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Family ownership during the Covid-19 pandemic

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ABSTRACT

A growing literature is devoted to understand how companies react to major external shocks. Contributing to this research, we study how the presence of families in corporate ownership and leadership affected the reaction of firms to the Covid-19 pandemic. Using data from Italy, we find that family firms exhibited higher market performance and operating profitability than other firms during the pandemic period. This result is stronger for companies without relevant minority investors and with multiple family shareholders. Delving into the mechanisms, we show that the outperformance of family firms is driven by a more efficient use of labor and a lower drop in revenues. Collectively, our results expand existing research by showing how family ties shape the response to adverse events.

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1. Introduction

A growing stream of research focuses on the impact of catastrophic events on corporate policies and performance (e.g. Dessaint and Matray, 2017; Schuwer et al., 2019). The sudden spread of Covid-19 features prominently in this literature given its abrupt impact on humankind. Several works indicate that the spread of the virus caused significant damages to the corporate sector (Bartik et al., 2020; Bennedsen et al., 2020; Bloom et al., 2021; Carletti et al., 2020). During the spring of 2020, when Covid-19 emerged as a threat to global health, many companies faced many challenges related to binding financial constraints, value-chain disruptions, and difficulties in carrying out activities while complying with the lockdown measures. After the summer of 2020, the virus proved able to bite even more, and raised further concerns as to when countries could be able to leave the pandemic behind.

While Covid-19 affected a large fraction of companies worldwide (and partly still does), recent works point to a significant heterogeneity depending on firm and industry characteristics (Carletti et al., 2020). For instance, the impact of Covid-19 was less severe among firms with higher cash reserves and less debt (Ding et al., 2021; Fahlenbrach et al., 2021; Ramelli and

Wagner, 2020), suggesting that financial flexibility was particularly valuable during the pandemic.¹ Within this research, scholars have started probing into the role of organizational and governance characteristics. Existing works show that firms that were more engaged in environmental and social activities performed better during the pandemic, possibly owing to their more loyal customer base (Albuquerque et al., 2020; Ding et al., 2021). Another key feature was corporate culture, which made companies more readily available to innovate and launch new products during the pandemic (Li et al., 2021). Relatedly, firms with greater employee satisfaction exhibited better results during the Covid-19 outbreak (Shan and Tang, 2020), as result of their superior ability to make employees cope with stress, accept alternative work arrangements, and thus preserve work efficiency. Finally, firms with better corporate governance (i.e., less entrenched executives) and low managerial ownership appeared to perform better than others (Ding et al., 2021).

From this literature, some early evidence suggests that family involvement in business played a role, too (e.g. Johnstone-Louis et al., 2020; Ding et al., 2021). Yet, it is still unclear what specific attributes of family involvement mattered the most, what dimensions of performance were most relevant, and what the mech-

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¹ Other works in this area have related firms' stock market performance during the Covid-19 pandemic to country-level factors, such as debt-to-GDP ratios (Gerding et al. 2020) and the exposure to previous epidemics like SARS (Ru et al. 2020).

anisms at play are. Contributing to this research, we provide a comprehensive assessment of the role of family involvement in ownership and leadership in the wake of the Covid-19 outbreak. Family vs. nonfamily ownership represents a key source of variation in corporate decision-making.² Moreover, family firms are notoriously common around the world (e.g. Faccio and Lang, 2002). Hence, studying whether and how this form of ownership shaped the response to the Covid-19 shock is useful to understand the broad consequences of the pandemic for the business sector.

Conceptually, the implications of family control of the ability to overcome the pandemic are unclear. On the one hand, family owners are often motivated by the desire to pass on a healthy firm to descendants (Adams et al., 2008), and thus exhibit longer time horizons in their decision-making, higher reputational concerns, and a stronger attachment to the business as compared to non-family owners. During a pandemic, these features may prove valuable as they signal to investors and stakeholders an extra motivation to react in order to keep the business afloat. Moreover, families often have an articulate network of connections which help accessing resources from banks (D'Aurizio et al., 2015) and politics (Amore and Bennedsen, 2013). Finally, family firms have been shown to exhibit higher employee productivity (Sraer and Thesmar, 2007) and lower cost of debt (Anderson et al., 2003) due to stronger relationships with stakeholders and better agency alignment. Collectively, these arguments suggest that family firms may have been better equipped to face the Covid-19 disruption.

On the other hand, during a crisis families may engage in actions aimed at preserving control at the expense of minority investors, and hence depress firm value (Lins et al., 2013). Moreover, as result of their long-term orientation, family owners tend to hedge their employees from negative shocks (Ellul et al., 2018; Sraer and Thesmar, 2007; Bjuggren, 2015) and experience lower dismissal rates (Bassanini et al., 2013). During a crisis, a lower propensity to make labor adjustments may constitute a disadvantage vis a vis other firms. Indeed, Alfaro et al. (2020) find that the effect of Covid-19 on stock returns was smaller among firms that were able to adjust labor costs more easily. Finally, as compared to managers hired in the labor market, family managers are typically drawn from narrow talent pools (Perez-Gonzales, 2006; Mehrotra et al., 2013) and may thus be less suited to make complex organizational changes necessary to overcome a shock.

To parse these explanations, we study the performance of family and nonfamily firms during the Covid-19 pandemic using both daily stock prices and accounting measures. Our study focuses on Italy, which represents an interesting laboratory for two reasons. First, it was the first Western country to be hit by Covid-19 and to enact policy measures to contain the diffusion of the virus. Second, family ownership is widespread in Italy due to a combination of institutional and cultural factors (e.g., Franks et al., 2012; Amore, 2017) – and this gives us enough variation in the involvement of family in the governance and ownership of listed firms.

Our baseline results indicate that the CAPM-adjusted abnormal returns of family firms were significantly *above* those of nonfamily firms during the outbreak of Covid-19 in the spring of 2020 as well as during the entire course of 2020. The ability to outperform during the pandemic is specific to family ownership and does not stem from other types of controlling shareholder. Moreover, the outperformance of family firms holds both in the cross-section and in a longitudinal analysis which allows us to control for constant heterogeneity in a difference-in-differences model. To facilitate a causal interpretation, we further show that family and nonfamily firms did *not* experience diverging trends in performance prior to

² Existing works have shown that family and nonfamily firms differ in investment, labor and innovation policies (Anderson et al. 2010; Sraer and Thesmar 2007).

the Covid-19 outbreak. Moreover, exploring geographic differences in the diffusion of Covid-19 we find that daily stock returns fell more in areas affected by a more widespread contagion; yet, family firms performed relatively better than other firms.

Going beyond the raw comparison between family and nonfamily firms, we explore the heterogeneity of our results depending on a number of ownership and governance attributes. Our analysis indicates that family firms experience higher returns when they do not have large minority investors and when multiple family members are involved in the firm's ownership. These variations suggest that a more extensive family control was key to perform during the Covid-19 pandemic. We also explore the presence of control-enhancing mechanisms, the presence of a family or professional CEO, and the family business' generation but find milder differences along these variables. Further exploring the heterogeneity behind the average result, we find that family firms outperformed primarily in labor-intensive industries. A possible interpretation of this finding is that family firms were better positioned to manage employee relationships and thus experienced higher labor productivity during the Covid-19 pandemic as a result of their long-term orientation and closer stakeholder relationships.³ Consistent with this notion, we find that family firms had a higher operating profitability and labor productivity throughout the pandemic year of 2020. There is also some indication that family firms generated more revenues relative to their asset base and exhibited a higher revenue growth than nonfamily firms. By contrast, investment and financing policies did not display significant differences.

