	−4.6658**	−0.0833	−0.8748
ROE	0.0381	0.9973***	0.0462	−0.7174***
AT	4.9936	−18.2626**	−0.8743	7.4322*
AFCF	0.2533	0.4838***	−0.0786	−0.4196***
CE	0.3094	−6.5244***	−0.1573	1.7455
Chi-Square test (*P*-value)	0.1822	0.0119**	0.9775	0.0421**
R^2	0.1867	0.3624	0.0196	0.2844
N.Obs.	224	224	224	224
N. Obs. Control	36	36	36	36

The asterisks ***, **, and * indicate significance at 1%, 5%, and 10% respectively.

The table shows the explanatory variable coefficients of the logit regression model, where the asterisks ***, **, and * indicate the significance level at 1%, 5%, and 10%, respectively. In particular, the regression appears to be good at predicting the dividend decrease (DDC) and dividend omission (DOM) probability. The total number of observations (N. Obs) used for determining the average values of the regressions is 224. The R^2 of DDC and DOM do not appear to be high as they are 36.24% and 28.44%; so, the fraction of the variation in the data is not very well explained by the model. However, the p-values appear to be significant at 5% level, making it appear as a good model for the population. The number of observations (N. Obs. Control) is just a control index added by the author to verify that all the observations have been included in the dataset before estimating the regressions' coefficients; if all observations are included to estimate the model, the value is 36 as all observations from 2014 to 2022 (9 observations) are considered for the 4 regressions.

The Chi-Square test shows the p-value, considering the 1%, 5% and 10% significance levels, in order to evaluate the quality of the model in terms of predictions. If the slope coefficient is significant and positive, a unit change in the regressor increases the odds of the considered event (i.e. Y = DIC, Y = DDC, Y = DNC, or Y = DOM), *ceteris paribus*.

In order to understand the impact of the explanatory variables and the relative significance levels, a series of regressions are performed to find the best set of explanatory variables, which maximise the Chi-Square test. In this regard, ROA and PFV were not considered due to the multicollinearity effect with ROE.

Table 12 shows that the regression is good at predicting the dividend decrease (DDC) and dividend omission (DOM). Overall, consistent with prior evidence (Hauser, 2013; Mazur et al., 2023; Krieger et al., 2021; Ali, 2022), the findings show a strong impact of profitability (ROE) and the ability to generate cash flow (liquidity) on dividend reduction and omission. However, the dummy variable CE, which shows if Covid-19 is significant to dividend policy (i.e. the dummy equals 1 in 2020), does not seem to be significant at 5%. The regression to dividend omission (DOM) shows that as cash flow (AFCF) increases, the probability of omitting dividends decreases by 0.41, *ceteris paribus*. In addition, the probability of omitting dividends increases as profitability (ROE) decreases. Similarly, the regression to dividend decrease (DDC) shows that with increasing cash flow and profitabil-

ity, the probability of dividend reduction is higher.

Table 13 considers the explanatory variable AFCF and PFV, in view of the Chi-Square test significant at 10%. The relationship between the dividend increase group and free cash flow is positive (i.e. 0.264) since dividend payout becomes more probable as cash flows are more available to the financial intermediaries. However, the other dependent variables do not seem to find significant regression models.

Table 13. Explanatory variable coefficients significance for regressors.

	DIC	DDC	DNC	DOM
Const	−1.2676***	−1.0941***	−1.1050***	−1.3085***
AFCF	0.2640*	−0.0007	−0.0928	−0.4226**
PFV	−4.4589	1.4306	0.9046	1.7963
Chi-Square test (*P*-value)	0.0940*	0.9018	0.7847	0.1405
R^2	0.1168	0.0051	0.0120	0.0969
N. Obs.	224	224	224	224
N. Obs. Control	36	36	36	36

The asterisks ***, **, and * indicate significance at 1%, 5%, and 10% respectively.
The table shows the explanatory variable coefficients of the logit regression model, where the asterisks ***, **, and * indicate significance levels at 1%, 5%, and 10%, respectively. The total number of observations (N. Obs) used for determining the average values of the regressions is 224. The R2 of DIC does not appear to be high, as it is 11.68%; so, the fraction of the variation in the data is not very well explained by the model. However, the p-value appears to be significant at 10% level, making it appearing as a good model for the population. The number of observations (N. Obs. Control) is just a control index added by the author to verify that all the observations have been included in the dataset before estimating the regressions' coefficients; if all observations are included to estimate the model, the value is 36 as all observations from 2014 to 2022 (9 observations) are considered for the 4 regressions.

