

Exploring the Third Type of Agency Problem: An Empirical Study of the Impact of Debt Suspension Programmes on SMEs' Resource Allocations

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This study explores the third type of agency problem concerning the tension between shareholders and stakeholders. It does so by analysing whether small and medium-sized enterprises (SMEs) eligible for a temporary debt suspension programme favour the short-term interests of their shareholders or stakeholders, or the firm's long-term competitiveness. Using information from an Italian debt moratorium programme aimed at alleviating the financial pressure on SMEs during the financial crisis, we built a rich database of 37,465 limited liability companies eligible for the programme between 2006 and 2015. We then used a difference-in-differences model to analyse the data. Our findings indicate that the debt suspension programme, designed to help eligible firms survive temporary financial constraints, did promote their long-term competitiveness. However, it also produced some undesirable consequences, such as benefiting shareholders in the short term at the expense of other key stakeholders.

Introduction

Since the early twentieth century, the governance literature has focused extensively on the first type of agency problem, called the principal–agent problem, which refers to the conflict of interests between shareholders and top executives in publicly traded American corporations (Hart, 1995). In recent years, recognizing that ownership structures are more concentrated and typically involve a controlling shareholder in contexts outside Anglo-American countries, scholars have begun investigating the second type of agency problem, called the principal–principal problem, which refers to the conflict of interests between controlling and minority shareholders (Shleifer and Vishny, 1997). Numerous studies have shed light on potential repercussions for investors due to these agency problems, as well as possible remedies to mitigate these issues (Bertoni, Meoli and Vismara, 2014; Kumar and Zattoni, 2017).

A third type of agency problem has also been identified, dealing with the conflict of interests between shareholders and stakeholders. Despite its significance, this

issue remains relatively underexplored in the scholarly literature. Early research has emphasized this issue's relevance, indicating that, especially under external pressures such as a takeover or high levels of leverage, companies may favour shareholders' interests at the expense of those of stakeholders (Shleifer and Summers, 1988; Tirole, 2001). This conflict can influence resource allocations and give rise to agency problems with various stakeholders such as governments, employees or debtholders (Alkausar *et al.*, 2023; Chen *et al.*, 2022; Kumar and Zattoni, 2017).

This third type of agency problem lies at the heart of the heated debate regarding the purpose of the firm and how companies balance the interests of shareholders and stakeholders in both normal and crisis times (Zattoni and Pugliese, 2021). This discourse has grown increasingly salient over the past decade as policymakers and business leaders such as Larry Fink, the Business Roundtable and Klaus Schwab express concerns about the potential negative impact of a shareholder-oriented view (Kacperczyk, 2009; Zattoni, 2020). Recent financial and health crises have fuelled this debate.

Such crises prompt companies to favour the short-term interests of their shareholders, thereby compromising those of their stakeholders and the competitiveness of the companies in the long run (e.g. Bebchuk, Kastiel and Tallarita, 2023; Bedendo, Garcia-Appendini and Siming, 2023; Flammer and Ioannou, 2021).

In response to recent calls to delve into this third type of agency conflict (Kacperczyk, 2009; Kumar and Zattoni, 2019) and investigate how companies balance the interests of different parties in the short and long terms (e.g. Flammer and Bansal, 2017; Zattoni and Pugliese, 2021), our study focuses on how companies allocated their financial resources during the 2008 global financial crisis. We specifically examine how debt suspension policies aimed at aiding small and medium-sized enterprises (SMEs) might have influenced their resource allocations. Did they favour the short-term interests of shareholders and/or non-equity stakeholders such as debtholders and employees (Goergen, Brewster and Wood, 2009), and/or did they allocate their resources to promote their firm's competitiveness in the long term?

To examine this question empirically, we used a quasi-natural experiment from a 2009 Italian debt moratorium aimed at SMEs. We selected Italy for several reasons. First, SMEs dominate the Italian business landscape, have a strong impact on its GDP and are often controlled and directed by one or just a few shareholders. Second, comprehensive and reliable financial data concerning Italian SMEs are available. Finally, Italy implemented debt moratorium programmes targeting SMEs yearly from 2009 to 2015 (Shevlin, Thornock and Williams, 2017).

We compiled data on all Italian limited liability companies, yielding a database of 37,465 non-financial firms over 10 years (2006–2015). Using a difference-in-differences (DiD) design with coarsened exact matching (CEM), we found that the debt moratorium shifted short-term resource allocations in a manner favouring shareholders over stakeholders. Eligible firms increased their dividends, took on more debt and lowered their labour costs in the short term, while they boosted long-term investments. As such, our results highlight that during financial or liquidity crises, SMEs eligible for temporary debt suspension programmes may have privileged shareholders at the expense of debtholders and employees in the short term, while promoting the success of their business in the long term.

Our research enriches the literature on the third type of agency problem, time-based agency problems, and debt suspension programmes in several ways. First, we show that the third type of agency problem can impact SMEs during financial crises (Tirole, 2001) by demonstrating that they can lead to short-term resource allocations favouring shareholders over other stakeholders (Zattoni and Pugliese, 2021). Second, our study illuminates the time-based aspects of agency problems

linked with debt moratorium programmes (Flammer and Bansal, 2017). In our case, the programme had a dual effect in that SMEs provided short-term gains for shareholders at the expense of other stakeholders, and concurrently boosted their long-term investments (Flammer and Ioannou, 2021). Lastly, while past work has considered the impact of debt renegotiations on lenders (Isagawa, Yamaguchi and Yamashita, 2010; Musumeci and Sinkey, 1990), our study explores their effects on borrowers. In this way, we added nuances to the current literature investigating how debt suspension policies influence resource allocations in volatile times (Sopha, Jie and Himadhani, 2021).

Our findings are timely and policy-relevant. Factors such as the COVID-19 pandemic, military conflicts and sudden increases in capital costs have strained the ability of firms – particularly SMEs – to access financial resources and meet their debt obligations. Although the responses to these prolonged crises have been diverse, debt moratoria and government-guaranteed loan schemes have been implemented in nearly every country (Bertoni, Meoli and Vismara, 2023; Brown, Martinsson and Thomann, 2021; Granja *et al.*, 2022). Our study reveals the benefits of these initiatives, as well as some less favourable outcomes.