Our study relates to a large literature which has asked whether family ownership hampers or increases financial performance (Anderson and Reeb, 2003; Miller et al., 2007; Villalonga and Amit, 2006; Sraer and Thesmar, 2007). Some studies in this area have found that family firms are better equipped to withstand heightened political uncertainty (Amore and Minichilli, 2018) or natural disasters (Salvato et al., 2020). By contrast, the evidence on financial crises is mixed. On the one hand, Lins et al. (2013) show that family firms underperformed during the great recession. On the other hand, there is evidence that family ownership can reduce the cost of bank debt (D'Aurizio et al., 2015; Lagaras and Tsoutsoura, 2015) and improve performance (Minichilli et al., 2016). As a result, the question of whether family firms are more effective than nonfamily firms to respond to crises is still unsettled. Moreover, existing works have not explored the effect of family ownership on both stock market *and* operating performance during the pandemic while also studying the underlying mechanisms.⁴ Building cumulative knowledge on this topic is important for at least two reasons. First, Covid-19 has led to an unprecedented rise in economic uncertainty (Altig et al., 2020; Baker et al., 2020a).⁵ Due the lack of close historical comparisons, Covid-19 also generated – at least in the first part of 2020 – a high uncertainty over the policy-making and strategic actions necessary to overcome the crisis. Second, some estimates suggested that the adverse effects of Covid-19 may have well exceeded those of the last financial crisis.⁶ In this gloomy scenario, it is important to discern the factors

³ Relatedly, existing works have argued that family firms use labor more efficiently (Sraer and Thesmar 2007) and labor relations drive family firms' performance advantages (Bennedsen et al. 2019). These advantages make family ownership more common in contexts where labor relations are more conflictual (Mueller and Philippon 2011).

⁴ Albeit insightful, the analysis in Ding et al. (2021) and Johnstone-Louis et al. (2020) is confined to stock returns.

⁵ Baker et al. (2020a) show that the increase in stock market volatility during the Covid-19 pandemic has been higher than the one during the global financial crisis of 2008, and similar to the one of the great depression.

⁶ Albuquerque et al. (2020) note that the unemployment rate in the US increased to 10% by the end of the recession, whereas during Covid-19 unemployment subsidies rose by 11% in just few weeks. According to the IMF, GDP growth in 2020

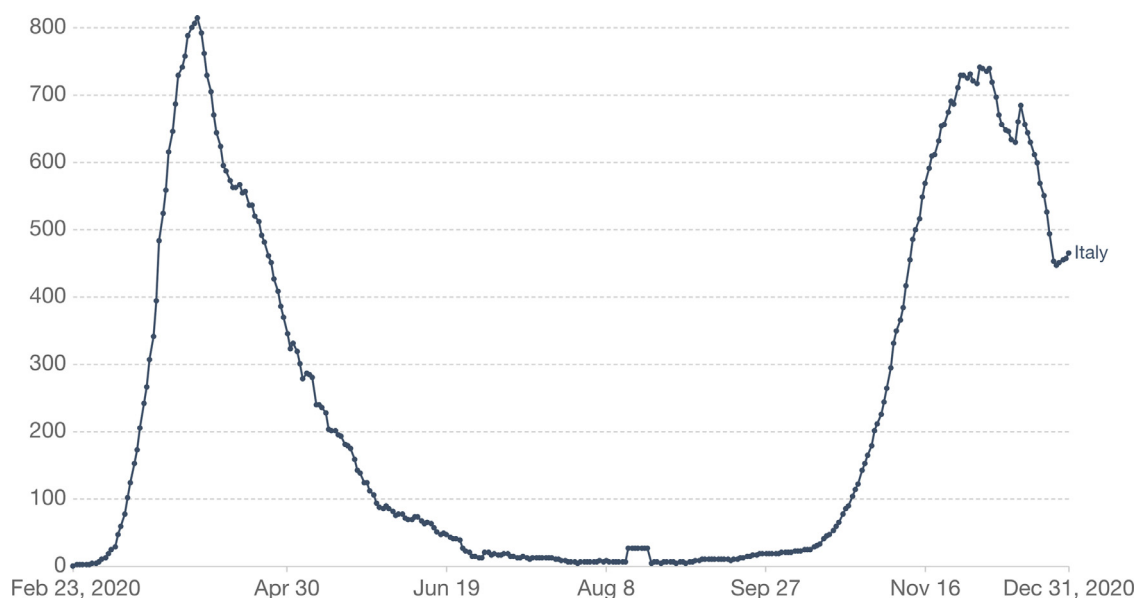


Fig. 1. Distribution of Covid-19 death cases in Italy.

that helped firms to overcome the pandemic crisis, whose unique nature makes it hardly comparable to the previously-studied financial and political crises. Our results suggest that the presence of a family as dominant owner is one such factor.

Finally, our analysis contributes to ongoing research about the implications of Covid-19 on a plethora of outcomes related to financial markets (Alfaro et al., 2020; Baker et al., 2020a), analyst forecasts (Landier and Thesmar, 2020), institutional investors (Glossner et al., 2020), labor markets (Coibion et al., 2020), and households (Baker et al., 2020b). Within this domain, our contribution is to document that, in addition to firms' financial conditions (Fahlenbrach et al., 2021; Ramelli and Wagner, 2020), the involvement of families in ownership and leadership positions shaped the heterogeneous response of companies to Covid-19. In so doing, we expand the small but fast-growing research on the importance of organizational and governance characteristics during an external shock such as the Covid-19 pandemic (Albuquerque et al., 2020; Ding et al., 2021; Li et al., 2021; Shan and Tang, 2020).

2. Data and variables

2.1. Context

Our analysis is based on firms listed in the Italian stock exchange. Italy was one of the first Western countries to report a contagion of Covid-19, and was subsequently hit extremely hard by the virus. Fig. 1 shows the evolution of Covid-19 (in terms of deaths) in Italy from the beginning to the end of 2020. As shown, the contagion rapidly increased - reaching its peak around late-March - and then started to decline. At the beginning of May, when Europe was still the center of the pandemic, 2020 Italy had cumulatively more than 200 thousand cases of contagion (3rd highest value after the US and Spain) and almost 30 thousand deaths (3rd highest value after the US and UK). Eventually, the pandemic spread aggressively in the US, and then Latin America and India. Fig. 2 shows the number of new cases worldwide at the end of 2020.

contracted by 3.5% in the US and 6.9% in Western Europe. As a comparison, the contraction in 2009 was 2.5% in the US and 4.2% in Western Europe. On the uniqueness of the Covid-19 crisis, see also Carmen Reinhart in "This time truly is different" (Project Syndicate, March 23rd, 2020).

The first policy effort to contain the contagion in Italy was made on February 22nd, when the government imposed the quarantine in 11 municipalities (counting more than 50,000 inhabitants) in the northern regions of Lombardy and Veneto. The government also imposed various restrictions, such as the closure of schools, museums and universities, and the suspension of non-essential commercial activities and sport events. This intervention represented the watershed of Italy's policy effort to stop the diffusion of Covid-19: subsequent interventions were aimed at expanding existing measures to broader sets of the Italian territory. Starting from March 10th, the lockdown measures were eventually implemented at the national level, and they remained in place until June 3rd, 2020. Throughout the summer, restrictions on mobility across regions were lifted, and businesses (including non-essential ones) were allowed to open. After a period characterized by a low number of cases, Covid-19 started to spread again from mid-October 2020. As a result, new containment measures were put in place starting from November 4th, when Italian regions were subject to measures whose stringency varied depending on the number of infections per inhabitants as well as a number of other indications.

For the analysis of stock returns, we use February 24th 2020 (i.e. the first trading day after the announcement of the decree on February 22nd) to denote the beginning of the time window subject to the Covid-19 shock. In Fig. 3, which shows the evolution of the FTSE All Shares during the course of 2020, we validate that this is also the period when the stock market started to fall. In an additional test, we start the Covid-19 window on March 10th 2020, i.e. the beginning of the lockdown at the nationwide level, and derive results that are similar to our baseline estimates.

