Questioni di Economia e Finanza

(Occasional Papers)

Ownership, governance, management and firm performance: evidence from Italian firms

by Audinga Baltrunaite, Sara Formai, Andrea Linarello and Sauro Mocetti

BANCA D'ITALIA

EUROSISTEMA

Questioni di Economia e Finanza

(Occasional Papers)

Ownership, governance, management and firm performance: evidence from Italian firms

by Audinga Baltrunaite, Sara Formai, Andrea Linarello and Sauro Mocetti

Number 678 – March 2022

The series Occasional Papers *presents studies and documents on issues pertaining to the institutional tasks of the Bank of Italy and the Eurosystem. The* Occasional Papers *appear alongside the* Working Papers *series which are specifically aimed at providing original contributions to economic research.*

The Occasional Papers *include studies conducted within the Bank of Italy, sometimes in cooperation with the Eurosystem or other institutions. The views expressed in the studies are those of the authors and do not involve the responsibility of the institutions to which they belong.*

The series is available online at www.bancaditalia.it .

OWNERSHIP, GOVERNANCE, MANAGEMENT AND FIRM PERFORMANCE: EVIDENCE FROM ITALIAN FIRMS

by Audinga Baltrunaite*, Sara Formai*, Andrea Linarello* and Sauro Mocetti*

Abstract

We explore the role of ownership, governance and management characteristics as potential drivers of the performance gaps between firms located in the Centre and North and in the South of Italy. First, we document that southern firms are characterized by more frequent family ownership and a higher fraction of local and family directors on the board. Moreover, entrepreneurs and managers of southern firms have lower education levels and are less inclined to adopt structured managerial practices and advanced technology. Second, we examine to what extent these differences account for the performance gap between the two areas. We find that managers' human capital explains one tenth of the difference in firm size, while family ownership accounts for one tenth of the differences in productivity. Although the analysis is purely descriptive, our findings suggest that ownership, governance and management play a significant role in explaining firm performance and account for a non-negligible fraction of the North-South divide.

Contents

* Bank of Italy, Economic Research and International Relations.

1. Introduction[1]

Output per worker varies enormously across countries (Hall and Jones, 1999) and within countries and, therefore, among firms subject to the same *de jure* institutions (Bloom and Van Reenen, 2007; Acemoglu and Dell, 2010). In Italy, for example, the value added per worker is 22 percent lower in the South with respect to the Centre-North.

Different factors – both internal and external to the firms – may account for differences in firm productivity. Concerning external factors, Bugamelli et al. (2018) argue that the inefficiency of the civil justice system, the presence of corruption and organized crime, and the general malfunctioning of the public administration are the main drags on productivity and GDP growth in Italy. There is abundant evidence that these *de facto* institutions matter (Acemoglu and Dell, 2010) and that the quality of the business environment is lower in the South of Italy. Internal factors may also play an important role. Ownership and governance structures significantly affect firm performance (Shleifer and Vishny, 1997). Moreover, several studies argue that productivity differences across firms largely reflect management quality (Bartelsman and Doms, 2000; Syverson, 2011; Gibbons and Henderson, 2012), both in terms of people who run the firm (Bertrand and Schoar, 2003) and practices adopted within it (Bloom et al., 2019).

This paper focuses on internal drivers of productivity and their role in explaining within country differences in firm performance in Italy. Namely, we address two research questions: are there geographical differences in terms of ownership, governance and management characteristics? To what extent do such (potential) differences explain the territorial divide in firm performance?

Aggregate data provides a partial answer to the first question. In 2018, 64 percent of Italian firms with at least 10 employees are family-owned. This figure is remarkable also among medium-sized and large firms (51 and 37 per cent, respectively) and it is significantly higher in the South of Italy (Figure 1a). Moreover, among family-firms, the fraction of non-family managers (i.e. managers hired from the market and/or promoted within the firm) is particularly low (3 per cent). There are again significant differences between the Centre North and the South, with the latter being less open to choosing non-family managers in medium-sized and large firms (Figure 1b).

In order to explore further ownership, governance and management characteristics, to assess whether such geographical differences remain after controlling for composition effects and to examine their relationship with firm performance, we exploit microdata on entrepreneurs, managers and firms. Namely, we use the Labour Force Survey (LFS) to identify who are entrepreneurs and managers in Italian firms and to measure their main sociodemographic characteristics (and, in particular, their education) and the size of the

firms they run. To investigate the role of firm-level characteristics, such as ownership, governance and management, we construct a novel database obtained from several data sources. Namely, we use the Survey of Industrial and Service Firms (*Invind*) conducted by the Bank of Italy that contains firm-level information on the main balance sheet indicators and, more importantly for our aim, that on the adoption of structured managerial practices, drawn from the Management and Organizational Practices Survey (MOPS) described in Bloom et al. (2019). Moreover, we enrich the dataset with detailed information on ownership (e.g., degree of concentration, the characteristics of the shareholders, etc.) and governance (e.g., degree of separation between ownership and management, the characteristics of the directors, etc.) drawn from Business Register administered by the Chambers of Commerce.[2]

Figure 1. Family firms and management selection

(a) Share of family-ownership	(b) Share of non-family managers
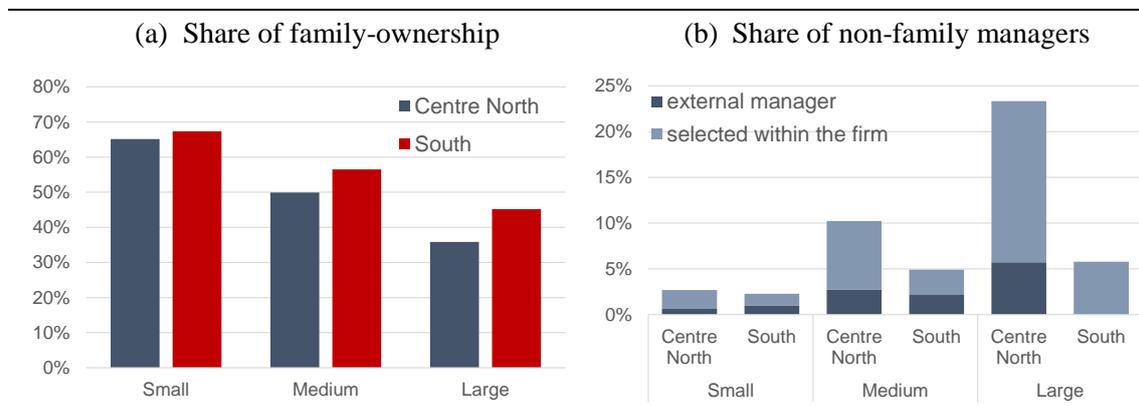
Figures refer to firms with at least 10 employees. Small firms are those with 10-49 employees, medium-sized firms are those with 50-249 employees while large firms are those with 250 employees or more.

Source: Istat, permanent census of enteprises, 2018.

Regarding the presence of geographical differences in terms of ownership, governance and management characteristics, several key differences stand out. First, entrepreneurs and managers in the South have significantly lower education, even when we account for sectoral composition of the local economy and other demographic variables. Moreover, among those with a college degree, the share of those with a background in economics or STEM is lower. The lower education level of entrepreneurs in the South mainly reflect a lower education level in overall employment, while that of managers also reflects a less effective selection process of the management. Second, the share of family-owned firms is significantly higher in the South; this is associated to a lower degree of separation between ownership and control and a higher share of local and

---

[2] The individual-level and the firm-level analyses are complementary. The former allows us to identify the main characteristics of entrepreneurs and managers; yet, the dataset lacks information on firm outcomes, except for plant size. The latter contains comprehensive data on firm characteristics and performance, but does not include information on crucial features of entrepreneurs and managers, such as their human capital.

family directors within the board. These findings are consistent with a different propensity in the two areas to hire external and professional managers. Finally, the degree of familism and localism (defined as either owners or directors living in the same province as the firm is located) also play a crucial role in determining the adoption of structured managerial practices and advanced technology – and, therefore, modern approaches to business activity – and the differences between the two areas on this respect.

Concerning the role of these factors in explaining the performance gap between the South and the Centre North, we detect the following main facts. First, entrepreneurs' and managers' human capital is positively and significantly associated to business size. Moreover, the managers' education explains one tenth of the difference in plant size between the two geographical areas while, in contrast, we do not detect a significant role of entrepreneurs' education level in determining such gap.[3] Second, family-owned firms are on average less productive; accounting for this characteristic in the analysis reduces the productivity gap between the Centre North and the South by one tenth. We obtain qualitatively similar results if we consider other governance characteristics that are strictly related to family ownership, such as the degree of overlap between ownership and management and the composition of the board (i.e., share of local and/or family directors).

In a nutshell, our findings show that family ownership explains a limited but not negligible part of the productivity differentials between the Centre North and the South and a crucial channel seems to be related to the selection of managers: in the South, they are less likely to be non-family members and they are, on average, less educated.

The rest of the paper is organized as follows. Section 2 reviews the related literature. Section 3 describes the data. Section 4 provides descriptive evidence on individual- and firm-level characteristics in terms of ownership, governance and management. Section 5 examines to what extent the South vs. Centre North divide of firm performance can be explained by such individual and firm characteristics. Section 6 concludes the paper.

2. Review of the literature

We review the literature distinguishing between individual-level (i.e., entrepreneurial and managerial) characteristics (Section 2.1) and firm-level (ownership, governance and management) characteristics (Section 2.2) and discussing why they are important for firm performance (and overall economic growth).

2.1. The individual characteristics of entrepreneurs and managers

---

[3] It is worth noting that we do not observe other entrepreneurs' characteristics – such as financial resources and personality traits (e.g. risk aversion, self-efficacy) – that arguably play a crucial role in business success.

Entrepreneurship is fundamental for economic growth: the choice of individuals to invest their resources in a new business lies at the heart of firms' formation. Since the work of Schumpeter (1934), entrepreneurs are portrayed as the «heroes of economic development», because they bring new goods and ideas to the market fostering growth and the process of creative destruction. Two central questions in the economic literature are therefore (*i*) who become entrepreneurs, and (*ii*) what are the characteristics of successful ones?

Some scholar argue that people choose to become entrepreneurs because of their personal traits (Kerr at al., 2017). First, entrepreneurs may have specific knowledge that allows them to perform well the tasks that are required to be successful entrepreneurs. Second, they may be endowed with high level of general human capital and a mixture of cognitive and non-cognitive traits. In sum, they likely possess unique talent that influences productivity and innovation (Lazear, 2004 and 2005).