Literature review

SMEs, debt suspension policies and resource allocations

SMEs are of paramount significance in the global economy, contributing substantially to job creation, economic growth and innovation. According to the World Bank (World Bank Group, 2019), SMEs represent the predominant portion of businesses worldwide and are recognized as crucial drivers of job creation. Furthermore, the Organisation for Economic Co-operation and Development (OECD) underscores the pivotal role of SMEs in fostering entrepreneurship, enhancing productivity and promoting regional development (OECD, 2017). SMEs often serve as incubators for innovation, playing a vital role in technological advancements and economic diversification (Acs and Audretsch, 2010). Recognizing the multifaceted contributions of SMEs, policymakers and scholars alike emphasize the need for tailored support mechanisms, regulatory frameworks (Link, van Hasselt and Vismara, 2021) and strategic interventions to nurture their growth and enhance their positive impact on the broader economy (Welter *et al.*, 2017).

While SMEs' resource allocations are usually determined by their controlling shareholders, some external environmental shifts – such as fiscal policies and financial aid programmes – can affect their behaviour significantly (Nadkarni and Barr, 2008). This study examines how an external regulation providing additional

short-term resources to these companies affects their short-term and long-term resource allocations (Kacperczyk, 2009). The 2008 global financial crisis seems to be an ideal setting to investigate these effects. As the financial crisis morphed into a banking crisis, funds became scarce and national governments launched debt suspension programmes to provide financial relief to eligible firms (Cornett *et al.*, 2011). By determining a firm's eligibility ex-ante, these programmes serve as a quasi-experiment through which to understand how environmental changes that provide financial benefits affect firms' resource allocations.

Based on the notion that debt renegotiations can alter a borrower's resource allocations (Cho, Linn and Nakibullah, 1997), we examine whether these changes favour shareholders or other stakeholders in the short term and impact a firm's competitiveness in the long term. Specifically, we assess whether debt suspension programmes targeting SMEs: (i) favour either shareholders (via dividends) or key stakeholders (employees through wages, debtholders through financial debt) in the short term (Clarkson, 1995; Freeman, Harrison and Wicks, 2007; Jensen and Meckling, 1976) and (ii) prompt changes in capital expenditures affecting their long-term competitiveness.

The third type of agency problem

Agency theory explores dyadic relationships where one subject (the agent) performs a task in the interests of a second one (the principal). According to this theory, both subjects seek to maximize their own utility, even at the expense of their counterpart (Jensen and Meckling, 1976). For example, when there is asymmetric information and uncertainty between the two subjects, the agents may engage in opportunistic behaviours that increase their utility and damage that of the principals (Eisenhardt, 1989).

Corporate governance scholars have used agency theory to investigate three different types of agency problems (Zattoni, 2020). The first type of agency problem, associated with ownership dispersion in large US and UK companies, concerns the risk that top managers will try to maximize their interests at the expense of dispersed shareholders (Hart, 1995; Jensen and Meckling, 1976). The second type of agency problem, associated with the presence of controlling shareholders, concerns the risk that these shareholders will try to maximize their interests at the expense of minority shareholders (Shleifer and Vishny, 1997; Zattoni and Judge, 2012). The third type of agency problem, associated with the conflict of interests between the company (shareholders) and its stakeholders, concerns the risk that the company will exploit the stakeholders (Zattoni, 2020).

The third type of agency problem happens if the companies first negotiate a contract with the stakehold-

ers (e.g. employees and debtholders) and then behave opportunistically to exploit them (Armour, Hansmann and Kraakman, 2009). For example, companies (shareholders) may divert financial resources in order to maximize their private benefits by aggressively reducing the taxes they pay to the government (Alkausar *et al.*, 2023) or increasing the risk of failure for the debtholders (Chen *et al.*, 2022).

This study analyses the third type of agency problem in Italian SMEs during the 2008 global financial crisis. This setting is ideal for several reasons. First, SMEs might be affected by the third type of agency problem, but typically do not experience the first or second types of agency problems. This situation is particularly true in countries like Italy, where ownership is highly concentrated and the shareholders are also directors and top managers. Second, investigating the third type of agency problem during extreme events such as the 2008 global financial crisis might provide more insights into the distributional effects associated with the conflict of interests among the various parties (Bebchuk, Kastiel and Tallarita, 2023; Kacperczyk, 2009; Shleifer and Summers, 1988). Third, following the 2008 global financial crisis, the Italian banking system implemented annual debt moratorium programmes for SMEs between 2009 and 2015, allowing us to explore the eligible companies' resource allocations over an extended period of time.

Theory development about SMEs' short-term resource allocations

During the 2008 global financial crisis, debt moratoriums reduced the pressure on SMEs regarding their debt obligations and let them manage their financial resources with more autonomy (Sachs, 1990). Companies could use these additional financial resources either to pursue the short-term interests of shareholders who are the residual claimants (Jensen and Meckling, 1976) and/or to satisfy the legitimate interests of their stakeholders (Freeman, Harrison and Wicks, 2007).

If the additional financial resources provided by the debt moratorium were used to benefit shareholders in the short term, we argue that they will be used to distribute dividends (Chronopoulos, Yilmaz and Wilson, 2023; Lazonick, 2014). While the dividend irrelevance argument in a 'perfect' Modigliani–Miller world states that a firm's dividend payout policy does not affect its valuation (as what matters is the firm's free cash flow), these perfect-world conditions are unlikely to be met, especially by financially distressed firms. Similarly, arguments based on risk aversion, such as the bird-in-the-hand hypothesis (Gordon and Shapiro, 1956; Lintner, 1956), signalling theory, such as the information content of the dividends hypothesis (Ang and James, 1987; Koch and Shenoy, 1999) or the effects of dividends (Dhalwal, Erickson and Trezevant, 1999; Short, Zhang and

Keasey, 2002) are unlikely to apply to SMEs participating in recurring debt suspension programmes. Dividend smoothing and considerations related to the first type of agency problem might be optimal for listed firms with dispersed shareholders. However, they are less relevant for private SMEs with little separation between ownership and control of the companies (e.g. Aivazian, Booth and Cleary, 2006; La Porta *et al.*, 2000).