2.2. Sample and summary statistics

For each company listed in Italy (net of missing values in the variables described below), we obtain daily stock market data from Compustat Global (WRDS). Using this data, we construct firms' stock market performance over two alternative time-periods. The first spans from early January to the end of April 2020. We stop this analysis in April since from this period onward the stock markets started to incorporate information on the passage of large policy interventions at the national and European level which

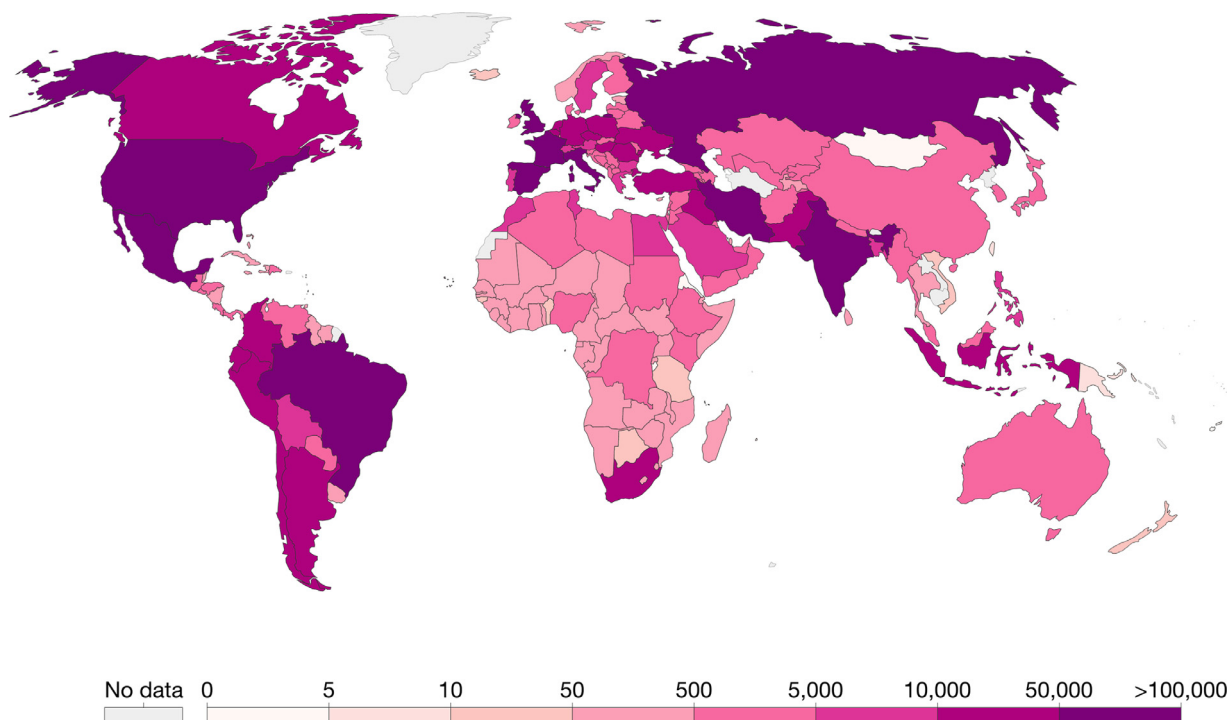


Fig. 2. Diffusion of Covid-19 worldwide as of December 2020.

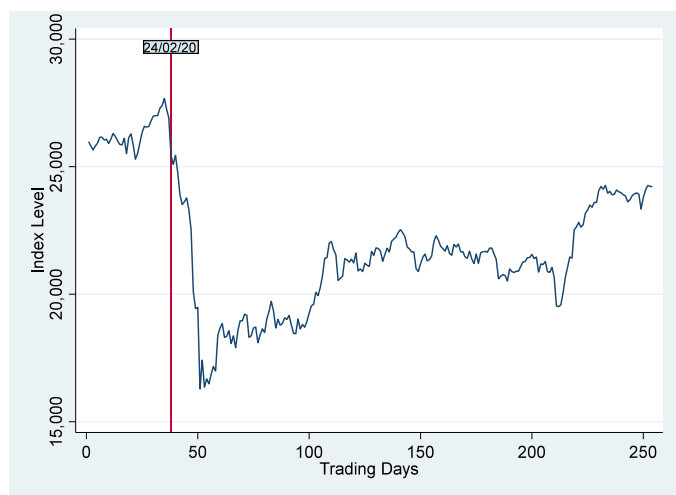


Fig. 3. Stock returns from January 1st to December 31st, 2020.

may confound the interpretation of our results.⁷ The second time-period covers the full year of 2020, which saw a later wave of contagion in the fall.

Following recent studies on firms' stock market performance during Covid-19 (Albuquerque et al., 2020; Ramelli and Wagner, 2020), we employ the CAPM-adjusted return computed as the difference between the daily logarithm return of a stock and its CAPM beta times the daily logarithm market return. CAPM betas are estimated using daily returns from January 2017 to December 2019 and using the FTSE-All Shares as market index. We will perform two different sets of analysis: the first is a cross-sectional analysis which employs the cumulated daily CAPM-

⁷ From end-April to July 22nd, the Italian stock market exhibited approximately a 15% increase.

adjusted returns in the two time-periods mentioned above (i.e., from early-January to end-April 2020, or over the entire year of 2020). The second is a longitudinal analysis which employs daily CAPM-adjusted returns over different time-windows in 2020 in a difference-in-differences setting.

Our sample contains 356 listed firms. For each of them, we gather financial statement data from Orbis. We also use information from companies' annual corporate governance reports, Consob and AIDA (Bureau Van Dijk) to construct a rich set of variables describing firms' ownership, boards and leadership.

As Panel A of Table 1 shows, out of the 356 firms in total, 236 (i.e. 66%) are classified as family firms.⁸ This classification is based on whether or not a family owns at least 25% of a firm's equity shares. This threshold is similar to the one used in previous studies on European firms (e.g. Andres, 2008); it is higher than the ones used in US studies (which often employ the 10% or 5% threshold) due to the fact that ownership in Italy is highly concentrated. For robustness, we checked that our results hold using the 30% (or 33%) threshold as well as using the continuous share of equity in the hands of a family.

In Panel B, we provide a more extensive description of family firms' ownership and leadership. First, we probe into the ownership structures to identify the presence nonfamily shareholders with a relevant equity stake (i.e. 15%). 17% of family firms feature such minority shareholders in their ownership. Second, we measure whether family firms have issued shares that create a wedge between voting rights and cash-flow rights. The analysis shows that 20% of family firms have voting rights exceeding cash-flow rights in the hands of the family shareholder.⁹ Third, we examine how families control their business, namely whether the control is achieved directly by family shareholders or indirectly via another

⁸ This figure is comparable to that in Faccio and Lang (2002) who find that 60% of listed firms in Italy are controlled by families.

⁹ The fraction amounts to 7.5% for nonfamily firms. Therefore, our data are consistent with Villalonga and Amit (2009) which shows that US family firms have a stronger tendency to adopt control-enhancing mechanisms.

Table 1

Sample composition

Panel A of this table shows the frequency of family and nonfamily firms (identified depending on whether a family has at least 25% of a firm's equity). Panel B focuses on the subsample of family firms and shows the frequency of a number of ownership and governance arrangements. First, it distinguishes between family firms with and without a large nonfamily shareholder (i.e. with at least 15% of equity shares). Second, it distinguishes between family firms with and without shares allowing them to obtain voting rights above cash-flow rights. Third, it distinguishes between family firms controlled by the family indirectly (i.e. through another firm) and those with direct family control. Fourth, it distinguishes between family firms with one family member and those with multiple family members in the firm's ownership. Fifth, it distinguishes between family firms with a family CEO and a nonfamily CEO. Sixth, it distinguishes 1st generation family firms (i.e. with the founder sitting as CEO or board chairman) and second/later generation family firms.

Panel A. Ownership type:		
Family firm	236	66%
Nonfamily firm	120	34%
All	356	
Panel B. Ownership and governance of family firms		
Presence of large minority shareholder: No	196	83%
Presence of large minority shareholder: Yes	40	17%
Cash-flow/voting right wedge: No	189	80%
Cash-flow/voting right wedge: Yes	47	20%
Family direct control: No	134	57%
Family direct control: Yes	102	43%
Multiple family members: No	172	73%
Multiple family members: Yes	64	27%
Family CEO: No	121	51%
Family CEO: Yes	115	49%
Generation: First	120	51%
Generation: Second /Later	116	49%

Table 2

Industry distribution

This table shows the distribution of family and nonfamily firms across the five most represented industries.

	Family firms	Nonfamily firms
Manufacturing	113 [48%]	17 [14%]
Information and communication	24 [11%]	13 [10%]
Wholesale/retail trade	17 [7%]	5 [4%]
Financial and insurance	22 [8%]	40 [36%]
Real estate	7 [3%]	5 [4%]
Other	55 [23%]	38 [32%]
All	236	120

company or holding firm. Direct control is found in 43% of family firms in our sample. Moreover, our data show that 27% of family firms have multiple family members in the firm's equity. Finally, we find that almost half of the family businesses in our sample are led by a family CEO, and half of them are 1st generation firms (i.e. the company founder serves as CEO or board chairman). In the empirical analysis, we will show that some of these variables represent an important source of heterogeneity of our results.

