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ENTREPRENEURSHIP, INHERITED CONTROL AND FIRM PERFORMANCE IN ITALIAN SMEs.

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Abstract

Despite the pervasive presence of family business worldwide, especially among small and medium sized companies, nearly all past studies on family founder succession have focused on large, public companies. We evaluate the issue of the inherited firm control on performance in an economic setting with a large presence of small- and medium-sized private firms run as family businesses. Our paper contributes to the existing literature in three ways. The first concerns the sample characteristics. By focusing on the transfer of business in private SMEs, our study helps to fill a gap in the existing literature that is largely concerned with public companies listed in official market. We set up a unique dataset by matching two different data sources: firstly, a cross-sectional survey dataset collected directly from more than 3,500 companies by means of a questionnaire and, secondly, a company account dataset drawn from Cerved. We merge survey data with balance sheet data in order to perform the econometric analysis. The article's second contribution is related to the effect on performance caused by the transfer of business within the family. Our major results show i) a founder effect in the Italian manufacturing industry and ii) a large drop in the post-succession performance in family-run businesses. Finally, we provide new evidence on the relationship between pre-succession firm (and industry) characteristics and past succession performance. By using a performance-based control group matching method to control for the effect of a pure mean reverting process in firm performance, we show that the observed large drop in the post-succession company performance is attributable to good performing companies, especially when operating in highly competitive industries.

JEL classifications: G32, G34, M13

Keywords: inherited control, entrepreneurship, SMEs governance, matching control group, mean reversion.

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Indice

1. Introduction

Because of the widespread family control of many companies around the world, family firms have attracted a lot of interest over the last few years. Family business is an important source of economic development and plays an important role in creating employment, generating innovation, incubating and financing new businesses. The long term nature of the family firms' ownership allows them to dedicate resources to innovation and risk taking, thereby fostering entrepreneurship.

Nearly all past studies on family founder succession have focused on large, public companies (Pérez-Gonzàlez, 2003; Bennedsen et al. 2005; Villalonga et a., 2005), despite the pervasive presence of family business worldwide, especially among small and medium sized companies. Large companies usually have a dispersed ownership base and a strong separation of ownership and control, a feature that does not entirely match typical corporation across countries. On the contrary, we still know little about the specific mechanism through which family ownership and control affect performance in small and medium family run businesses, the role played by the family members (and founders) and the effect on performance caused by the transfer of business within the family. Even if some preliminary implications can be drawn from recent theoretical analysis (Bhattacharya and Ravikumar, 2002, Burkart et al. 2003), the empirical evidence is still scant.

We evaluate the issue of the inherited firm control on performance in an economic setting with a large presence of small and medium sized private (SMEs), entrepreneurial firms run as family businesses. Our paper contributes to the existing literature in three ways. The first concerns the sample characteristics. By focusing on the transfer of business in private SMEs, our study helps to fill a gap in the existing literature that is largely concerned with public companies listed in official market. Given our main interest on family-managed companies, we will use the Italian economy as the focus of our empirical analysis. Because of the large presence of small and medium family-run businesses, we believe that the Italian manufacturing industry can represent an ideal candidate to empirically evaluate the effect of succession on firm performance. However, the choice of dealing with small private companies has also the disadvantage of not having publicly data available. For this reason, we have built up a dataset by matching two different data sources: firstly, a cross-sectional survey dataset collected directly from more than 3,500 companies by means of a questionnaire and, secondly, a company account dataset drawn from Cerved.[1] We merge survey data with balance sheet data in order to perform the econometric analysis.

The article's second contribution is related to the effect on performance caused by the transfer of business within the family. Our major results show i) a strong founder effect (consistent with an entrepreneurial view of the firm) in the Italian manufacturing industry and ii) a large drop in the post-succession performance in family-run businesses. Even if the negative effect of succession on performance is an established result in recent empirical literature, we generalise this finding by using a very large sample of small and medium private companies run by an entrepreneur-founder.

[1] Cerved collects balance sheet data for a large sample of Italian companies.

Finally, we provide new evidence on the relationship between firm (and industry) characteristics and observed past succession performance. Our main result is that the major change in post succession performance is largely concentrated in those firms whose pre-succession performance was higher than sample average. By using a performance-based control group matching method to control for the effect of a pure mean reverting process in firm performance, we show that the observed large drop in the post-succession company performance is attributable to good performing companies, thus confirming the "entrepreneurial view" as a key determinant in company performance.

The rest of the paper is as follows. The next section briefly summarizes the prior work on the role of the founder-entrepreneur, family business and business transfer. Section 3 draws attention to the motivation of the paper and to basic research questions. Section 4 outlines our empirical strategy and presents the results. Section 5 concludes.

2. Entrepreneurship, family business and business transfer

2.1. Entrepreneurship and business transfer

Because of the growing relevance of entrepreneurial firms in world economy - and the importance of founders for the growth of their companies - there is reason to believe that the succession process in private, non quoted SMEs will differ from large firm succession. This makes it difficult to extrapolate from the existing literature on succession and business transfer (Wasserman, 2003).

Large-company studies usually neglect many critical aspects. First, the standard framework of Berle and Means (1932) large companies - where owners and managers are two very different groups - does not apply to a small company setting of entrepreneur/founder.[2] Second, in entrepreneurial firms - the majority of small and medium sized companies - the departure of the founder can have an impact on company performance larger than the change of any other manager. At the time of company founding, "founders usually craft a vision, attract employees, develop products based on that vision and perform the management tasks necessary to grow the business" (Wasserman, 2003): the organization they develop are

[2] In the ideal line connecting different types of companies according to the degree of separation of ownership and control, entrepreneurial family firms are on the opposite side with respect to the Bearle and Means corporations. As those companies, entrepreneurial firms account for a large share of employment and growth, both in developed as well as developing countries, and their key role in fostering economic growth is unanimously accepted. But despite their widespread diffusion, most of the existing literature on the transfer of business has neglected their relevance because of the difficulty to have reliable data available for extensive studies.

founder-tailored and this makes their replacement extremely challenging. Third, the successor in small business usually comes from inside the family, while, in larger companies, CEOs are more likely to join the company from outside the family.[3] Fourth, the founder succession is likely the most critical event in the life of most SMEs: after the starting difficulties have been overcome, the most likely cause of business failure in these companies are the problems encountered in the transition from a personal entrepreneurial style of management to a different one (in the case of the heir-successor), or to a functionally-organized professional management team. Fifth, the departure of a founder has a disproportionate negative impact on the likelihood of organizational survival, at least because of the risk of destroying the commercial network (trust) the founder set up. Finally, the transfer of business in small and medium sized companies, especially family-run companies, is still largely unexplored – both theoretically and empirically - and this introduces challenges for collecting detailed data and producing deeper analyses.

As a general point, founder's characteristics affect both the company organisation and performance. As an entrepreneur, the founder usually transfers his talent in managing the company. Much of the company performance depends on founder's talent, i.e. his ability as entrepreneur. An important contribution toward the understanding of this complex concept was recently made by Lazear (2002 and 2005). He emphasizes the point that becoming an entrepreneur (as opposed to a specialist) requires having a more balanced talent that spans a number of different skills. Having a background in a large number of different roles increases the probability of becoming an entrepreneur, i.e. a founder in our case. The intuition behind this proposition is that entrepreneurs must have sufficient knowledge in a variety of area to put together the many ingredients needed for survival and success in a business. The empirical validity of this theory is still quite preliminary but some support has been given in Lazear (2002 and 2005), Wagner (2002 and 2003) and Shaw et al. (2005).[4]

This model provides a useful framework for understanding how founder-entrepreneur's characteristics can affect firm's profitability following the transfer of business. The starting point is that, even if talented people are always more valuable in all industry, there are particular industries where talented people are more valuable than in other. Lazaer (2005) and Shaw et al. (2005) show that this depends on the industry characteristics in terms of "outcome" variance of revenue: the larger this variance, the larger the risk of failure due to a bad decision and the larger the need to have a smart entrepreneur that takes good decisions. As an example, new industries, as well as high technology industries, have an intrinsic larger risk that is due to the higher probability that a wrong decision can be taken or to a larger amount of damage (or success in the case of a proper decision) than in other industries. So, good performing companies in "high variance of payoff" industries are those that are willing to pay high wages for high ability entrepreneurs.

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[3] In larger companies, boards are usually reluctant to appoint an outside (the board) CEO, unless the company has experienced serious underperformance or needs an effective strategic change.

[4] In all these papers, the key factors in promoting entrepreneurship reside in the possibility of training entrepreneurial attitudes, even if for all of these authors seems to be little scope for policy intervention because entrepreneurial talent appears to be mostly innate and difficult to develop and teach.