The cumulative evidence reveals that shareholders can use payouts as a disciplinary device to prevent management from making unnecessary investments or funnelling resources away from the firm (e.g. Farre-Mensa, Ljungqvist and Schroth, 2022). For firms involved in recurring debt suspension programmes, the distribution of dividends could be guided by the desire to please shareholders through high payouts (Davies *et al.*, 2014). This behaviour may represent a form of the third type of agency problem because firms distribute financial resources to satisfy their shareholders' short-term interests instead of addressing other stakeholders' interests, such as increasing wages for employees or reducing financial debt (Lazonick, 2014).

In sum, if firms eligible for debt suspension programmes pursue shareholders' short-term interests, they will, everything else being equal, increase their dividends more than non-eligible firms. Stated formally:

H1a: Firms eligible for debt suspension programmes will increase their dividends more than non-eligible firms.

Alternatively, firms could potentially use the additional financial resources offered by the debt moratorium to safeguard or enhance the interests of essential stakeholders, such as increasing employees' remuneration or reducing financial debt, in several ways.

First, companies have a responsibility to shield their stakeholders, especially the most pivotal ones, from the ravages of an economic downturn by maintaining or augmenting their compensation. Employees, in particular, are a vital component of a company's stakeholder matrix. Their income and wealth are primarily tied to the compensation offered by the company (Blair and Stout, 1999; Hoskisson *et al.*, 2018). Hence, from a stakeholder perspective, companies ought to safeguard their employees' welfare by utilizing the short-term financial resources provided by the debt moratorium to steady or increase their compensation (Zattoni and Pugliese, 2021). This action would help ensure the retention and commitment of valued employees (Gerhards and Heinz, 2017).

Second, banks and other financial institutions are also fundamental stakeholders in the company, particularly during a financial crisis, as they offer the financial resources that become crucial in a liquidity-starved financial market. Therefore, from the stakeholders' perspective, if firms receive a temporary debt suspension

from the banks, they ought to stabilize or reduce their financial liabilities. Taking on more debt could make it more difficult for companies to meet their financial obligations, exposing them and their stakeholders to greater risk (Demirgüç-Kunt *et al.*, 2015). Debtholders prefer conservative behaviour on the part of the firms in which they are involved, because they receive fixed payoffs when the firms' performance is strong, but face financial risks and even the possibility of bankruptcy when it is weak. Consequently, any expansion of financial debt by companies is seen as risk-shifting behaviour. Such actions are especially concerning during periods of financial distress (Cassell *et al.*, 2012), as they might give rise to agency conflicts between companies and their debtholders (Dewatripont and Tirole, 1994; Galariotis *et al.*, 2023).

In sum, if firms eligible for debt suspension programmes pursue their stakeholders' short-term interests, they will, everything else being equal: (i) stabilize or increase their employees' compensation more than non-eligible firms and (ii) stabilize or reduce their financial debt more than non-eligible firms. Stated formally:

H1b: Firms eligible for debt suspension programmes will stabilize or increase their labour costs per worker more than non-eligible firms.

H1c: Firms eligible for debt suspension programmes will stabilize or decrease their financial debt more than non-eligible firms.

Theory development about SMEs' long-term resource allocations

Debt moratoriums create additional financial resources that may be used either to satisfy the short-term interests of shareholders or stakeholders, or to promote the firm's long-term success. Therefore, it is important to determine how the additional funds granted by debt moratoriums will be used.

Long-term investments are pursued with the aim of reaching desirable long-term outcomes at the expense of short-term ones (Reilly, Souder and Ranucci, 2016). Typical long-term investments are expenditures for durable assets and R&D projects (Le Breton-Miller and Miller, 2006; Teece, 2006). The outcomes of these investments are riskier than short-term investments and take longer to materialize (Flammer and Bansal, 2017; Hall, Jaffe and Trajtenberg, 2005), but they may produce better results in the long run. Therefore, if eligible firms are long-term oriented, they will use the additional financial resources for capital expenditures.

Despite the documented positive effects of a long-term orientation, some firms tend to overemphasize positive returns in the near future at the risk of compromising long-term outcomes (Holmström, 1999; Laverty, 1996). More specifically, firms with a short temporal

orientation tend to reduce the resources allocated to long-term investments (Chrisman and Patel, 2012; Desyllas and Hughes, 2010), as their outcomes take a longer time to materialize (Flammer and Bansal, 2017; Hall, Jaffe and Trajtenberg, 2005; Laverty, 1996). Given the short-term nature of the extra resources granted by the moratorium, eligible firms may be prone to use these resources to satisfy the short-term interests of the shareholders or the stakeholders. In a nutshell, if they are short-term oriented, meaning they are affected by some form of myopia (Holmström, 1999; Levinthal and March, 1993), eligible firms will use the additional financial resources to benefit the short-term interests of shareholders or stakeholders at the expense of the company's long-term success. Thus, we examine two possible hypotheses:

H2a: Firms eligible for debt suspension programmes will increase their long-term investments more than non-eligible firms.

H2b: Firms eligible for debt suspension programmes will reduce their long-term investments more than non-eligible firms.

Research design

Empirical setting

Studying the impact of a debt suspension programme on a firm's resource allocations poses several empirical challenges, such as potential endogeneity. A false positive correlation between programme eligibility and investments might, in fact, arise from unobserved, time-variant characteristics affecting both. As a consequence, a robust research design is essential for clear causal estimates. Therefore, to examine the programme's effect on dividends, employee costs, financial debt and investments, we used a DiD design (Koning and Heinrich, 2013).