However, Table 12 and Table 13 show some controversial results: how can higher profitability (ROE) and liquidity (AFCF) boost a higher probability to decrease dividends? Similar findings were described by Ali in 2022. In particular, her research showed that "*firms that have higher leverage and are smaller in size are also found to be more likely to have large dividend increases*". According to Heba's findings, these results can appear surprising since higher liquidity and profitability should induce dividend increase, as higher leverage and size should induce dividend decrease. However, Table 1 designates several studies as having a "*Positive Impact on Dividend Payout Policy*", by following the behavioural finance principles (Signalling Theory), which can provide support in explaining these results. According to Heba, firms "*that are more leveraged and relatively smaller in size, tend to announce large dividend increases in order to reduce the asymmetric information and adverse selections costs associated with having more leverage and being smaller*". Similarly, financial intermediaries which are more profitable and liquid tend to be more conservative in announcing dividend increases, in order to avoid bad signals to market, which can impact on the market value. On the other hand, debt to equity ratio appears to be negatively correlated with dividend decreases for financial intermediaries. In fact, while high leverage

levels can be a critical aspect for firms, it is part of the physiological core business for banks. Regarding this, increasing debt can boost returns (even for shareholders) since more financial resources are used in performing the business (Ali, 2022). Similar results were found and explained by Tinungki et al. (2022a), where Indonesian listed firms showed that "*the crisis due to the pandemic led to higher dividend distribution* […]" since it can be considered as "*a positive signal for investors which lifted the sluggish trade condition in the capital market*". They pointed out that profitability, leverage and size have a robust and positive effect on dividend distribution, while size has an adverse effect on dividend policy; this appears to be consistent with both Heba's findings and this one (Tinungki et al., 2022a). Similar findings were also provided by Mazur et al. (2023), who pointed out that 82% of firms on the S&P 1500, during the Covid-19 pandemic, increased dividends despite bad earnings and a deterioration of equity. Their research hypothesises that the "*relation holds for other types of payouts, including share repurchases and special dividends*" to keep good signals to the market. This finding appears seems unlikely in the banking industry due to the strong regulation and the continued actions of supervisory authorities (Mazur et al., 2023). The research confirms the findings in favour of behavioural finance theory, even for financial intermediaries on the Italian stock exchange, which integrates the available literature that mainly focuses on the preliminary pandemic time. In addition, it reveals some phenomena, which seem to be peculiar to the financial industry, such as the Covid-19 effect (CE), which does not seem to be significant in predicting dividend omissions, while it is significant in predicting dividend reductions. Even profitability (ROE) seems to be contradictory, even when it is aligned with the other cited research. However, liquidity appears to be the really critical indicator for banks and insurance firms influencing dividend policies, through a significant negative relationship with dividend omission.

6. Conclusion

The research contributes to the analysis of corporate dividend payout policies during the outbreak, particularly the research analysing how dividend changes were impacted by the Covid-19 pandemic, utilising a sample of 25 financial intermediaries listed on the Italian stock exchange. The initial sections of the research describe the macroeconomic effects of the pandemic on the financial industry. They show a significant impact by considering that, from 2019 to 2020, return on equity and stock of equity decreased by around 4% and 2%, respectively. In this regard, European and national supervisory authorities had to implement specific programs, such as the *Pandemic Emergence Purchase Program* (PEPP) and the *Expanded Asset Purchase Programme* (APP), to support the banking industry by providing financial resources and fiscal incentives. Following the described macroeconomic scenario, the analysis of the sample shows that several financial intermediaries omitted dividends in 2020. 77% of the financial firms of the FTSE Mib sample omitted to pay dividends, while 23% decreased dividends. The same pat-

tern was confirmed by the other indices in 2020, where firms in the FTSE Mib Mid Cap, FTSE Mib Small Cap and FTSE Italia Star omitted dividends for 71%, 75% and 80% of firms, respectively. However, the phenomenon appears to be limited at the beginning of the pandemic, and considering the fact that, in 2021, the majority of financial firms started paying dividends again (77% FTSE Mib, 86% FTSE Mib Mid Cap, 75% FTSE Mib Small Cap, and 40% FTSE Italia Star). The paper shows that, even if several financial intermediaries reduced or omitted dividends at the beginning of the pandemic, the analysis shows that banks kept dividend payouts high during the outbreak, in order to provide the market with positive signals of stability and resilience in response to the pandemic.