In modelling the value of leaders in different industries, Lazear (2005) shows that the effect of talent on value depends on a parameter (k) that is a measure of the difference in the company value of getting something right instead of wrong. Although more able individuals are more valuable everywhere because they get more correct decision, the effect of ability on value is greater when k is large. High variance industries have larger values of k, i.e. are affected by the quality of decision more heavily than low variance industries. This intuition can apply also to the transfer of business. In the case of an "average-ability" successor, the probability for the company to end up with a relevant drop in performance should be higher the larger the "payoff variance" of the industry (or of the single company within the industry). Industry payoff can be signalled by structural industry characteristics, like the degree of innovation, the intensity of competition, the relative presence of large and small competitors, and so on. In the case of a single firm, high variance companies can be revealed by the industry profit distribution by firm or by the company profitability relative to sector average. If we take the actual company performance as the "instantaneous" rate of the company value, its change following a transfer of business should reveal the "intrinsic value" (in the Lazaer sense) of the person that is actually in charge of control. Larger drop in performance can be associated to a successor's ability lower than expected, or lower than required in that "payoff variance" type of industry.

2.2. Family business and business transfer

While the classic view of ownership is that of widely held dispersed control, La Porta et al. (1999) report evidence that family control is prevalent in approximately half of medium sized companies throughout the world. Anderson and Reeb (2003) and Villalonga and Amit (2005) report that a large share (at least one third) of large US listed companies are characterized by some form of family ownership and/or control: in particular, family ownership (founder and descendants) is present in 35 (37) percent of firms in the Standard and Poor's (Fortune) 500, where families hold an average of 18 (16) percent of shares.

Outside the United States, evidence of ownership concentration by La Porta et al. indicate that families control over 53 percent of publicly traded companies with at least $500 million in market capitalization in 27 countries. Evidence for other countries is consistent with these data: Morck et al. (2000) show that direct family involvement in Canada is present in almost 30% of 500 largest public traded companies; Claessens et al. (2002) find extensive family control in East Asian corporation, even if significant cross-country difference exists; Faccio and Lang (2002) show that on average 44.3% of Western European companies are family controlled, with a higher share in continental Europe with respect to the UK. Barontini and Caprio (2005) confirm the high presence of family controlled companies in a large set of European countries.

Even if the role of families has been indicated as prominent also in public companies, their role in privately held firms is presumably even larger. From a theoretical perspective, it is still unclear whether family control should have a positive impact on firm performance. The existing literature has highlighted a number of crucial issues related to family ownership: incentives, agency, monitoring, personal (non monetary) rewards from the success of organization, "business human capital" creation and so on. As a general point, the ability of the family member or the heir to create value (compared with non-family managed firms) has been neither demonstrated, nor rejected unambiguously yet.

Villalonga and Amit (2005) summarize positive and negative effects of family involvement on firm value. A positive effect usually arises within the classic owner-manager

agency conflict described by Berle and Means (1932) and Jensen and Meckling (1976): family ownership, control or management provide a closer monitoring on external managers activity, as well as an enhanced alignment of family interest with the company investment policy. Moreover, working together with the founder allows the descendant to develop some business-specific skills and, especially in the small business sector, increase its "business human capital" (i.e. the ability to run firms). Conversely, a negative effect usually comes out when the selection of the management is restricted within the group of heirs: if the talent of the family successor is lower than that of a potential external manager, a "dynastic management effect" [5] can decrease the value of the firm ("cost of nepotism"). Burkart, Panunzi, Shleifer (2003) show that the negative effect due to the cost of family management - if hired professionals are better managers than are family founders or their heirs – can offset the positive effect of family control on incentives. In a complementary paper, Bhatthacharia and Ravikumar (2002) show that a family successor can efficiently survive only in small firms, where the cost of inducing effort by professional managers outweighs the benefits created by their qualification. Consistent with the view that family management mitigates the classic agency problem, Palia and Ravid (2002), Adams, Almeida, Ferreira (2004) and Fahalenbrach (2004) find that founder-CEO firms trade at a premium relative to other firms. On the contrary, Pérez-Gonzàlez (2003) for US companies and Smith and Amoako-Adu (1999)[6] for Canadian firms find a negative stock market reaction to the appointment of family heirs as managers. Furthermore, Villalonga et al.(2005) show that the negative effect of descendant CEO in a sample of US firms is entirely attributable to the second generation, while the contribution of third generation is positive. Moving to Europe, Bennedsen et at. (2005) also find a dramatic negative impact of family succession on firm performance in a large set of Danish companies. Sraer and Thesmar (2004) show that family firms largely outperform widely held corporations in France, and this result holds for founder controlled firms, but more surprisingly also for heir managed firms. Also Barontini and Caprio (2005) find a neat positive effect of family management in a sample of European companies (i.e. families are better then other controlling shareholders), even if part of this positive effect is wasted by the excessive use of wealth-reducing, control-enhancing devices (dual classes share, pyramids, etc) by families and only a little positive effect remains.

3. Motivation of the paper and research questions

Succession is a risky event in company life. It can end up with a poor post-succession performance, or even with the failure of the company. For the economy as a whole, the cost of the succession is supposed to be higher, the larger is the number of companies involved, i.e. the share of businesses that are still founder-managed and that are not expected to manage the succession process successfully.

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[5] Gennaioli Caselli (2004). Morck et al. (2000) document the negative "heir" effect in the GDP growth rate at country level.

[6] In a 3-day window interval, they observe a decline in the stock price when family successor is appointed (but it is due to young age and not managerial competences).

By using the Italian case as representative of a SMEs-type economy, we investigate the effect of succession on firm performance. Our focus on Italian SMEs relies on three main reasons. The first is the importance of this size of firms (SMEs) in the Italian economy: according to the 2001 Census data, 98% of the Italian manufacturing firms have less than 50 employees and they employ approximately 55% of the total manufacturing workforce. If we consider the size class with less than 250 employees (i.e. companies included in the "small size class" by the EU definition), these percentages go up to 99% of firms and 77% of total industrial employment. A second reason is that no previous studies on the impact on performance of family succession have been carried out on Italian SMEs. The only study we are aware of is Barontini and Caprio's (2004) that includes a group of Italian listed companies in a large sample of Western European companies.

The third reason concerns the actual exposure of the Italian economy to the "succession risk". The sample distribution of companies for decade of birth (Fig.1) shows that a large share (approximately 70%) of existing companies was born in the time interval from the early '60s to the end of the '80s. Among these companies, only one third has already completed a succession process, while the remaining share is approaching very fast to a change of management. The expected "succession wave" could have a substantial impact on the economic system in the next few years. We provide a rough estimate of the expected succession rate – i.e. the probability for a founder-managed company to undergo a succession process in the next year – by using the past (observed) probability of succession calculated with the Kaplan Meier survival function as a predictor of future succession probability. Simulation results are reported in Exhibit 1. They show a probability of succession for the sample of founder managed companies ranging from 46% to 65%: this means that a succession event is currently on run for approximately one founder-managed company out of two.[7] Even if this tendency will probably slow down in the next few years, the size of the phenomenon makes it an issue very critical to deal with.

Because of the large presence of founder-managed companies in the Italian economy, a first question to be answered concerns the role of the founder within the family business. The literature on entrepreneurial firms in world economy has shown the importance of founders for the growth of their companies. This role is far more relevant in small and medium sized companies, where the founder plays a key role for the growth of the firm. As individuals, "founder CEOs can be markedly different from later stage 'professional' CEOs": differently from a manager or a successor that join the organization after its founding, the characteristics of the founder CEO are tightly linked to those of the organization (Wasserman, 2003). Especially in smaller companies, the customer base, as well as major suppliers and financiers, usually develop a "personal" and unique relationship with the founder and it makes his replacement rather difficult. Given the entrepreneurial characteristics of most founder-run companies, we expect that these companies over-perform other companies in similar competitive environments.

[7] The estimated succession wave has been obtained by weighing the present firm distribution by age with the probability of succession estimated using Kaplan Meier procedure. In order to take into account different survival probabilities according to the decade of birth, we run the estimation procedure for the different periods of time: whole sample, companies born after 1950 and companies born after 1970. Censoring has not been considered.

If the founder plays a key role in fostering firm performance and growth, a change in control can have a negative effect on firm performance, especially when the control is inherited by heirs within the family. As a consequence, we expect i) a decline in company performance when the control passes to a family successor and ii) a larger decline (improvement) in performance, the better (worse) the firm performance before the succession.

This hypothesis is due to two self-reinforcing arguments. The first concerns the succession process within the family. In the majority of family-run companies, the transfer of business is largely completed within the family, i.e. CEO transition is often a simple passage of control from the father-founder to the heirs, without any formal involvement of the board. As a consequence, if family firms promote CEOs based on family ties rather than on merit, "avoiding the market" to find a suitable external manager increases the "cost of nepotism" (Pérez-Gonzàlez, 2003). The second point refers to the founder ability to manage the company. If managerial and entrepreneurial abilities tend to regress to the average of population (Becker and Tomes, 1986), as it happens for physical characteristics or earnings, the cost of nepotism is expected to increase with the entrepreneurial/managerial capabilities of the founder and with the intensity of competition in the industry.

This peculiarity in the succession process (the founder is keen to transfer the business to the heirs) provides some testable implications.

Firstly, if successors' capabilities are uniformly distributed among descendants, i.e. descendants of a smart founder are as good as other descendants, founder-managed companies that perform better than average are likely to experience a greater than average reduction in performance.[8] Similarly, poor performing firms are expected to improve their performance if their negative position were due to an insufficient ability of the founder to deal with a new market environment. As a general point, the business transfer due to succession can speed up the mean reverting process of firm performance to sectoral average.