The empirical evidence on these questions is rather scant, mainly because of lack of data. Personal traits such us risk aversion or self-efficacy, are difficult to measure and existing empirical studies are often limited in scale. Moreover, to meaningfully characterize the population of entrepreneurs with respect to that of employees, their personal characteristics should be measured before the self-selection into entrepreneurship. If these traits are observed only *ex post*, they are of little help in the longstanding debate on whether individuals choose to become entrepreneurs because they have some specific characteristic or because they acquire those characteristics after they start a business. Levine and Rubistein (2017) show that those who become entrepreneur had as teenagers distinct cognitive and non-cognitive traits, such as higher score in learning aptitude tests, greater self-esteem, stronger sentiments of controlling their future, and the propensity to engage in more illicit activities than others.

There is more evidence available on the education of entrepreneurs, one of the widely used proxies for human capital. Cabral and Mata (2003) show that the entrepreneur's level of education has an effect on firm size both at time of its creation and afterwards. Queiro (2021) find that entrepreneurial human capital is a key driver of firm dynamics: firms started by entrepreneurs with higher education are larger and exhibit faster growth. Consistent with an effect on growth, the thickness of the right tail of the size distribution increases with entrepreneur schooling. Concerning the mechanisms behind such effects, more educated entrepreneurs are more likely to innovate and adopt advanced technology (Queiro, 2021) and to hire college graduates, better assessing the quality of the universities of job applicants (Schivardi and Torrini, 2010). Michelacci and Schivardi (2020) find that in the US entrepreneurs are on average more educated compared to employees, particularly in terms of postgraduate education, and that they earn more than employees at each educational level, and that such difference increases

with education. Contrary to the US, Schivardi (2018) show that Italian entrepreneurs are on average less educated than employees.[4]

Managers also do play a crucial role within the firm: they are responsible for overseeing production and strategic decision-making, by shaping the organization of the production process and the policies implemented within the firm. Syverson (2011) describes managers as «conductors of an input orchestra»: if they poorly coordinate the application of labour, capital, and intermediate inputs this might significantly affect production outcomes. Indeed, Bertrand and Schoar (2003), Lazear et al. (2015) and Baltrunaite et al. (2021), among others, find evidence that specific CEOs and/or their characteristics matter for firm performance.[5]

However, neither theoretical nor empirical studies provide much guidance concerning which particular characteristics and abilities of managers determine firm performance. Some critical characteristics – such as leadership, resolution, risk aversion, communication and listening skills, empathy and team-related skills – although difficult to observe, arguably play an important role.[6] Furthermore, formal education may also matter. Kaplan et al. (2012) find that performance is positively associated to general ability (which, in turn, is correlated with college selectivity and college SAT scores) and execution skills. Gennaioli et al. (2013) find that the human capital of managers increases output at the firm and regional levels. Black (2019) finds that manager ability is significantly associated to firm productivity and, although the relevance of CEO quality goes beyond their observable human capital, it is connected to its several dimensions, such as schooling and labour market experience[7].

2.2. Ownership, governance and management

A broad strand of literature in economics and finance analysed the effects of ownership and governance structures – such as the degree of concentration of ownership, family-ownership, the separation between ownership and control and the selection and composition of the boards of directors – on corporate performance (Short, 1994).

Ownership concentration might help to reduce information asymmetries and possible conflicts between ownership and managers and, therefore, to foster long-term

---

[4] Financial resources also matter in the selection into entrepreneurship (Hurst and Lusardi, 2004; Schmalz et al. 2017). Caselli and Gennaioli (2013) show that if talent is uncorrelated with financial resources, the poor functioning of financial system may generate negative selection into entrepreneurship, where most wealthy individuals start a business rather than most talented, with negative effects on growth.

[5] Interestingly, Alves et al. (2021) show that firms have managers whose economic preferences are aligned with owners' interests.

[6] Other studies show the relevance of other directors' characteristics such as independence (Knyazeva et al., 2013), experience (Field and Mkrtchyan, 2017; Chen et al., 2020), social skills (Hansen et al., 2021) and diversity in board composition (Adams et al., 2005; Bernile et al., 2018).

[7] The importance of managers and their skills, in a market-based perspective, can be evaluated looking at their pay. Falato et al. (2015), for example, find that CEO's pay is positively associated with several CEO credentials, which include reputational, career, and educational components.

corporate strategies (Jensen and Meckling, 1976; Shleifer and Vishny, 1997). However, Fama and Jensen (1983) argue that ownership concentration above a certain level may allow managers to become entrenched and to expropriate the wealth of minority shareholders. Other adverse consequences of concentrated ownership are those related to an underdeveloped stock market, owing to the scant demand for listing, and to excessively cautious management that potentially suppresses innovation, new technologies' adoption and internationalization. Empirical evidence on the topic, however, is not conclusive, in line with the view that while dispersed ownership may exacerbate agency problems, it may also have compensating advantages that offset such problems (Demsetz and Villalonga, 2001). Moreover, different institutional environments may be associated with a different optimal choice of ownership concentration.[8]

Owners' characteristics are also important and the literature has devoted a particular attention to the role of family firms. This issue remains topical, as existing contributions have failed to reach consensus, both from the theoretical point of view (Bertrand and Schoar, 2006) and from the empirical one (Miller et al., 2007; Bhaumik and Gregoriou, 2010). The literature has identified various strengths and weaknesses of the family business. The positive aspects include the sharing of values and interests (and the resulting reduction in agency costs), easier coordination through informal relationships and long-term orientation (because the entrepreneur considers his business as a value to be safe-guarded and handed over to future generations). The weaknesses comprise the difficult access to managerial positions for talented people to preserve family ties (e.g., nepotism).[9] The long-term firm orientation may also be associated with an excessively risk-averse strategic approach, limiting the company's development opportunities.[10] Resistance to raise capital, both risk and debt, due to the fear of losing control, may ultimately limit expansion strategies in national and international markets. The vast incidence of family firms, in fact, is seen as one of the possible determinants of the low productivity of the Italian firms, with the shareholders more oriented towards maintaining control of the company in the long term, instead of pursuing its growth, innovation and productivity (Bianchi et al., 2005; Bugamelli et al., 2018; Baltrunaite et al., 2019).[11]

The agency problems associated to the separation of management and ownership are at the core of corporate governance (Shleifer and Vishny, 1997). Dating back to Adam

---

[8] Thomsen and Pedersen (2000) find a positive effect of ownership concentration on firm value, but null effect for high shares. They also find that the identity of the main owner (family, bank, institutional investor, government or other companies) has important implications for corporate strategy and performance.

[9] Selection criteria based on social or family ties rather than objective qualifications lead to suboptimal board appointments (Lippi and Schivardi, 2014; and Bandiera et al., 2015) and may undermine firm growth and performance. Furthermore, there is evidence showing a negative effect of family successions on firm outcomes (Pérez-González, 2006; Bennedsen et al. al., 2007; and Cucculelli and Micucci 2008).

[10] This extends beyond business growth, and may relate, in general, to modernization of the firm. For example, Bloom and Van Reenen (2007; 2010) show that bad managerial practices are more prevalent when control is passed on to the firstborn in family businesses (instead of an external manager).

[11] Family firm creation may arise in response to institutional frictions. For example, family ties might support entrepreneurial activity when capital markets are working poorly (Cagetti and De Nardi, 2006) or when low contract enforcement makes trust among stakeholders more relevant (Burkat et al., 2003).

Smith, the separation is considered potentially problematic because managers would lack the incentives to operate the corporation in the same manner as owner-managers.[12] Following this idea, Jensen and Meckling (1976) characterized the separation of ownership and control as an agency problem between shareholders (principals) and managers (agents). From the agency theory perspective, the managers, who have been assigned relevant powers and resources, will tend to follow their own interests instead of that of the shareholders. This can happen because of the incompleteness of the contract that regulates their respective obligations and the strong information asymmetry that favours the managers. However, agency problems can be mitigated by incentivizing the managers to act in accordance with the interests of the shareholders, while leveraging the skills of professional managers that shareholders do not necessarily have.

As far as management is concerned, the individual characteristics of the managers and the managerial practices adopted within the firm are extensively examined in the literature. While the role of individual characteristics have been reviewed in the previous subsection, here we focus on managerial practices.[13] In a seminal paper, Ichniowski et al. (1997) find that the adoption of structured management practices (e.g. incentive-based pay or employee participation in problem-solving teams) are significantly correlated with plant-level productivity.[14] The interest in this topic has increased enormously thanks to the surveys managed by Bloom and Van Reenen and their research team, who collect information on managerial practices at the plant level for a wide set of industries and countries. Bloom and Van Reenen (2007), Bloom and Van Reenen (2010) and Bloom et al. (2019) contain a comprehensive analysis of the relationship between management practices and productivity. Bloom et al. (2013) find a large causal role for such management practices in a field experiment with Indian textile plants.[15]

3.   Data sources

Information at the individual level, on entrepreneurs and managers, is drawn from the LFS. The main objective of the survey (conducted by Istat) is to supply accurate official statistics regarding the employed and unemployed population in Italy. Since our analysis focuses on the individual characteristics of entrepreneurs and managers, which represent a small share of total employment, we pool waves from the last five available years and we restrict the sample to the employed population. We identify entrepreneurs

---

[12] Namely, in *The Wealth of Nations*, Smith (1776) wrote about joint stock companies: «The directors of such companies [...], being the managers rather of other people's money than of their own, it cannot well be expected that they should watch over it with the same anxious vigilance with which the partners in a private copartnery frequently watch over their own». Another classical and influential reference is Berle and Means (1932) who documented the rise of the modern corporation in the US.

[13] It is worth noting that managers and managerial practices are strictly related. For example, Cornwell et al. (2021) show that better managers match with firms using structured operations management practices.

[14] See Lazear and Shaw (2007) on human resource management practices like compensation, hiring practices, and teamwork.

[15] See also Giorcelli (2019) for long-run causal effect of management on firm performance.

and managers on the basis of their self-defined professional status (e.g., executive, clerical worker, blue-collar worker, professional, self-employed, etc.) and the occupational content (i.e., the ISCO occupational classification at the 3-digit level). We also use information on the size of the plant where individuals work and on their main socio-demographic characteristics (e.g., gender, age, educational achievement, etc.).

