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Carlo A. Favero
IGIER, IEP, Università Bocconi and CEPR

Stefano W. Giglio
IGIER, Università Bocconi

Maddalena Honorati
IGIER, Università Bocconi

Fausto Panunzi
IGIER, IEP, Università Bocconi, CEPR and ECGI

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Abstract

In this paper, we study the performance of Italian listed family firms in the period 1998-2003. We measure their performance by using both accounting and market data. We first study the relative performance of family firms compared to widely held firms. Then we investigate whether performance is affected by the type of family firm (i.e., whether the CEO is a member of the family or is an outsider). We find that the data and the methodology used to measure performance strongly affect the results. When performance is measured by accounting data (ROA), using a static model, we find evidence in favor of a superior performance of family firms. Such evidence is not confirmed by the application of the same model to market measures of performance. However, we report statistical evidence that the correct econometric specification for market data is a dynamic model. The results of estimation of the dynamic model for the market measures of performance are more consistent with those based on the static model for the accounting measures of performance.

Carlo A. Favero
Università Bocconi - Innocenzo Gasparini Institute for Economic Research (IGIER)
Via Salasco 5, 20136 Milan,
Italy
phone: +39 02 5836 3306 , fax: +39 02 5836 3302
e-mail: carlo.favero@uni-bocconi.it

Stefano W. Giglio
Università Bocconi - Innocenzo Gasparini Institute for Economic Research (IGIER)
Via Salasco 5, 20136 Milan,
Italy
e-mail: sgiglio@fas.harvard.edu

Maddalena Honorati
Università Bocconi - Innocenzo Gasparini Institute for Economic Research (IGIER)
Via Salasco 5, 20136 Milan,
Italy
e-mail: maddalena.honorati@phd.unibocconi.it

Fausto Panunzi*
Università Bocconi - Innocenzo Gasparini Institute for Economic Research (IGIER)
Via Gobbi 5, 20136 Milan,
Italy
e-mail: fausto.panunzi@unibocconi.it

*Corresponding Author

1. Introduction

Starting from Berle and Means (1932), large, widely held firms run by professional managers have been at the center stage of economic research. Yet, recent research has documented that widely held corporations are the exception rather than the rule and that they almost absent outside Anglo-Saxon countries. Moreover, among firms with a concentrated ownership structure, the most typical situation is one where the ultimate owner is either an individual or a family. For instance, in the sample of firms studied by La Porta et al. (1999) (listed firms in 27 rich countries whose capitalization exceeds 500m$) 50% of firms are family controlled whereas only 40% are widely held. The percentage of family-controlled firms obviously increases when smaller firms are considered. For instance, in the US, family firms constitute over 35% of the largest 500 in the S&P Industrials. Faccio and Lang (2002) document that more than 60% of all listed firms are family firms in Italy, France and Germany.

Given that family firms represent such a large share of total firms, it is important to assess their relative (in)efficiency with respect to widely held firms. The theoretical literature often simply assumes that family firms are less efficient than corporations (e.g., Burkart et al. 2003, Caselli and Gennaioli 2005). Yet, even from a pure theoretical point of view, family firms may have costs and benefits. Family control implies the costs of a concentrated ownership. First, families may use their control over companies to extract private benefits of control at the expense of minority shareholders. The private benefit extraction may take different forms such as excessive compensation of family members or related-party transactions. Second, families may be excessively interested in maintaining control over the company even in the presence of a potentially value-increasing acquirer. When the family owns less than 100% of the shares of the company, it gives an excessive weight to private benefits of control over security benefits. Another type of cost of family ownership has to do with the family itself and the ties among its members. For instance, the founder of a family firm may be willing to assign key management positions to his/her children or relatives even when there are unqualified only to keep the family happy. More generally, family priorities – such as consumption motives - may conflict with the objectives of outside investors.

Family control does not only come with cost, though. By owning a large stake, families may be willing to provide public goods such as monitoring of the management that would not be granted in companies with a dispersed ownership structure. This type of benefit may look secondary as often families manage directly their company. Yet, even in this case, the presence of a family may be beneficial. Whereas it is true that, by owning a large block, families have the power to extract private benefits of control, they may not have the incentive to actually consume them when private

benefit extraction is associated to a deadweight loss. The larger the stake owned by the controlling party, the larger the internalization of the deadweight loss and thus the lower the incentive to divert corporate resources as private benefits of control. Third, families may have longer investment horizon with respect to other shareholders thereby avoiding managerial myopia. Because the company will be controlled by future generations of the family, family firms may be natural long term value maximizers.

 The theoretical debate provides arguments both in favour and against family firms. One has to turn to the empirical analysis to shed light on whether the benefits of family control exceed its costs or vice versa. Recently, several papers have begun to analyze the performance of family firms. Anderson and Reeb (2003) study a sample of US firms in the S&P 500. Firm performance is measured both with accounting (Return On Assets) and market data (Tobin's q). Their main finding is that family firms outperform non family firms whatever the performance measure used. However, when market data are used, the result holds only if family firms have a CEO who does not belong to the family. But other papers find opposite results. For instance, Perez-Gonzales (2001) studies a sample of 335 successions in listed US family firms. In 122 cases the successor is chosen inside the family (including marriages into the family) whereas in the remaining 213 cases outside the family. His main result is that ROA drops on average of 17% in case of a succession inside the family while there is no impact on ROA in case of succession outside the family. Similar results hold when performance is measured by the market-to-book ratio.

Morck et al. (2000), using Canadian data, provide evidence that family control deteriorates firm performance. Performance is measured using accounting data. They find that widely held firms have a superior performance with respect to family firms. Results are unaffected by having the founder, or one of his heirs of a professional manager as a CEO. But probably the most interesting finding in Morck at al. is that they find no evidence of a longer horizon in decision making in family firms. They invest less in R&D and have fewer employees than widely held firms.