Secondly, the intrinsic characteristics of the industry in which the company competes can affect the expected drop in firm performance. In high tech industries, or in sectors with intense competition, successors are likely to need longer time than in traditional sectors to mature and to develop the needed ability. So, for a given period of succession, companies in high competition/high technology sectors could experience a sharper decline in profitability than firms in low competition/traditional industries. On the contrary, succession could be easier and can even produce an increase in performance in those sectors requiring lower ability than average.

[8] The underlying hypothesis is that capabilities are uniformly distributed among successors, regardless of the distribution capabilities among founders.

4. The empirical analysis

4.1. Description of data

Most of the recent studies on the succession process have focused on large, public companies quoted in official market. Quoted companies usually have a large record of data – from balance sheets and stock market - that allows measuring the stock market response to major changes in firm ownership or management composition. Company annual reports and specialized press also provide an excellent source of information for the analysis of the succession process.

Firms in the small business sector lack most of desired data. Except for company accounts, publicly available data do not usually report major facts affecting the succession, such as the starting date of the firm, the year of the founder's exit or the characteristics of the management staff after the founder's exit. Most data can be traced out only by a direct interview. For this reason, we build up a dataset by matching two complementary sources: a cross-sectional survey dataset, collected directly from companies through a questionnaire-based phone interview, and a large company accounts dataset from Cerved. We merge the survey data with the balance sheet data in order to perform the econometric analysis.

The aim of understanding the succession process in the small business manufacturing industry has affected the selection of the sample. First, we selected a large set of companies within the 10-1,000 employee range in 2004 and with balance sheet data for the whole period 1997-2003. We selected only non-farm, non-services companies in the manufacturing industry according to Ateco 2001 classification. Then, in order to increase the degree of homogeneity of companies in the sample, we restricted the survey to four Italian regions that share a similar pattern of development, at least with respect to sectoral specialization[9] and the presence of "industrial districts" as the prevalent type of industrial organisation for traditional industries.

According to these criteria, the initial sample consists of 7,500 companies with usable accounts for the period 1994-2004. We conducted a phone survey on all these company and we got back a total of 3,532 questionnaires. The telephone survey was conducted in the period March-July 2005. Summary information for the complete sample, split by region and industry, is summarized in Table 1 and 2.

The interview was conducted as follows. After asking the starting year of the company and who is currently managing the company, questions go into two different directions. If the founder is still managing the company, we ask i) if some heirs work in the company, ii) the founder's age and iii) if a succession is expected in the next two years. If the founder is no longer managing the company, we ask i) the type of current management (heirs, an acquiring

[9] Regions are Abruzzo, Marche, Emilia Romagna, Veneto. These regions represent the bulk of the Italian "traditional" industry and experienced an intense industrialisation process since the late Fifties. Major industry specialisations include fashion (clothing and footwear), wood and wooden furniture, light mechanical industry and plastic manufactured products.

company, other external managers) and ii) the date in which the succession took place.

In the following, we present some preliminary results from the survey. Founder managed companies are - on average – 64.7% of the total sample (Table 1.a), with a percentage that constantly increases as the company starting year approaches present time. As expected, the percentage of "first generation companies" on total sample is lower than average in Emilia Romagna and Veneto, because of the relative early start of industry development in these two regions[10].

The share of founder-managed companies is also decreasing with firm size: 67.1% of companies in the 10-49 size class are still founder-managed, while only 40.9% in the 500+ class. With respect to firm size, founder-run companies are, on average, significantly smaller than non-founder managed firms.

Restricting the analysis to founder-run companies, a very large share (78.1%) of interviewed companies has one or more heirs involved in the current management. This percentage, that increase with founder's age, goes up to almost 90% when founder's age is in the 70-79 interval, and then declines for the 80+ class. If we exclude this last class for which some difficulty in the transition process can be found (i.e. a lack of a suitable heir or preference to sell the company or even to shut down the operations), we can guess that for these companies the transition process is more likely to be a continuative, overlapping process that does not represent a neat breaking point in the company's life-cycle: the older generation deliberately shares the business management in order to extend the heir apprenticeship and to increase its "business human capital".

Table 1.b shows other descriptive statistics. The percentage of founder run companies varies slightly between sectors. The succession rate, i.e. the ratio of heir and unrelated run companies on total companies increases with the size of the firm (bigger firms are likely to be older and more likely to have already undergone a succession event) and with the geographical location of the company. Because of the early development of industry in that area, northern regions (Veneto and Emilia Romagna) show a succession rate higher than Marche and Abruzzo. With respect to the choice of internal (heir) versus external (unrelated) succession, our data show how more "mature" industries (foods, clothing, footwear, wood and furniture) are more likely to remain within the family (heir), while less mature industries (mechanical industry, machinery, appliances) show a higher incidence of unrelated succession. This could be due to different reasons such as the need for stronger management ability in less mature industries, or an intense growth rate that forces the founder to sell the company before the heir has reached sufficient maturity. Furthermore, for similar reasons bigger companies seem to be more likely to be managed by unrelated managers than by heirs.

4.2. The "founder effect"

The existing empirical literature largely agrees on the result that family run businesses perform better when the founder is actively involved in company management. A particular management talent of the founder, together with his ability to seize opportunities in

[10] Most firms have actually already undergone a succession process.

unexploited, high growth market segments (especially at the beginning of the firm life cycle), is usually indicated as mainly responsible for the good performance of a founder-managed company.

In this paragraph we test the presence of a founder effect in our sample and compare the founder's performance with that of heirs and unrelated controlled companies.

The empirical specification has a performance variable (ROA and ROS) as dependent variable. ROA is the Return on Asset and is measured as the ratio of earnings before interest and taxes on a firm's assets; ROS (Returns on Sales) has the same numerator but is divided by total sales.[11] Two different dummies - for heir (H) and unrelated (U) - indicate the present status of management. Both H and U are zero if the company is founder-managed and 1 otherwise (respectively for heir or unrelated management). Other variables potentially affecting the firm performance are included in the regression: size, age, growth rate and leverage. Also controls for time, sector and area are considered. The empirical equation is:

(1)
$$\pi_{it} = \alpha_0 + \alpha_{1t} H + \alpha_{2t} U + \alpha_{3t} Size + \alpha_{4t} Age + \alpha_{5t} Growth + \alpha_{5t} Lev + controls + \varepsilon_{it}$$

The variables of interest are the status dummies for heir (H) and unrelated (U). As expected (Table 2), both variables have a negative - and statistically significant - coefficient, thus confirming the role of the founder in boosting performance in founder managed companies.[12] Size, age and leverage are negatively related to performance in founder-managed companies, while the growth rate of the previous year shows a positive sign. In order to test robustness, we also run some single regressions comparing each status with all the others. We use the following empirical specifications:

(1') $$\pi_{it} = \alpha_0 + \alpha_{1t} H + \alpha_{3t} Size + \alpha_{4t} Age + \alpha_{5t} Growth + \alpha_{5t} Lev + controls + \varepsilon_{it}$$

(1'')
$$\pi_{it} = \alpha_0 + \alpha_{2t} U + \alpha_{3t} Size + \alpha_{4t} Age + \alpha_{5t} Growth + \alpha_{5t} Lev + controls + \varepsilon_{it}$$

(1''')
$$\pi_{it} = \alpha_0 + \alpha_{2t} HU + \alpha_{3t} Size + \alpha_{4t} Age + \alpha_{5t} Growth + \alpha_{5t} Lev + controls + \varepsilon_{it}$$

where H and U have the same meaning as above. Variable HU is a dummy variable that

[11] Accounting performance measures, as ROA and ROS, have some particular features that make them preferable with respect to other commonly used measures of company performance. We have used accounting measures of firm's profitability also because of the unavailability of market value measures for private companies.

[12] Differently from Sraer and Thesmar (2004) for French companies, in our sample unrelated-controlled firms perform worse than heir-managed companies.

provides direct comparison between heir and unrelated management. It takes a value equal to zero when the company is heir-managed and 1 when controlled by unrelated.

Estimate results are reported in Table 3. Estimated coefficients are very close to those obtained from the previous regression equation and appear to be statistically significant, thus confirming the role of the founder and the better performance of heir-managed companies compared to unrelated-managed firms.

4.3. Pre-post succession results

A direct test of the consequences of succession (both for heir or unrelated) is to compare the level of firm performance before and after the transfer of business. As in Pérez-Gonzàlez (2003), the null hypothesis is that we should expect negligible changes in profitability because of the succession. If, in contrast, succession were to improve performance, we should expect positive changes in ROA and ROS in firms where control is transferred. Or alternatively, we should expect a negative change in profitability if company performance deteriorates upon succession.[13] We use a three-year window before and after each transition.

As a benchmark for econometric analysis, we first confront some descriptive statistics on pre and post-succession performance. As a result, performance is hurt by succession, given that the industry-relative performance of sample companies decrease from -0.92 to -1.37 for ROA and from 0.15 to -0.31 for ROS, with a similar decline of 0.5 point for both variables.