The analysis at the firm level exploits the 2019 wave of the *Invind* survey. The survey is conducted annually by the Bank of Italy on a representative sample of manufacturing and services firms with at least 20 employees. The sample consists of around 3,200 firms, mostly limited liability companies. We restrict the analysis to the 2019 wave because it contains a special section on structured managerial practices, including questions drawn from the Management and Organizational Practices Survey (MOPS) described in Bloom et al. (2019). Specifically, the survey contains eight management questions in three main areas: monitoring, targets, and incentives. The monitoring section asked firms about their collection and use of information to monitor and improve the production process. For example, the survey asked, «How many key performance indicators are monitored in your firm» with response options ranging from «none» to «10 or more». The targets section concerned the design, integration, and feasibility of production targets. For example, the survey asked, «How easy or difficult is it in your firm for people to typically achieve their operational targets» with answers ranging from «Possible to achieve without much effort» to «Only possible to achieve with extraordinary effort». Finally, the incentives section asked about bonus, promotion, and reassignment/dismissal practices. For example, the survey asked, «How were workers promoted in your firm» with answers ranging from «no promotion» or «mainly on factors other than performance and ability, for example tenure or family connections» to «solely on performance and ability».[16]

We then augment this dataset with variables on ownership structure and governance characteristics drawn from the Business Register (administered by Chambers of Commerce) and balance sheet data from the Company Accounts Data System (CADS) collected by Cerved Group. For each firm, registry data provides us with personal information regarding all owners and directors, such as their name, surname, gender, date and place of birth. Moreover, we observe the ownership share of the shareholders, the dates of stock purchases and sales, as well as the time and the type of position held within the corporate governance structure of firm (i.e., within the board of directors). Using this detailed information, we compute firm-level indicators regarding the share of stock held by the majority owner, by women, by young persons, by persons born in the same province where the firm is located and by persons with the same surname (which we use as a proxy for the share of family ownership). Analogously we compute the share of female, young and local directors, as well as the share of stock held by directors and the share of directors that have the same surname as one of the owner (similarly, as a proxy for the within-family director appointments).

---

[16] Table A.1 in the Appendix contains the questions in the survey and the associated score to the answers.

4. Geographical differences in ownership, governance and management

In this section, we examine the individual characteristics of entrepreneurs and managers (Section 4.1), firm characteristics in terms of ownership and governance structures (Section 4.2) and their effects on key variables affecting firm organization and the functioning of the production process such as the adoption of managerial practices and of advanced technologies (Section 4.3).

4.1 Who are entrepreneurs and managers?

Using the LFS, we identify entrepreneurs and managers, exploiting the information on their self-defined professional status and the ISCO occupational classification. Namely, we define entrepreneurs as self-employed workers who run businesses with employees, thus excluding self-employed and professionals working alone. Managers are employees working as chief executives or managing directors (i.e., administrative, commercial or production managers) in the private sector.[17]

According to these definitions, we estimate (using sample weights) that there are about 1.24 million entrepreneurs and around 135.000 managers, corresponding to 5.4 and 0.6 percent of the overall employment, respectively.[18]

Looking at the main descriptive statistics (Table 1), entrepreneurs are older with respect to the total employment (48 and 44 years, respectively) and less likely to be female (25 and 42 percent). They also have lower educational attainments: the fraction of those with a college degree is below 10 percent, with respect to 21 percent among total employment. Concerning the geographical differences, the entrepreneurs in the Centre North are older, more likely to be female and more educated with respect to those in the South. In particular, the difference in the fraction of entrepreneurs with a college degree between the two areas is nearly two percentage points, about one fifth of the sample mean. The difference decreases markedly, while remaining significant from a statistical point of view, when we control for the sectoral composition of the economy and the size of the plants.

Moving on to the managers', they are older (on average, 50 years old) and less likely to be female (18 percent) while they have significantly higher education (the

---

[17] Specifically, we consider entrepreneurs those who define themselves as such – i.e., variable «pospro» equal to 7 – and the self-employed who run business with employees – i.e., variables «pospro» equal to 9 and «c4» equal to 1. We consider instead as managers the employees whose occupational content is to manage firms (as chief executives) or their departments (e.g., administrative, commercial or production departments) – i.e., variable «prof3» between 121 and 131.

[18] The number of managers is significantly lower because they typically manage medium-sized and large firms, while the entrepreneurs themselves usually manage the business in small firms. To put these figures in perspective, it is worth noting that in Italy there are 4.4 million of firms, of which around 1.6 million with employees (less than 30.000 with at least 50 employees).

fraction of those with a college degree is 55 percent). When we replicate the analysis for the two main macro-areas, a striking difference emerges regarding education attainments: the fraction of managers with a college degree is 14 percentage points lower in the South of Italy, around one fourth of the sample mean. The difference is attenuated when we control for plant size- and industry-fixed effects. Nevertheless, it remains significant from a statistical and a quantitative point of view: it amounts to over 5 percentage points, about one tenth of the sample mean.

Table 1. Descriptive statistics

Variable and population:	Italy	Centre North	South	Δ (raw)	Δ (with controls)
Age (in years)					
Entrepreneurs	48.4	49.2	46.4	2.777***	2.634***
Managers	49.7	49.9	48.9	0.965**	0.526
Total employment	44.1	44.0	44.2	- 0.214***	0.304***
Female (%)					
Entrepreneurs	25.0	26.2	22.1	4.034***	4.976***
Managers	17.8	17.9	17.2	0.703	8.910***
Total employment	41.9	43.8	36.6	7.244***	8.780***
College (%)					
Entrepreneurs	9.7	10.2	8.4	1.809***	0.657**
Managers	54.7	56.7	42.3	14.348***	5.469***
Total employment	21.2	21.9	19.5	2.336***	2.131***

The table shows simple means of main socio-demographic characteristics for different subgroups of the population and by geographical areas. The last two columns show, respectively the unconditional and the conditional difference between the Centre North and the South, with controls including plant- and industry-fixed effects, and the statistical significance; *** p<0.01, ** p<0.05, * p<0.1.

Source: LFS (waves 2015-2019).

Next, we examine the role of education as a driver of (self-) selection into the role of entrepreneur and managers, also focusing on geographical differences. In particular, we distinguish between individuals with a college degree and those with a post-tertiary education (e.g., a master or a doctoral program). Moreover, we control for main demographic characteristics (age and gender) and plant size- and industry-fixed effects. The inclusion of these controls leads to a positive association between education and entrepreneurship (Table 2). Namely, having a college degree (master or doctoral program) is associated to an increase of 1.9 (2.1) percentage points in the probability of being an entrepreneur, with respect to a sample mean equal to 5.4 percent. The impact is roughly comparable between the Centre North and the South of Italy.

The positive relationship between education and the probability of being a manager is even more pronounced. According to our findings, having a college degree (master or

doctoral program) is associated to an increase of 1.6 (1.7) percentage points in the likelihood of occupying a managerial position, which represents nearly three times its sample mean. Moreover, the effect is significantly larger in the Centre-North. If we consider the standardized beta coefficient – to get comparable estimates – the effect of a college degree (master or doctoral program) on the probability of being a manager in the Centre North is 1.8 (3.2) times higher with respect to the South.[19]

Table 2. Education and occupational choice

	I	II	III
Geographical area:	Italy	Centre North	South
Dependent variable:	Probability of being entrepreneur		
=1 if college degree	0.019***	0.017***	0.022***
	(0.001)	(0.001)	(0.001)
	[0.030]	[0.028]	[0.037]
=1 if master or doctoral program	0.021***	0.021***	0.020***
	(0.001)	(0.001)	(0.002)
	[0.015]	[0.015]	[0.014]
Sample mean of the dependent variable:	*0.054*	*0.054*	*0.056*
Dependent variable:	Probability of being manager		
=1 if college degree	0.016***	0.019***	0.007***
	(0.000)	(0.000)	(0.001)
	[0.080]	[0.087]	[0.048]
=1 if master or doctoral program	0.017***	0.022***	0.005***
	(0.001)	(0.001)	(0.001)
	[0.039]	[0.045]	[0.014]
Sample mean of the dependent variable:	*0.006*	*0.007*	*0.003*
Controls	YES	YES	YES
# observations	1,012,406	737,944	274,462

Cross-section regression with the probability of being entrepreneur (manager) as dependent variable in the top (bottom) panel and an indicator for college degree and for master or doctoral programm as main explanatory variables. Column I includes the entire sample while columns II and III replicate the analysis for the two geographical areas. Controls include age bracket, gender, plant size and industry fixed-effects. Standardized beta coefficients in square brackets. Robust standard errors in round brackets; *** p<0.01, ** p<0.05, * p<0.1.
Source: LFS (waves 2015-2019).

Finally, we go beyond the level of education and we explore heterogeneous effects of the field of study.[20] In the LFS, for individuals with a college degree, we observe the university degree program at 2-digit level. We group this information in 6 main broad

---

[19] This result suggests that while there may also be supply issues – i.e., the fact that in some areas managers are in short supply, as suggested by Sauvagnat and Schivardi (2020) – selection problems are also relevant, with the latter arguably related to the lower propensity of southern firms (especially family-owned ones) to hire managers externally.
[20] Arcidiacono (2004) documented large earnings and ability differences among different college majors.

fields including humanities (e.g., arts, sociology, psychology, political sciences and other social sciences), economics, law, STEM (e.g. math, statistics, natural sciences, engineering, etc.), health and a residual category (e.g. sports, tourism, etc.) that we omit from the main analysis. Armed with this data, we examine the marginal effect of main college majors (with humanities being the reference category), conditional on having a college degree, on the probability of being entrepreneur or manager. The analysis takes into account main individual and firm-level characteristics (Figure 2). Economics and law backgrounds are positively associated to entrepreneurship and to the likelihood of being a manager, while a degree in health is important only for entrepreneurship. However, there are some significant differences between the two geographical areas. In particular, the role of economics for entrepreneurship is significantly stronger in the Centre North relative to the South. Concerning the probability of being a manager, the field of study seems to matter less in the Southern regions and having an economics or a STEM background plays a significantly larger role in the Centre North with respect to the South.