Amit and Villalonga (2005) find evidence of superior performance of family firms only if the founder is the CEO or when he is the Chairman with an external (to the family) CEO.

 Outside North-America, Sraer and Thesmar (2006) study a sample of French listed companies. Performance is measured with accounting data (ROA and ROE). They find evidence of a superior performance by family firms. The advantage of family firms relies on their ability to pay lower salaries in exchange for greater job security. Barontini and Caprio (2005) have collected data on listed European family firms. They find that, although family firms tend to use control enhancing devices (such as pyramids or dual class shares) much more than non family firms, the effect of family control on performance is positive (both using accounting and market data). They also find

that, whereas the founder-CEO effect is present, there is no evidence of underperformance of heir-controlled family firms, thereby confirming the results of Sraer and Thesmar.

In this paper, we study the performance of Italian listed family firms in the period 1998-2003. We measure performance by using both accounting and market data. We first study the relative performance of family firms compared to widely held firms. Then we investigate whether performance is affected by the type of family firm (i.e., whether the CEO belongs to the family or is an outsider). We find that the data and the methodology used to measure performance strongly affect the results. When performance is measured by accounting data (ROA), a static model is the correct one (that is, lagged variables are not significant) and we find evidence in favor of outperformance of family firms. Such evidence is not confirmed by the application of the same static model to market measures of performance. However, we report statistical evidence that the correct econometric specification for market data is a dynamic model. The results of estimation of the dynamic model for the market measures of performance are consistent with those based on the static model for the accounting measures of performance. In other words, our paper points out the importance of the adoption of a dynamic specification when using market data to measure firm performance. We can therefore provide a statistical explanation of the common finding, replicated in our study, that when accounting data are used, family firms seem to outperform widely held firms, whereas the opposite occurs when market data are used.

The paper is organized as follows. Section 2 describes our data on performance and ownership. Section 3 illustrates our empirical results. Finally, section 4 concludes.

2. The Data

Data Sources

We have drawn an initial sample from Consob[1] including firms listed in 2003. We consider all firms but, as in Sraer and Tesmar (2006), we exclude banks, real estates and financial services except in cases in which these firms are part of the ownership and control chains of other listed firms (for example, Capitalia and Cirio Finanziaria). We then go back until 1998 and include firms listed in previous years. Most of the firms have been listed for the entire sample period but some of

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[1] Commissione Nazionale per la Societa' e la Borsa: the Italian Security and Exchange Commission.

them enter after 1998 or exit before 2003. We keep in our sample firms listed at least two of the six years considered in our sample.

We use two different databanks. Accounting data are taken from Amadeus, while ownership data are taken from the Consob database. In principle Amadeus has also information on ownership but we found its coverage inadequate in that it doesn't capture cross holdings and pyramidal structure so common among Italian listed companies.

Amadeus makes the distinction between direct and total (indirect) ownership. However, direct stakes data are missing stakes data when the shareholder is recorded (direct stakes are always specified in Consob database) and when the indirect ownership stake is provided it is done without specifying the exact pattern through which the ownership is held.

Amadeus also identifies the ultimate owner of a company. The ultimate owner is defined as the shareholder who owns more that 24,9% of the company with no other single shareholder owning a larger percentage. Unfortunately in the case of a pyramidal control structure when the control chain divides into two or more paths Amadeus automatically follows only the one with the highest percentage of ownership, losing therefore holdings through multiple control chains and cross-holdings stakes. Finally the ultimate holder it is not speficied (it is labeled "unknown") whenever the shareholder is not recorded or the shareholder is recorded but the percentage of ownership is not reported at any stage of the control chain.

We have then used the Consob database as our source for ownership data. We tracked the ownership structure from the direct stakes publicly available in Consob's website and we manually compute the ultimate ownership and control stakes for each firm.

The information on board structure and composition is also drawn form Consob's website: the names of the directors are available on an annual basis allowing us to identify who is in the board and mostly all CEO changes occurring from 1998 to 2003. Concerning the CEO's characteristics and some family attributes like heirs identification (the relationship to the owner when the family name is not the same, i.e. Agnelli-Elkan, Pirelli-TronchettiProvera) we have retrieved information from each company's website and online news.

Identity of owners

Corporate ownership is measured by cash flow rights ("capitale votante") and control by voting rights ("capitale ordinario"). To be in line with previous studies, we assume that the 20% of voting shares suffices to ensure control and we take it as the threshold [2].

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[2] As a robustness check we have also considered 10% as a cutoff

Ownership and control rights can differ because of pyramiding, holdings through multiple control chains, cross holdings and because of dual class shares which provide different voting rights for given cash flow rights (in general, any deviation from one-share-one-vote scheme). For every firm in the dataset we have constructed four dummy variables (dual class shares, pyramid, holding through multiple control chains, cross-holding) assuming value equal to one if the respective form of separation is present.

In Italy the main legal form of separation adopted by listed companies is the pyramidal group. This structure allows shareholders to diversify and to control a wide range of assets with a limited amount of capital. The pyramid structure enables a shareholder to spread minority shareholders' voting rights over many firms and to concentrate his own voting right on the firm at the top of the pyramid, obtaining large control on other's capital with small amount of capital owned

There are no legal restrictions on interlocking directorates and on corporate groups have been favored by Italian tax policy (i.e. dividends are taxed only once, no matter how many levels the control chain has).

Almost all listed companies in Italy issue dual class shares; shares with limited voting rights (preferred shared or "azioni privilegiate") and non-voting shares (saving shares or "azioni di risparmio").