Table 2 illustrates the distribution of family and nonfamily firms across industries. As shown, and consistent with existing insights, family firms are more common in manufacturing, and less in the financial and insurance industry. Covid-19 had a different impact on stock market performance across industries: manufacturing and wholesale/retail trade industries were the worst performers, possibly owing to the difficulty to comply with lockdown policies and value-chain disruptions. Our data also reveal that family firms are more common in labor-intensive industries, and that Covid-19 had

a stronger impact on those industries (though the statistical significance is weak). These results underlie the importance of controlling for industry effects. We will do so by including industry dummies in our baseline specification. Moreover, in additional checks we will: (1) use matching to create pairs of observationally similar family and nonfamily firms within the same industry, (2) remove firms in the manufacturing industry (so as to show that the results are not driven solely by family manufacturers), and (3) include firm fixed effects in the panel analysis (thereby removing all sources of firm-level heterogeneity).

In order to reduce the spread of Covid-19, the Italian government passed a decree which allowed to carry out only business activities classified as "essential" and low-risk. The first list of such activities was published in late-March and included 89 ATECO codes (the Italian equivalent of NACE classification). A revised – more comprehensive – list including 129 ATECO codes was issued in mid-April. One may wonder whether family firms are more common in industries that were allowed to operate during the lockdown. While, as anticipated above, we will control for industry effects (and thus essentially compare family and nonfamily firms within the same industry), we verify that this is not the case. In our sample, the fraction of firms in ATECO codes allowed to operate in late-March was 61%, and nonfamily firms were actually more represented than family firms in those codes (75% vs. 52%). As an alternative test, we collected text-based data (from online newspapers, quarterly reports and corporate websites) to identify whether a given company was forced to shut down operations during the lockdown period. We were able to find this information for 316 out of the 356 companies. Of those, 44 firms reported a complete interruption of their activities for some period of time, and 133 reported a partial interruption. Family and nonfamily firms are equally represented in these two groups.

Using accounting data, we construct the following variables: (1) the logarithm of the book value of total assets as proxy for firm size; (2) the logarithm of firm age to capture differences in the firm's stage of development; (3) the ratio of the book value of debt to the book value of total assets to control for differences in firms' capital structure; (4) a measure of accounting profitability, computed as net profits divided by the book value of assets (ratio winsorized at 1% of each tail); and (5) the ratio of cash and equivalent securities to the book value of assets to control for the role of liquid holdings. Moreover, we construct a number of variables which capture governance attributes related to the board of directors. Specifically, we compute: (1) the logarithm of the total number of directors to measure board size; (2) the share of independent directors to all directors, which captures the degree of independence in the board; (3) a dummy equal to one if at least one director has been appointed by minority shareholders, which captures the direct representativeness of minorities in the board; and (4) a dummy equal to one if at least one director sits in the board of any another listed firm in Italy, which proxies for directors' busyness. Both accounting and governance variables, which will be used as controls in the empirical analysis, are computed using the pre-Covid values of 2019 (or the last year available when the information for 2019 is missing).

Summary statistics are reported in Table 3, Panel A, whereas in Panel B we report *t*-test comparisons of the (industry-adjusted) differences between family and nonfamily firms. Industry-adjustments are made by subtracting the industry average from firms' values. Results indicate that family firms are significantly smaller than nonfamily firms. By contrast, capital structure, age, and accounting performance do not exhibit significant differences across the two groups. Looking at board characteristics, we find that family firms have boards which are smaller, less independent and with a less direct representation of minorities. In Panel C of Table 3, we show the univariate comparison of average CARs

Table 3

Descriptive statistics

This table shows summary statistics for the key variables used in the analysis. The sample includes Italian listed firms with accounting data in Orbis. Cumulative abnormal returns (CARs) represent the sum of the abnormal returns, computed as the difference between the daily logarithm return of a stock and the CAPM beta times the daily logarithm market returns from January to April 30th, 2020 (in the first row) and from January to December 31st (in the second row). CAPM betas are estimated using daily returns from January 2017 to December 2019, using the FTSE-All Shares as market index. Ln (Assets) is the natural logarithm of the book value of total assets. Debt/Assets is the ratio of debt to total assets. Ln (Firm age) is the natural logarithm of the number of years since a firm's establishment. ROA is the ratio of net profits to book value of assets (winsorized 1% in each tail). Cash/Assets is the ratio between a firm's cash and equivalent securities to total assets. Independent directors (%) is the share of independent directors to the total number of directors. Minority representation is a dummy having value 1 if at least one director has been appointed directly by minority shareholders; 0 elsewhere. Ln (Directors) is the natural logarithm of the number of directors. Busy Directors is a dummy having value 1 if at least one director sits in the board of at least another listed firm; 0 elsewhere. In Panel B and C, we compare family and nonfamily firms after subtracting from firms' values the industry average (computed using 3-digit NACE dummies or 2 digit if we have fewer than 5 firms in a given 3-digit NACE). With the exception of CARs, all variables refer to the pre-pandemic year of 2019 (or the last year available if the information was missing for 2019).

Panel A. Summary statistics						
	Firms	Mean	sd.	p25	Median	p75
CARs Jan-Apr 2020	356	-7.350	24.242	-21.295	-8.084	5.394
CARs Jan-Dec 2020	356	-8.000	45.646	-29.442	-10.235	12.072
Ln (Assets)	356	12.63	2.596	10.698	12.355	14.154
Debt/Assets	356	0.641	0.273	0.492	0.643	0.799
Ln (Firm age)	356	3.190	0.934	2.708	3.258	3.761
ROA	356	-0.008	0.138	-0.004	0.017	0.046
Cash/Assets	356	0.129	0.153	0.040	0.090	0.167
Independent directors (%)	356	0.393	0.224	0.200	0.400	0.556
Minority representation	356	0.374	0.484	0	0	1
Ln (Directors)	356	2.071	0.410	1.792	2.197	2.398
Busy directors	356	0.823	0.389	1	1	1

Panel B. Average industry-adjusted differences			
	Family firm	Nonfamily firm	Difference Family - Nonfamily
Ln (Assets)	-0.228	0.449	-0.678*** (0.212)
Debt/Assets	0.009	-0.020	0.029 (0.025)
Ln (Firm age)	0.041	-0.081	0.122 (0.078)
ROA	0.001	-0.001	0.002 (0.001)
Cash/Assets	0.004	-0.010	0.014 (0.014)
Independent directors (%)	-0.017	0.033	-0.050** (0.021)
Minority representation	-0.035	0.068	-0.103** (0.047)
Ln (Directors)	-0.027	0.053	-0.080** (0.036)
Busy directors	0.004	-0.007	0.0011 (0.039)

Panel C. Average industry-adjusted performance			
	Family firm	Nonfamily firm	Difference Family - Nonfamily
CARs Jan-Apr 2020	1.632	-3.209	4.841** (2.285)
CARs Jan-Dec 2020	3.602	-7.084	10.687** (4.356)

between family and nonfamily firms. As shown, family firms experienced a higher financial performance during the outbreak of the Covid-19 pandemic as well as over the full year of 2020.

