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FAMILY INVOLVEMENT IN MANAGEMENT AND FIRM PERFORMANCE: EVIDENCE FROM ITALY

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Family Involvement in Management and Firm Performance: Evidence from Italy•

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Abstract. Using Total Factor Productivity (TFP) as a measure of corporate performance, this study compares the performance of owner management to that of firms run by professional managers over the period 2004-2006. We consider the influence of owner management for the sample as a whole and for subgroups of firms. The findings demonstrate that family run firms are less productive than firms run by professional managers, but the difference between the two is small. Our results support the idea that in Italy there is not a genuine process of manager selection both for family and no-family firms.

Keywords: TFP, Family firms, Management
JEL classification: D24, G34

1. Introduction

The effects of family ownership on firm performance have received increased attention over the last two decades, without any conclusive results (Schulze and Gedajlovich, 2010 amongst others). The issue is particularly relevant in Italy, since family firms have considerable importance in the economy and family control is the dominant form of ownership. Furthermore, this governance structure shows limited changes despite the extensive season of reforms developed between 1990 and 2005 to upgrade legal and financial framework of the Italian financial market (Giacomelli and Trento, 2005).
Therefore, it is certainly worth investigating the role of ownership structure in the Italian economy, especially considering the sluggish economic growth observed over the last decade. A number of papers have shown how this slowdown can be attributed to the structural characteristics of the productive system, which render it incapable of dealing with the competitive pressures resulting from globalisation. One of these characteristics, the limited size of the firm, translates into a low level of innovation, a low presence in international markets and a specialisation in traditional sectors. Of course, the question of size is related to the ownership structure (Bank of Italy, 2009, Bianchi et al., 2005). Indeed, family run firms tend to be characterised by prudence in strategic decision-making, due to the close connection between family and firm assets. Moreover, such firms demonstrate a reluctance to resort to outside managers, even when there is a shortage of internal resources (Bank of Italy, 2009). These characteristics, which may have a negligible effect in periods of stable growth, can become a severe handicap when the economic system has to deal with competitive pressures brought

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about by market globalisation such as the Italian system has experienced over the last years.

With regards the case of Italy, many papers have analysed how family ownership affects firms' behaviour and performance defined in several ways (Bandiera et al., 2008; Barba-Navaretti et al., 2008; Bianco et al., 2009; Bloom et al., 2008; Cucculelli and Micucci, 2008; Lippi and Schivardi, 2009; Sciascia and Mazzola, 2008), but none has studied the relationship between family management and total factor productivity (TFP). The aim of the paper is to fill this gap. .The focus is on management because in Italy family firms are mainly managed by a member of the family (Bank of Italy, 2009; Giacomelli and Trento, 2005; UniCredit, 2008). We use TFP because it may be considered a proper measure of firms' performance for several reasons. First, unlike financial measurements (ROE, ROI, Tobin's Q), productivity is less exposed to manipulation by accountants (Palia and Lichtenberg, 1999). Second, TFP intrinsically determines the equilibrium value of financial variables, such as profit and stock price (Griffell-Tatje and Lovell, 1999). In addition, performance measures based on market prices can be used only if the stock market is efficient (Brealey and Myers, 2000), which is not the case for Italy. Moreover, the use of measures based on market prices enables researchers to consider only listed firms which are just a small percentage of firms, while our sample combines both listed and non listed firms. Finally, many contributions have shown how Italy's productivity slowdown, observed over the last decade, can be attributed to total factor productivity (amongst others OECD, 2007; Van Ark et al., 2007) .

The main contribution of this study is to empirically assess whether firms run by a member of the owner family are more or less productive than firms run by professional managers over the period 2004-2006. TFP is estimated at firm level by using Levinshon and Petrin (2003) approach over the period 1998-2006. The empirical evidence is based on data from the Xth Capitalia-UniCredit survey (2008) collected through a questionnaire sent to a sample of Italian manufacturing firms and complemented with balance sheet data.