In 2009, the Italian Banking Association (ABI) and the Association of Italian Corporations (Confindustria) agreed to launch a debt moratorium programme. The programme permitted a 12-month freeze on payments on the principal of mortgages and a 6-month halt on payments on the principal of leases for micro, small and medium-sized enterprises (MSMEs). As per EU Recommendation 2003/361 (Title 1, Article 2), eligible firms were MSMEs with fewer than 250 employees and annual turnovers under €50 million or a balance sheet below €43 million. All MSMEs could apply annually, except for firms with significant debt irregularities, such as those requiring restructuring or those that were non-performing.

The debt moratorium extended the date at which payment on the debt was due. It reduced short-term cash outflows to financial institutions, which could defer pay-

ments without raising interest rates. According to the ABI, almost all Italian banks participated in the programme. Between 2009 and 2018, over 450,000 firms benefited from these programmes annually (ABI press release, 5 May 2018). Given that the average number of active Italian limited liability companies during this time was about 1.5 million (source: ISTAT – Annual Reports on Companies), these numbers highlight the moratorium's significant impact on eligible firms.

The Italian debt moratorium is well-suited for our study for multiple reasons. First, it was implemented annually with the same features between 2009 and 2015, allowing us to observe its impact on firms over an extended period. Second, focusing on one country (Italy) helps us avoid the omitted-variable bias common in multi-country studies (De Jong, Kabir and Nguyen, 2008) and issues related to differences across countries in the programmes (Shevlin, Thornock and Williams, 2017). Third, Italian firms have a leverage ratio that is about 10% higher than other European firms, making them likely to benefit from the moratorium (De Socio, 2010). Fourth, reliable financial data for Italian SMEs are accessible, ensuring accurate empirical analysis.

Sample

Our data was aggregated from AIDA, a Bureau van Dijk database, which provides comprehensive accounting information for 'all Italian companies required to file their accounts' (see www.bvdinfo.com). Consistent with previous accounting studies (Burgstahler, Hail and Leuz, 2006), we selected all limited liability companies with revenues exceeding €5 million for at least one year during the 2006–2015 decade. We made these choices based on the quality and completeness of the available data, as larger firms have more rigorous reporting requirements than smaller ones (Haack and Scherer, 2014; Le and Lobo, 2022). Moreover, preliminary analysis of the database indicated that firms with revenues exceeding €5 million maintained more reliable financial reporting throughout the study period.

Pairing eligible firms with a comparable set of non-eligible firms resulted in a sample that included 37,465 firms and a total of 340,409 firm-year observations between 2006 and 2015. We collated all of the data at the end of each fiscal year. Between 2006 and 2015, the vast majority of the observations met the eligibility criteria for the debt moratorium (305,151 observations), but some of them did not (35,258 observations). The sample includes 3 years of pre-moratorium observations (2006–2008) and 6 years of post-moratorium observations (2010–2015). The firm panel features exhaustive accounting data throughout the observation period.

Variables

Independent variable. The debt moratorium programme, initiated in 2009, designated MSMEs as eligible firms. Our independent variable captures the programme's effects on two different categories of firms: eligible and non-eligible. In our model, firms eligible for the debt suspension programme after 2009 received a value of 1, whereas those that were not eligible received a value of 0.

Dependent variables. To determine the shift in resource allocations within companies, we used firm-year data about dividends, employee costs, financial debt and long-term investments.

Dividends. We quantified dividends using disbursement data (Davies *et al.*, 2014). Scholars use this variable, calculated as the natural logarithm of dividend disbursements, to measure resource allocations in terms of dividends (Driver, Grosman and Scaramozzino, 2020; Karjalainen *et al.*, 2023).

Labour costs per worker. To gauge a firm's inclination to favour employees when eligible for debt moratorium, we used the labour costs per employee, expressed as a natural logarithm. This factor includes the total cost of the employee for the firm, including taxes, social security contributions and other benefits (Amore *et al.*, 2021).

Financial debt. We calculated the firms' financial debt as the ratio between their financial debt and total assets, as recorded in their balance sheets (Hamrouni, Boussaada and Toumi, 2019).

Fixed assets to total assets. We estimated long-term investments by measuring capital expenditures, thereby capturing resources whose potential value will likely be actualized over a long-term horizon. Following Birhanu, Gambardella and Valentini (2016), we measured long-term investments as the ratio between fixed assets and total assets. This measure reflects the firm's investments dynamically, as it fluctuates annually in response to investments and divestments.

Control variables. We included firm and year fixed effects in all of our models to account for time-invariant firm and year effects. However, these fixed effects do not account for variations over time at the firm-specific level. To address these time-variant effects, we included a collection of time-variant control variables that may concurrently influence both the eligibility for the programme and our dependent variables. The exclusion of these factors would represent an omitted-variable problem, leading to an endogeneity issue.

To account for the size of the firm, we introduced controls for revenues (log-transformed) or assets (log-transformed) in all of the regressions. Thus, when our dependent variable used assets as the denominator (e.g.

see Model 4 in Table 4 later), we controlled for revenues. Conversely, when the dependent variable excluded assets in the denominator (e.g. see Model 2 in Table 4 later), we controlled for assets. These controls for firm size are crucial because they serve as a proxy for the slack resources a firm possesses (Fuentelsaz, Gomez and Polo, 2002). Furthermore, due to their limited resources, smaller firms might underperform compared to larger firms (Waddock and Graves, 1997).

Additionally, we controlled for the firm's returns on assets (ROA) as a measure of financial performance (Itner and Larcker, 1997). We also considered the debt-to-equity ratio (Thomsen and Pedersen, 2000), which controls for the extent of debt a company utilizes to finance its assets in relation to the value of the shareholders' equity. However, we did not include this control variable when we used financial debt as the dependent variable, because the two variables have similar meanings. In other words, when we used financial debt as the dependent variable, we were already measuring the effect of the moratorium on the firm's leverage.