Figure 2. College majors and probability of being entrepreneur or manager
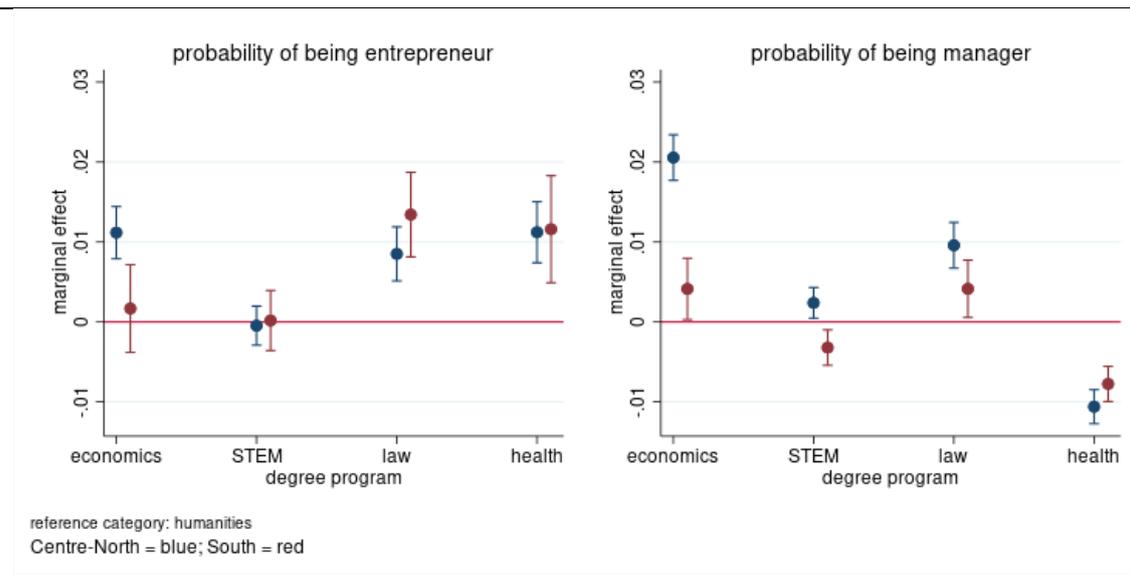
reference category: humanities
Centre-North = blue; South = red

Cross-section regression with the probability of being entrepreneur (manager) as dependent variable in the top (bottom) panel, conditional on having a college degree, and indicators for the field of studies as main explanatory variables. The figures shows the corresponding point estimates and confidence intervals. The specifications also include the following controls: age bracket, gender, plant size and industry fixed-effects.

Source: LFS (waves 2015-2019).

In summary, entrepreneurs have lower education attainments with respect to the rest of the employed population. However, such relationship is reversed when we control for individual characteristics, firm size and the industry composition of the local economy. Findings are roughly comparable between the Centre North and the South. Managers, in contrast, are significantly more educated with respect to overall

employment, and this is especially true in the Centre North, suggesting that this positive selection mechanism is less effective in the southern regions. Moreover, among managers with a college degree, the role of economic and STEM backgrounds (relative to humanities), is much stronger predictor of the probability of being a manager in the Centre North than in the South.

4.2 Firm ownership and governance structures

We examine ownership and governance structures using Business Register data, containing information on the identities of firm shareholders and directors and the share of the stock held, which makes it possible to construct several indicators. The analysis in this sections focuses on the subset of firms interviewed in the *Invind* survey, for which we can exploit some crucial variables – such as adoption of managerial practices and advanced technologies – that are collected only through the survey and are not available in other data sources.

Figure 3, Panel A shows sample averages in the *Invind* sample for ownership (governance) characteristics on the left (right) panel for firms located in the Centre-North and in the South. Backed by the literature on the role of family firms in shaping corporate governance, and the evidence on a higher incidence of familism in the South of Italy, in Figure 3, Panel B we examine the same features for the subsamples of family-owned firms only.[21]

Focusing on the ownership structure, there are two most striking differences. First, the share of family-owned firms is significantly higher in the South of Italy: 58 per cent, with respect to 33 percent in the Centre-North. Second, entrepreneurs in the South are more likely to be local: 38 percent of the stock is owned by individuals born in the same province of the firm's location against 19 percent in the Centre North. The latter result might be partly due, indeed, to the higher share of family-owned firms in the Southern regions and to the migration patterns, with northern (southern) regions characterized by higher immigration (emigration) rates.

Concerning the governance structure, and analogously to what observed for ownership features, the largest differences between the Centre North and the South refer to the localism of directors – i.e., directors born in the same province as the firm's location – and the scarce reliance on external managers, particularly in family-owned firms. Indeed, in the South 64 percent of the directors are local (51 percent in the Centre North) while 47 per cent are members of the family owing the firm (27 percent in the Centre North). While the localism might be partly explained by the different migration history of the two geographical areas and to the characteristics of the labour market (Baltrunaite

---

[21] Figure A.1 in the Appendix replicates Figure 3 using information on the universe of Italian corporations. They are characterized by more familism and localism, likely due to the different firm size in the two samples (*Invind* sample is restricted to firms with at least 20 employees). However, the differences between firms located in the Centre North and in the South are qualitatively similar.

and Karmaziene, 2021), the role of family firms is also crucial. Indeed, family firms – which are more widespread in the South – more often hire local directors and promote family members within the boards of directors. Southern firms are also characterized by a lower degree of separation between ownership and control which can be seen, again, as a direct consequence of the prevalence of family-firms in that area of the country. Among the other characteristics, the presence of female and young directors is remarkably low, with no evident differences between the two geographical areas.

Figure 3. Ownership and governance structure

Panel A. All firms in the *Invind* sample

Panel B. Family-owned firms in the *Invind* sample
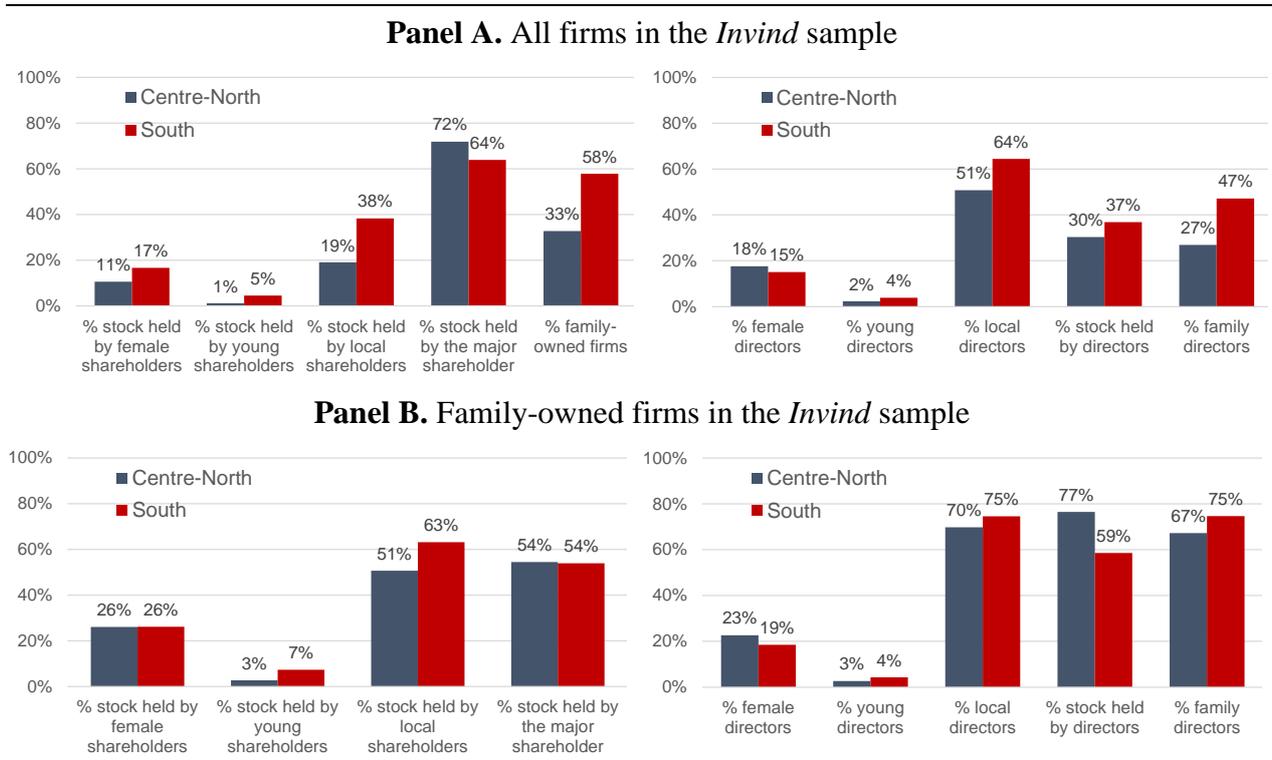
Source: *Invind* and Business Register data.

The evidence described so far does not take into account composition effects of the local economy. In Figure 4, therefore, we investigate to what extent the South-North differences in ownership and governance vary once we control for size- and industry-fixed effects. Overall, the territorial divide is attenuated by the inclusion of these controls, in particular when we consider ownership and governance variables that reflect localism (of either shareholders or directors) and family involvement in business. Nevertheless, the conditional differences do not change neither the sign nor the statistical significance, except for the share of stock held by directors – our measure of the degree of separation between ownership and control – that becomes not significantly different from zero.[22]

---

[22] Table A.2 in the Appendix replicates the analysis contained in Figure 4, examining the conditional differences in terms of ownership and governance characteristics between the Centre North and the South

Figure 4. Centre North vs. South differences in ownership and governance structures
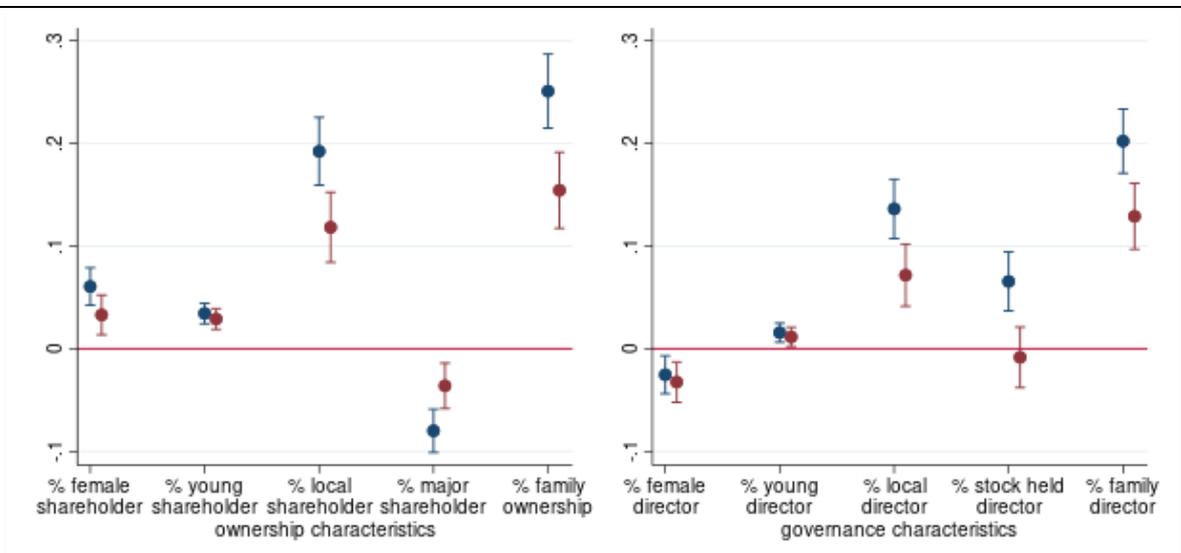
The figures show the point estimates and the confidence interval of the Centre North vs. South difference for each ownership and governance characteristics. The conditional difference is estimated in a regression including size- and industry-fixed effects.