The findings demonstrate that professional managers are more efficient in operating the firm than owner-managers. The difference between firms that are managed by a member of the family and those operated by professional managers is estimated to be around 4%. The effect of the managerial regime is not homogeneous, however, rather it varies depending on the firm's characteristics. Productivity gaps between family and professional management are significant for small businesses, exporting firms, firms that do not innovate, those belonging to the scale intensive sector and firms located in Northern Italy.

The work is organized as follows. Section 2 provides a review of the theoretical issues and empirical evidence. Section 3 presents the data. Section 4 reports methodology and results. Finally, Section 5 concludes, while the Appendix provides information on the database, definitions and methodology used to estimate TFP.

2. The literature

A number of studies have investigated the impact of family influence on the performance of a firm[1]. The relevant literature is, in many ways, divided on the view that concentrated family ownership as well as owner-management may have beneficial

[1] For a survey of the literature see Chrisman et al. (2010), Matias and Galvão (2010), Schulze and Gedajlovich (2010).

economic consequences. Two different perspectives are used- agency theory and stewardship theory- each revealing evidence for and against the benefits of family involvement (Chrisman et al., 2005; Miller and Le Breton-Miller, 2009).

As to the distinction between owner-management and non-owner management, agency theory would predict a positive effect on value of firms, because owner-management aligns the interests of owners and managers (Jensen and Mechling, 1976). Yet, this effect may be offset by the costs of family management. Family managers are not recruited from the general market for managers and this situation generally leads to a lower quality among owner-managers than professional managers and may reduce a firm's productivity. Moreover, family run firms tend to be characterised by prudence in strategic decision-making, due to the close connection between family and firm assets. This risk aversion may prevent owner-managers from adopting new and productivity-enhancing management principles as too risky or breaking with business and family traditions.

Stewardship is another informative perspective from which to view the advantages and disadvantages of a family business. Stewardship theory posits that many leaders and executives identify themselves with the organization (Davis et al.1997). This attitude will be especially prevalent among family businesses in which leaders are either family members or emotionally linked to the family. There may be a strong incentive for family owners and executives, therefore, to act in the long-run interests of the company and all its stakeholders by investing in new processes, products and marketing (Habberson and Williams, 1999; Sirmon and Hitt, 2003). However, other researchers suggest that many of the advantageous attributes can become disadvantages, due to conflicts of interests within the family or distort incentives due to altruism or kinship behaviour (Gomez-Mejia et al., 2001; Schulze et al., 2002).

From a theoretical point of view, therefore, the effect of family management on firm's performance remains an open issue. These conflicting ideas have recently evoked a number of empirical examinations of the relationship between family management and firm performance. Even the empirical evidence provides no uniform answer. Although not entirely conclusive, many contributions on different countries show that family firms are more profitable or show higher market valuation when the management is handled by the founder. On the other hand, negative effects emerge when descendant runs the firm[2]. The only exceptions to this consensus are some studies on France (Sraer and Thesmar, 2007), on Italy (Favero et al., 2006) and on continental Europe (Barontini and Caprio, 2006) which find that family owned firms, first or later generations, perform better than firms with widely held ownership structures.

As regards how family management influences firm productivity (the main purpose of this work) the empirical literature is less extensive and the results are mixed. Palia and Lichtenberg (1999) and Martikainen et al. (2009) find a positive effect for US firms. Barth et al. (2005) document a negative relationship between family management and firm productivity for Norway.

As far as the authors know, similar studies for Italy have yet to be seen[3]. Some papers have analysed the performance of family managed firms using market-based and

[2]Adams et al. (2009), Anderson and Reeb (2003), Pérez-González (2006), Villalonga and Amit (2006), for US; Bennedsen et al. (2007) for Denmark; Bertrand et al. (2008) for Thailand; Cucculelli and Micucci (2008) for Italy.