3. Results

3.1. Cross-sectional analysis

We start by conducting a cross-sectional analysis of cumulative abnormal returns from early January to April 2020. In Panel A of Table 4, the key explanatory variable is a dummy equal to one for family firms, and zero otherwise. The specification in Column (1) only controls for industry effects (via 3-digit NACE dummies, or 2-digit NACE dummies if we have fewer than 5 firms in

a given 3-digit NACE), a dummy for whether the stock belongs to the segment dedicated to small and fast-growing firms (Alternative Investment Market), and a set of dummies for the region of firms' headquarter to remove geographic heterogeneity (arising, for instance, from the fact that the virus spread more aggressively in some regions than others). Results indicate that family firms exhibit higher returns by 8.5%, on average. The effect remains significant to sequentially controlling for firms' accounting characteristics, as shown in Columns (2)-(6), as well as board characteristics (Column 7). In Column (8), following Fahlenbrach et al. (2021), we also test the robustness to controlling for debt maturity and financial flexibility. More specifically, we replace the debt ratio with: (1) Short-term debt to assets, computed as the short-term debt in excess of cash scaled by firm assets, and (2) Long-term debt to assets,

Table 4

CAR analysis This table shows the results of OLS regressions in which the dependent variable is the cumulative abnormal returns (CARs). In Panel A, CARs are computed in the period from January to April 30th 2020, whereas in Panel B CARs are computed over the entire year of 2020. The main explanatory variable is the Family firm dummy. The specification in Column (1) only controls for industry heterogeneity (via 3-digit NACE dummies or 2 digit if we have fewer than 5 firms in a given 3-digit NACE), a dummy for whether or not the stock belongs to the Alternative Investment Market segment, and a set of dummies for the region of firm's headquarter. We sequentially control for the natural logarithm of the book value of total assets (Column 2), the ratio of debt to total assets ratio (Column 3), the natural logarithm of firm age (Column 4), the net profits divided by the book value of equity (winsorized 1% in each tail) (Column 5), and the ratio between a firm's cash and equivalent securities to total assets (Column 6). In Column (7) we control for the characteristics of the board of directors via the share of independent directors, a dummy equal to 1 if at least one of the directors has been elected by minority shareholders; 0 elsewhere, the natural logarithm of the number of directors, and a dummy equal to 1 if at least one of the members of the board sits in the board of any another listed firm; 0 elsewhere. In Column (8) we replace the ratio of debt to total assets ratio with (1) the firm's short term debt (minus cash and equivalents), and long term debt, both scaled by total assets. As data on short- and long-term debt is not available for banks and insurance companies, in Column (8) we dropped them. Finally, in Column (9) we re-estimate Column (7) excluding manufacturing companies. The numbers in parentheses are robust standard errors. *, **, *** denote significance at (respectively) the 10%, 5%, and 1% level.

Panel A. Dependent variable: CARs Jan-Apr 2020									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Family firm	8.561** (3.823)	8.343** (3.752)	8.435** (3.800)	8.694** (3.814)	7.934** (3.755)	7.611** (3.847)	7.638** (3.850)	10.640** (4.146)	8.143* (4.497)
Ln (Assets)		-0.300 (0.882)	-0.286 (0.891)	-0.288 (0.889)	-0.860 (0.995)	-0.856 (0.995)	-0.388 (1.081)	-0.123 (1.189)	-1.014 (1.286)
Debt/Assets			-1.330 (4.990)	-1.101 (5.101)	1.590 (5.162)	3.226 (5.924)	1.200 (5.766)		3.508 (6.391)
Ln (Firm age)				-0.912 (1.912)	-1.136 (1.890)	-1.074 (1.910)	-0.928 (1.957)	-1.411 (2.156)	-1.883 (2.479)
ROA					18.522 (13.760)	20.133 (14.265)	22.519 (14.239)	19.302 (14.448)	30.053* (16.513)
Cash/Assets						7.627 (11.117)	7.115 (11.468)	3.473 (15.488)	2.439 (12.417)
Independent directors (%)							8.182 (9.016)	10.978 (9.922)	10.409 (12.726)
Minority representation							0.669 (3.418)	2.549 (3.605)	0.346 (4.492)
Ln (Directors)							-10.586* (5.381)	-12.254** (5.674)	-12.390* (7.066)
Busy directors							-1.309 (4.225)	-1.811 (4.605)	-0.534 (5.276)
Short-term debt/Assets								-1.545 (6.613)	
Long-term debt/Assets								-12.146 (13.459)	
Manufacturing firms Segment dummy	In Yes	In Yes	In Yes	In Yes	In Yes	In Yes	In Yes	In Yes	Out Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R ²	0.110	0.107	0.103	0.101	0.106	0.104	0.109	0.129	0.171
Observations	356	356	356	356	356	356	356	327	226

Panel B. Dependent variable: CARs Jan-Dec 2020									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Family firm	20.204*** (7.170)	22.662*** (7.193)	24.601*** (7.181)	26.241*** (7.385)	23.537*** (7.141)	21.671*** (7.538)	21.137*** (7.593)	27.681*** (8.726)	23.482** (10.038)
Ln (Assets)		3.377** (1.456)	3.662** (1.464)	3.653** (1.440)	1.620 (1.684)	1.644 (1.644)	2.146 (1.762)	2.201 (2.008)	-0.665 (2.178)
Debt/Assets			-28.228** (10.893)	-26.782** (10.782)	-17.217 (11.785)	-7.751 (11.549)	-7.984 (11.709)		8.153 (14.170)
Ln (Firm age)				-5.756 (3.552)	-6.552* (3.443)	-6.197* (3.432)	-5.980* (3.446)	-6.554 (3.996)	-9.271** (4.609)
ROA					65.841** (30.378)	75.160** (29.544)	71.638** (29.804)	61.733** (30.825)	100.310** (38.900)
Cash/Assets						44.125 (29.900)	44.137 (29.955)	15.541 (39.371)	41.985 (38.308)
Independent directors (%)							-12.365 (16.140)	-15.023 (20.390)	1.650 (22.284)
Minority representation							-1.985 (6.148)	2.929 (6.950)	-0.272 (8.706)
Ln (Directors)							-0.289 (11.182)	-1.852 (11.875)	-0.015 (14.813)
Busy directors							2.754 (7.025)	3.255 (7.811)	-3.186 (9.656)
Short-term debt/Assets								-20.449 (23.440)	
Long-term debt/Assets								-10.805 (23.440)	
Manufacturing firms Segment dummy	In Yes	In Yes	In Yes	In Yes	In Yes	In Yes	In Yes	In Yes	Out Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R ²	0.096	0.109	0.129	0.134	0.161	0.173	0.162	0.172	0.189
Observations	356	356	356	356	356	356	356	327	226

Table 5

Matching results

In this table we match family with nonfamily firms using exact matching on the industry (i.e. 3-digit NACE if we have at least 5 firms; 2-digit NACE otherwise) and nearest neighbor matching on the natural logarithm of firm assets. We use a 1:1 match without replacement. *, **, *** denote significance at (respectively) the 10%, 5%, and 1% level.

	Family firm	Nonfamily firm	Difference Family - Nonfamily
CARS _{Jan-Dec 2020}	6.059	-13.075	19.134** (9.029)

computed as the long-term debt scaled by firm assets.¹⁰ Finally, to ease concerns that our results are driven by the large number of family firms in the manufacturing industry, we drop manufacturers from the analysis; as shown in Column (9), our results are robust to this exclusion.

In Panel B of the table, we present the results obtained using as dependent variable the cumulative abnormal returns computed over the entire year of 2020. The specifications are the same of those employed in Panel A. As shown, our results become generally stronger in both economic magnitude (reaching a 20% improvement in the full specification) and statistical precision.¹¹ This evidence indicates that family firms outperformed other companies not only in the spring outbreak but also during the entire course of the pandemic. Looking at the coefficients of the control variables, we find that larger, younger and less indebted firms performed generally better (though these results are not robust across the different specifications).

To further validate our main finding so far, we adopt a matching approach. In particular, we match each family firm with the most similar nonfamily firm operating in the same industry (3-digit NACE if we have at least 5 firms in the 3-digit NACE; 2-digit otherwise) and nearest-neighbor in terms of total assets. Results in Table 5 confirm that family firms experienced higher returns by 19% (a magnitude similar to the one reported in Table 4, Panel B).¹²

In Column (1) of Table 6 we show the robustness to using a 30% equity threshold (rather than 25%) to classify family firms, whereas in Column (2) we show the robustness to using the continuous share of family ownership (ranged from 0 to 1).

An important question is whether the better performance during Covid-19 is specific to family control or whether it would arise from the presence of *any* dominant shareholder (as opposed to being a widely-held firm). We tackle this question in Column (3) of Table 6, where we replace the family-nonfamily firm dummy with a set of variables identifying different types of dominant owners (again identified using the 25% threshold): families, state, financial institutions (like banks, investment funds etc.), and foreign companies. The baseline group includes widely-held firms, firms held by coalitions of investors (without family ties), and other residual categories (e.g. cooperatives). Consistent with our previous results, the family firm coefficient is positive and significant at the 5% level. By contrast, the coefficients of the other types of controlling owners are insignificant. Collectively, this evidence suggests that the ability to outperform during the Covid-19 pandemic was specific to family ownership.