Source: *Invind* and Business Register data.

4.3 Managerial practices

Managerial practices are highly correlated with corporate success (Bloom et al. 2019). In this section, we examine the South-North gap in the adoption of such practices and to what extent they reflect differences in the ownership and governance structures of the firms.

Table 3 investigates the geographical differences in the composite score of structured managerial practices. The adoption of these practices is lower in companies located in the South of the country, even when holding firm size and sector constant (column I). We then investigate how the coefficient capturing the North-South divide changes once we account for the ownership characteristics studied in the previous section in columns II to VI. In particular, the share of female (young) shareholders is associated negatively (positively) with the adoption of modern management practices. While interpreting the gender effect is not straightforward, it is plausible that the presence of young entrepreneurs may bring more modern approach to firm's organization and management. Strong incidence of local or family based entrepreneurship, in contrast, correlated negatively with modern management practices, suggesting more conservative approach to business. Finally, higher concentration of stock is positively associated with

---

of Italy for the universe of Italian corporations. The main findings, and in particular those related to the localism and familism of shareholders and directors, are qualitatively confirmed.

managerial practices score, possibly because of a more fluid decision-making in deciding the inner organization of the firm. The magnitude of the North-South divide is only marginally affected by the inclusion of ownership characteristics, with the exception of local shareholders and family-ownership whose inclusion is associated to a reduction by one tenth and one sixth of the gap between the two geographical areas, respectively.

Table 3. Managerial practices and ownership

	I	II	III	IV	V	VI
Dependent variable:			Managerial practice score			
=1 if South	-0.133***	-0.128**	-0.141***	-0.118**	-0.130***	-0.110**
	(0.050)	(0.050)	(0.051)	(0.050)	(0.050)	(0.051)
% female shareholders		-0.366***				
		(0,097)				
% young shareholders			0.285*			
			(0.149)			
% local shareholders				-0.133**		
				(0,058)		
% main shareholders					0.222**	
					(0,087)	
=1 if family-owned firm						-0.173***
						(0,052)
Controls	YES	YES	YES	YES	YES	YES
#observations	1,667	1,667	1,667	1,667	1,667	1,667

Cross-section regression with the managerial practices score as dependent variable and ownership characteristics as main explanatory variables. Controls include size- and industry-fixed effects. Robust standard errors in round brackets; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Source: *Invind* and Business Register data.

In Table 4, we investigate the relationship between managerial practices and governance characteristics. A high presence of family members on corporate boards and a high overlap between ownership and governance are associated with lower adoption of structured management practices, possible because of the lack of openness to new approaches in these firms that also prevents firm modernization. However, as above, the magnitude of the geographical divide is only marginally affected by the inclusions of these variables, with the exception of family directors whose inclusion is associated to a reduction by one tenth of the gap between the two geographical areas.

Table 4. Managerial practices and governance

	I	II	III	IV	V	VI
Dependent variable:	Managerial practice score					
=1 if South	-0.137***	-0.148***	-0.139***	-0.135***	-0.139***	-0.123**
	(0.050)	(0.050)	(0.050)	(0.050)	(0.050)	(0.051)
% female directors		-0.235***				
		(0.090)				
% young directors			0.154			
			(0.173)			
% local directors				-0.082		
				(0.059)		
% stock held by directors					-0.133**	
					(0.062)	
% family directors						-0.121**
						(0.060)
Controls	YES	YES	YES	YES	YES	YES
#observations	1,692	1,692	1,692	1,692	1,692	1,692

Cross-section regression with the managerial practices score as dependent variable and governance characteristics as main explanatory variables. Controls include size- and industry-fixed effects. Robust standard errors in round brackets; *** p<0.01, **p<0.05, * p<0.1.

Source: *Invind* and Business Register data.

4.4 Advanced technology

Firm organization and the production process are also largely shaped by the introduction of advanced technology. To examine the spread of and the territorial divide in this phenomenon, and its relationship with ownership and governance structures, we rely on a measure of technology adoption taken from *Invind* survey. Namely, for each firm in our sample we create a dummy equal to one for firms that were employing as of 2019 at least one of the following advanced digital technology tools: cloud computing, big data and artificial intelligence.

In Tables 5 and 6, we show that the use of advanced technology is less frequent among firms in the South: the fraction of is about 7 percentage points lower (the sample mean is 35 percent). When we add to our regression the variable capturing the ownership or governance characteristics, the coefficients measuring the North-South divide in technology remain highly stable, negative and significant. The gap, in particular, decreases (in absolute terms) by around 1 percentage point (i.e., around one seventh of the sample mean) when we control for the share of family directors or family firms, that are less inclined (on average) to adopt advanced technologies within the firms.

Table 5. Technology and ownership

	I	II	III	IV	V	VI
Dependent variable:	=1 if the firm uses advance technology					
=1 if South	-0.071***	-0.068***	-0.069***	-0.064***	-0.070***	-0.059**
	(0.023)	(0.023)	(0.023)	(0.024)	(0.023)	(0.024)
% female shareholders		-0.122***				
		(0.044)				
% young shareholders			-0.070			
			(0.084)			
% local shareholders				-0.057**		
				(0.026)		
% main shareholders					0.098**	
					(0.040)	
=1 if family-owned firm						-0.079***
						(0.025)
Controls	YES	YES	YES	YES	YES	YES
#observations	1,799	1,799	1,799	1,799	1,799	1,799

Cross-section regression with an indicator of technology adoption as dependent variable and ownership characteristics as main explanatory variables. Controls include size- and industry-fixed effects. Robust standard errors in round brackets; *** $p<0.01$, **$p<0.05$, * $p<0.1$.

Source: *Invind* and Business Register data.

Table 6. Technology and governance

	I	II	III	IV	V	VI
Dependent variable:	=1 if the firm uses advance technology					
=1 if South	-0.076***	-0.079***	-0.076***	-0.076***	-0.077***	-0.066***
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.024)
% female directors		-0.073*				
		(0.042)				
% young directors			0.001			
			(0.092)			
% local directors				-0.019		
				(0.028)		
% stock held by directors					-0.066**	
					(0.030)	
% family directors						-0.087***
						(0.028)
Controls	YES	YES	YES	YES	YES	YES
#observations	1,822	1,822	1,822	1,822	1,822	1,822

Cross-section regression with an indicator of technology adoption as dependent variable and governance characteristics as main explanatory variables. Controls include size- and industry-fixed effects. Robust standard errors in round brackets; *** $p<0.01$, **$p<0.05$, * $p<0.1$.

Source: *Invind* and Business Register data.

5. Geographical differences in firm performance

In this section, we provide a descriptive analysis of geographical differences in terms of firm performance and to what extent they relate to individual characteristics of entrepreneurs and managers (Section 5.1) and firm characteristics in terms of ownership, governance and managerial practices (Section 5.2).

5.1 Plant size and the human capital of entrepreneurs and managers

The LFS data does not contain indicators of firm performance. Nevertheless, we do know the size of the plant for each worker, including entrepreneurs and managers. Since the relationship between firm size and productivity is well-document (Van Ark and Monnikhof, 1996), we use plant size to measure firm performance.[23]

In the LFS, in some cases we do not observe the actual number of employees but the size group of the plant. Specifically, we know the exact number of employees for plants with less than 10 employees and the size group – 11-19, 20-49, 50-249 and 250 and more – for those with more than 10 employees. In order to have a continuous measure of size we impute the figures when we only know the size group. Namely, for each cell identified by the region, the industry (at the 2-digit level) and the size group we impute the mean plant size observed in the census data by Istat[24].

We start by considering the sample of entrepreneurs and, for each of them, we regress the plant size on an indicator equal to 1 if the entrepreneur is located in the South of Italy. Table 7 shows the results.[25] Entrepreneurs in the South run business that are on average 31 percent smaller (column I). If we include industry fixed effects the coefficient of interest decreases significantly (column II), suggesting that around one-fourth of the North-South difference is attributable to sector composition. The coefficient decreases further if we include fixed effects for the gender and, more importantly, for age cohort of the entrepreneur (column III). Finally, if we include the level of education of the entrepreneurs – that is positively correlated with firm size, as expected – the difference between the Centre North and the South is substantially unaffected (column IV).

We replicate the analysis by considering the sample of managers. Similarly, we regress the log of employees on an indicator equal to 1 if the manager is located in the South of Italy. Table 8 shows that if we consider unconditional differences, managers in

---

[23] The strong correlation between firm size and labor productivity is confirmed also in Italian data, as shown in Figure A.2 in the Appendix.

[24] The distribution of plants by group size is very similar to that obtained by Istat on the universe of plants, as shown in Figure A.3 in the Appendix.

[25] It is worth noting that our estimates, which are based on individual- rather than plant-level, are likely to (mechanically) overestimate the differences in size. Indeed, in the Centre North there are on average larger firms which, in turn, have a greater number of entrepreneurs and/or managers. Therefore, when we use individual data, a firm with, say, two entrepreneurs (or managers) are counted twice.

the South run businesses of smaller size (column I). If we include industry fixed effects, the coefficient of interest decreases significantly, but its size remains remarkably high (column II). The inclusion of main socio-demographic characteristics of the manager (age and gender) does not alter the coefficient of the South variable (column III). Finally, if we include the level of education of the managers we find that is positively correlated with firm size (column IV). Moreover, the inclusion of these controls decreases the coefficient of the South variable by about 10 percent, suggesting that a part of geographical divide in firm size can be explained by the lower human capital endowment of the managers in the South.