[3]Lippi and Schivardi (2009) use TFP as a measure of performance, but the focus of their work is on a specific form of private benefits from control. They present a model in which the owners of the fim enjoy a private return from employment relationship with the managers.They assume that some firm owners

accounting-based performance. Most of these have found that family firms and family run firms perform worse (Caselli and Di Giuli, 2009; Sciascia and Mazzola, 2008)[4]. Other studies focusing on the founder effect provide mixed results. Cucculelli and Micucci (2008) find a positive founder effect followed by a marked drop in the post-succession performance. On the other hand, Favero et al. (2006) show that family owned firms, first or later generations, perform better than firms with widely held ownership structures. Other papers focus on management practices. Bloom et al. (2008) show that Italian entrepreneurs are reluctant to formally hand over the management of the firm to outside figures and this may have severe productivity implications. In the analysis of the ways in which managers are hired and incentives offered, Bandiera et al. (2008) confirm these findings[5].

3. Data description

This section presents firms' characteristics according to type of ownership and management. It draws on data from the Xth Capitalia-UniCredit survey (2008), which was compiled on the basis of the information collected in a questionnaire sent to a sample of Italian manufacturing firms and complemented with balance sheet data.

In the literature, there is no single definition of a family business (Astrachan and Shanker, 2003; Chua, 1999; Miller et al., 2007). In this paper information on ownership (whether the firm is family-owned or not) and on owner-management is based on response to a specific question on ownership and management included in the Xth Capitalia-UniCredit questionnaire (2008)[6].

We distinguish firms by ownership type and by management regime, but our focus here is on family management rather than ownership. As regards management, we distinguish three types of firms: (i) family firms run by a family member (*owner management*); (ii) family firms run by a professional manager outside the family (*outside management*); and (iii) a broader category includes both the family firms run by a manager outside the family (point ii) and non-family firms which presumably are also run by a professional manager (*professional management*)[7] (table 1).

Table 1 reports average values of a number of variables for 2006 and the distribution of firms (in parentheses) on the basis of their characteristics, such as the relevance of

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derive utility not only from profits but also from employing managers with whom they have developed a personal tie. For example, the owner of a family business might enjoy a compliant entourage and/or a group of managers that pursue the prestige of the family. They show that the greater the value of the private returns, the higher the probability that senior low-capabilities managers are retained and the lower the productivity of the firm. As a consequence, the model predicts that a higher value of the personal relation increases the average managers' tenure and decreases the firm productivity. They test these predictions using a sample of Italian manufacturing firms over 1984-1997 and find that the government and family firms have a larger share of senior managers, display lower values of TFP and are characterized by a negative relation between TFP and the share of senior manager.

[4]Caselli and Di Giuli (2009) show that the family firms with a non family Chief Financial Officer (CFO) perform better than both family firms with a family CFO and nonfamily firms. Sciascia and Mazzola (2008) find a negative quadratic relationship between family involvement in management and performance, but no association between family involvement in ownership and performance.

[5] Other works, that focus on firm's behaviour, stress how the greater risk aversion of Italian family firms can influence investment decisions (Bianco et al. 2009) or the decision to enter foreign markets (Barba-Navaretti et al., 2008).

[6] Additional information on database and definitions can be found in the appendix.

[7] The choice to consider professional management in family and non-family firms jointly finds support by Bloom et al. (2008). Their results show that family owned firms run by external management are statistically undistinguishable from non family firms

exports and innovation, Pavitt sector, size and territorial distribution. Family firms make up 63% of the sample (1,835 out of 2,920 firms) and 90% of these are run by a family member (1636 out of 1835). This illustrates the difference between Italy and other countries. The difference lies not so much in the importance of family groups within the economy as this phenomenon is common in other countries (La Porta, 1999), but rather in the fact that family management is the dominant form of management (Bianchi et al. 2005; Bloom et al., 2008; UniCredit, 2008).

Looking at the total sample we find that, on average, family firms' value added, number of employees, capital, white collar share, labour productivity (value added/number of employees) are lower than non family firms. More importantly, the TFP, estimated with Levinsohn and Petrin approach[8], is lower both overall and for all the sub-samples of firms considered: listed and non-listed, exporters and non exporters [9], innovators and non innovators,[10] Pavitt sector, size and territorial area.