Cross-holdings at 20% threshold are present when firm X holds a stake in Firm Y of at least 20%, and Y holds a stake in Firm X of at least 20%, or if firm Y holds directly at least 20% of its own stocks. After the 1998 corporate law reform in Italy, the limit for listed companies on the reciprocal shareholdings (cross-holdings) has been raised to 5% (before it was lower), but never at the 20% cutoff level.

To evaluate the degree of separation between ownership and control we need to consider the ultimate owner. A shareholder of a corporation is said to be an ultimate owner at a given threshold if he controls it via a control chain whose links all exceed that threshold. If a firm has two owners with 12% of control rights each, then we say that the firm is half controlled by each owner at the 10% threshold, but that the firm is widely held at the 20% threshold. In the case of a firm with two owners (a family with 20% of control rights and a widely held corporation with 19% of control rights) we would say that this firm is half controlled by each owner at the 10% threshold, but family-controlled at the 20% threshold.

In the calculation of voting rights and cash flow rights we follow the Faccio and Lang (2002) methodology. All control stakes of at least 2% are reported to Consob. Actually the law sets a 2 percent threshold for the disclosure of holdings in listed companies, the lowest in Europe[3].

To compute the largest shareholder's ultimate cash flow and control stake, for each listed company we move from the latter's direct shareholding along the control chain. If an investor owns 25% of Firm X that owns 20% of Firm Y, then this investor owns 5% of the cash-flow rights of Firm Y (the product of the ownership stakes along the chain) and controls 20% of Firm Y (the weakest link along the control chain).

Example: Gruppo Editoriale L'Espresso, 2001
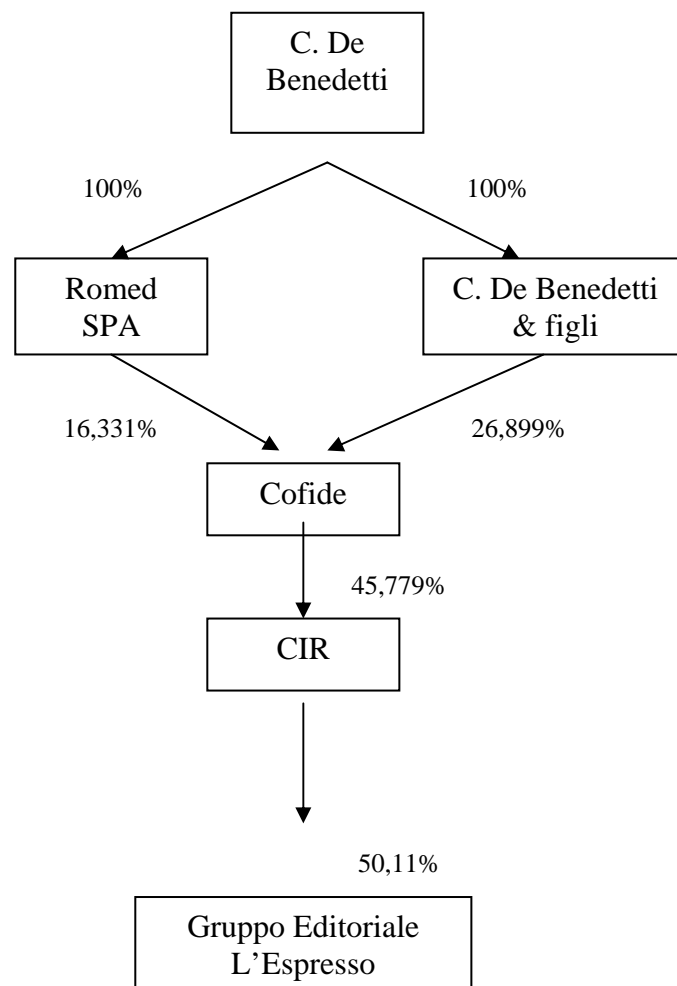
The ultimate owner is Carlo De Benedetti; his ultimate ownership is the product of the ownership stakes along the chain = (50.11% * 45.779% * 16.331%)+(50.11% * 45.779% * 26.899%) = 9.92% and his ultimate control stakes is the sum of the weakest links along the control chain: 16.331%+26,899%=43.23%.

In case of a pyramids, firm Y is said to be controlled through pyramiding if it has an ultimate owner, who controls Y indirectly through another corporation that it does not wholly control. In this example we say that Gruppo Editoriale L'Espresso is controlled through a pyramid at the 20% threshold[4].

A firm is said to be controlled through a multiple control chain if it has an ultimate owner who controls it via a multitude of control chains, each of which includes at least 5% of the voting rights at each link. In the Pirelli SPA example, Marco Tronchetti Provera is the ultimate owner; he owns 9.64% of cash flow rights =(0.55135*0.25148*0.05676) + 0.05 + (0.55135*0.25148*0.27761) and controls 35.43% of its voting rights =min(5.676%, 25.14%, 55,135%) + 55 + min(27.761%, 25.14%, 55,135%).

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[4] For example, if a family owns 15% of Firm X, that owns 20% of Firm Y, then Y is controlled through a pyramid at the 10% threshold. However, at the 20% threshold, we would say that Firm Y is directly controlled by Firm X (which is widely held at the 20% threshold) and no pyramiding would be recorded. If Firm X holds 100% of Firm Y, then again there is no pyramid.