¹⁰ As the data on debt maturity is not available for banks and insurance firms, we drop them from the analysis.

¹¹ Results of Table 4 are robust to additional tests such as: (1) winsorizing 1% of observations in the left and right tail of the return distribution to alleviate concerns of outliers; (2) controlling for industry effects using always the 3-digits NACE (or always the 2-digits NACE); (3) removing the dummy identifying firms listed in the Alternative Investment Market; and (4) controlling for firms' internationalization by means of the ratio of domestic sales over total sales.

¹² This result is robust to using the full set of explanatory variables in Table 4 to match family and nonfamily firms.

Table 6

Cross-sectional regression of returns by ownership type

This table shows the results of OLS regressions in which the dependent variable is the cumulative abnormal returns in the period January-December 2020. In Column (1), the main explanatory variable is a family firm dummy constructed using the 30% threshold (rather than 25%). In Column (2), the main explanatory variable is the continuous share of equity owned by the family (from 0 to 1). In Column (3), the main explanatory variable is a set of dummies corresponding to the different types of controlling owners: families, state, financial entities (banks, investment funds) and foreign companies (all identified using the 25% threshold). The baseline group is given by widely-held firms, firms controlled by coalitions of different investors, and other ownership categories (e.g. cooperatives). The specification includes all controls of Table 4, Column (7). The numbers in parentheses are robust standard errors. *, **, *** denote significance at (respectively) the 10%, 5%, and 1% level.

Dependent variable: CARS _{Jan-Dec 2020}			
	(1)	(2)	(3)
Family firm	15.122** (6.729)	24.275** (10.490)	20.336** (8.396)
State-controlled firm			-15.403 (17.363)
Firm controlled by financial company			12.827 (11.223)
Firm controlled by foreign company			-6.655 (12.448)
Controls	Yes	Yes	Yes
Segment dummy	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
Region dummies	Yes	Yes	Yes
Adjusted R ²	0.148	0.147	0.162
Observations	356	356	356

3.2. Heterogeneity of cross-sectional returns

So far, we have shown that family firms outperformed nonfamily firms during the pandemic year of 2020. In this section, we parse the heterogeneity behind this average result by probing into the ownership and governance attributes which we described in Table 1. We do so by replacing the family business dummy with a set of dummies distinguishing family firms with different ownership or governance attributes (and compare them with nonfamily firms, which are used as baseline group). The rest of the specification is identical to the one used in Table 4.

We start by distinguishing between family businesses with and without large minority investor(s) in the firm's equity. The effect of large minority investor(s) on firm performance during a pandemic is theoretically ambiguous. On the one hand, firms with both a family dominant shareholder *and* a relevant nonfamily investor may benefit from blockholder complementarities and enhanced monitoring. On the other, family owners at these firms may experience less latitude in decision-making and more principal-principal agency conflicts (as compared to family firms without nonfamily blockholders); these features may impair the ability of families to react to protect the family business in the wake of the shock. The analysis in Column (1) of Table 7 indicates that the family businesses best equipped to respond to the pandemic were those *without* large nonfamily investor(s). This finding has been derived using a 15% equity threshold. Results hold, and become generally stronger, if we use a 20% threshold, while they become weaker if we use a lower threshold (e.g. 10% or below). Hence, it seems that the presence of relevant minority shareholders dilute the positive effect of family control on firm' performance during Covid-19.

Next, we study the heterogeneity depending on whether or not the firm has issued shares that amplify families' voting rights above and beyond cash-flow rights. The agency costs of dual class shares have been extensively documented (e.g., Masulis et al., 2009). Yet, recent evidence (Kim and Michaely, 2019) suggests that

Table 7

Cross-sectional regression of returns: Heterogeneity

This table shows the results of OLS regressions in which the dependent variable is the cumulative abnormal returns in the period January–December 2020. The main explanatory variables are: in Column (1), two dummies corresponding to family firms with or without a large minority shareholder (i.e. with an equity stake equal to at least 15%); in Column (2), two dummies corresponding to family firms with voting rights above cash-flow rights; in Column (3), two dummies corresponding to family firms controlled by the family indirectly (through a holding) or directly; in Column (4), two dummies corresponding to family firms with one or multiple family members as shareholder; in Column (5), two dummies corresponding to family firms with a family or nonfamily CEO; in Column (6), two dummies corresponding to first (or subsequent) generation family firms (i.e. with or without a founder in CEO or chairman position); in Column (7), two dummies corresponding to family firms in industries with low or high labor intensity (i.e. below or above the median threshold of the industry ratio of employees to physical capital). In all columns the reference category is represented by nonfamily firms. Each specification includes all controls of Table 4, Column (7). Robust standard errors are reported in parenthesis. *, **, *** denote significance at (respectively) the 10%, 5%, and 1% level.

Dependent variable: CARs _{Jan-Dec 2020}							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Family firm with large minority shareholders	17.717 (11.376)						
Family firm without large minority shareholders	21.876*** (7.689)						
Family firm without cash-flow/voting right wedge		20.854*** (7.746)					
Family firm with cash-flow/voting right wedge		22.367** (9.682)					
Family firm with indirect control			18.430** (7.564)				
Family firm with direct control			25.075*** (9.454)				
Family firm with single family shareholder				19.300** (7.745)			
Family firm with multiple family shareholders				27.614*** (10.021)			
Family firm led by professional CEO					20.342** (8.421)		
Family firm led by family CEO					21.818** (8.694)		
First-generation family firm						21.174** (8.221)	
Second/later generation family firm						22.030*** (8.298)	
<i>Continue in the next table</i>							
Family firm in low labor intensity industry							18.292* (9.826)
Family firm in high labor intensity industry							23.705*** (7.654)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Segment dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R ²	0.160	0.159	0.162	0.163	0.159	0.160	0.161
Observations	356	356	356	356	356	356	356

dual class shares may provide some benefits to founder-led firms in terms of protection from capital market pressures. Our analysis in Column (2) shows that family firms outperformed nonfamily firms regardless of the presence or absence of dual class shares.

Moving on, we analyze different structures of family ownership, namely whether the family exercises *direct* control over the business (as opposite to indirect control via another company or holding) and whether there are multiple family members involved in the firm's equity (as opposite to one). Results in Columns (3) and (4) indicate that while family firms performed systematically better than nonfamily firms, the overperformance is economically larger when the family controls the business directly and when multiple family members hold equity shares. This heterogeneity suggests that a more direct and articulated control amplifies the benefits that families provide to their businesses during a pandemic.

Moving to the firm's leadership, we analyze the role of the CEO at the helm of the family business. Whether the business is led by a family member or a professional CEO constitutes a key source of heterogeneity in firm performance as well as in the qual-

ity of stakeholder relationships (Bach and Serrano Velarde, 2015; Mullins and Schoar, 2016). Column (5) shows that family firms performed better than nonfamily firms regardless of the identity of the CEO. Hence, our evidence suggests that family-led firms are *not* worse-equipped to overcome the pandemic. Existing works show that family firms tend to underperform when the CEO position is transferred to a family member rather than a nonfamily manager (Bennedsen et al., 2007; Cucculelli and Micucci, 2008; Perez-Gonzales, 2006). To the contrary, our findings indicate that the specific context of a pandemic can make family CEOs particularly valuable. So, our results complement the evidence in Thesmar and Sraer (2007) showing that family firms outperform nonfamily firms regardless of the CEO's identity.

Another well-known source of heterogeneity in firm performance is given by whether or not the company founder serves as top executive (Villalonga and Amit, 2006). Accordingly, in Column (6) we distinguish between family firms in which the founder holds the CEO or chairman position (1st generation firms), and family firms in which the founder does not hold such roles (2nd or later-generation family firms). Results show that 1st and 2nd or

Table 8

Difference-in-differences results

This table shows the results of a difference-in-differences estimation of daily abnormal returns from the beginning of January to end-December 2020. The Covid-19 variable captures the time period from February 24th to April 30th 2020, 2 the time period from May 3rd to October 25th, and the period from October 26th to December 31st. The baseline is the time period from early January to February 24th. In Column (2) we include firm fixed effects (thus dropping the Family firm dummy which does not change within the time-frame considered). In Column (3), we include day fixed effects (dropping the Covid-19 variable). Standard errors (in parentheses) are clustered by firms in Columns (1) to (3), and by firms and days in Column (4). *, **, and *** denote significance at (respectively) the 10%, 5% and 1% level.