The firms considered are representative for the Italian industrial structure, in particular as regards medium and large firms. They operate predominantly in traditional sectors and are located in Northern and Central Italy, a high percentage of which are exporters[11]. Nevertheless, several differences emerge between the groups considered: family firms are substantially smaller than the average (only 7% have over 250 employees, while this figure rises to 12% for non family firms) and they are specialised in traditional activities (50% of family run firms are found in the supplier dominated sector, while the figure is 46.5% for the non-family firms). As regards innovation, 59% of the family run firms carried out some form of innovation over the period 2004-2006, while the figure is 56.9% for the non-family firms. Moreover, only a small number of family run firms are listed (1% compared to 3% for the others), which indicates their desire to maintain control and the consequent reluctance to look for outside investors.

[8] See Appendix for details.

[9] The status of exporting is available in Xth wave of UniCredit-Capitalia survey, given by the answer to the question "Did you export in 2006?".

[10] We consider innovative any firm that claimed in the questionnaire to have carried out innovations in the period 2004-2006.

[11] The percentage of exporting firms in the sample is 68% as opposed to 17% according to ISTAT (2008). This might be a consequence of the fact that, in the Capitalia-Unicredit sample, the firms with fewer than 10 employees are not considered and there are few firms with less than 50 employees. These firms are characterized by a low degree of internationalization: exporting firms make up only 10% of those firms with fewer than 9 employees and 46% of those with 10 to 50 employees, while this figure becomes 78% for firms with more than 50 employees (ISTAT, 2008).

Table 1. Firms' characteristics by ownership and management type (average values)

	Ownership		Management regime		
	Family firms	Non-family firms	Owner-managed family firms	Outside management in family firms	Professional management (family and non-family firms)
Value added	54406	92764	53881	86651	91807
Number of employees	95	136	86	167	141
Capital	52744	71836	47207	98679	76039
Age	33	32	33	33	33
White collar share	37.9	43.6	38.2	35.2	42.3
Labour productivity	550	584	548	572	582
TFP	845	934	833	950	936
Listed	1268	1533	1132	1449	1519
	(1,0%)	*(3,0%)*	*(0,7%)*	*(3,5%)*	*(3,1%)*
Export status					
Exporters	878	968	865	967	968
	(68,5%)	*(67,6%)*	*(67,1%)*	*(79,9%)*	*(69,5%)*
Non exporters	774	864	766	889	866
	(31,1%)	*(31,8%)*	*32.5*	*19.6*	*29.9*
Innovation status					
Innovators	879	934	868	968	940
	(59,0%)	*(56,9%)*	*(58,6%)*	*(62,8%)*	*(57,8%)*
Non innovators	791	946	775	942	946
	(35,7%)	(37,8%)	(36,4%)	(30,2%)	(36,6%)
Pavitt Sectors					
Supplier dominated	765	809	756	854	816
	(49,9%)	*(46,5%)*	*(50,6%)*	*(44,2%)*	*(46,2%)*
Scale intensive	921	1071	898	1104	1076
	(19,1%)	*(18,9%)*	*(19,1%)*	*(19,6%)*	*(19%)*
Specialised suppliers	910	989	902	965	985
	(26,8%)	*(29,4%)*	*(26%)*	*(32,7%)*	*(29,9%)*
Science based	1026	1241	1016	1116	1226
	(4,3%)	*(5,2%)*	*(4,3%)*	*(3,5%)*	*(4,9%)*
By class of employees					
Small (less than 50)	720	764	715	776	766
	(57,3%)	*(53%)*	*(58,8%)*	*(45,2%)*	*(51,8%)*
Medium (50-250)	955	997	948	1007	999
	(35,5%)	*(34,7%)*	*(34,8%)*	*(41,7%)*	*(35,8%)*
Large (>250)	1326	1530	1316	1365	1502
	(7,1%)	*(12,3%)*	*(6,4%)*	*(13,1%)*	*(12,4%)*
By territorial area					
North	864	958	849	988	962
	(74,8%)	*(75,2%)*	*(74,9%)*	*(74,4%)*	*(75,1%)*
Center	848	872	843	884	875
	(15,6%)	*(15%)*	*(15,3%)*	*(18,1%)*	*(15,5%)*
South	692	838	691	700	822
	(9,5%)	*(9,8%)*	*(9,8%)*	*(7,5%)*	*(9,4%)*
N. observations	1835	1085	1636	199	1284

All variables computed for 2006. Data in value deflated and expressed in euros. In parentheses shares with respect to the total of the column. The share for exporting/non exporting firms and innovating/non innovating firms may not sum to 100 since some firms did not answer the questions in the survey.