Table 7. Firm size and entrepreneurial education

	I	II	III	IV
Dependent variable:		(log of) employees		
=1 if South	-0.312***	-0.239***	-0.231***	-0.230***
	(0.042)	(0.027)	(0.027)	(0.026)
College				0.258***
				(0.022)
Master or doctoral program				0.316***
				(0.076)
Industry fixed effects	NO	YES	YES	YES
Individual controls	NO	NO	YES	YES
# observations	58,430	58,430	58,430	58,430

Cross-section regression with (log) of employees as dependent variable and entrepreneurs education as main explanatory variable. Clustered standard errors at the region-industry-group size level in round brackets; *** $p<0.01$, **$p<0.05$, * $p<0.1$.
Source: LFS (waves 2015-2019).

Table 8. Firm size and manager education

	I	II	III	IV
Dependent variable:		(log of) employees		
=1 if South	-0.725***	-0.472***	-0.468***	-0.422***
	(0.135)	(0.111)	(0.109)	(0.105)
College				0.639***
				(0.071)
Master or doctoral program				0.680***
				(0.124)
Industry fixed effects	NO	YES	YES	YES
Individual controls	NO	NO	YES	YES
# observations	5,768	5,768	5,768	5,768

Cross-section regression with (log) of employees as dependent variable and managers education as main explanatory variable. Clustered standard errors at the region-industry-group size level in round brackets; *** $p<0.01$, **$p<0.05$, * $p<0.1$.
Source: LFS (waves 2015-2019).

5.2 Firm performance

We now turn to analysing the role of the documented differences in ownership, governance and management in determining firm performance and its gap between firms located in the Northern and Southern regions. To this aim, we focus the (log of) output per worker that we interpret as a proxy for firm productivity after controlling for the other inputs used in the production process (i.e., capital labour ratio, employment and material inputs).

In order to quantify the importance of these structural differences on firms gaps we use, similarly to the previous section, the following empirical approach. We start by regressing the performance indicators on a dummy for firms that are located in the South controlling for 2-digit sector fixed effects and firm size indicators (defined in terms of employment as in the previous sections). We interpret the coefficient on the South dummy as the existing gap between the two groups of firms, conditional on composition effects. We then add to the regression one-by-one the variables of interest (i.e., ownership, governance and management characteristics) and check by how much the South coefficient, indicative of the gap, changes. The idea is that if a single characteristic under consideration is responsible for the difference in firms' gaps, then the estimated coefficient on the dummy South should shrink towards zero.[26]

In Table 9, we start by exploring the importance of ownership characteristics. The productivity gap between firms located in the Centre North and the South of Italy is above 17 percent (column I). For any given input bundle, firms in the South produce 17 percent less output than firms operating in the same industries, but located in the Centre North. This productivity gap, however, can be in part due to specific features of the firm ownership structures that differ systematically between firms located in the two areas and can have a direct effect on firms' productivity. In columns II to VI, we include in our regressions these firm characteristics. While the point estimates on the South dummy are remarkably stable, the most significant difference emerges when we control in the regression for the family ownership: the coefficient drops from 17.4 to 15.5 percent, suggesting that the different share in family-owned firms can explain up to 10 percent of the productivity gap.

In Table 10, we replicate the analysis exploring the role of governance. The results mirror those of Table 9. Indeed, the productivity gap between the two geographical areas is significantly attenuated when we control for the share of directors belonging to the family owning the firm (from 17.5 to 16.2). Taken together with the evidence on ownership, our results point towards the importance of familism in Southern firms as one of the drivers of the performance gaps between firms in the different areas of the country.

---

[26] The results are confirmed for the universe of corporations (Tables A.3 and A.4 in the Appendix).

Table 9. Productivity and ownership

	I	II	III	IV	V	VI
Dependent variable:	(log of) output per worker					
=1 if South	-0.174***	-0.169***	-0.170***	-0.161***	-0.171***	-0.155***
	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)
% female shareholders		-0.193***				
		(0.036)				
% young shareholders			-0.144**			
			(0.072)			
% local shareholders				-0.126***		
				(0.021)		
% main shareholders					0.153***	
					(0.032)	
=1 if family-owned firm						-0.140***
						(0.019)
Controls	YES	YES	YES	YES	YES	YES
#observations	2,775	2,775	2,775	2,775	2,775	2,775

Cross-section regression with firm productivity as dependent variable and ownership characteristics as main explanatory variables. Controls include size- and industry-fixed effects and (log of) capital-labour ratio, employment and material inputs. Robust standard errors in round brackets; *** $p<0.01$, **$p<0.05$, * $p<0.1$.

Source: *Invind*, CADS and Business Register data.

Table 10. Productivity and governance

	I	II	III	IV	V	VI
Dependent variable:	(log of) output per worker					
=1 if South	-0.175***	-0.178***	-0.174***	-0.168***	-0.178***	-0.162***
	(0.022)	(0.022)	(0.022)	(0.021)	(0.022)	(0.021)
% female directors		-0.098***				
		(0.036)				
% young directors			-0.034			
			(0.067)			
% local directors				-0.116***		
				(0.024)		
% stock held by directors					-0.154**	
					(0.025)	
% family directors						-0.111***
						(0.023)
Controls	YES	YES	YES	YES	YES	YES
#observations	2,825	2,825	2,825	2,825	2,825	2,825

Cross-section regression with firm productivity as dependent variable and governance characteristics as main explanatory variables. Controls include size- and industry-fixed effects and (log of) capital-labour ratio, employment and material inputs. Robust standard errors in round brackets; *** $p<0.01$, **$p<0.05$, * $p<0.1$.

Source: *Invind*, CADS and Business Register data.

Finally, we examine the role of managerial practices and advanced digital technology in explaining productivity gaps. We have documented that both MOPS and advanced digital technology are less common among Southern firms and that they are partly shaped by ownership and governance structures (in particular with reference to the role of family-owned firms and related governance characteristics). Since MOPS and technology might significantly affect firm performance, in Table 11 we examine whether they can be responsible for the documented gaps. The first column shows the overall productivity gap, while column II and column III show the results when we include the MOPS score and an indicator of technology adoption, respectively, in our regression. Although both variables are positively associated with firm productivity, the point estimates on the indicator measuring the North-South gap in the various specifications are fairly stable. This suggests that neither MOPS nor digital technologies play a crucial role in explaining the productivity gap between firms. The same result is confirmed in the last column when both measures are contemporaneously added to the regression. Naturally, both MOPS and technology are equilibrium outcomes and, therefore, it is difficult to establish the causality.[27]

Table 11. Firm performance, managerial practices and digital technology

	I	II	III	IV
	(log of) output per worker			
=1 if South	-0.159***	-0.156***	-0.158***	-0.155***
	(0.028)	(0.028)	(0.028)	(0.028)
Management Score		0.035**		0.030**
		(0.015)		(0.015)
=1 if advanced technology			0.060**	0.049*
			(0.027)	(0.028)
Controls	YES	YES	YES	YES
# observations	1,641	1,641	1,641	1,641

Cross-section regression with firm productivity as dependent variable and adoption of managerial practices and advanced technology as main explanatory variables. Controls include size- and industry-fixed effects. Robust standard errors in round brackets; *** p<0.01, **p<0.05, * p<0.1.
Source: *Invind*.

6. Concluding remarks

Are there territorial differences in terms of ownership, governance and management characteristics? To what extent do such (potential) differences explain the territorial differences in firm performance? The paper approaches these two research questions providing novel evidence on this subject.

---

[27] Unfortunately, data on MOPS and digital technology are available for a limited number of firms and limited sample size can partly affect our results.

First, we show that the presence of family-owned firms is significantly higher in the South, also after controlling for sector and size fixed effects. As a consequence, southern firms are also characterized by a higher fraction of local and family directors within the board, and in contrast, a lower reliance on external (professional) managers. Partly related, firms in the South have less educated managers.

Second, we examine to what extent these differences account for the performance gap between the two areas. We find that managers' human capital explains one tenth of the differences in plant size; family-ownership (and the other related governance characteristics) account for one tenth of the difference in productivity and to a greater extent of the difference in advanced technology adoption.

A comprehensive interpretation of these findings may draw attention to the inefficient selection of firm management as one of the channels through which a higher family business prevalence in the South translates into the geographical disparities in firm size and performance.

All in all, although the analysis is purely descriptive, our findings suggest that ownership, governance and management play a significant role for firm performance and explain a non-negligible fraction of the North-South divide. Our analysis, however, abstracts from investigating the origins of family business creation and potential differences in them across the regions. For example, the institutional context may give rise to differential patterns in family entrepreneurship, business development and survival, translating in geographical differences between family firms in the South and in the North of the country, Future research on these topics could shed further light in explaining territorial divide in firm performance.

References

Acemoglu D. and M. Dell. (2010), Productivity Differences between and within Countries, *American Economic Journal: Macroeconomics,* vol. 2, pp. 169-188.

Adams R.B., H. Almeida and D. Ferreira (2005), Powerful CEOs and Their Impact on Corporate Performance, *Review of Financial Studies*, vol. 18, pp.1403-1432.

Arcidiacono P. (2004), Ability Sorting and the Returns to College Major, *Journal of Econometrics*, vol. 121, pp. 343-375.

Alves G., P. Blanchard, G. Burdin, M. Chávez and A. Dean (2021), Like Principal, Like Agent? Managerial Preferences in Employee-Owned Firms, *Journal of Institutional Economics*, 1-23.

Baltrunaite A., G. Bovini and S. Mocetti (2021), Managerial Talent and Managerial Practices: Are They Complement? Bank of Italy, Working Paper 1335.

Baltrunaite A., E. Brodi and S. Mocetti (2019), Assetti Proprietari e di Governance delle Imprese Italiane: Nuove Evidenze e Effetti sulla Performance delle Imprese, Bank of Italy, Occasional Paper 514.

Baltrunaite A. and Karmaziene, E. (2021). Trainspotting: Board Appointments in Private Firms, CEPR Discussion Paper 15828.

Bandiera O., L. Guiso, A. Prat and R. Sadun (2015), Matching Firms, Managers, and Incentives, *Journal of Labor Economics*, vol. 33, pp. 623-681.

Bartelsman E.J. and M. Doms (2000), Understanding Productivity: Lessons from Longitudinal Microdata, *Journal of Economic Literature*, vol. 38, pp. 569-594.

Bennedsen M., K.M. Nielsen, F. Perez-Gonzalez and D. Wolfenzon (2007), Inside the Family Firm: The Role of Families in Succession Decisions and Performance, *Quarterly Journal of Economics*, vol. 122, pp. 647-691.