Example : Pirelli SPA, 2000
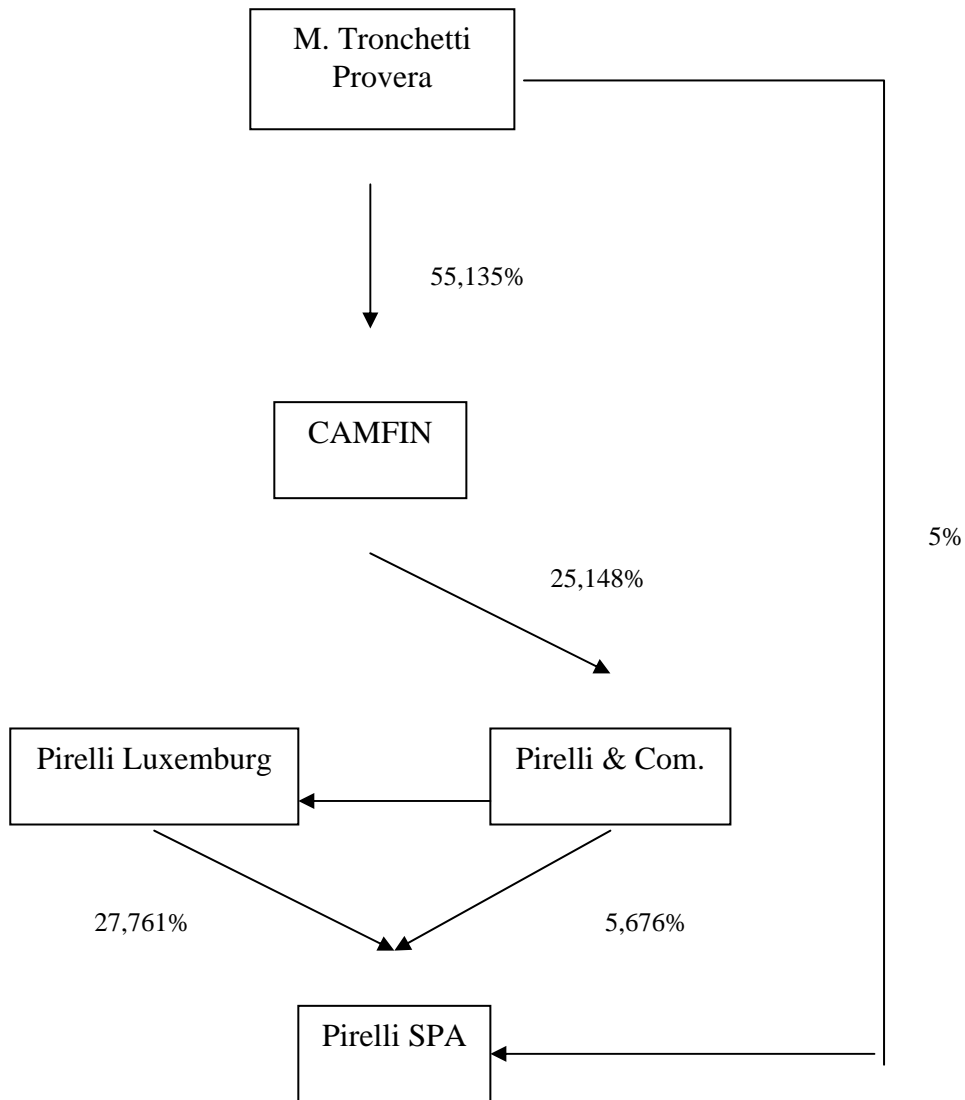
The ultimate owner is Marco Tronchetti Provera; his ultimate ownership is the product of the ownership stakes along the chain = (55,135% * 25,148%*5,676%)+ 5%+(55,135% * 25,148%*27,761%)=9,63% and his ultimate control stakes the weakest link along the control chain: 5,676%+5%+25,148%=35,82%.

Controlling shareholders are classified into eight types. Family when an individual or a family (shareholders with the same last name) control at least the cutoff value. Precisely, it means that the control stakes of each individual member of the family are added up in the variable "Largest shareholder's ultimate cash flow stake" and in the variable "Largest shareholder's ultimate control stake"). Unlisted: when the controlling firm is unlisted on the stock exchange. Financial companies: insurance companies, mutual funds and Banks. State: a national government (domestic or foreign), local authority (county, municipality, etc.), or government agency. Voting trusts and Foreign when the controlling firm is a foreign firm. Companies that do not have a shareholder controlling at least 20% (or 10%) of votes are classified as Widely held at the respective cutoff..

Then we created five dummies for five categories:

Family when the controlling shareholders type is family or unlisted (as Faccio and Lang);

Widely held when there is no shareholder exceeding the reference threshold;

State when the type is State;

Foreign when the controlling firm is foreign;

Financial companies when the controlling type is a financial company or a bank.

As in Sraer-Thesmar (2006) we further disaggregate the category "family" into three sub-categories: "founder controlled" when the founder is still the CEO, "heir managed" when an heir, directly or indirectly, related to the founder is the CEO and "professionally controlled" when the CEO is hired outside of the family according, in principle, to labor market's rules and to his skills. The following Table report the exact definition of ownership variables:

Ownership Variables

STATE	Dummy for state-owned firms**
WIDELY	Dummy for widely-owned firms**
FAMILY	Dummy for family-owned firms**
FOUNDER	Dummy for a family firm run by one of its founders.
HEIR	Dummy for a family firm run by one of the founders' heirs.
PROFESS	Dummy for a family firm managed by a professional CEO
PRIVILEGES	Dummy for presence of control privileges** in the ownership structure. Equals one if at least one of the following is present: - pyramids in the ownership structure (Faccio-Lang) - holding through multiple control chains - dual-class share structure, such as outstanding non-voting, limited voting or multiple voting shares - cross-holdings

** Note: a 20% participation is the threshold used for attributing a firm to a ownership type.

Accounting Data

We have used Amadeus as source of accounting data instead. We considered consolidated accounts to extract data on industry, sales, assets, employment, wages and stock prices. We have initially followed Sraer and Tesmar (2006) in selecting measures of performance and considered the   return on assets, return on equity and Tobin's Q, defined as in Sraer-Thesmar as the ratio of financial debt plus market capitalization over total asset minus short term debt. ROA is computed as earning after tax scaled by the book value of total assets, and ROE as earnings before tax, depreciation and amortization (EBIDA) divided by assets minus liabilities. However, we have also extended the analysis to consider Financial Indicators of Performance along with Accounting Indicators of Performance. In particular, we have considered absolute and relative stock market returns. We report in the following tables the precise definition of firm variables and measures of performance.