Source: elaborations on data from Capitalia-UniCredit (2008)

Similar differences are found when we compare management type, which reveals better performances by no family managers than family members.
Also in this case, the result is confirmed by all the indicators used: value added, number of employees, capital, white collar share and labour productivity. Turning to TFP we find firms run by professional managers perform better both overall and in each of the subgroups considered. Furthermore, firms run by a non-family manager are more open to the market (3.1% listed firms compared to 0.7% for family run firms); they tend to be larger (the proportion of firms with over 250 employees is double that for family run firms); they are more active on the international scene (69.5% compared to 67.1% for family run firms) and finally they are less present in traditional sectors (46.2% compared to 50.6%) and less concentrated in the south of the country.
In conclusion, the data confirm the major aspects of the Italian corporate governance model, i.e. firms are still mainly run by family members, though this is less so for larger firms, listed companies and specialised suppliers. Firms not run by family members, on the other hand, are larger, more productive, use more skilled workers and enjoy higher TFP than their family run counterparts.

4. Empirical strategy and results

The analysis of simple summary statistics does not, of course, allow us to isolate the possible effects on productivity of other covariates. In order to disentangle the effect of family management and other factors on firm productivity, therefore, we turn to an econometric analysis. To investigate whether firms run by a member of the owner family are more or less productive than firms run by professional managers we estimate a TPF equation of the form:

$$\omega = \beta_0 + \beta_1 D_{FM} + \sum_{j=1}^{k} \gamma_j X_j + \sum_{s=1}^{v} \eta_s D_s + \varepsilon \qquad [1]$$

where ω is the firm TFP (in logarithm) estimated by using Levinsohn and Petrin approach, D_{FM} is a binary variable taking the value one if the firm is run by a member of the owner family and zero otherwise, X a vector of firm-level variables highlighted by previous literature as important drivers of TFP and D a set of sector dummies, grouping firms according to both the Pavitt taxonomy and the ATECO sub-sections, and territorial area dummies. Our parameter of interest is β_1 that measures whether firms managed by a member of the owner family are more or less productive than non-family-managed firms. Firms characteristics include: firm size (measured by the log of employment), the log of firm's age in 2006; a dummy variable equal to one if a firm is listed on the stock market; the share of white collar workers on total employment as a proxy of human capital[12].
Equation [1] is estimated by standard ordinary least squares[13] considering average values of 2004-2006 period for TFP and employment[14].

[12] Among the firm-level predictors the correlation coefficients are very low, which confirms that these variables capture distinct characteristics of firms and that the results do not suffer from a serious problem of multicollinearity of firm predictors (see appendix for correlation matrix)..
[13] This equation probably suffers from omitted variable problems since unit heterogeneity is not considered. One way to allow for unobserved heterogeneity is the fixed effects model. However, panel data analysis cannot be performed, due to the lack of time series in management variables.
[14] We use TFP and employment in the form of three-year averages over the period of the survey (2004-2006) to limit influence of shocks and measurement errors in specific years. Moreover, the use of the

Table 2 reports the empirical estimates from the TFP equation on all manufacturing firms. We found that family-managed firms are, on average, 5.3% less productive than non-family firms[15] when we only control for firm size (model 1). The results do not change when we consider age, whether the firm is listed, Pavitt sectors and territorial area (model 2). By adding human capital (model 3), we get a picture of the sensitivity of the relationship between family management and productivity to differences in human capital. The productivity gap decreases by a 1.3 percentage point and this could reflect that firms run by a family are less intensive in human capital[16,17].