The result is quite consistent with the view that financial firms and managers are "*reluctant to decrease or omit dividends to either avoid signalling bad news about future earnings, as posited by the signalling models* […] *or to maintain their personal benefits, as proposed by the agency models*" (Ali, 2022). Following the multivariate logit regression model, the results show that dividends were significantly influenced by profitability (ROE) and liquidity (average free cash flow per share) during the Covid-19 pandemic. Similarly, the dividend decrease group appears to experience a significant influence from liquidity and profitability, in addition to leverage ratio, which does not appear to follow the expected trend. Regarding this, the dummy variable, which signals the Covid-19 effect, is significant at 5%, probably due to a blended need to equilibrate dividend payout market signals and protect equity, during severe crises.

Following the available literature, around 71% of the cited papers showed that decisions on omitting dividend payouts followed the need to preserve capital in order to face higher risks during the pandemic. However, recent analysis, which also considered overall pandemic data, showed that signalling theory appears to better explain the results, as happened in this specific case. This research is intended to contribute to the decisions of academics, supervisory authorities, and practitioners, with a focus on investors and shareholders, who need to pay attention to market perceptions and influencing factors, which support remuneration decisions, especially during extraordinary times, such as the Covid-19 crisis. In fact, following the analysis, financial intermediaries should consider dividend policies as a positive signal to market investors, by effectively distributing dividends to increase the market share price, as stated by Tinungki et al. (2022b). There are also some limitations in the performed research, which need to be taken into consideration, even for further research opportunities. Firstly, the available data are not extensive, being circumscribed to the Italian financial industry. Even if the research addresses some relevant research biases that emerge from the available literature, which mainly focused on data sorted before the end of the pandemic in 2022, further analysis should be undertaken to analyse the effects related to subsequent periods, post-crisis. In addition, the regression models should also analyse the marginal effects of key metric growth rates, by avoiding focusing only on the probability to omit dividends or not. In fact, the analysis of effects caused by extraordinary crises, such as the Covid-19 pandemic, can help supervisory authori-

ties to better understand which financial supervisory sectors should be regulated, with further savings protection schemes. Finally, the results show "optimism" on the part of managers in proposing dividend distribution regarding the market consequences, instead of adjusting "*dividend payouts to realised earnings as well as future earnings potential*", which should be anchored in the fundamental analysis (Mazur et al., 2023).

In conclusion, the relationship between shareholders' needs and managers' needs appears to be even more critical during extreme situations, which should induce both players to preserve liquidity, in order to maximise the probability of allowing financial firms to survive even at the expense of profitability in the short-run. In this regard, further research opportunities could focus on the liquidity-profitability trade-off and market volatility in the banking industry during extraordinary times.

7. Declarations

- The authors have no relevant financial or non-financial interests to disclose.
- The authors have no competing interests to declare that are relevant to the content of this article.
- All authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.
- The authors have no financial or proprietary interests in any material discussed in this article.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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Appendix

Table A1. The table shows the key descriptive statistics for each firm of the considered sample.