General Firm Variables

NAME	Name of the firm
YEAR	Year of the observation (range: 1998 – 2003)
AGE	Age of the firm. The age was constructed as the log of the number of years since the firm incorporation.
LOGASSET	Log of total assets of the firm.
LOGLEVERAGE	Log of the firm's total leverage, computed as the sum of current and non-current liabilities as resulting from the balance sheet.
GROUP	Code of the industry group to which the firm belongs. The code corresponds to the standard Primary Nace Rev 1.1 classification

Accounting Indicators of Performance

ROA	Return on Assets: obtained by dividing the profit (loss) after taxes by total assets.
ROE	Return on Equity: obtained by dividing the profit (loss) before taxes by total shareholders' funds.
TOBIN_Q	Tobin Q calculated as the sum of financial debt and market capitalization divided by total assets minus short term debt (Sraer-Thesmar).

Financial Indicators of Performance

RELRET	One-year* stock price returns minus the average one-year return of the industry each firm belongs to. A constant beta of one is assumed for every industry.
REL_MIB30	One-year* stock price returns minus average market performance (mib30 index) times the relative beta of the stock.
REL_STOXX	One-year* stock price returns minus average market performance (as measured by the Euro Stoxx 50 index) times the relative beta of the stock.

* Note: while an interesting experiment would have been to use indicators of performance that spanned in a larger range of years (for example, 5-year returns), lack of market price data for such a range would have caused a substantial number of missing observations (more than ¾ of the total), therefore creating a selection issue.

Merging the Ownership and the Accounting Databases

Several remarks on the merging of the ownership and accounting database are in order.

We discarded from the final sample firms not included in both datasets. After the merger, the resulting dataset was cleaned of some inconsistencies (especially in the ownership dataset), and some of the missing observations in the ownership dataset, such as family or state dummies, were reconstructed on the basis of other ownership information available about the firm in the dataset, in previous and following periods.

The most important part of this preliminary work was to identify some firms whose data appeared corrupted and inconsistent, at least in some observations. In particular, we had negative values for total assets and shareholders funds, and in some cases we had outliers for ROA and ROE. As a results we have eliminated a number of firms from our sample, namely Arquati, Buongiorno Vitaminic, C. T. O., Cardnet Group, Centro HL Distribuzione, Gandalf SPA, Roland Europe, Schiapparelli 1824, Società Sportiva Lazio, Tecnodiffusione Italia, Vemer Siber Group.

At the end of the preliminary data preparation step we obtained a dataset consisting of 6 annual observations (1998-2003) for 246 firms.

Data Description

We start by looking at the number of firms listed in our dataset over time (Graph 1). As the graph shows, the number of firms in each category is fairly constant.

This is a first indicator of low intertemporal mobility across family status, which will be confirmed later using a Markov transition approach. The graph also gives us important information about the composition of our dataset. Taking 2002 as a reference year, we see that most firms (about 83%) are family firms, while only 9% are state owned and 8% widely held. Among family firms, more than half of them (52%) are managed by a professional CEO, about a third (32%) are run by their owners and 16% by the heirs.

Figure 1: *ownership status and number of firms over time*
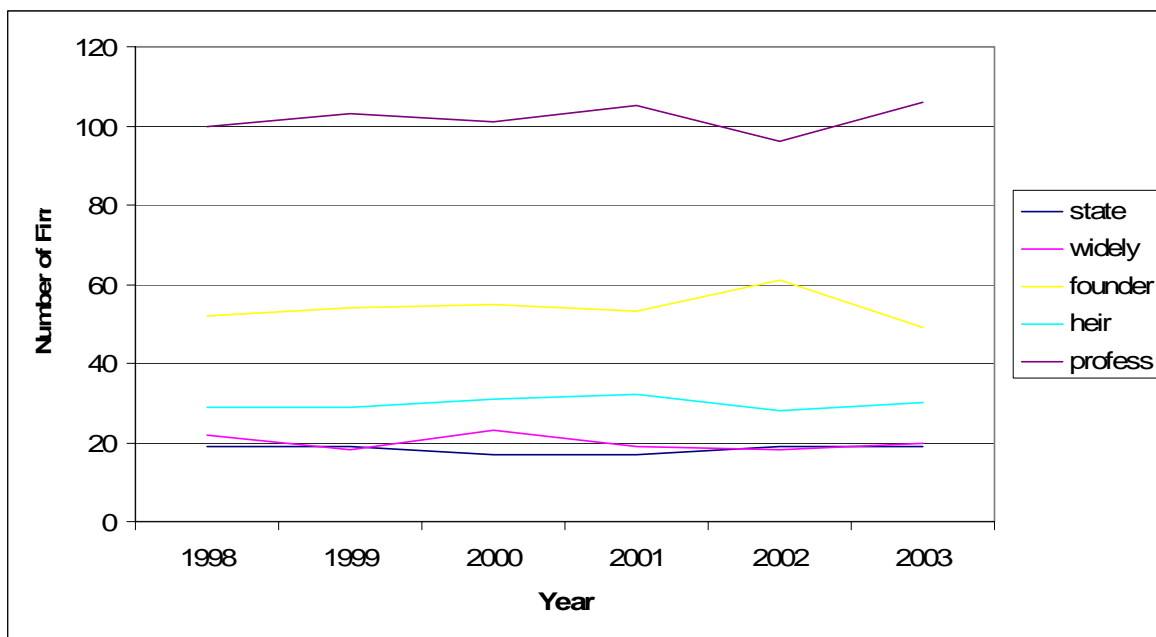
These data are in general coherent with the situation of the Italian economy. The predominance of family firms in Italy has been confirmed and studied extensively. Among them, about a half is managed by a professional CEO. This could be an indicator that in Italy there is a tendency to keep control (property of the firm) within the family, while, as the size of the firm increases, an appointment of on outside manager as CEO becomes more likely.