Tab. 2 The owner-management in family firms and productivity

	Model 1	Model 2	Model 3	Model 4	Model 5[1]
Intercept	5.899***	5.799***	5.622***	5.785***	5.612***
	(169.29)	(121.26)	(109.37)	(104.45)	(105.69)
Manager from the owner family	-0.054***	-0.053***	-0.040***	-0.037***	-0.034**
	(-3.48)	(-3.46)	(-2.63)	(-2.49)	(-2.19)
Log number of employees	0.199***	0.195***	0.209***	0.210***	0.208***
	(24.82)	(24.98)	(26.34)	(26.36)	(25.06)
Log age		0.015	0.018	0.010	0.021*
		(1.27)	(1.55)	(0.88)	(1.82)
Listed firm		0.161***	0.128**	0.128**	0.123**
		(2.67)	(2.17)	(2.07)	(1.86)
White collar share			0.283***	0.269***	0.275***
			(8.81)	(8.39)	(8.34)
Sectors	no	yes	yes	yes	yes
		(Pavitt)	(Pavitt)	(ATECO)	(Pavitt)
F-sector test		40.07***	31.83***	18.45***	30.10***
Territorial area	no	yes	yes	yes	yes
F-area test		15.06***	13.13***	21.61***	13.29***
R^2	0.22	0.28	0.31	0.34	0.30
F-statistics	332.69***	121.12***	120.69***	70.85***	109.04***
White test statistic	21.51***	68.22***	90.71***	185.67***	90.06***
Number of observations	2876	2802	2795	2795	2692

Dependent variable: log of TFP (average values for 2004-2006 period). In parentheses, t-values based on heteroskedastic-robust standard errors. Level of significance: *** 1%, ** 5%, * 10%.
(1) Model 5 refers to the sample net of foreign ownership firms.

In model 4, the family management relationship is not altered by the inclusion of industry dummies at the ATECO sub-sections level instead of Pavitt classification. In the fifth column (model 5) we report results obtained by estimating the equation without foreign owned firms and find that the productivity differential between family run firms

three-year averages limits the extent of missing data, nevertheless the results using 2006 values (not reported here) are very similar.

[15] Percentage differences in TFP can be obtained as $[\exp(\beta_1)-1]*100$, where β_1 is the estimated coefficient associated to the management regime dummy.

[16] The assumption is that the parameters for white collar share are the same for family managed and non family managed firms. We have tested this assumption by introducing an interaction effect between the white collar share and D_{FM}. Since the coefficient of this interaction effect is statistically insignificant, we can accept the hypothesis of the equality of human capital parameters.

[17] Unreported estimates show that the productivity differential is still negative, but not statistically significant, when we consider only family-owned firms and compare owner management with outside management.

and the others is smaller (-0.034 instead of -0.040). This result might be due both to the fact that foreign firms (99 in our sample) display higher TFP (on average the value is 1,169) than domestic firms (average value 867)[18] and, in our sample, there are more foreign firms in the group of non family run firms (66 firms compared to 33 family run firms).

Tab. 3 Robustness checks

Sub-samples	Model 3
Coefficient of the Manager from the owner family dummy	
Exporters	-0.036**
	(-2.07)
No exporters	-0.047
	(1.57)
Innovators	-0.017
	(-0.84)
Non innovators	-0.077***
	(-3.05)
By class of employees	
Small (less than 50 employees)	-0.044**
	(-2.26)
Medium (50-250)	-0.006
	(0.25)
Large (>250)	-0.062
	(-1.16)
Pavitt sectors	
Supplier dominated	-0.030
	(-1.35)
Scale intensive	-0.117***
	(-3.13)
Specialised suppliers	-0.005
	(-0.18)
Science based	-0.020
	(-0.28)
Territorial area	
North	-0.045***
	(-2.67)
Center	-0.004
	(-0.11)
South	-0.025
	(-0.42)

Dependent variable: log of TFP (average values for 2004-2006 period).
In parentheses, t-values based on heteroskedastic-robust standard errors.
Level of significance: *** 1%, ** 5%, * 10%.