Models

To measure the impact of the debt moratorium on firms' resource allocations, we used a DiD model, which allowed us to evaluate the varying effects of the programme on the two distinct cohorts of eligible and ineligible firms (Cerqueiro, Ongena and Roszbach, 2016). Using this strategy helped mitigate concerns that confounding variables might steer the results during the sample period (Altamuro and Beatty, 2010). Thus, we paired eligible firms with non-eligible firms in a controlled sample to lessen the impact of unobservable effects (Shevlin, Thornock and Williams, 2017). This approach also reduces the disparities between eligible and non-eligible firms. It considers post-intervention variations for non-eligible firms as counterfactual, providing a speculative depiction of what might have transpired if eligible firms had not qualified for the debt moratorium (Gubler, Larkin and Pierce, 2017).

The unit of analysis is the firm. Our methodology follows very closely that of Cuñat, Gine and Guadalupe (2012). In our specific context, we estimated the following regression:

$$Y_{it} = a + \beta * Debt_Suspension_{it} + \delta X_{it} + \gamma_i + c_i + \varepsilon_{it} \quad (1)$$

where Y is our dependent variable, $Debt_Suspension$ is the 'treatment dummy' (i.e. a dummy variable that equals 1 if the firm is eligible for the programme in year t , and 0 otherwise), X_{it} is the vector of control variables, γ_i represents the year fixed effects, c_i represents the firm fixed effects and ε_{it} is the error term. The coefficient of interest is β , which measures the varying effects of the programme's implementation on

eligible versus non-eligible firms. For example, H1a predicts that β should be positive and significant when Y_{it} is dividends. In such cases, the programme's implementation increases the dividends of firms eligible for the debt moratorium, in comparison to firms that are not eligible for the debt moratorium.

To draw a fair comparison between eligible and non-eligible firms that exhibited insignificant differences in the pre-treatment phase, we supplemented the DiD model with a CEM technique. This method enhances 'the estimation of causal effects by ameliorating imbalance in covariates between eligible and control groups' (Blackwell *et al.*, 2009: 524). We used the CEM technique on three variables: revenues, employees and assets. We selected these three variables because they represent the thresholds for firms to be eligible for the debt moratorium. The combination of a matching strategy and a DiD model effectively eliminated unobserved disparities between comparable eligible and non-eligible firms. Additionally, incorporating firm fixed effects and robust error clustering at the firm level allowed us to account for heteroscedasticity, error clustering and time-invariant firm disparities that could concurrently influence our independent and dependent variables.

Table 1 describes all of the variables contained in our empirical models.

Empirical results

Summary statistics

Table 2 presents the descriptive statistics of the variables and their pairwise correlations.

To assess multicollinearity, we conducted the variance inflation factor (VIF) test after performing the regressions. As per Hair *et al.* (1995), VIF values exceeding 10 typically necessitate further examination to pinpoint potential problems related to a high degree of correlation among the predictors. Table 3 presents the VIF values for our primary regressions. As the table indicates, all of the VIF values were significantly lower than 5, indicating little correlation among the predictors (Gareth *et al.*, 2013). Thus, these VIF values reassured us that multicollinearity did not pose a significant problem in our analysis.

Regression analysis

Table 4 shows the regression estimates of the impact of the debt moratorium on the eligible firms with respect to non-eligible firms, using CEM. Model 1 of Table 4 indicates that eligibility for the debt moratorium increases the dividends among eligible firms in comparison to non-eligible firms. This positive and statistically significant finding supports H1a. It also confirms prior findings related to the distribution of dividends as rooted in

Table 1. Definitions of the variables

Variable	Type of variable	Definition
Dividends	Dependent variable	Dividend disbursement (expressed as a natural logarithm)
Labour costs per worker	Dependent variable	Labour costs per single employee (includes taxes and social security contributions and is expressed as a natural logarithm)
Financial debt	Dependent variable	The ratio of financial debt to total assets
Fixed assets to total assets	Dependent variable	The ratio of fixed assets to total assets
Debt suspension	Independent variable	Treatment dummy variable. Equals 1 if the firm is eligible for the programme, and 0 otherwise
Revenues	Control variable	The amount of revenue (expressed as a natural logarithm)
Debt-to-equity ratio	Control variable	The ratio of debt to equity (debt is equal to the net financial position)
ROA	Control variable	Profitability ratio, meaning the return on assets
Cash and cash equivalents	Control variable	The amount of cash and cash equivalents from the balance sheet (expressed as a natural logarithm)
EBITDA	Control variable	Earnings before interest, taxes, depreciation and amortization
Assets	Control variable	The amount of total assets (expressed as a natural logarithm)
Short-term financial debt ratio	Dependent variable (validity of the empirical design)	Measures the relative weight of short-term financing capital sources in both the short-term and the long-term capital sources of the company as a percentage
Long-term financial debt ratio	Dependent variable (validity of the empirical design)	Measures the relative weight of long-term financing capital sources in both the short-term and the long-term capital sources of the company as a percentage

Table 2. Descriptive statistics and correlations

Variable	Obs.	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) Dividends (ln)	224,235	5.058	2.045	1.000												
(2) Labour costs per worker (ln)	309,992	10.585	0.418	0.261***	1.000											
(3) Financial debt	305,656	0.179	0.177	-0.207***	-0.125***	1.000										
(4) Fixed assets to total assets	339,082	0.190	0.202	0.059***	-0.055***	0.149***	1.000									
(5) Debt suspension	340,393	0.896	0.305	-0.346***	-0.077***	0.039***	0.001	1.000								
(6) Revenues (000)	339,082	32,097	139,186	0.439***	0.214***	-0.041***	-0.018***	-0.764***	1.000							
(7) Debt-to-equity ratio	322,977	2.139	4.956	-0.283***	-0.120***	0.574***	-0.030***	0.032***	-0.071***	1.000						
(8) ROA	339,054	0.019	0.065	0.343***	0.066***	-0.256***	-0.104***	0.028***	0.034***	-0.231***	1.000					
(9) Cash and cash equiv. (000)	339,069	1.875	18,762	0.416***	0.179***	-0.220***	-0.019***	-0.399***	0.489***	0.166***	-0.154***	1.000				
(10) EBITDA (000)	339,082	2.571	19,741	0.547***	0.231***	-0.107***	0.121***	-0.612***	0.738***	-0.122***	0.274***	0.532***	1.000			
(11) Assets (000)	339,082	37,495	1.374	0.550***	0.305***	0.020***	0.214***	-0.544***	0.680***	-0.061***	-0.040***	0.499***	0.654***	1.000		
(12) Short-term financial debt ratio	340,136	0.849	0.203	0.004***	0.045***	-0.283***	-0.421***	0.022***	0.001***	-0.063***	0.128***	-0.017***	-0.049***	0.160***	1.000	
(13) Long-term financial debt ratio	340,066	0.151	0.203	-0.004***	-0.045***	0.283***	0.421***	-0.022***	-0.001***	0.063***	-0.128***	0.017***	0.049***	-0.160***	-1.000	1.000