As a more general test, we then estimate the fixed-effect regression (2), reported on Table 4. The dependent variable is, alternatively, ROA and ROS. Independent variables include a dummy variable "After" that is equal to one if the transfer of the company has already happened, and zero otherwise. The specification in column 1 of Table 4 also includes an interaction term After* family succession, that shows the effect of succession within the family relative to the unrelated. Also additional controls have been added to take into account the age of the firm and years effects.

(2) $\pi_{it} = \alpha_0 + \alpha_1 After + \alpha_2 After * Family + \alpha_3 \overline{\pi} + \alpha_4 Age + controls + \varepsilon_{it}$

[13] The succession impact on the two ratios can also be ranked by using the standard ROA decomposition formula, i.e. by splitting ROA as the product of earning over sales (ROS) and sales over asset (Turnover). If we exclude the (long period) situation in which a reduction (increase) in one ratio is balanced by an increase (decrease) in the other, in short term we normally observe a null or positive association between changes in these two ratios, as well as a larger variability of turnover ratio with respect to ROS. The reason is due to the fact that the turnover ratio reflects a process of quantity adjustment that is easier to realize in the short run, while changes in prices take a longer period to be implemented. In other words, while ROS reflects the markup policy of the company and its positioning in different market segments, the turnover ratio shows the ability of the firm to change its sales (a quantity adjustment) according to market conditions, even in a very short span of time. Therefore, turnover ratio is mainly responsible for changes in ROA in the short period. As a consequence, we rely more on ROA when analysing the impact of succession on performance.

where dummy After is equal to 0 if the company is still founder managed, and 1 otherwise. After*Family is an interaction term indicating the transfer within the family. $\overline{\pi}$ is the sector average profitability index calculated as a 3-digit SIC, area and size class mean. Variable $\overline{\pi}$ has been introduced in order to examine changes in firms performance after controlling for industry, area and size effect.

Estimate results in columns II and III come from equation (3).

$$(3)\ \pi_{it} = \alpha_0 + \alpha_1 After + \alpha_3 \overline{\pi} + \alpha_4 Age + controls + \varepsilon_{it}$$

that is a version of the general model (2), but estimated separately for two subset of companies (heir and unrelated succession).

According to estimates results in table 4, the succession causes a reduction in profitability, that is larger for heir-managed companies (-1.96 and -1.76 respectively for ROA and ROS, columns III and VII).

Columns 4 and 8 add to equation (2) a time trend variable that starts with zero for the succession year and takes values 1, 2, and 3 for each of the following three years after succession. The positive sign of the coefficient indicates that the drop in performance is partially absorbed by successor management, presumably in concomitance with an increase in experience.

4.4. Family succession and performance

Because of our main research motivation concerns the impact of "family" succession on firm performance, we will focus our empirical analysis on the sub-sample of succession that take place within the family, i.e. on heir- or family-successions.[14] Table 5 divides family successions according to three different criteria: i) firm size, ii) technological intensity of the production and iii) the intensity of competition of the industry in which the firm competes. The first criterion is size measurement based on the number of employees. The second criterion is based on the OECD classification that aggregates all 3digit ISIC sectors in four groups according to their R&D intensity (high, medium high, medium low, low). The third criterion is based on Aghion et al. (2005) and is the 3 digit SIC industry Lerner index of competition, which is (1-profits/sales) calculated as the average across the entire firm level database for the period 1998-2002 (Bloom and Van Reenen, 2005). Regressions are estimated for the heir controlled firms sample by using dummy variables for technological intensity, size and intensity of competition. Estimate results show that succession hurts performance mainly in small-size firms that compete in (relatively) high tech industries and in sectors where the intensity of competition is high. However, these estimated coefficients are not

[14] This choice also reflects the small number of observations on unrelated succession in our sample.

significant (table 5).

4.5. Good and poor performers

Table 6 provides evidence on the impact of succession on firm performance in good and poor performing companies. The empirical specification comes from equation (4):

$$(4)\quad \begin{aligned}\pi_{it} &= \alpha_0 + \alpha_1 After + \alpha_2 After * Family + \alpha_3 After * Family * Performance + \\ &+ \alpha_4 After * Performance + \alpha_5 \overline{\pi} + \alpha_6 Age + \alpha_7 Time + controls + \varepsilon_{it}\end{aligned}$$

where Performance is a dummy variable indicating alternatively well- or poor-performing companies and other variables have the usual meaning. The selection of companies has been done by grouping good and poor performing companies according to their relative performance with respect to the sample median. For both good and poor performing companies, the large difference in performance observed in descriptive statistics reduces after family successors are promoted to the CEO position. When the family-successor takes over the family business, the company experiences a very large decline in performance: the droop ranges in a interval of 3.50 – 4.20 percentage points (for ROS and ROA; table 6), that is a very large reduction with respect to pre-succession performance. Contrarily, the improvement in poor performing companies is far more modest than good performing ones, ranging from .10 to .40 percentage point respectively for ROS and ROA. As a consequence, the large decrease in company performance after the heirs took control does not appear adequately balanced by a comparable increase in well performing companies.

4.6. Good performers and mean reversion: quality of management or luck?

So far we have observed a significant decline in well performing companies' ROA and ROS. Post succession company performance of good performers can decrease not only because of a lower managerial quality of the heir with respect to the founder, but also because of a mean reversion trend due to a pure luck (Barber and Lyon, 1996) that pushes performance towards the industry mean. Therefore, when we evaluate post succession changes in firm performance, we have to remove this pure effect of the mean reverting trend from performance changes, in order to isolate the management quality shift.

In order to consider this potential bias, we have used a performance-based control group matching method performed as follows[15]. Each sample firm (run by heirs after a family succession) is matched to each comparison firm (run by founders) with the same three-digit SIC code, size class and located in the same area ("regione"). The selection of the firm to be used as a comparative term is done by selecting only those firms whose performance in the

[15] See also Barber and Lyon (1996) and Huson, Malatesta and Parrino (2004).

year before the family succession are within ± 10 per cent of the sample firm's performance. If there are no matched firms, the procedure is repeated using all firms with the same three-digit SIC code and the same size class, regardless they are located. Finally, a last step includes all firms with the same three-digit SIC code, regardless of size class and location area. [16]

Estimate results in Table 7.a and 7.b (respectively for ROA and ROS) provide clear evidence for the large drop in company performance following succession. Furthermore, the interaction between performance and family succession shows that heir-managed companies have a post-succession performance lower than founder-managed ones, thus confirming the difficulty for the good performers to find a suitable successor within the restricted group of family members.

Finally, Table 8 provides further indications on the relationship between founder change and the external setting in which the company competes: the drop in post succession performance of good performers appears to be higher, the higher the competitive intensity of the sector, that is managerial quality is a key determinant of company performance in those sectors with a high intensity of competition.

5. Conclusions

In this paper we have addressed the issue of the cost of succession arising when company control is transferred from founder to successor within a family business.

Major results can be summarized as follows. As most of the empirical research on this topic, we have also observed a "founder effect", with founder-run businesses that systematically outperform heirs- or unrelated-managed companies.

Pre- and post-event analysis shows that family succession generally hurts performance. By using a fixed effect model, we find a reduction in profitability by 2.0 points for ROA and 1.8 for ROS in the three-year period following the succession (with respect to the previous three-year period). In relative values, the decline in performance is very significant and is around 20% for ROA and 25% for ROS.

Post succession decrease in performance appears to be mainly concentrated within well performing companies, i.e companies that, before the succession, outperformed the sectoral average profitability. The reduction in profitability is impressive (by about 4.0 points for ROA and ROS) and confirms the negative effect that the change in control produces on firm performance in small and medium entrepreneurial companies. Furthermore, poor-performing

[16] The matching procedure has allowed to find out 561 founder-managed companies that have been used as a matched control group for 177 heir controlled companies. Estimate results provided in Table 7.a, 7.b and 8 come from this matching method. We have obtained a similar result also by using a one-to one matching procedure that compares 177 heir-managed companies to 177 founder-managed comparable companies.

companies show a positive, even if fairly modest, increase in profitability after founder's departure, thus signalling that the succession can also be a "positive" event in the company life if it allows a strategic change and renewed organizational capabilities that improve the company's responsiveness to the market. We also tested for the presence of a pure mean reversion effect in firm performance, but our tests fails to accept such hypothesis, suggesting that quality of management matters for firm performance, especially in competitive industries.