Panel A: Before Covid-19 (January 1, 2016-December 31, 2019)

Statistics	BMPS.MI	BAMI.MI	BPE.MI	BMED.MI	BGN.MI	AZM.MI	FBK.MI	G.MI	ISP.MI	MB.MI	UCG.MI	UNI.MI	PST.MI	IF.MI	BPSO.MI	ILTY.MI	BFE.MI	CE.MI	MOL.MI	US.MI	BST.MI	PRO.MI	DOV.MI	EQUI.MI	REVO.MI
Mean	−0.0044	−0.0015	−0.0004	0.0002	0.0000	0.0000	0.0004	0.0001	−0.0002	0.0001	−0.0006	0.0001	0.0004	−0.0007	−0.0007	0.0007	−0.0004	−0.0002	0.0009	0.0001	−0.0007	−0.0001	−0.0001	−0.0001	NA
Minimum	−1.1982	−0.2653	−0.2825	−0.1631	−0.1240	−0.1479	−0.1024	−0.1835	−0.2606	−0.2385	−0.2717	−0.2055	−0.1103	−0.1746	−0.1469	−0.0276	−0.0826	−0.1154	−0.0918	−0.1108	−0.1311	−0.0984	−0.0873	−0.0637	NA
Maximum	0.3586	0.1686	0.1501	0.0873	0.1270	0.1201	0.0787	0.0789	0.1349	0.0947	0.1478	0.1203	0.0897	0.1396	0.1273	0.0327	0.0503	0.0899	0.1135	0.1046	0.1231	0.1787	0.0983	0.0607	NA
Std. Dev.	0.0546	0.0336	0.0298	0.0179	0.0190	0.0210	0.0192	0.0160	0.0215	0.0212	0.0282	0.0219	0.0156	0.0276	0.0205	0.0110	0.0150	0.0189	0.0210	0.0169	0.0224	0.0219	0.0227	0.0123	NA
Skewness	−10.0910	−0.4396	−0.5196	−0.8767	−0.2842	−0.5421	−0.2741	−1.3531	−1.5587	−1.5328	−0.2471	−0.7458	−0.5164	−0.2587	−0.1225	0.1713	−0.8210	−0.0800	0.4094	−0.2681	0.0719	1.5381	0.3171	−0.1040	NA
Kurtosis	228.0700	5.2312	10.2730	8.9743	5.6323	6.1626	2.6831	20.9580	24.4500	18.8930	10.9390	9.9756	5.6720	4.9831	5.0361	0.3314	4.0275	3.5400	2.7171	5.7061	3.8435	11.5460	2.5224	3.0848	NA
Jarque-Bera	2212770.0000	1187.7000	4499.6500	3529.1300	1352.5800	1652.6000	316.5380	18848.0000	25642.1000	15462.1000	5060.9900	4294.1400	1402.9500	1059.3800	1073.0500	1.7519	394.8890	530.0190	339.9030	1386.4100	624.4100	6026.4500	146.8520	199.5480	NA
P-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4165	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NA

Panel B: During Covid-19 (January 1, 2020-March 31, 2022)

Statistics	BMPS.MI	BAMI.MI	BPE.MI	BMED.MI	BGN.MI	AZM.MI	FBK.MI	G.MI	ISP.MI	MB.MI	UCG.MI	UNI.MI	PST.MI	IF.MI	BPSO.MI	ILTY.MI	BFE.MI	CE.MI	MOL.MI	US.MI	BST.MI	PRO.MI	DOV.MI	EQUI.MI	REVO.MI
Mean	−0.0007	0.0005	−0.0012	−0.0002	0.0002	−0.0000	0.0004	0.0002	−0.0002	−0.0001	−0.0005	−0.0001	0.0000	0.0005	0.0010	0.0003	0.0004	0.0002	0.0008	0.0001	0.0001	−0.0001	−0.0009	0.0005	NA
Minimum	−0.2052	−0.1827	−0.1954	−0.1271	−0.1483	−0.1731	−0.1297	−0.1387	−0.1958	−0.2069	−0.1895	−0.1923	−0.2489	−0.1511	−0.2100	−0.1348	−0.1473	−0.0881	−0.1462	−0.0834	−0.1432	−0.1643	−0.1705	−0.0850	NA
Maximum	0.1798	0.1403	0.2022	0.1141	0.0820	0.1430	0.1121	0.1049	0.1052	0.1303	0.1286	0.1632	0.0932	0.0837	0.1175	0.1357	0.0852	0.0791	0.1050	0.0675	0.0784	0.2343	0.1516	0.1313	NA
Std. Dev.	0.0318	0.0292	0.0322	0.0237	0.0213	0.0246	0.0227	0.0170	0.0237	0.0249	0.0304	0.0247	0.0229	0.0236	0.0281	0.0218	0.0226	0.0187	0.0259	0.0160	0.0236	0.0251	0.0302	0.0203	NA
Skewness	0.5826	−0.4847	0.2245	−0.4975	−1.1073	−0.7517	−0.1927	−1.1429	−1.3119	−1.2912	−0.8430	−0.4947	−2.5577	−0.5193	−0.6200	0.0551	−0.6807	−0.2173	−0.4312	−0.2716	−0.5962	1.1579	−0.3220	0.7769	NA
Kurtosis	8.8349	5.1471	6.9520	5.4609	7.6108	9.4567	5.3301	12.6910	11.5470	13.2020	6.5359	10.6290	27.1370	4.0870	6.6158	6.6463	5.0693	3.0708	3.0763	4.4518	3.6639	20.7390	5.7747	8.6979	NA
Jarque-Bera	1895.9700	654.9500	1160.7300	736.9000	1502.6800	2192.9000	681.8320	3977.2400	3353.5100	4328.0800	1089.6500	2725.4600	18238.5000	425.2910	1083.5800	1056.7600	658.9230	230.0500	244.1270	481.0500	355.0670	10415.1000	807.4750	1867.1000	NA
P-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	NA