***p < 0.01, **p < 0.05, *p < 0.1.

the desire to satisfy shareholders through high payouts (Davies *et al.*, 2014).

Model 2 of Table 4 shows that the eligibility for the debt moratorium reduces the labour costs per worker among eligible firms in comparison to non-eligible firms. This negative and statistically significant finding refutes H1b. One explanation for this result is that using the limited resources available to pay higher dividends leaves fewer funds for employees, reducing their compensation (Lazonick, 2014).

Model 3 of Table 4 indicates that the eligibility for the debt moratorium has a significant positive effect on financial debt, prompting the company to take on even more debt. This finding does not support H1c. Taken together, these results indicate that eligible firms favour the short-term interests of their shareholders at the expense of their employees and debtholders.

We also tested whether companies eligible for the debt moratorium increase (decrease) their long-term investments (measured by their fixed assets over total assets) in comparison to non-eligible firms. As Model 4 of Table 4 demonstrates, a firm's eligibility has a positive and statistically significant effect on an increase in its long-term investments, supporting H2a.

Validity of the empirical design

Our empirical model's validity hinges on the intended effects of the debt moratorium, which extended the time when the debt would come due. Doing so reduced the firms' need to make immediate cash outflows, thereby pushing obligations into the future. In other words, the debt moratorium led firms to lengthen the average debt maturity and therefore switch short-term obligations into medium-term obligations. We examined whether this programme did indeed increase the firms' financial debt maturity, as indicated by an increased long-term and decreased short-term financial debt ratio, which are common measures of debt maturity choices (Flannery, 1986).

Table 5 presents the results of the firm-year level regressions with the two debt ratios as the dependent variables (Gyimah *et al.*, 2022). As control variables, we included revenues to account for the firms' size, EBITDA for their performance, cash and cash equivalents for their cash holdings. The findings indicate that the debt moratorium led to extended debt maturity for eligible firms, meaning less short-term financial debt and more long-term financial debt. The observed increase in debt maturity served as a litmus test for the accuracy of our empirical model. This anticipated outcome suggests that our model is capturing the effects of the debt suspension policies correctly. It also corroborates our empirical model's validity, because it confirms that the debt moratorium mechanism led to the desired effect of the programme.

Table 3. . VIF values for all regressions of the principal analyses

	Dividends (ln)	Labour cost per worker (ln)	Financial debt	Fixed assets/total assets
Debt suspension	2.02	2.14	1.62	1.59
ROA	1.00	1.00	1.01	1.01
Assets (ln)	2.04	2.16		
Debt-to-equity ratio	1.02	1.02	1.02	1.01
Revenues (ln)			1.63	1.60
Mean VIF	1.52	1.58	1.32	1.30

Table 4. Effects of the programme on the resource allocations of firms eligible for the debt moratorium

Variables	(1) Dividends (ln)	(2) Labour costs per worker (ln)	(3) Financial debt	(4) Fixed assets/total assets
Debt suspension	0.0392* [0.0203]	-0.0135*** [0.00344]	0.00495*** [0.00156]	0.00672*** [0.00154]
ROA	-0.00525*** [0.000685]	0.000214*** [0.00001]	-0.0558 [0.0347]	-0.0102 [0.00707]
Assets (ln)	0.370*** [0.0105]	0.111*** [0.00504]		
Debt-to-equity ratio	-0.000696*** [0.000240]	-0.00001 [0.00001]	0.000533*** [0.00001]	0.00001 [0.00001]
Revenues (ln)			-0.0117*** [0.00115]	-0.0138*** [0.000799]
Observations	211,999	296,399	303,550	318,621
R-squared	0.763	0.673	0.816	0.888
Year REs	Yes	Yes	Yes	Yes
Firm id	Yes	Yes	Yes	Yes

***p < 0.01, **p < 0.05, *p < 0.1.

Clustered robust standard errors in brackets.

Table 5. Effects of the programme on the debt maturity of firms eligible for the debt moratorium

	(1) Short-term financial debt ratio	(2) Long-term financial debt ratio
Debt suspension	-0.01626*** [0.0022]	0.01626*** [0.0022]
EBITDA	-0.0001* [0.0000]	0.0001* [0.0000]
Revenues (ln)	0.0048*** [0.0007]	-0.0048*** [0.0007]
Cash and cash equiv. (ln)	-0.00259*** [0.0002]	0.00259*** [0.0002]
Observations	337,977	337,906
R-squared	0.667	0.666
Firm fixed effects	Yes	Yes
Year fixed effects	Yes	Yes

***p < 0.01, **p < 0.05, *p < 0.1.

Clustered robust standard errors in brackets.

Robustness checks

We also performed different robustness checks and extensions of our baseline analysis. Overall, these additional checks provide evidence that our findings are ro-

bust to different specifications. Tables, figures and results are available in the Online Appendix.

Pre-trend in the DiD. The credibility of DiD models hinges on there being no pre-trends, meaning no consistent differences over time between the treatment and control groups without the treatment (Pieroni and Salmasi, 2017). We confirmed this point by illustrating our parallel trend assumptions and checking that there were no pre-trends in our variables. Figures S1–S4 in the Online Appendix show the mean differences in the main dependent variable between eligible and non-eligible firms. Dividends dropped the year before but rose post-moratorium (Figure S1). Labour costs remained stable pre-moratorium and dropped significantly afterwards (Figure S2). Financial debt decreased the year before but surged post-moratorium (Figure S3). Investments were lower 2 and 3 years pre-moratorium but increased later (Figure S4).