These facts seem to be confirmed by aggregate data on the age and size of the firms, decomposed by ownership status.

[Insert Table 1 here]

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As Table 1 shows, family firms managed by professional CEOs are the largest except for state-owned firms, and in particularly they are larger (in terms of assets) than family firms where direction is kept under the family's control. The age pattern of family firms is interesting: as one would expect, founder controlled firms are younger than the others, while heir controlled firms are in general much older, since they lasted more than a whole generation. State owned firms show their typical signs: very large size and a generally old age. Finally, it is interesting to notice how widely held firms appear to be surprisingly small and young, which confirms how in Italy diffuse ownership is a recent phenomenon.

[Insert Table 2 here]

To get a first glance on the relationship between performance and ownership status, we can take 2002 as a reference year and analyze the decomposition of firm performance by ownership status, as shown in Table 3.

[Insert Table 3 here]

First of all, it might be noticed how 2002 was generally a negative year for the selected sample, showing negative overall indicators of performance, be it accounting indicators (ROA and ROE) or stock indicators (Return to Mib30 and Stoxx Index). What emerges from the analysis of the accounting indicators is that family firms that were run by the owning family (founder-controlled and heir-controlled ones) largely underperformed the other firms, while family firms with a professional CEO were among the best performers in that year. This is in contrast with the decomposition results of Sraer and Thesmar (2006), in which founder controlled firms were the best performers. Instead, widely held companies show weak performances, the worst in our sample. Finally, state-owned firms show surprisingly good performances. These results can mainly be explained noticing how this analysis omits two important variables, age and size of the firms. These could, for example, explain the good average performance of state-owned firms. The regression analysis, which takes these factors (and others) into consideration in explaining firm performance, will show how relevant they are for explaining the relationship between ownership status and performance. The same results hold also for the stock market performance indicators, where the best player appears to be the state and founders are outperformed by heirs and professional CEOs. Again, many of these results will be denied by regression analysis, showing the presence of an omitted variable bias in this simple analysis.

Finally, it is interesting to examine in which industries we find family, state and widely held firms. State firms are naturally concentrated in public-service industries, such as energy, gas, water, chemicals, communication. Widely held companies are a small fraction of the sample, and again are present in industries which require high amounts of capital. Family firms are well distributed among all industries, and they are remarkably present in many capital intense industries, such as manufacturing, chemicals, and energy. This again confirms that family ownership in Italy is more (at least, it was so until recently) a standard way of conducting business than a decision based on specific economic needs such as capital intensity of the business.

[Insert Table 4 here]

3. Empirical Results

In this section we investigate the relation between family ownership and firm performance. On the right had side of the regression, we first distinguish between the case where the CEO is the firm founder, or one of his heirs or a professional manager. We also include some control variables: state ownership (the state may have different objectives with respect to those of minority shareholders) and other common control variables such as the leverage ratio, firms size (as measured by total assets) and the firm age[5]. Finally, we control for the presence of control-enhancing devices (such as dual class of shares, cross-shareholdings, pyramids, etc.) as they amplify the wedge between control rights and cash-flow rights and thereby magnify the conflict of interests between the family and outsiders investors.

On the left hand side of the regression equations we have performance. We measure performance both with accounting data (ROA and ROE) and market data (Tobin's q, return over market).

Table 5 presents the results of a simple OLS regression with all the observations. In the first column we use return on assets (ROA) as our measure of performance, whereas in the second column we have return on equity (ROE) and in the third column Tobin's q.

If we focus on the first two columns (where performance is measured with accounting data) we find strong evidence that family firms perform better than nonfamily firms. It is generally believed that founders bring value-increasing skills resulting in superior performance. According to the

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[5] We have also tried the inclusion of the stake of the family, and its square (a higher family stake can yield the family a higher power to expropriate minority shareholders but it may, on the other hand, provide a better alignment of the family incentives with those of minority shareholders). The stake of the family is not available for all observations and causes a rather sizeable reduction of our sample size, moreover neither the linear nor the quadratic trend were ever significant. Hence we decided to drop this variable and conduct our empirical research on the larger sample.

conventional wisdom, though, as firm age grows, founder's heirs may not possess the value-increasing. According to this view, family firms should have superior performance with respect to non family firms only if they are run by the founder or if they are sufficiently young so that the positive effect of the founder has not yet vanished. To this purpose we control for firm's age in our regression. We find that age is not significant when performance is measured by accounting variables. We also find that - whereas it is indeed confirmed that the presence of a CEO founder increases performance - the same is true also for his heirs and for the case when a family firm has a professional manager. With ROA all the types of family firms outperform non family firms. When ROE is considered, perhaps surprisingly, only family firms where the CEO is a heir of the founder outperform nonfamily firms.

Notice also that control-enhancing devices have a positive (and significant) effect on performance. While this result may seem puzzling at first sight, its interpretation may be simple. More profitable firms may be more willing to block the possibility of a change in control.

In the third column we report the results of the regression with Tobin's q as the performance measure. In this case the regression yields a totally different picture with respect to the ones obtained using accounting data. First, now firm age has a negative and significant coefficient. Second, the only case where family firms outperform widely held firms is when the founder is in control. These two findings combined seem to suggest that, from the market point of view, once the founder does not control the firm anymore its performance will not be significantly different from the one of a widely held firm.