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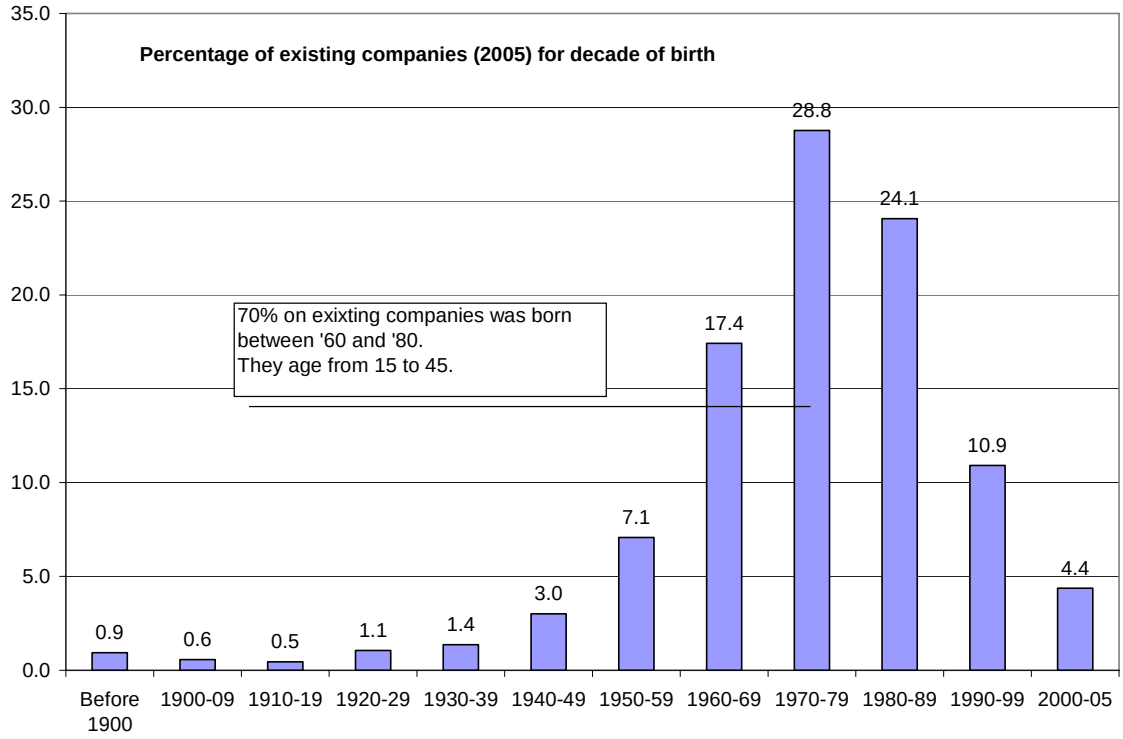
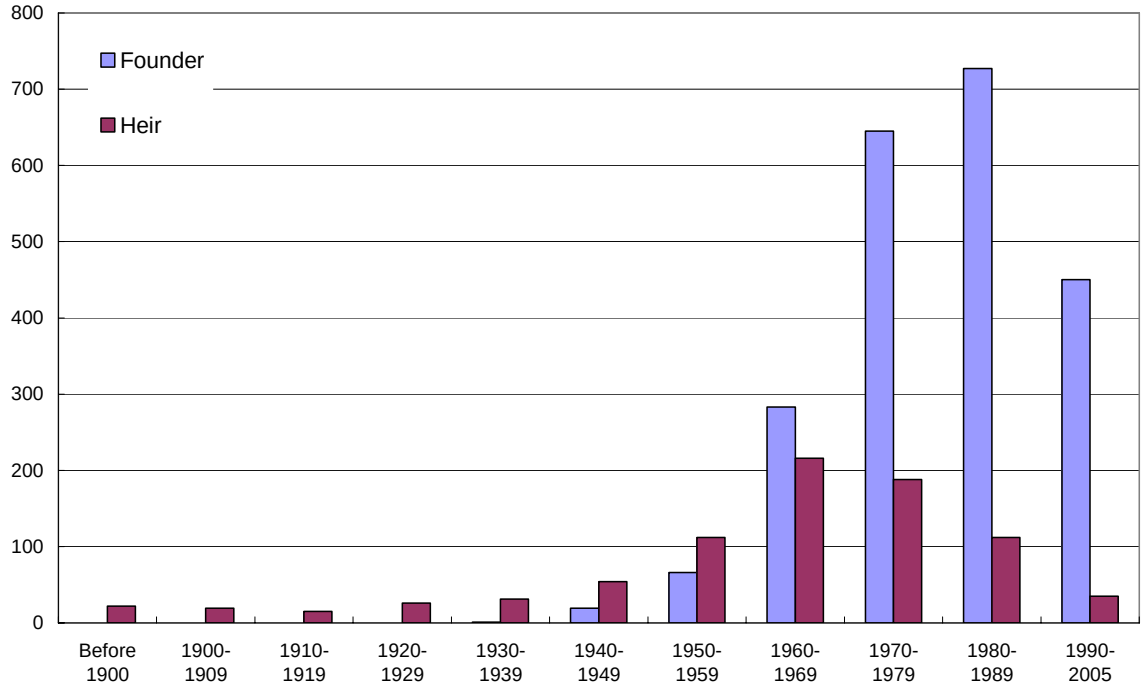
Figure 1 – Distribution of firms for decade of birth – Sample of 3,548 Italian companies.



Source: Survey of Marche Polytechnic University

Figure 2 – Distribution of firms for decade of birth and actual management – Sample of 3,548 Italian companies.



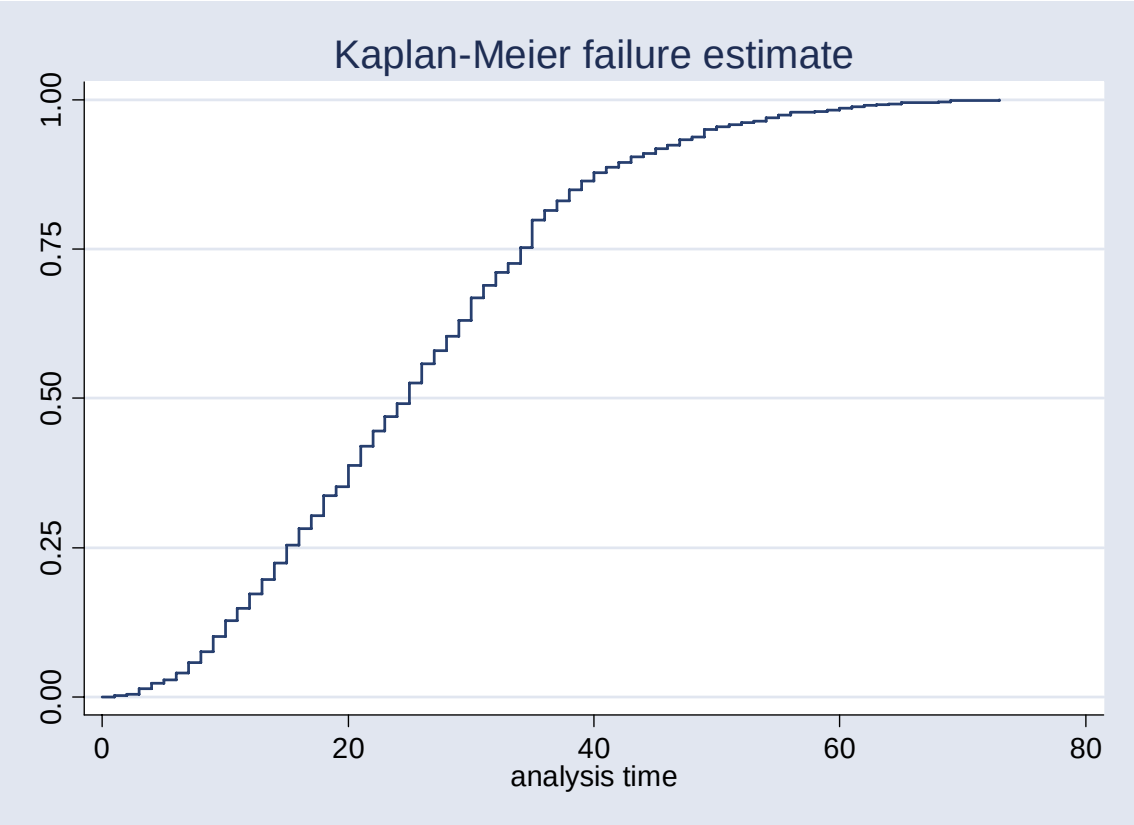
Source: Survey of Marche Polytechnic University

Exhibit 1 - Estimates of expected successions for different scenarios – Probability of successions estimated using Kaplan Meier survival estimator for three different samples.

Starting year	Founder managed companies	Heir managed companies	Total companies	Probability of succession (Kaplan Meyer estimate)			Expected successions (absolute value)			Expected successions (percentage of founder managed companies)		
				Whole period	Last 70 Years	Last 40 Years	Whole period	Last 70 Years	Last 40 Years	Whole period	Last 70 Years	Last 40 Years
Before 1900	0	33	33	-	-		-	-	-	-	-	-
1900-09	0	20	20	-	-		-	-	-	-	-	-
1910-19	1	15	16	1.00	1.00	1.00	1	1	1	100.0	100.0	100.0
1920-29	2	35	37	1.00	1.00	1.00	2	2	2	100.0	100.0	100.0
1930-39	4	44	48	1.00	1.00	1.00	4	4	4	100.0	100.0	100.0
1940-49	29	77	106	0.98	0.98	1.00	28	28	29	98.0	98.0	100.0
1950-59	98	151	249	0.95	0.97	0.98	93	95	96	95.0	97.0	98.0
1960-69	324	289	613	0.80	0.87	0.94	259	282	305	80.0	87.0	94.0
1970-79	696	316	1,012	0.55	0.69	0.75	383	480	522	55.0	69.0	75.0
1980-89	654	193	847	0.38	0.47	0.56	249	307	366	38.0	47.0	56.0
1990-99	331	53	384	0.12	0.26	0.38	40	86	126	12.0	26.0	38.0
2000-05	138	16	154	0.04	0.11	0.21	6	15	29	4.0	11.0	21.0
Total	**2,277**	**1,242**	**3,519**				**1,064**	**1,301**	**1,480**	**46.7**	**57.1**	**65.0**