Our evidence on productivity differentials is obtained as an average across all the manufacturing sector. The results could, therefore, stem from some underlying heterogeneity rather than from differences in management structure. In order to take this into account and check the robustness of our results, we split our sample into different

[18] This result is in line with the empirical literature (for example, see Barba Navaretti and Venables, 2004).

groups. The first sub-sample is according to export status, while the second split is between innovative and non-innovative firms. In the literature, indeed, heterogeneity within sectors is either explained by self-selection of more efficient firms in the export market (Melitz, 2003)[19] or in terms of innovation (Klette and Kortum, 2004). Moreover, family management could have a different impact depending on the sector, size or location of the firms. This last point is especially crucial for Italy where, as is well known, a territorial dualism persists. To control for these sources of heterogeneity, we compute the effect of family firm management separately for size (small, medium, large), location (North, Centre, South) and sector, grouping firms according to the Pavitt taxonomy.

Table 3 reports results of these robustness checks on model 3 with the focus on the managerial regime dummy coefficient. Estimates show that the dummy's coefficient is negative in all groups, while there are differences in the statistical significance and magnitude of productivity gaps. The findings provide evidence that even when exporting, family run firms are less productive than others, while the coefficient for non exporters is not statistically significant. On the contrary, the coefficient of the managerial regime dummy is more pronounced in the sample of non innovative firms than in the full sample as indicated by a productivity gap of more than 7%, while there is no significant difference for innovators.

The small firms are the ones where the family management effect is stronger and statistically significant, while for medium firms there is almost no difference between the family run enterprises and the others.

In terms of sector characteristics, interesting results emerge from the heterogeneity analysis: only scale intensive firms display a statistically significant coefficient for the family management dummy, with an even stronger effect than the one found in the full sample, indicating a gap of 11%. However, for the specialised suppliers group that includes the machine and machine tools industry, the backbone of the Italian model of international specialisation, there is no substantial difference between the two management regimes. Finally, the findings indicate that, while for the northern firms, the productivity gap is significant, for firms localised in the central and southern part of the country we find no significant effect.

In conclusion, three main findings emerge from our analysis. First, for all specifications and groups of firms, enterprises run by a member of the owner family are less productive than those run by non-family-managers. Second, human capital is a key variable in explaining differences in productivity between family run firms and their counterparts. Finally, the effect of the managerial regime is not homogeneous, rather it varies depending on the firm's characteristics. Productivity gaps between professionally and owner-managed family firms are significant for small businesses, exporting firms, firms that do not innovate, those belonging to the scale intensive sector and firms located in Northern Italy.

5. Conclusions

Using TFP as a measure of firms' performance, this study compares the influence of owner management to firms run by a professional manager. The analysis allows us to

[19] In the case of Italian firms, several works provide empirical support to the prediction of the self-selection hypothesis that only firms who are efficient enough to bear entry costs and the intense competition of the export market will export (Castellani, 2002; Castellani and Giovannetti, 2010; Serti and Tomasi, 2008).

show the main features of the corporate governance model of Italian companies, a large proportion of which are family owned and family run, though the percentage of family run firms diminishes in large firms, listed companies and specialised suppliers. Firms not run by the owner family are larger, more productive, and their workforce is more skilled than their family run counterparts. In particular, their TFP is higher on average both overall and for all the subgroups of firms considered:, export status, innovative activities, Pavitt sector, size and territorial area.

The econometric analysis based on a sample of Italian manufacturing firms shows that family managed firms are, on average, 5% less productive than non-family managed firms after controlling for sector, area, as well as other characteristics, such as age and being listed on the Stock Exchange. We also find that the TFP gap drops to 4% when we include the share of white-collar employees suggesting that this factor contributes to the productivity gap. The effect of the managerial regime is not homogeneous rather it varies with respect to the firm's characteristics, both in the statistical significance and in the magnitude of productivity gap but not in the sign, which is always negative.

Our results are in line with previous studies on Italian firms such as Caselli and Di Giuli (2009), Lippi and Schivardi (2009) and Sciascia and Mazzola (2008), which found, considering different measures of performance, that family run firms perform worse than non-family managed firms. However the difference between the two is small (-4%), especially if we compare with the result reported by Barth et al. (2005) for Norwegian firms (-14%). This result may reflect the system of managers selection in Italy. As Bandiera et al. (2008) show for the service sector, managers in non-family-firms are more likely hired through formal channels than in firms with family ownership, but less than their international counterparts.