Dependent variable: Daily abnormal returns				
	(1)	(2)	(3)	(4)
Covid-19: Spring wave	-0.151*** (0.048)	-0.150*** (0.048)		
Covid-19: Summer wave	-0.076* (0.041)	-0.074* (0.041)		
Covid-19: Fall wave	0.113** (0.047)	0.115** (0.048)		
Family firm	-0.091** (0.043)			
Covid-19: Spring wave×Family firm	0.156** (0.063)	0.154** (0.064)	0.159** (0.064)	0.159* (0.088)
Covid-19: Summer wave×Family firm	0.103** (0.050)	0.100** (0.050)	0.103** (0.050)	0.103** (0.049)
Covid-19: Fall wave×Family firm	0.173*** (0.062)	0.171*** (0.063)	0.173*** (0.063)	0.173** (0.073)
Firm fixed effects	No	Yes	Yes	Yes
Day fixed effects	No	No	Yes	Yes
Standard error clustering	Firm	Firm	Firm	Firm-day
Adjusted R ²	0.001	0.002	0.020	0.020
Observations	89,831	89,831	89,831	89,831

later-generation family firms performed quite similarly during the Covid-19 pandemic.

Finally, we examine a dimension of industry heterogeneity such as the reliance on labor resources. Extant research shows that a long time horizon in decision-making renders family firms better able than other businesses to enforce implicit contracts with employees and other stakeholders. As a result, family firms benefit from a greater commitment from their workforce and thus achieve a more efficient use of labor resources (Sraer and Thesmar, 2007). To explore the labor channel, we estimate the performance effect of family control separately for high and low labor-intensity industries (using nonfamily firms as reference group). If family firms' competitive edge derives from a better ability to manage the workforce during the pandemic, the performance gap vis a vis nonfamily firms should be larger when business activities rely more heavily on labor inputs. We measure industry labor intensity as of 2019 by means of the ratio of employees to physical capital computed using all firms in Italy with revenues above 20 million Eur as reported in AIDA (Bureau Van Dijk). Results in Column (7) indicate that family firms outperform significantly more in labor intensive industries. We will go back to the labor channel in the last part of the paper – where we will take advantage of annual accounting data to study whether family and nonfamily firms implemented different corporate policies during the pandemic.

3.3. Difference-in-differences analysis

In this section, we provide evidence from an alternative estimation strategy based on daily stock returns. In particular, we use daily abnormal returns from January 1st to December 31st 2020, and exploit the longitudinal variation by means of a set of time-windows capturing: (1) the spring outbreak of Covid-19, from February 24th (i.e. when the virus started to spread across the Italian territory and the lockdown measures went into effect) until April 30th (i.e. when the restrictions on business activities were lifted); (2) the summer period, from early May to October 26th

(i.e. when the new policy restrictions went into effect); and (3) the fall wave, from October 27th until the last trading day of 2020. The baseline group is given by the pre-Covid period from the first trading day of January 2020 to February 23rd. Interacting these time-windows with the family firm dummy yields a difference-in-differences model which is useful to account for common effects as well as to remove unobserved heterogeneity via firm fixed effects.¹³

Results are reported in Table 8. In Column (1), we show the baseline results obtained by only including the Covid-19 dummies and their interaction with the family firm dummy, and clustering residuals by firm. Consistent with the descriptive evidence in Fig. 3, the spring outbreak dummy has a negative and significant coefficient, which indicates that stock returns fell sharply in the immediate aftermath of the Covid-19 surge. The coefficient of the summer dummy is negative too, albeit smaller, whereas the fall wave has a positive and significant coefficient, which denotes a stock market rebound that took place at the end of 2020. The main result for us comes from the interactions between these variables and the family firm dummy which, as shown, have all positive and significant coefficients. This evidence suggests that family firms fared better than nonfamily firms during the surge of Covid-19 and throughout the entire pandemic year. In economic magnitude, family firms outperformed nonfamily firms by 16% in the spring wave, 10% during the summer, and 17% in the fall wave.

These findings are confirmed in Column (2) where we control for firm fixed effects (and thus omit the family firm dummy, which does not change within the time-frame considered) as well as in Column (3) where we further control for day fixed effects (and

¹³ Using daily returns in a difference-in-differences model is also consistent with existing works on Covid-19 (e.g. Albuquerque et al. 2020).

Table 9

Performance trends before Covid-19
This table shows the results of a difference-in-differences estimation of daily abnormal returns from the beginning of January to February 23rd 2020. Covid-19: Placebo is a dummy variable equals to 1 for the time period from January 29th to February 23rd 2020, and 0 before this period. The specification also includes firm fixed effects, and day fixed effects. Standard errors (in parentheses) are clustered by firms and days. *, **, and *** denote significance at (respectively) the 10%, 5% and 1% level.

Dependent variable: Daily abnormal returns	
	(1)
Covid-19: Placebo×Family firm	-0.094 (0.086)
Firm fixed effects	Yes
Day fixed effects	Yes
Standard error clustering	Firm-day
Adjusted R ²	0.022
Observations	13,182

Table 10

Abnormal returns and diffusion of Covid-19
This table shows the results of regressing the daily abnormal returns on the logarithm of one plus the number people that tested positive to the Covid-19 in the province where the firm is headquartered (per 1000 inhabitants) in a given day, and its interaction with the family firm dummy. All the specifications include firm and day fixed effects. Standard errors (in parentheses) are clustered by firms (Columns 1) and firms and days (Columns 2). Columns 3 and 4 replicate the analyses of Columns 1 and 2 restricting the period of observation to the first wave (i.e. until April 30th). *, **, and *** denote significance at (respectively) the 10%, 5% and 1% level.

Dependent variable: Daily abnormal returns				
	(1)	(2)	(3)	(4)
Ln (Cases per inhabitants)	-0.078*	-0.078*	-0.213**	-0.213*
	(0.040)	(0.046)	(0.101)	(0.118)
Ln (Cases per inhabitants) ×Family firm	0.050***	0.050**	0.220***	0.220***
	(0.018)	(0.025)	(0.060)	(0.073)
Firm fixed effects	Yes	Yes	Yes	Yes
Day fixed effects	Yes	Yes	Yes	Yes
Standard error clustering	Firm	Firm-day	Firm	Firm-day
Adjusted R ²	0.045	0.045	0.063	0.063
Observations	84,670	84,670	27,721	27,721

thus omit the Covid dummies), and in Column (4) where we cluster residuals by firms and days.¹⁴

A key assumption behind our difference-in-differences analysis is that family and nonfamily firms did not exhibit diverging trends in stock returns prior to the diffusion of Covid-19. To assess its validity, we conduct the analysis from early January to February 23rd (i.e. the period during which the Post-Covid dummy employed in the previous analysis is equal to zero) and use a dummy equal to zero until January 28th, and equal to one from January 29th until February 23rd, 2020.¹⁵ We then interact this placebo Covid-19 outbreak with the family firm dummy. As shown in Table 9, the coefficient of the interaction term is not statistically different from zero. This non-result is useful to interpret causally our previous findings.