Source: Survey of Marche Polytechnic University

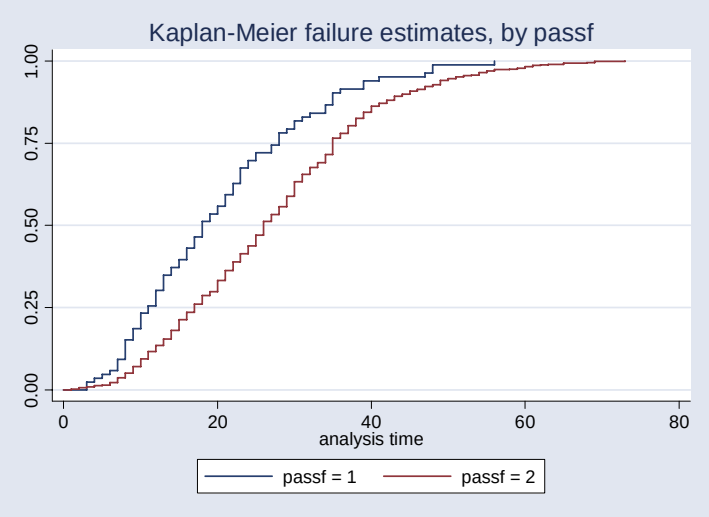
Figure 3 - Kaplan Meier survival estimate - Sample of companies born after 1930. Failure event: succession. Analysis time: years of management by founder.



Source: Survey of Marche Polytechnic University

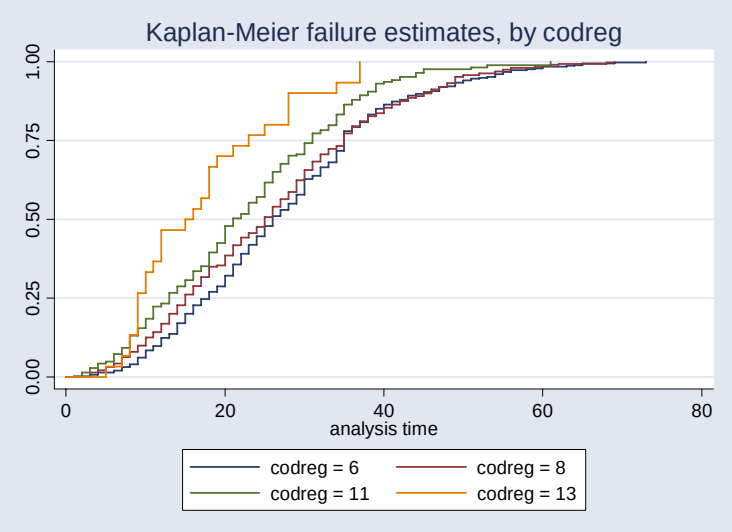
Figure 4 - Kaplan Meier survival estimate - Sample of companies born after 1930. Failure event: succession. Analysis time: years of management by founder.

Succession within or outside the family



Passf=1 Succession outside the family; Passf=2 Succession within the family

Succession by region



Codreg = 6 Veneto; Codreg = 8 Emilia Romagna; Codreg = 11 Marche; Codreg = 13 Abruzzo

Source: Survey of Marche Polytechnic University

Table 1.a

DESCRIPTION OF THE SAMPLE

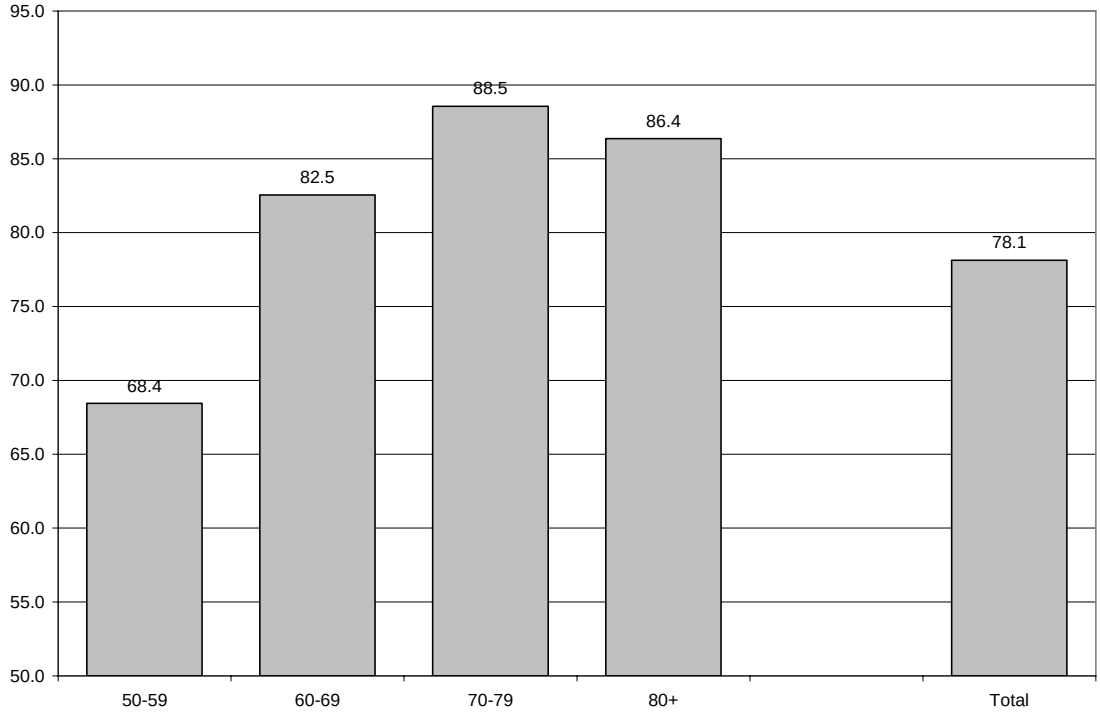
(% of firms and firm size)

		Size class (employees)					
		10-49	50-99	100-199	200-499	>500	Total
Founder still manages	%	67.1	61.5	56.2	48.7	40.9	64.7
Founder retired	%	32.9	38.5	43.8	51.3	59.1	35.3
Total	%	100.0	100.0	100.0	100.0	100.0	100.0
Founder still manages	Mean	22.4	69.7	136.3	269.5	1365.9	47.5
Founder retired	Mean	24.0	70.2	133.3	294.2	1044.8	64.8
Total	Mean	22.9	69.9	135.0	282.2	1176.1	53.6
	Diff.	-1.6 (***)	-0.5	3.1	-24.7(*)	321.1	-17.3(***)

Significant at 1% (***), 5% (**) and 10% (*)

Source: Survey of Marche Polytechnic University

Figure 5 – Share of founder-managed companies with one or more heirs involved in the current management.



Founder age by class of age

Source: Survey of Marche Polytechnic University

Table 1

DESCRIPTION OF THE SAMPLE

(number and % of firms)

Variables	Firm Control							Succession rate	of which: Family succession rate
	Founder		Heir		Unrelated		Total		
	N°	%	N°	%	N°	%	N°	%	%
Total Sample	2,292	64.6	834	23.5	422	11.9	3,548	35.4	23.5
Sectors									
Foods	110	48.5	89	39.2	28	12.3	227	51.5	39.2
Textile & clothing	171	70.7	50	20.7	21	8.7	242	29.3	20.7
Footwear	177	65.3	81	29.9	13	4.8	271	34.7	29.9
Wood, paper	184	63.0	76	26.0	32	11.0	292	37.0	26.0
Chemicals, rubber plastic	171	58.8	79	27.1	41	14.1	291	41.2	27.1
Minerals (no metals)	135	55.8	70	28.9	37	15.3	242	44.2	28.9
Metalworking	472	70.8	131	19.6	64	9.6	667	29.2	19.6
Mechanical industry	394	64.5	124	20.3	93	15.2	611	35.5	20.3
Machinery, appliances, vehicles	238	65.9	64	17.7	59	16.3	361	34.1	17.7
Furniture, toys, jewels	240	69.8	70	20.3	34	9.9	344	30.2	20.3
"Regioni"									
Veneto	870	63.3	358	26.0	147	10.7	1,375	36.7	26.0
Emilia-Romagna	763	61.0	289	23.1	198	15.8	1,250	39.0	23.1
Marche	567	71.4	167	21.0	60	7.6	794	28.6	21.0
Abruzzo	92	71.3	20	15.5	17	13.2	129	28.7	15.5
Size									
< 15 employees	487	68.2	157	22.0	70	9.8	714	31.8	22.0
>=15 employees < 50	1,272	66.7	439	23.0	197	10.3	1,908	33.3	23.0
>=50 employees < 200	470	59.5	198	25.1	122	15.4	790	40.5	25.1
empoloyes >=200	63	46.3	40	29.4	33	24.3	136	53.7	29.4
Starting year (1)									
Before 1929	0	0.0	82	82.8	17	17.2	99	100.0	82.8
1930-1939	1	2.4	31	73.8	10	23.8	42	97.6	73.8
1940-1949	19	22.6	54	64.3	11	13.1	84	77.4	64.3
1950-1959	66	33.2	112	56.3	21	10.6	199	66.8	56.3
1960-1969	283	49.6	216	37.8	72	12.6	571	50.4	37.8
1970-1979	645	67.5	188	19.7	122	12.8	955	32.5	19.7
1980-1989	727	76.1	112	11.7	116	12.1	955	23.9	11.7
1990-2005	450	84.3	35	6.6	49	9.2	534	15.7	6.6

Source: Survey of Marche Polytechnic University.