[Insert Table 5 here]

These results are in agreement with the ones obtained by Sraer and Thesmar (2006) on French family firms. They also find strong evidence of superior performance of family firms when using accounting data and that only founder-controlled family firms outperform widely held firms using market data.

To provide further evidence on this issue we consider in Table 6 as a dependent variables the market excess returns to shares in each firms (computed as the difference between annual returns to shares in each firm and the product of the returns to the stock market index (Euro Stoxx 50) times the firms Beta). As the choice of the new dependent variable causes a reduction in the number of observations we have re-run the ROA based regression on the shorter sample to show that the

results in Table 5 (reported again in the second column of Table 6) for the ROA are confirmed in the shorter sample.

[Insert Table 6 here]

Table 6 confirms the difference between the results based on accounting data and those based on market data. The results in Table 2 also allow us to rule out that such difference is generated by the fact that family firms have on average higher beta with respect to the market. There may be several reasons for this discrepancy in the results. As Sraer and Thesmar (2006) argue, one possible explanation is that family firms may distribute less dividends than widely held firms because they want to keep funds inside the firm to finance their pet projects (expropriation hypothesis). Unfortunately we do not have data on dividends and so we cannot control for this explanation.

Another explanation may simply be that the market has mistakenly undervalued family firms over the period we consider. The market may either have underestimated future returns of family firms or overestimated future returns of non family firms. Finally there is the possibility that omitted dynamics in the dependent variable causes a model mis-specification that biases the estimated coefficients. We have then proceeded to re-analyze the data using a dynamic panel data approach including in the specification two lags of the dependent variables. We report in Table 7 the results based on the Arellano-Bond two-step estimates including two lags of the dependent variable. We consider regression based on ROA and Rel_Stoxx as dependent variables.

The results show that the lags of the dependent variable are of very little significance when considering ROA while they are statistically significant when considering beta-corrected returns. Importantly, now the results of the dynamic (correct) model for the market measures of performance are more consistent with those based on the static (correct) model for a the accounting measures of performance: the founder and the heir dummies are always strongly significant.

[Insert Table 7 here]

A check on potential endogeneity bias

Our analysis suffers from an obvious potential endogeneity problem, as it is not clear whether it is family ownership that affects performance or whether it is performance that affects the decision to keep ownership inside the family. Overall our results of better perfomance of family firms could be interpreted as evidence about the beneficial effects of family ownership but they could also be observed as a cosequence of the fact that family decide to retain control only when they expect

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performance to be good. To address this issue, we looked at firms who were transmitted either to heirs or to a professional CEO, one year before the transmission of control. These events are very limited (only about 6% of the firms in our sample). As it can be seen in the table below, these firms do not outperform their industry prior to the transmission of control.

[Insert Table 8 here]

Although this evidence comes from a limited subsample it is suggestive of an unequivocal causal chain going from ownership to performance.

4. Concluding remarks

In this paper, we have studied the performance of (listed) italian family firms, comparing it with the one of non family firms. Our results can be summarized as follows. When accounting measures – such as ROA and ROE – are used, then family firms show a clear superior performance with respect to other firms. This superior performance is not limited to those family firms where the founder is also the CEO, but it extends also to family firms managed either by heirs of the founder or by external (to the family) professional managers. Instead, when performance is measured by market data – such as stock market returns – there is no evidence of superior (or inferior) performance of family firms. This results are in line with those obtain by Sraer and Thesmar (2006) on French (listed) family firms. We then propose a possible explanation for this discrepancy in the results. In particular, we show that the correct model is a static one (that is, a model where the lagged performance variables are not included in the right hand side of the regression equation) when using accounting variables to measure performance, whereas a dynamic model is more appropriate when using market data. When we use a dynamic model, the results obtained by using market data are similar to those obtained by using accounting data.
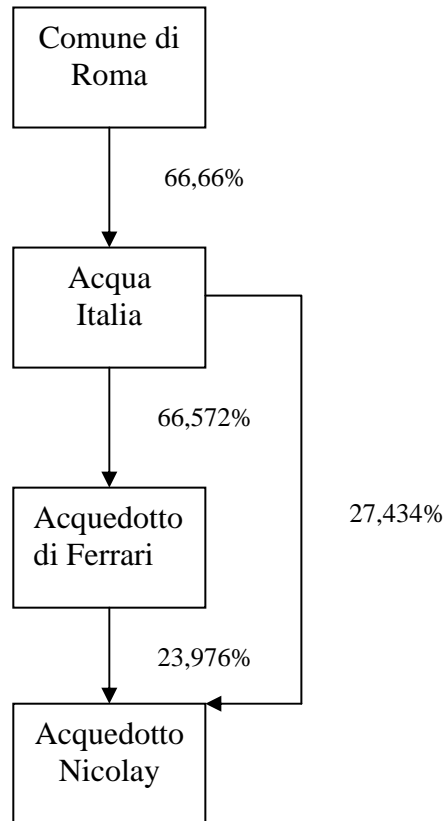
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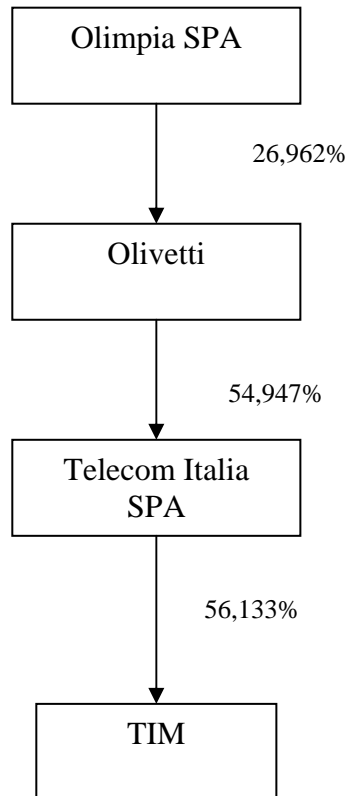
Appendix 1

Ownership and control rights in Italian firms: some illustrative examples.