Berle A. and G. Means (1932), *The Modern Corporation and Private Property*, New York: Harcourt, Brace & World.

Bernile G., V. Bhagwat and S. Yonker (2018), Board Diversity, Firm Risk, and Corporate Policies, *Journal of Financial Economics*, vol. 127, pp. 588-612.

Bertrand M. and A. Schoar (2003), Managing with Style: The Effect of Managers on Firm Policies, *Quarterly Journal of Economics*, vol. 118, pp. 1169-1208.

Bertrand M. and A. Schoar (2006), The Role of Family in Family Firms, *Journal of Economic Perspectives*, vol. 20, pp. 73-96.

Bhaumik S. and A. Gregoriou (2010), Family Ownership, Tunnelling and Earnings Management: A Review of the Literature, *Journal of Economic Surveys*, vol. 24, pp. 705-730.

Bianchi M., M. Bianco, S. Giacomelli, A.M. Pacces and S. Trento (2005), *Proprietà e Controllo delle Imprese in Italia*, Il Mulino, Bologna.

Black (2019), Better Together? CEO Identity and Firm Productivity, working paper.

Bloom N. and J. Van Reenen (2007), Measuring and Explaining Management Practices Across Firms and Countries, *Quarterly Journal of Economics*, vol. 122, pp. 1351-1408.

Bloom N. and J. Van Reenen (2010), Why Do Management Practices Differ Across Firms and Countries? *Journal of Economic Perspectives*, vol. 24, pp. 203-224.

Bloom N., B. Eifert, A. Mahajan, D. McKenzie and J. Roberts (2013). Does Management Matter? Evidence from India. *Quarterly Journal of Economics*, vol. 128, pp. 1-51.

Bloom N., E. Brynjolfsson, L. Foster, R. Jarmin, M. Patnaik, I. Saporta-Eksten and J. Van Reenen (2019), What Drives Differences in Management Practices? *American Economic Review*, vol. 109, pp. 1648-1683.

Bugamelli M., F. Lotti, M. Amici, E. Ciapanna, F. Colonna, F. D'Amuri, S. Giacomelli, A. Linarello, F. Manaresi, G. Palumbo and F. Scoccianti (2018), Productivity Growth in Italy: A Tale of a Slow-Motion Change, Bank of Italy, Occasional Paper 422.

Burkart M., F. Panunzi and A. Shleifer (2003), Family Firms, *Journal of Finance*, vol. 58, pp. 2167-2201.

Cabral, L.M.B. and J. Mata (2003), On the Evolution of the Firm Size Distribution: Facts and Theory, *American Economic Review*, vol. 93, pp. 1075-1090.

Cagetti M. and M. De Nardi (2006), Entrepreneurship, Frictions, and Wealth, *Journal of Political Economy*, vol. 114, pp. 835-870.

Caselli F. and N. Gennaioli (2013), Dynastic Management, *Economic Inquiry*, vol. 51, pp. 971-996.

Chen S.S., Y.S. Chen, J.K. Kang and S.C. Peng (2020), Board Structure, Director Expertise, and Advisory Role of Outside Directors, *Journal of Financial Economics*, vol. 138, pp. 483-503.

Cornwell C., I.M. Schmutte and D. Scur (2021), Building a Productive Workforce: The Role of Structured Management Practices, *Management Science*, forthcoming.

Cucculelli M. and G. Micucci (2008), Family Succession and Firm Performance: Evidence from Italian Family Firms, *Journal of Corporate Finance*, vol. 14, pp. 17-31.

Demsetz H. and B. Villalonga (2001), Ownership structure and corporate performance, *Journal of Corporate Finance*, vol. 7, pp. 209-233.

Falato A., D. Li and T. Milbourn (2015), Which Skills Matter in the Market for CEOs? Evidence from Pay for CEO Credentials. *Management Science,* vol. 61, pp. 2845-2869.

Fama E. and M. Jensen (1983), Agency Problems and Residual Claims. *The Journal of Law & Economics*, vol. 26, pp. 327-349.

Field L.C. and A. Mkrtchyan (2017), The Effect of Director Experience on Acquisition Performance, *Journal of Financial Economics*, vol. 123, pp. 488-511.

Gennaioli N., R. La Porta, F. Lopez-de-Silanes, and A. Shleifer (2013), Human Capital and Regional Development, *Quarterly Journal of Economics*, vol. 128, pp. 105-164.

Gibbons R. and R. Henderson (2012), What Do Managers Do?, *Handbook of Organizational Economics*, Princeton University Press.

Giorcelli M. (2019), The Long Term Effects of Management and Technology Transfer, *American Economic Review*, vol. 109, pp. 121-152.

Hall R.E and C.I. Jones (1999), Why Do Some Countries Produce So Much More Output per Worker Than Others? *Quarterly Journal of Economics*, vol. 114, pp. 83-116.

Hansen S., J.B. Fuller, T. Ramdas and R. Sadun (2021), The Demand for Executive Skills, Harvard Business School Working Paper 21-133.

Hurst E. and Lusardi, A. (2004), Liquidity Constraints, Household Wealth, and Entrepreneurship, *Journal of Political Economy*, vol. 112, pp. 319-347.

Ichniowski C., K. Shaw and G. Prennushi (1997), The Effects of Human Resource Management Practices on Productivity: A Study of Steel Finishing Lines, *American Economic Review*, vol. 87, pp. 291-313.

Jensen M.C. and W.H. Meckling (1976), Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, *Journal of Financial Economics*, vol. 3, pp. 305-360.

Kaplan S.N., M.M. Klebanov and M. Sorensen (2012), Which CEO Characteristics and Abilities Matter? *Journal of Finance*, vol. 67, pp. 973-1007.

Kerr S.P., W.R. Kerr and T. Xu (2017), Personality Traits of Entrepreneurs: A Review of Recent Literature, NBER Working Paper 24097.

Knyazeva A., D. Knyazeva and R.W. Masulis (2013), The Supply of Corporate Directors and Board Independence, *Review of Financial Studies*, vol. 26, pp. 1561-1605.

Lazear E.P. (2004), Balanced Skills and Entrepreneurship, *American Economic Review*, vol. 94, pp. 208-211.

Lazear E.P. (2005), Entrepreneurship, *Journal of Labor Economics*, vol. 23, pp. 649-680.

Lazear E. P. and K. L. Shaw (2007), Personnel Economics: The Economist's View of Human Resources, *Journal of Economic Perspectives*, vol. 21, pp. 91-114.

Lazear, E.P., K.L. Shaw and C.T. Stanton (2015). The Value of Bosses, *Journal of Labor Economics*, vol. 33, pp. 823-861.

Levine R., and Y. Rubinstein (2017), Smart and Illicit: Who Becomes an Entrepreneur and Do They Earn More? *Quarterly Journal of Economics*, vol. 132, pp. 963-1018.

Lippi F. and F. Schivardi (2014), Corporate Control and Executive Selection, *Quantitative Economics*, vol. 5, pp. 417-456.

Michelacci C. and F. Schivardi (2020), Are they all like Bill, Mark, and Steve? The education premium for entrepreneurs, *Labour Economics*, forthcoming.

Miller D., I. Le Breton-Miller, R.H. Lester and A.A. Cannella Jr. (2007), Are Family Firms Really Superior Performers? *Journal of Corporate Finance*, vol. 13, pp. 829-858.

Pérez-González F. (2006), Inherited Control and Firm Performance, *American Economic Review*, vol. 96, pp. 1559-1588.

Queiro F. (2021), Entrepreneurial Human Capital and Firm Dynamics, *Review of Economic Studies*, forthcoming.

Sauvagnat J. and F. Schivardi (2020), Are Executives in Short Supply? Evidence from Death Events, working paper.

Schivardi F. (2018), The Education of Italian Entrepreneurs, working paper.

Schivardi F. and R. Torrini (2010), Structural Change and Human Capital in the Italian Productive System, *Giornale degli Economisti e Annali di Economia*, vol. 69, pp. 119-167.

Schmalz M.C., D.A. Sraer, and D Thesmar (2017), Housing Collateral and Entrepreneurship, *Journal of Finance*, vol. 72, pp. 99-132.

Schumpeter J.A. (1934), *The Theory of Economic Development*, Harvard University Press.

Shleifer A. and R.W. Vishny (1997), A Survey of Corporate Governance, *Journal of Finance*, vol. 52, pp. 737-783.

Short H. (1994), Ownership, control, financial structure and the performance of firms, *Journal of Economic Surveys*, vol. 8, pp. 203-249.

Syverson C. (2011), What Determines Productivity?, *Journal of Economic Literature*, vol. 49, pp. 326-365.

Thomsen S. and T. Pedersen (2000), Ownership Structure and Economic Performance in the Largest European Companies, Strategic, *Management Journal*, vol. 21, pp. 689-705.

Van Ark B. and E. Monnikhof (1996), Size Distribution of Output and Employment: A Data Set For Manufacturing Industries in Five OECD Countries, 1960s-1990, OECD Economics Department Working Paper 166.

Appendix

Table A.1. *Invind* 2019 – MOPS section

QUESTIONS	ANSWERS
Monitoring section:	
• What best describes what happens at your firm when a problem in the production process arises? (e.g., *finding a quality defect in a service or a product; a piece of equipment breaking down)*	*we fixed it but did not take further action (1/3); we fixed it and took action to make sure that it does not happen again (2/3); we fixed it and took action to make sure that it does not happen again, and had a continuous improvement process to anticipate similar problems in advance (1); no action taken (0)*
• How many key performance indicators are monitored in your firm? *(e.g., metrics on production, cost, waste, absenteeism, and quality of services)*	*1-2 key performance indicators (1/3); 3-9 key performance indicators (2/3); 10 or more key performance indicators; no key performance indicators (0)*
• How frequently are key performance indicators typically reviewed/updated?	*yearly (1/6); quarterly (1/3); monthly (1/2); weekly (2/3); daily (5/6); hourly or more frequently (1); never (0)*
Targets section:	
• What best describes the time frame of operational targets at your firm?	*short-term (less than one year) targets (1/3); long-term (more than one year) targets (2/3); combination of short-term and long-term targets (1); no targets (0)*
• How easy or difficult typically is it for people to achieve their operational targets in your firm?	*without much effort (0); with some effort (1/2); with normal amount of effort (3/4); with more than normal effort (1); with extraordinary effort (1/4)*
Incentives section:	
• What are performance bonuses usually based on in your firm?	*own performance (1); team performance (3/4); local establishment's performance (1/2); entire company's performance (1/4); no performance bonuses (0)*
• What is the primary way workers are promoted in your firm?	*solely on performance and ability (1); partly on performance and ability, and partly on other factors (e.g., tenure or family connections) (2/3); mainly on factors other than performance and ability (e.g., tenure or family connections) (1/3); normally no promotions (0)*
• When is an under-performing worker usually reassigned or dismissed?	*within 6 months of identifying worker under-performance (1); after 6 months of identifying worker under-performance (1/2); rarely or never (0)*

The score associated to each answer is reported in parenthesis.