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Appendix

Data

The data used come from the Xth Capitalia-UniCredit survey (2008) of Italian manufacturing firms, based on information from a completed questionnaire and balance sheets. The survey, which covers a sample of firms with 11 to 500 employees and all firms with over 500 employees, gathered information on the main characteristics of the Italian manufacturing system. The questionnaire refers to 2004-2006 and contains information on firm structure, ownership structure, workforce composition, physical capital and innovation, as well as the degree of internationalization. The balance sheet data refer, instead, to 1998-2006. The original data refer to 5,100 firms. In order to estimate TFP we carry out a data cleaning procedure: we eliminated the firms which presented negative values of value added from the original archive and firms with a growth rate of value added and of employees below the first or above the ninety-ninth percentile of the distribution. Finally, firms for which at least 7 years data regarding employee numbers was not available were also excluded. After the cleaning procedure our sample is equal to 2920 firms.

Ownership structure and management

Our information on ownership (family-owned or not) and on owner-management are based on response to the following question:

If your company is controlled or owned by an individual or a family who runs the company?

1. *the person who owns or controls the company or a member of the family that owns or controls the company;*
2. *a manager hired from outside the company;*
3. *a manager hired from inside the company.*

Construction of TFP variable

TFP at firm level is estimated by using Levinshon and Petrin (2003) approach. Productivity was estimated using the following log-linear specification of a production function:

$$y_{it} = \beta_0 + \beta_K^{MAT} k_{it}^{MAT} + \beta_l l_{it} + u_{it} \qquad (1')$$

with $i = 1, \ldots\ldots N$ firms, t = 1998, ……2006 and where *y* represents the value added, *l* the number of employees, k^{MAT} the stock of physical capital, β_0 measures the average efficiency and u_{it} represents the deviation of firm *i* from this average at time *t*. The error term can be decomposed into two parts:

$$u_{it} = \omega_{it} + \eta_{it} \qquad (2')$$

where the term ω_{it} represents the productivity of firm *i* at time *t* and η_{it} is a stochastic term which includes not only the measurement error, but also the shocks which are unobservable to firms, and, therefore, do not correlate with inputs.

Productivity ω_{it} is known to the firm which, therefore, in the case of positive shocks to productivity, can decide to increase production by raising the level of inputs. This determines a problem of simultaneity which Levinshon and Petrin (2003) resolved by identifying in the demand for intermediate goods a proxy related to the variations in TFP known to firms.

Equation (1') was estimated by utilizing as proxy of the stock of physical capital the tangible fixed assets and the demand for intermediate goods was measured by the

operating costs. The value added has been deflated by using the ISTAT production price index available for each ATECO sector. As regards the tangible fixed assets, data have been deflated by using the average production price indices of the following sectors: machines and mechanical appliances, electrical machines and electrical equipment, electronics and optics and means of transport. For the operating costs, we adopt the intermediate consumption deflator calculated by using data from ISTAT.
The TFP used in this paper has been estimated in Aiello et al. (2010), to which those interested can refer for further details.

Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11
TFP (1)	1.00										
Family management (2)	-0.11	1.00									
Log employees (3)	0.48	-0.10	1.00								
Log age (4)	0.12	0.04	0.18	1.00							
Listed firm (5)	0.14	-0.09	0.18	0.05	1.00						
White collar share (6)	0.11	-0.08	-0.17	-0.06	0.04	1.00					
Dummy South (7)	-0.13	0.01	-0.02	-0.09	-0.01	-0.06	1.00				
Dummy Center (8)	-0.04	0.00	-0.03	-0.05	-0.01	-0.02	-0.14	1.00			
Dummy Pavitt 2 (9)	0.08	0.00	0.01	0.02	0.02	-0.04	0.03	0.04	1.00		
Dummy Pavitt 3 (10)	0.12	-0.05	0.04	0.00	0.01	0.07	-0.11	-0.07	-0.30	1.00	
Dummy Pavitt 4 (11)	0.10	-0.02	0.01	0.00	0.07	0.14	-0.04	-0.02	-0.11	-0.14	1.00

(obs=2795)