Dividend payout. We conducted a robustness check using a different variable, the payout ratio, and added new control variables such as total debt with a maturity over 12 months (in natural logarithm) and net profit as a profitability index. Table S1 in the Online Appendix confirms our main findings on resource allocations to shareholders, as the coefficient is positive and significant.

Number of employees. To validate the impact on employees in our main analyses, we conducted a robustness check using an alternate metric: employee numbers. Our findings indicate that eligible firms might not pass benefits on to employees after introducing a debt moratorium. To deepen this insight, we examined the programme's effects on the size of the workforce. We expected that changes in resource allocations from the programme would likely lead to a smaller workforce along with reduced labour costs. As Table S2 in the Online Appendix indicates, our results show a significant negative correlation between the programme and employee numbers, reinforcing our main analyses.

CAPEX. In accordance with previous studies (Flammer and Ioannou, 2021), we used a different variable – capital expenditures (CAPEX) – for a robustness check on the effects on investments. We calculated the annual investment ratio using the CAPEX for property, plant, equipment and intangible assets. The results in Table S3 in the Online Appendix show the programme's positive and statistically and economically significant impact on firms' investment behaviour. This result supports our previous analysis.

Different censoring levels. In another robustness check, we examined the impact of different levels of censoring on our results, as some variables are highly skewed. Tables S4–S6 in the Online Appendix show the programme's estimated effects on firms' behaviour, accounting for both left and right censoring at the 1%, 2% and 3% thresholds. Across these specifications, the observed effect remains statistically and economically significant.

Incorporation of additional control variables. To assess our findings' robustness, we proposed an alternate model with added control variables. Table S7 in the Online Appendix shows the programme's impact on firms' behaviour when including new controls such as Altman's Z-score for the risk of bankruptcy and EBITDA/revenue ratios for profitability. The results remain statistically and economically significant with these additional controls.

Implementation of generalized method of moments. To confirm our results' robustness, we also used generalized method of moments (GMM) estimation, which handles unobservable heterogeneity and endogeneity while validating the instruments and serial correlations. Employing GMM as a robustness check reinforced the reliability of our findings. Table S8 in the Online Appendix shows the significant, positive effects of the debt suspension programme on dividends, financial debt and investments, along with a significant negative impact on labour costs. These results are consistent with our primary DiD design analyses, further supporting our conclusions.

Inclusion of industry fixed effects. As an additional robustness check, we incorporated industry fixed effects to control for unobserved industry-level heterogeneity in cases in which firms might switch industries. The results in Table S9 in the Online Appendix strengthen our main findings on resource allocations, even after accounting for these fixed effects and new control variables. The results remain statistically significant and consistent with our main analyses.

Modification of the observation period. We assessed the sensitivity of our results by modifying the observation window to include 3 years pre- (2006–2008) and post- (2010–2012) the beginning of the debt moratorium. We checked the robustness by altering the censoring thresholds for the dependent variable and removing the outliers (1%, 2% and 3% at both ends). Tables S10a and S10b in the Online Appendix confirm the consistency of our main findings over this truncated period, highlighting the resilience and reliability of our analysis across different settings.

Impact on Altman's Z-score. To assess the effects of the debt suspension programme, we analysed its impact on Altman's Z-score, a recognized measure of a company's risk of bankruptcy and its longevity (Swift, 2016). Our findings indicate a statistically significant negative effect of the debt suspension programme on Altman's Z-score (see Table S11 in the Online Appendix), a pattern that endures across multiple levels of censoring addressing outliers (1%, 2% and 3%, using both right and left censoring). These results suggest that the programme may have inadvertently compromised the firms' survival rates, likely due to the distribution of dividends and the increased financial debt. Thus, our primary analyses correspond with the findings about firms' survival rates, bolstering our study's validity.

Additional analyses. In unreported results, we considered additional control variables, such as the financial independence index, value added per employee, liquidity ratios and capital assets over ratios. Even when including these additional variables, our results are supported. Finally, we also investigated how different ownership structures – such as private firms versus state-owned enterprises – might affect firms' behaviour when they are eligible to participate in the debt suspension programme. Our additional analyses show that, unlike private firms, state-owned enterprises generally do not exhibit significant changes in their investment patterns, dividend distributions, leverage levels or labour costs due to the debt suspension programme.

Discussion

Our results support the view that debt moratorium programmes designed to help SMEs during global crises

might modify their resource allocations. The findings suggest, in fact, that the short-term benefits provided to eligible firms may prompt SMEs to privilege the short-term interests of their shareholders – by giving them higher dividends – at the expense of other primary stakeholders' interest (i.e. by reducing employees' compensation and increasing financial debt). At the same time, they also promote capital expenditures, which should promote the firm's competitiveness in the long run.

As such, our results contribute in several ways to the literature on the third type of agency problem, time-based agency problems, and the consequences of debt suspension programmes. First, they add to the existing literature on both the third type of agency problem (e.g. Kacperczyk, 2009; Kumar and Zattoni, 2019) and the likelihood of companies favouring the interests of their shareholders or stakeholders (e.g. Bebchuk, Kastiel and Tallarita, 2023; Flammer and Ioannou, 2021). We demonstrate empirically that SMEs which are eligible for short-term financial benefits modify their short-term resource allocations to benefit their shareholders. As such, our findings provide support for the shareholder theory (e.g. Jensen and Meckling, 1976), suggesting that eligible SMEs will allocate additional short-term resources to distribute dividends at the expense of employees and debtholders. In addition, the results cast doubt on the contention of various business leaders that companies will increasingly benefit their stakeholders (e.g. Bebchuk, Kastiel and Tallarita, 2023; Zattoni and Pugliese, 2021).