Panel C: After Covid-19 (April 1, 2022-February 29, 2024)

Statistics	BMPS.MI	BAMI.MI	BPE.MI	BMED.MI	BGN.MI	AZM.MI	FBK.MI	G.MI	ISP.MI	MB.MI	UCG.MI	UNI.MI	PST.MI	IF.MI	BPSO.MI	ILTY.MI	BFE.MI	CE.MI	MOL.MI	US.MI	BST.MI	PRO.MI	DOV.MI	EQUI.MI	REVO.MI
Mean	−0.0033	0.0014	0.0017	0.0005	0.0000	0.0005	−0.0002	0.0001	0.0007	0.0006	0.0023	0.0008	0.0002	−0.0002	0.0013	−0.0019	0.0009	0.0008	0.0001	−0.0000	−0.0012	−0.0001	−0.0027	−0.0000	0.0001
Minimum	−0.5467	−0.1284	−0.1383	−0.0808	−0.0866	−0.0952	−0.1044	−0.0603	−0.0907	−0.0782	−0.0954	−0.0861	−0.0617	−0.0777	−0.1122	−0.0840	−0.1179	−0.0868	−0.0770	−0.0625	−0.0954	−0.0906	−0.2377	−0.0485	−0.0317
Maximum	0.1743	0.0975	0.0926	0.0561	0.1749	0.0743	0.0687	0.0398	0.0572	0.0572	0.1160	0.1909	0.0423	0.0560	0.0530	0.0539	0.0597	0.0496	0.0643	0.1030	0.0549	0.0710	0.1083	0.0479	0.0438
Std. Dev.	0.0459	0.0225	0.0237	0.0162	0.0180	0.0162	0.0216	0.0126	0.0172	0.0152	0.0224	0.0167	0.0146	0.0172	0.0190	0.0182	0.0172	0.0165	0.0222	0.0115	0.0166	0.0130	0.0279	0.0113	0.0115
Skewness	−4.6601	−0.5377	−0.8965	−0.7320	1.4454	−0.4795	−0.5633	−0.6825	−0.7749	−0.8307	0.1164	2.0153	−0.5400	−0.5040	−0.9796	−0.6030	−1.0459	−0.7431	−0.1693	0.6182	−0.5024	−0.3281	−1.7536	−0.2383	0.5967
Kurtosis	50.8640	3.4893	4.6028	2.9991	18.9740	4.0274	2.4721	3.5701	3.3942	4.4376	4.1385	37.5120	1.8917	1.9405	4.2598	2.2720	6.1671	3.4256	0.6386	15.1450	2.6649	11.1110	13.1930	2.3145	1.7413
Jarque-Bera	54371.4000	271.6250	497.1570	226.9370	7505.3000	349.2190	150.3770	297.6610	283.6710	457.4600	350.0620	29002.2000	96.6788	97.4306	447.9310	134.8100	864.0730	284.1080	10.6464	4704.6100	165.2670	2524.2300	3797.2000	113.7720	55.1469
P-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0049	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000