(1) Frequency missing = 109.

Table 2

THE RESULTS OF OLS POOLED REGRESSION OF FIRM PERFORMANCE ON FAMILY CONTROL

Regression specification	Dependent variable			
	ROA		ROS	
Heir	-0.58	**	-0.37	**
Unrelated	-0.75	**	-1.07	**
Size	-1.45	**	-0.38	**
Age	-0.53	**	-0.20	**
Growth	1.21	**	0.81	**
Leverage	-0.14	**	-0.13	**
Year dummies	yes		yes	
3 digit-SIC dummies	yes		yes	
Area dummies	yes		yes	
Adj R-Square	0.16		0.18	
N. Observations	17,888		17,888	

Source: Survey of Marche Polytechinc University and Cerved

Heir is a dummy variable taking value 1 for heir-controlled firms. Unrelated is a dummy variable taking value 1 for unrelated-controlled firms. Size is the natural logarithm of Total Assets. Leverage is the book value of total debt divided by the book value of total assets. Growth is the growth of sales in the previous year. Age is the natural logarithm of Firm age.The regression includes the intercept. ** means a significance at 1% level. * means a significance at 10% level (based on T-statistics from heteroskedasticity consistent standard errors).

Table 3

THE RESULTS OF OLS POOLED REGRESSION OF FIRM PERFORMANCE ON FAMILY CONTROL

Regression specification	Dependent variable			
	ROA		ROS	
Heir (vs Founder)	-0.57	**	-0.36	**
Unrelated (vs Founder)	-0.82	**	-1.13	**
Unrelated (vs Heir)	-0.15		-0.67	**

Source: Survey of Marche Polytechnic University and Cerved.

Regression specification also includes controls reported in Table 2. ** means a significance at 1% level. * means a significance at 10% level (based on T-statistics from heteroskedasticity consistent standard errors.

Table 4

INHERITED CONTROL AND FIRM PERFORMANCE: ROA AND ROS

Independent variables	ROA				ROS			
	All Successions +- 3 years	Unrelated Successions +- 3 years	Family Successions +- 3 years	Family Successions +- 3 years	All Successions +- 3 years	Unrelated Successions +- 3 years	Family Successions +- 3 years	Family Successions +- 3 years
After	-1.05	-1.76			0.06	-1.94		
Family succession * After	-1.29 *		-1.96 *	-2.00 *	-1.97 **		-1.76 **	-1.80 **
Mean ROA or ROS (1)	0.84 **	1.07 **	0.64 **	0.65 **	0.87 **	1.20 **	0.68 **	0.69 **
Log (firm age)	11.35 **	23.33 **	5.49 **	5.40 **	7.15 **	14.02 **	4.06 **	3.99 **
Trend post-succession				0.70 *				0.58 *
Year effects	yes	yes	yes	yes	yes	yes	yes	yes
Firm fixed-effects	yes	yes	yes	yes	yes	yes	yes	yes
Number of successions	229	52	177	177	229	52	177	177
Observations	1,374	312	1,062	1,062	1,374	312	1,062	1,062

Source: Survey of Marche Polytechnic University and Cerved.

** means a significance at 1% level. * means a significance at 10% level. - (1) 3-digit SIC, area and size class.

Table 5

INHERITED CONTROL AND FIRM PERFORMANCE: ROA AND ROS

Independent variables	ROA			ROS		
	Family Successions +- 3 years	Family Successions +- 3 years	Family Successions +- 3 years	Family Successions +- 3 years	Family Successions +- 3 years	Family Successions +- 3 years
After * Family succession	-1.76 *	-1.74 *	1.71 *	-1.48 *	-1.68 *	-1.78 **
After * Family succession * Small size	-0.29			-0.40		
After * Family succession * Medium (vs low) tech sector		-0.43			-0.16	
After * Family succession * Strong competition sector			-0.66			-0.07
Mean ROA or ROS (1)	0.64 **	0.64 **	0.65 **	0.69 **	0.68 **	0.69 **
Log (firm age)	5.63 **	5.43 **	5.74 **	4.27 **	4.04 **	4.19 **
Year effects	yes	yes	yes	yes	yes	yes
Firm fixed-effects	yes	yes	yes	yes	yes	yes
Number of successions	177	177	177	177	177	177
Observations	1,062	1,062	1,062	1,062	1,062	1,062

Source: Survey of Marche Polytechnic University and Cerved.

** means a significance at 1% level. * means a significance at 10% level. (1) 3-digit SIC, area and size class.

Table 6

INHERITED CONTROL AND FIRM PERFORMANCE: ROA AND ROS

Independent variables	ROA		ROS	
	Family Successions +- 3 years	Family Successions +- 3 years	Family Successions +- 3 years	Family Successions +- 3 years
After * Family succession	0.39	-4.21 **	0.12	-3.65 **
After * Family succession * Good performers	-4.60 **		-3.78 **	
After * Family succession * Poor performers		4.60 **		3.78 **
Mean ROA or ROS (1)	0.72 **	0.72 **	0.73 **	0.73 **
Log (firm age)	4.73 **	4.73 **	4.00 **	4.00 **
Year effects	yes	yes	yes	yes
Firm fixed-effects	yes	yes	yes	yes
Number of successions	177	177	177	177
Observations	1,062	1,062	1,062	1,062

Source: Survey of Marche Polytechinc University and Cerved.

** means a significance at 1% level. * means a significance at 10% level. (1) 3-digit SIC, area and size class.

Table 7a

INHERITED CONTROL AND FIRM PERFORMANCE: ROA

Independent variables	ROA					
	Family Successions +- 3 years	Family Successions +- 3 years	Family Successions +- 3 years	Family Successions +- 3 years	Family Successions +- 3 years	Family Successions +- 3 years (only good performers)
After	0.31	0.32	2.24 **	1.98 **	-0.83	0.35
After * Family succession	-1.00 **	1.28 **	-1.28 **	-0.37	-2.10 **	-2.08 **
After * Family succession * Good performers		-4.52 **		-1.73 **		
After * Good performers			-3.26 **	-2.81 **		
After * Family succession * Poor performers					1.73 **	
After * Poor performers					2.81 **	
Mean ROA or ROS (1)	0.43 **	0.45 **	0.51 **	0.50 **	0.50 **	0.60 **
Log (firm age)	0.63	0.55	0.70	0.66	0.66	0.95
Year effects	yes	yes	yes	yes	yes	yes
Firm fixed-effects	yes	yes	yes	yes	yes	yes
Control firms (2)	yes	yes	yes	yes	yes	yes

Source: Survey of Marche Polytechnic University and Cerved.

** means a significance at 1% level. * means a significance at 10% level. (1) 3-digit SIC, area and size class. (2) On the basis of a sample's firm 3-digit SIC, area, size and past performance.

Table 7b

INHERITED CONTROL AND FIRM PERFORMANCE: ROS

Independent variables	ROS					
	Family Successions +- 3 years	Family Successions +- 3 years	Family Successions +- 3 years	Family Successions +- 3 years	Family Successions +- 3 years	Family Successions +- 3 years (only good performers)
After	-0.34	-0.36	1.00 **	0.79 *	-1.40 **	-0.76
After * Family succession	-0.77 **	1.18 **	-0.80 **	0.02	-1.53 **	-1.56 **
After * Family succession * Good performers		-3.72 **		-1.55 **		
After * Good performers			-2.57 **	-2.18 **		
After * Family succession * Poor performers					1.55 **	
After * Poor performers					2.18 **	
Mean ROA or ROS (1)	0.44 **	0.45 **	0.48 **	0.48 **	0.48 **	0.65 **
Log (firm age)	0.50	0.48	0.32	0.34	0.34	0.54
Year effects	yes	yes	yes	yes	yes	yes
Firm fixed-effects	yes	yes	yes	yes	yes	yes
Control firms (2)	yes	yes	yes	yes	yes	yes

Source: Survey of Marche Polytechnic University and Cerved.

** means a significance at 1% level. * means a significance at 10% level. (1) 3-digit SIC, area and size class. (2) On the basis of a sample's firm 3-digit SIC, area, size and past performance.