Furthermore, our study expands the analysis of the macro-level determinants of firms' resource allocations (Flammer and Bansal, 2017; Reilly, Souder and Ranucci, 2016). Departing from previous studies that explored the effects of cultural differences (Hofstede, 1993), capital markets (Lees and Malone, 2011) and takeover protections (Kacperczyk, 2009), we investigate whether external regulatory changes, in our case debt moratoriums, prompt SMEs to change their resource allocations. Our findings highlight that SMEs eligible for such programmes choose to favour their shareholders rather than other stakeholders. Thus, the results contribute to the long-standing debate about the objectives of the firm (Jensen and Meckling, 1976; Zattoni, 2020) by corroborating the shareholder view of the firm (e.g. Jensen and Meckling, 1976).

Second, we contribute to the literature on temporal agency problems by investigating whether debt suspension programmes promote a different time-horizon resource allocation that favours some stakeholders at the expense of others (Flammer and Bansal, 2017; Reilly, Souder and Ranucci, 2016). In this respect, our results suggest that eligible SMEs' short-term resource allocations tend to benefit their shareholders (thanks to higher dividends) at the expense of other stakeholders such as

employees (lower compensation) and debtholders (increased financial debt) (Becchetti and Sierra, 2003). This result has implications for the growing literature on agency conflicts (Cumming, Dannhauser and Johan, 2015; Cumming, Johan and Peter, 2018) and the potential negative consequences for a company's long-term success associated with providing short-term benefits for one group of stakeholders at the expense of others (Haksever, Chaganti and Cook, 2004).

Moreover, our results indicate that debt moratorium programmes prompt eligible SMEs to adopt a long-term financial orientation by increasing their capital expenditures. Thus, while in the short term eligible firms favour their shareholders with higher payout ratios (Lazonick, 2014) at the expense of other stakeholders, they make capital investments to ensure their future competitiveness in the long term. By highlighting the presence of SMEs' time-based agency problems, our results encourage scholars to identify other events that might push companies to modify their short-term and long-term resource allocations to benefit some stakeholders at the expense of others (Flammer and Bansal, 2017; Haksever, Chaganti and Cook, 2004).

Third, our study contributes to the debate on the effects of debt renegotiations (Isagawa, Yamaguchi and Yamashita, 2010; Musumeci and Sinkey, 1990) by analysing their consequences for eligible firms' resource allocations. Previous studies have explored this phenomenon from the lender's perspective. They have demonstrated that it is not easy for borrowers to renegotiate their debt (James, 1995), as financial institutions rarely make concessions for firms with public debt outstanding (Asquith, Gertner and Scharfstein, 1994). Departing from this tradition and building on Cho, Linn and Nakibullah (1997), our study analysed the consequences of these programmes for eligible firms to understand if debt suspensions, albeit designed to reduce the likelihood that firms will become financially distressed, can actually induce unintended and undesirable negative behaviour in the beneficiaries.

Specifically, our results show that the eligible firms' resource allocations, whose costs are (partially) supported by third parties, may promote a short-term pro-shareholder orientation which may produce negative consequences for stakeholders and damage the future of the company itself. Reducing employees' compensation may attenuate their investment in firm-specific and value-enhancing competencies, with negative effects on the company's future productivity and innovation (Hoskisson *et al.*, 2018). Moreover, increasing dividends and taking on more debt may increase firms' risk profile, which would be ironic because the regulation was designed precisely to improve their chances of survival during a financial crisis (Becchetti and Sierra, 2003; Jindal and McAlister, 2015; Klingebiel and Rammer, 2014; Powell, Lovallo and Fox, 2011). In short, consistent with

previous studies, our results suggest that the effects of a debt moratorium on eligible SMEs' resource allocations may negatively impact the banks (Isagawa, Yamaguchi and Yamashita, 2010; Musumeci and Sinkey, 1990).

Limitations

Our study has several limitations that offer avenues for future research. First, the absence of direct behavioural data from the firms required us to use accounting measures to infer resource allocations. Future research could address this issue by using qualitative data from a smaller sample. Second, the lack of disclosed information on which firms benefited from the debt moratorium warrants subsequent studies that have access to private datasets. Third, the focus on Italian SMEs limits the generalizability of our findings, suggesting the need for cross-country studies. Fourth, our dataset is marred by missing values that may introduce sample selection bias. Finally, we restricted our scope to the impact of the debt suspension on resource allocations, leaving room for studies on other organizational outcomes and firm-specific moderating factors.

Concerning practical implications, our research underscores the critical role of robust corporate governance in SMEs and suggests a multifaceted approach for policymakers and managers. First, governance mechanisms should be geared towards balancing stakeholder interests through transparent reporting and ethical conduct. For example, incentives could be offered to SMEs that commit to sustainability and responsible financial management. Second, alongside debt relief measures, programmes designed to improve firms' capacities and financial literacy can help SMEs allocate resources wisely. Third, a continuous feedback loop involving periodic evaluations and stakeholder input is vital for refining support programmes. By aligning the initiatives with the principles of responsible governance and long-term value creation, a more sustainable and balanced business ecosystem can be achieved for SMEs and the broader community (Billio, Murgia and Vismara, 2024).

Summary and conclusion

In sum, our study reveals a nuanced picture of how eligibility for debt suspension programmes influences a firm's behaviour. Specifically, the eligibility leads to a dual strategy: a short-term focus on shareholder wealth through increased dividends and reduced labour costs and a long-term commitment to competitiveness via capital investments. Our research extends the theoretical framework on the third type of agency problem, particularly in times of financial stress, corroborating Tirole's (2001) and Flammer and Ioannou's (2021) insights. For policymakers, the findings highlight the need

to craft debt suspension policies that address immediate stakeholder needs while facilitating firms' resilience in the long term, especially during external shocks such as pandemics or financial crises. Overall, the study contributes to our understanding of the delicate equilibrium that debt suspension programmes must strike between short-term gains for shareholders and stakeholders and the long-term success of the companies eligible to participate in them.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section at the end of the article.