Table A.2. Ownership and governance structure: extended sample

	Panel A: Ownership				
	% female shareholders	% young shareholders	% local shareholders	% main shareholders	=1 if family-owned firm
=1 if South	0.031***	0.073***	0.151***	0.001	0.095***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Controls	Yes	Yes	Yes	Yes	Yes
# observations	628,220	628,220	628,220	628,220	628,220
	Panel B: Governance				
	% female directors	% young directors	% local directors	% stock held by directors	% family directors
=1 if South	-0.002	0.041***	0.142***	-0.033***	0.091***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Controls	Yes	Yes	Yes	Yes	Yes
# observations	628,329	628,329	628,329	628,329	628,329

The table shows the estimated Centre North vs. South difference for each ownership and governance characteristics. Controls include size- and industry-fixed effects.

Source: CADS and Business Register data.

Table A.3. Productivity and ownership (universe of corporations)

	I	II	III	IV	V	VI
Dependent variable:			(log of) output per worker			
=1 if South	-0.270***	-0.267***	-0.263***	-0.260***	-0.270***	-0.254***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
% female shareholders		-0.120***				
		(0.003)				
% young shareholders			-0.115***			
			(0.003)			
% local shareholders				-0.073***		
				(0.002)		
% main shareholders					-0.029***	
					(0.004)	
=1 if family-owned firm						-0.194***
						(0.003)
Controls	YES	YES	YES	YES	YES	YES
#observations	443,006	443,006	443,006	443,006	443,006	443,006

Cross-section regression with firm productivity as dependent variable and ownership characteristics as main explanatory variables. Controls include size- and industry-fixed effects and (log of) capital-labour ratio, employment and material inputs. Robust standard errors in round brackets; *** $p<0.01$, **$p<0.05$, * $p<0.1$.
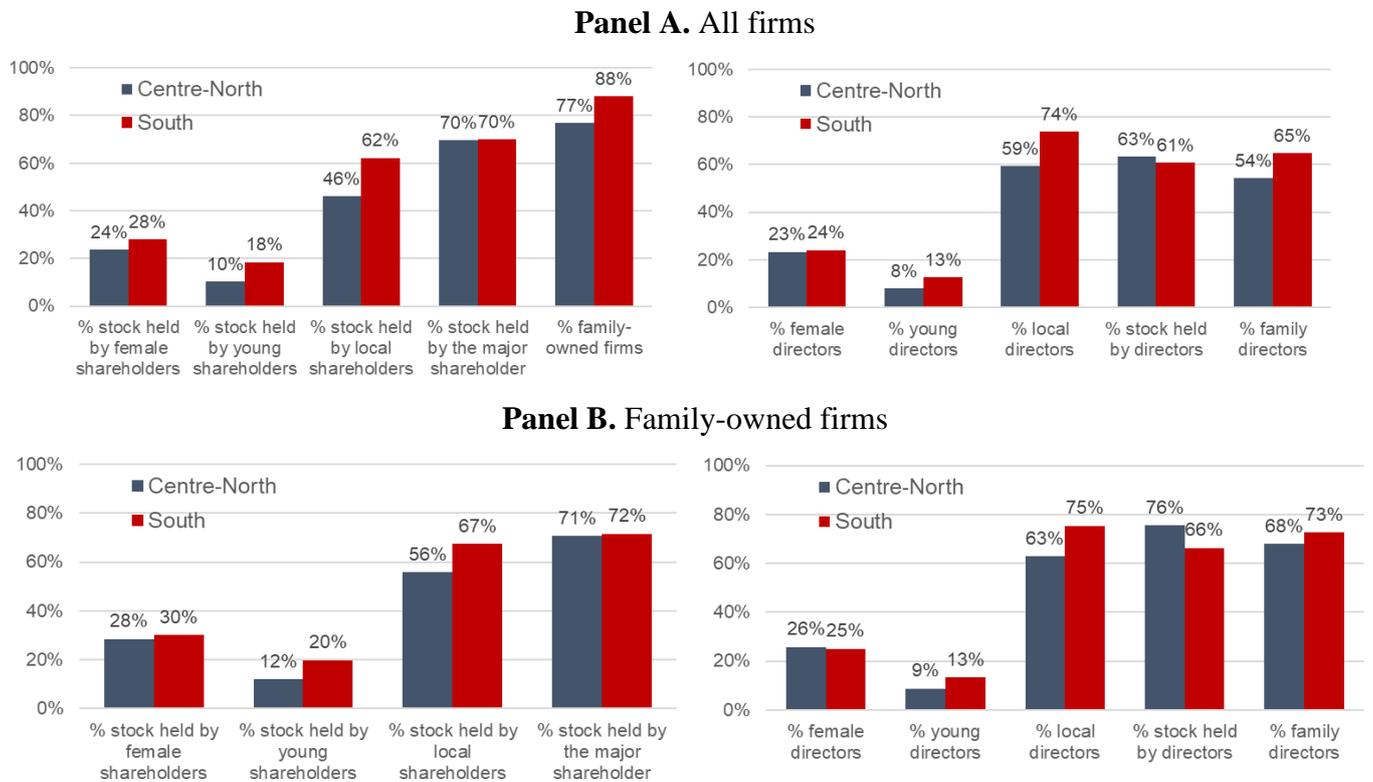
Source: CADS and Business Register data.

Table A.4. Productivity and governance (universe of corporations)

Dependent variable:	(log of) output per worker					
	I	II	III	IV	V	VI
=1 if South	-0.271***	-0.272***	-0.269***	-0.263***	-0.277***	-0.262***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
% female directors		-0.076***				
		(0.002)				
% young directors			-0.065***			
			(0.004)			
% local directors				-0.057***		
				(0.002)		
% stock held by directors					-0.114***	
					(0.003)	
% family directors						-0.107***
						(0.002)
Controls	YES	YES	YES	YES	YES	YES
#observations	442,026	442,026	442,026	442,026	442,026	442,026

Cross-section regression with firm productivity as dependent variable and governance characteristics as main explanatory variables. Controls include size- and industry-fixed effects and (log of) capital-labour ratio, employment and material inputs. Robust standard errors in round brackets; *** p<0.01, **p<0.05, * p<0.1.
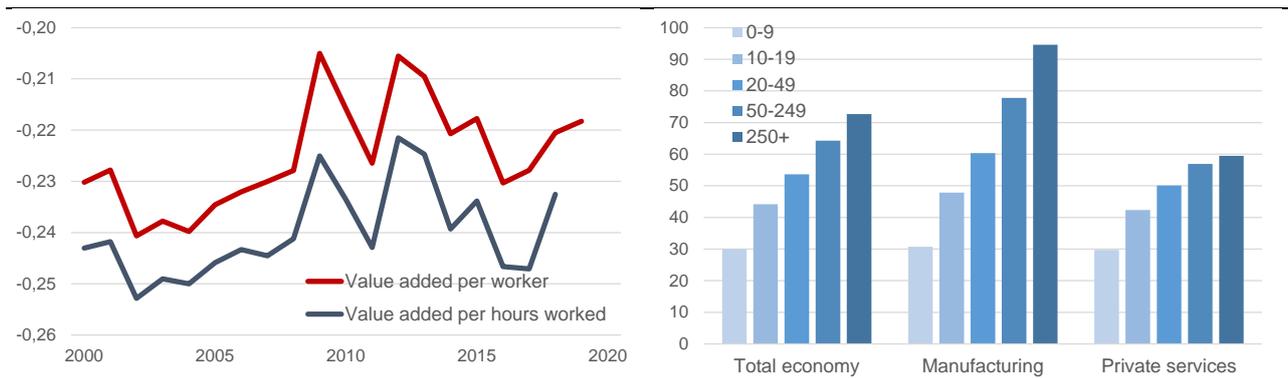
Source: CADS and Business Register data.

Figure A.1. Ownership and governance structure (universe of corporations)

Panel A. All firms

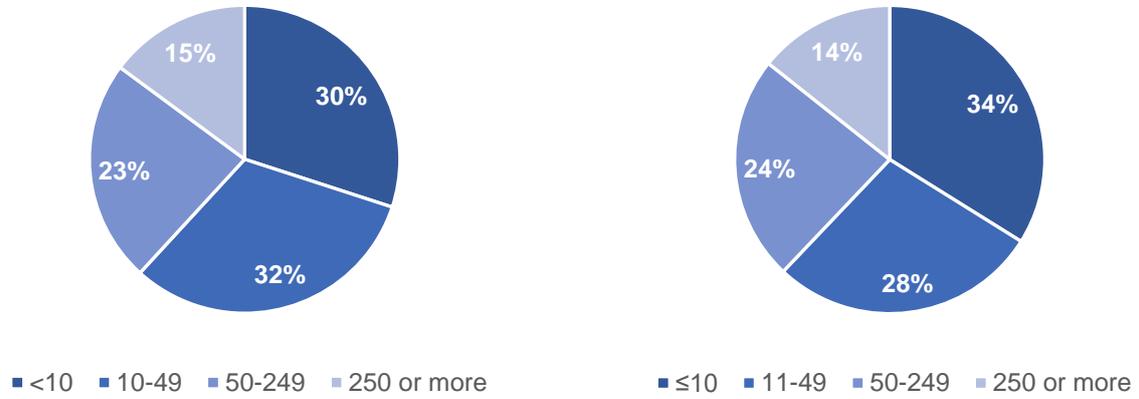**Panel B.** Family-owned firms

Source: Business Register data.

Figure A.2. Labor productivity by area, size and sector

Source: Istat National Accounts.

Figure A.3. Distribution of establishment by group size: LFS vs. Istat

The right panel shows the distribution of employees by establishment size group according to enterprises census while the left panel shows the same distribution according to the FLS. The size groups slightly differ in the two data sources.

Source: Istat National Accounts and Labor Force Survey.