Table 8

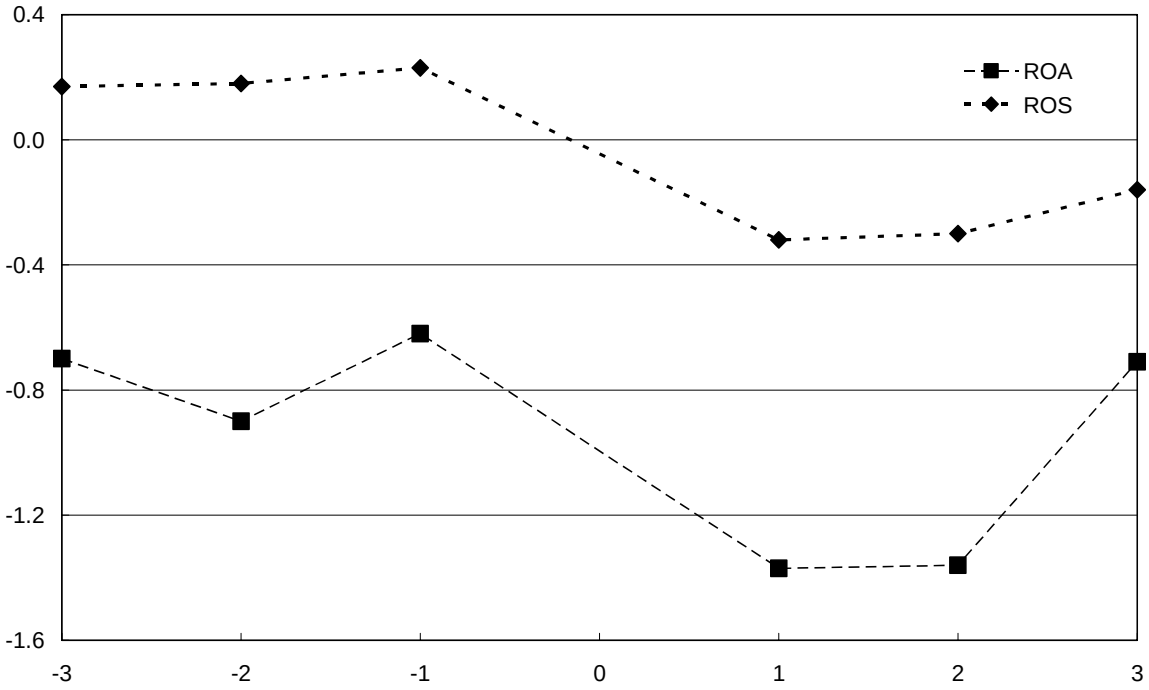
INHERITED CONTROL AND FIRM PERFORMANCE: ROA AND ROS

Independent variables	ROA			ROS		
	Family Successions +- 3 years	Family Successions +- 3 years	Family Successions +- 3 years	Family Successions +- 3 years	Family Successions +- 3 years	Family Successions +- 3 years
After	1.98 **	1.98 **	1.94 **	0.79 *	0.79 *	0.78 *
After * Family succession	0.07	0.07	-0.11	0.22	0.18	-0.03
After * Family succession * Good performers	-1.78 **	-1.78 **	-0.86	-1.55 **	-1.55 **	-1.24 *
After * Good performers	-2.81 **	-2.81 **	-2.81 **	-2.18 **	-2.18 **	-2.18 **
After * Family succession * Good performers * Small size	-0.58			-0.28		
After * Family succession * Good performers * Medium (vs. low) tech sector		-0.80			-0.30	
After * Family succession * Good performers * Strong competition sector			-1.94 **			-0.36
Mean ROA or ROS (1)	0.50 **	0.50 **	0.51 **	0.48 **	0.48 **	0.48 **
Log (firm age)	0.69	0.65	0.69	0.35	0.33	0.35
Year effects	yes	yes	yes	yes	yes	yes
Firm fixed-effects	yes	yes	yes	yes	yes	yes
Control firms (2)	yes	yes	yes	yes	yes	yes

Source: Survey of Marche Polytechnic University and Cerved.

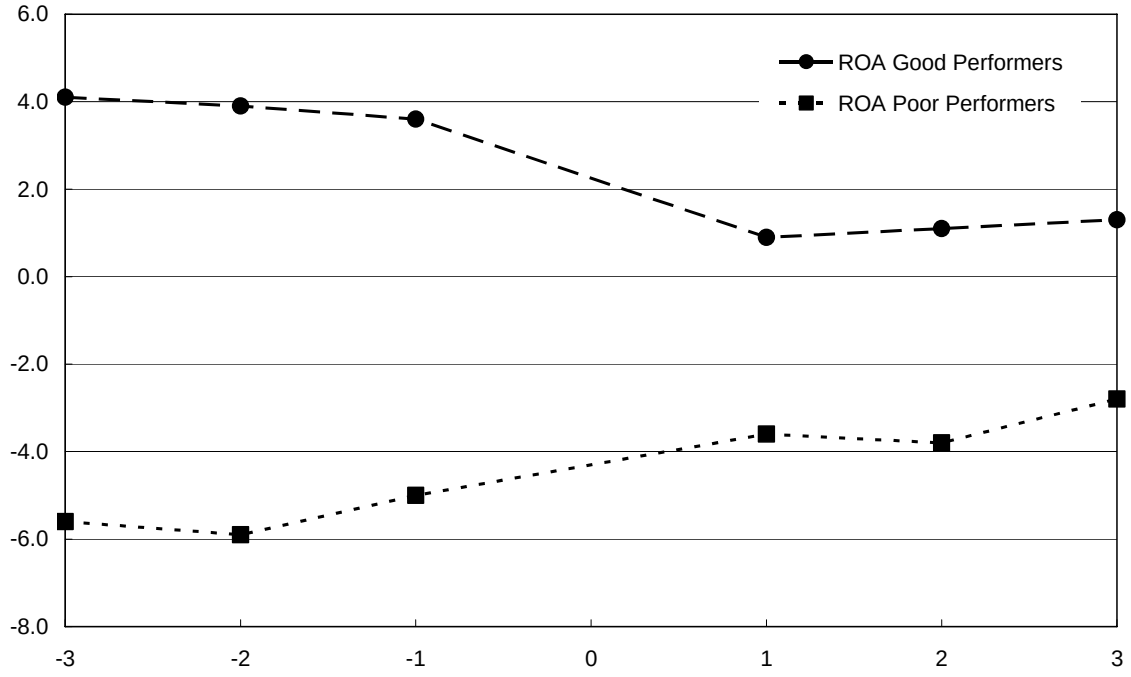
** means a significance at 1% level. * means a significance at 10% level. (1) 3-digit SIC, area and size class. (2) On the basis of a sample's firm 3-digit SIC, area, size and past performance.

Figure 6 – Family firms' relative performance - ROA and ROS – Differences from sectoral mean.



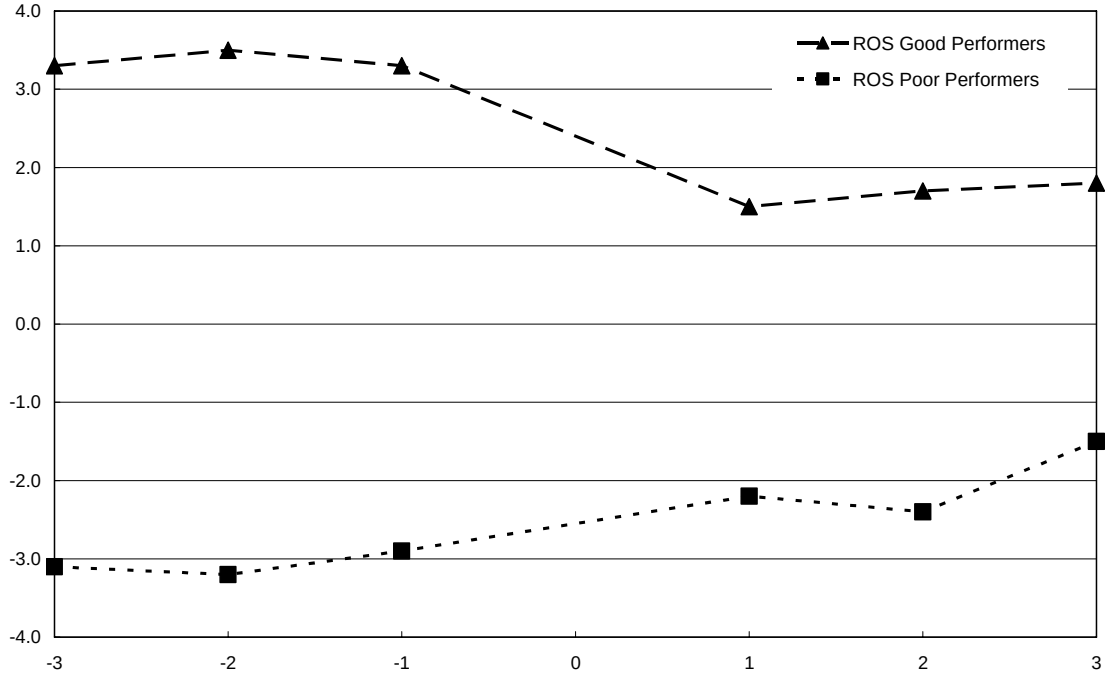
Source: Survey of Marche Polytechnic University

Figure 7 – Family firms' relative performance – ROA - Good and poor performers – Differences from sectoral mean.



Source: Survey of Marche Polytechnic University

Figure 8 – Family firms' relative performance – ROS - Good and poor performers – Differences from sectoral mean.



Source: Survey of Marche Polytechnic University