Recall that, especially in the first wave, Covid-19 spread quite heterogeneously across Italian territories: some cities in the north-eastern regions were much more severely affected than others, and

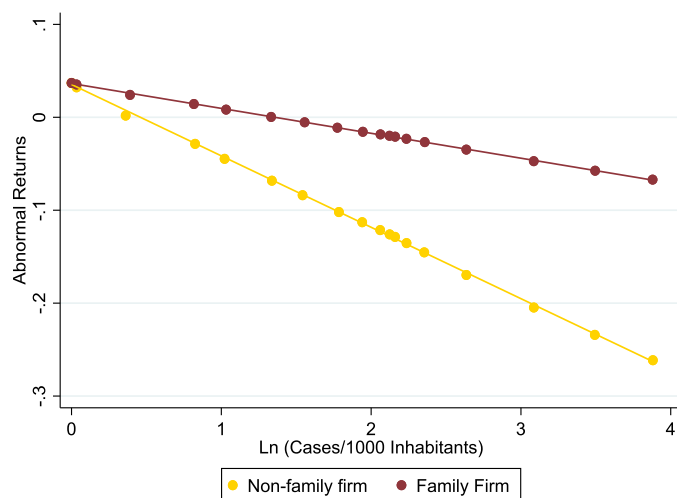


Fig. 4. Association between stock returns and Covid-19 diffusion.

generally, the north was more affected than other parts of Italy. Exploiting these geographic variations, we conduct a test in which we replace the Covid-19 time periods with the daily count of infections per thousand inhabitants in the province of corporate headquarter.¹⁶ Results in Column (1) of Table 10 show that the (time-varying) diffusion of Covid-19 had a negative effect on firms' stock returns, and that family firms were less severely affected. Again, this finding is robust to clustering residuals by firm and day (Column 2).

To ease the interpretation, we plot the estimated interaction coefficients from Column (2). As shown in Fig. 4, a higher number of Covid-19 cases per thousand inhabitants had a negative effect on the stock returns of firms in that province; however, family firms coped with this shock significantly better than nonfamily firms. In Columns (3) and (4) of Table 10, we replicate the analysis of Column (1) by focusing only on the first wave (i.e. until April 30th).¹⁷

3.3. Accounting profitability and other outcomes

We have so far employed stock returns to assess the market performance of family and nonfamily firms during the pandemic. Here, we move the focus to operating profitability and other accounting outcomes. To this end, we gather data from companies' annual reports and construct the ratio of net profits to total assets (ROA) which is commonly used in the literature on family firms' profitability. We then use ROA (winsorized at 1% in each tail) as dependent variable in a cross-sectional regression similar to the one estimated in Table 4, Column (7). In line with our earlier findings, results in Column (1) of Table 11 indicate that family firms experienced a 5% higher ROA during 2020. This result is robust to controlling for 1-year lagged ROA (Column 2) as well as to use the annual change in ROA from 2019 to 2020 (Column 3).

To understand the drivers of such higher profitability, we decompose ROA into: (1) net profits over sales (winsorized at the 1% of each tail); and (2) the logarithm of sales over assets, and use them as alternative dependent variables. As shown in Columns (4)-(5) of Table 11, family firms exhibited a higher ability to generate revenues out of the asset base during the Covid-19 pandemic. In

¹⁴ In untabulated results, we employed as dependent variables trading volumes and risk (computed as the volatility of daily stock returns, or the price range of a stock within a given day). These analyses did not reveal any significant result.

¹⁵ Partitioning the sample in this way we have roughly the same number of observations for which the Placebo-Covid dummy is equal to zero and one.

¹⁶ Data come from the Department of Civil Protection: <https://raw.githubusercontent.com/pcm-dpc/COVID-19/master/dati-province/dpc-covid19-ita-province.csv>

¹⁷ A possible limitation of Table 10 arises from the fact that large firms might have plants outside of the city of headquarter. That said, shocks in the location of firms' headquarter are certainly relevant for investors. This is what our analysis captures.

Table 11

Accounting profitability, revenues and labor productivity

This table shows the results of OLS regressions obtained using a number of dependent variables related to accounting performance (in the pandemic year of 2020). In Columns (1) and (2) the dependent variable is the ROA (winsorized at 1% in each tail). In Column (1) we use all the controls used in Table 4 Column (7) (except the 1-year lagged ROA), whereas in Column (2) we also include the 1-year lagged ROA as control. In Column (3) we run the same regression of Column (2) but use as dependent variable the annual change in the firm's ROA between 2019 and 2020. In Column (4) the dependent variable is the ratio between a firm's net profits and its sales (winsorized 1% in each tail), whereas in Column (5) is the natural logarithm of the ratio between a firm's sales and its assets. In Column (6) the dependent variable is the growth of revenues (in percentage) between 2019 and 2020 (winsorized at 1% in each tail). In Column (7) the dependent variable is the value added per employee computed as the ratio between the value added and the number of employees (winsorized 1% in each tail). In Column (8) the dependent variable is the annual change of the value added per employee between 2019 and 2020. Columns 4–8 include the same control variables of the baseline specification in Column (1). The numbers in parentheses are robust standard errors. *, **, and *** denote significance at (respectively) the 10%, 5% and 1% level.

Dependent variable:	ROA (1)	ROA (2)	Δ ROA (3)	Profits/Sales (4)	Sales/Assets (5)	Revenues growth (6)	Labor productivity (7)	Δ Labor productivity (8)
Family firm	0.053*** (0.018)	0.036** (0.014)	0.040*** (0.015)	0.305* (0.175)	0.386** (0.190)	0.111** (0.052)	69.131* (39.321)	75.441* (42.660)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Segment dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R ²	0.331	0.657	0.406	0.070	0.566	0.155	0.795	0.560
Observations	292	292	292	294	292	294	222	222

untabulated analyses, we checked whether this result is explained by the fact that during the pandemic family firms experienced a reduction of assets (e.g., due to divestitures) for a given level of revenues, but found no evidence of this kind (i.e. the changes in the level of assets between family and nonfamily did not differ). Neither did we find differences in corporate financial policies (e.g., debt or cash holdings). Instead, the evidence indicates that family firms' revenues grew more than nonfamily firms during the Covid-19 pandemic. This result is shown in Column (6), in which the dependent variable is the percentage change in revenues from 2019 to 2020 (winsorized at 1% in each tail).

Our earlier analysis suggested that the outperformance of family firms was mainly present in labor-intensive industries. This evidence suggests that family firms may have exhibited a more productive use of labor during the pandemic. To further probe into this mechanism, we use as dependent variable the ratio of value-added, i.e. total sales minus non-labor costs of inputs, to employees (winsorized at 1% in each tail) as a proxy of labor productivity (Sraer and Thesmar 2007). As shown in Column (7), the labor productivity of family firms in 2020 was significantly higher than that of nonfamily firms. This result largely holds using the annual change in value added per employee (from 2019 to 2020), as shown in Column (8). Importantly, we do not find differences in the level of employment between family firms and nonfamily firms at the onset of the pandemic (untabulated). Hence, higher labor productivity of family firms is likely to stem from their superior ability to carry out work activities during the pandemic.

4. Conclusion

Covid-19 has been shaking up the business sector around the world. Which companies have proven more resilient to the pandemic? A vibrant research in this area has begun to explore firm-level factors related to financial strength and organizational climate, as well as industry characteristics like the reliance on labor versus capital inputs. Our work expands this line of inquiry by studying how the presence of families in ownership and leadership positions affected the financial performance of companies during the Covid-19 pandemic.

Some arguments in the literature suggest that family firms are better positioned to overcome a pandemic. For instance, family owners' long horizons, reputational concerns and attachment to the firm may raise the motivation to keep the business afloat. Family ties can also facilitate the access to resources from banks and the political sector, and raise labor productivity thanks to implicit

contracting with employees. On the contrary, other works suggests that family owners may lack managerial capabilities to make complex organizational adjustments, or may engage in expropriation actions that are costly for external investors and will thus be factored in lower market value during hard times.

Using a sample of listed firms in Italy, we found that family firms fared significantly better than other firms during the Covid-19 pandemic. They experienced both higher daily stock returns and operating profitability, especially in the absence of relevant minority investors and with multiple family shareholders in the firm's equity. Moreover, family firms outperformed their nonfamily counterpart primarily in labor-intensive industries. Studying the mechanisms at play, our analysis further indicated that family firms exhibited a higher labor productivity and were better able to generate revenues out of their asset base.

Collectively, the findings of our study help to understand the heterogeneous propagation of exogenous shocks to the business landscape. Moreover, they complement the recent literature on the drivers of the ability to overcome extreme events such as natural disasters, financial crises and spikes in political uncertainty.

Credit author statement

Mario Daniele Amore: Conceptualization, Methodology, Writing, Editing. **Valerio Pelucco:** Data, Methodology, Software, Editing. **Fabio Quarato:** Data, Methodology, Software, Editing

Declaration of Competing Interest

None.

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