Acquedotto Nicolay, 2001

```
              ┌──────────────┐
              │  Comune di   │
              │    Roma      │
              └──────┬───────┘
                     │ 66,66%
                     ▼
              ┌──────────────┐───────────┐
              │    Acqua     │           │
              │   Italia     │           │
              └──────┬───────┘           │
                     │ 66,572%           │ 27,434%
                     ▼                   │
              ┌──────────────┐           │
              │  Acquedotto  │           │
              │  di Ferrari  │           │
              └──────┬───────┘           │
                     │ 23,976%           │
                     ▼                   ▼
              ┌──────────────┐
              │  Acquedotto  │
              │   Nicolay    │
              └──────────────┘
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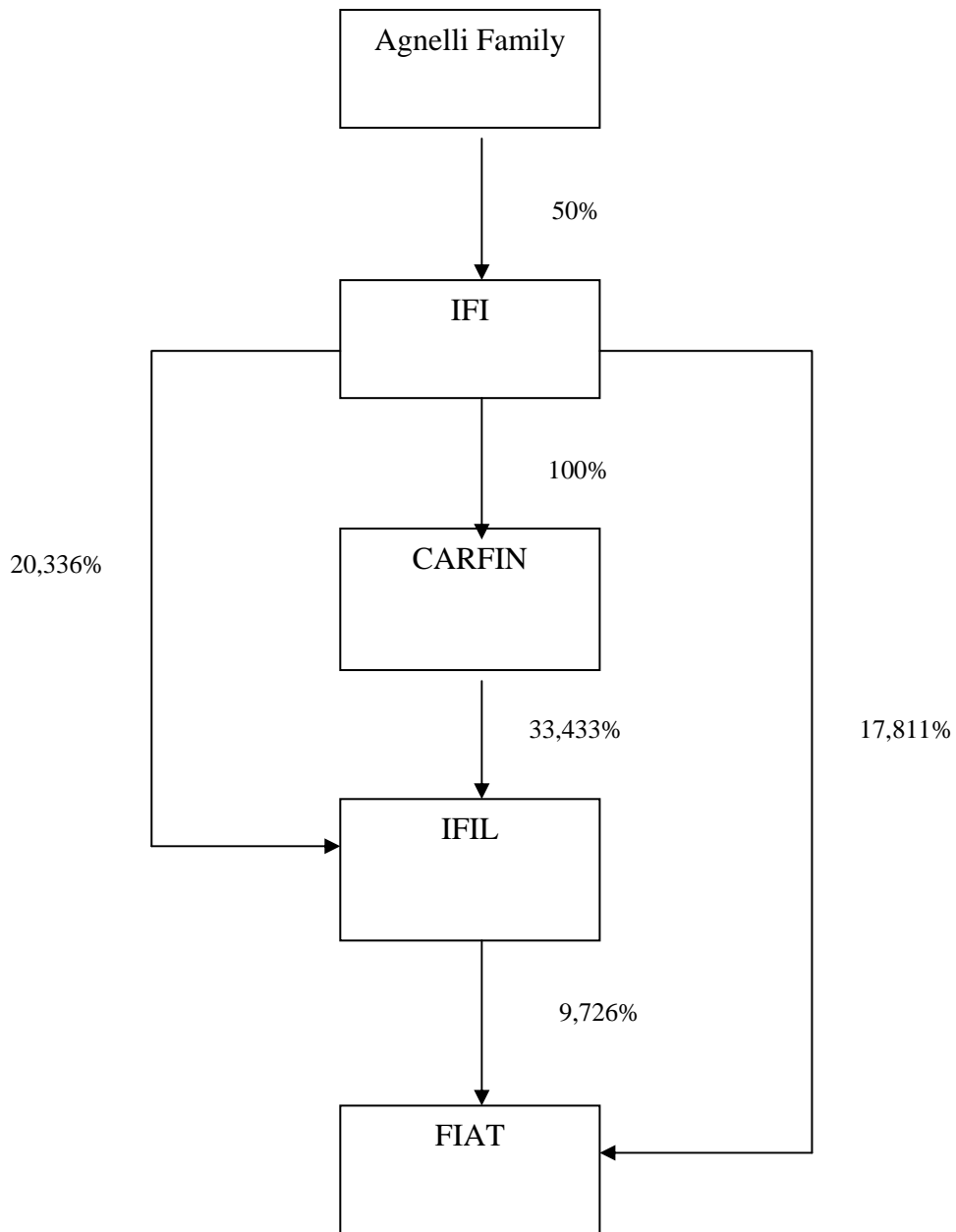
The ultimate owner is Comune di Roma; his ultimate ownership is the product of the ownership stakes along the chain = (66,66% * 66,572% * 23,976%)+(66,66% * 27,434%) =28,92 % and his ultimate control stakes the weakest link along the control chain: 23,976+27,434=51,41%.

Tim, 2002

```
            ┌─────────────────┐
            │   Olimpia SPA   │
            └─────────────────┘
                     │
                     │ 26,962%
                     ▼
            ┌─────────────────┐
            │    Olivetti     │
            └─────────────────┘
                     │
                     │ 54,947%
                     ▼
            ┌─────────────────┐
            │  Telecom Italia │
            │       SPA       │
            └─────────────────┘
                     │
                     │ 56,133%
                     ▼
            ┌─────────────────┐
            │       TIM       │
            └─────────────────┘
```

The ultimate owner is Olimpia SPA, unlisted firm; his ultimate ownership is the product of the ownership stakes along the chain = (26,962% * 54,974% * 56,133%)=0,0832 % and his ultimate control stakes the weakest link along the control chain:26,962%..
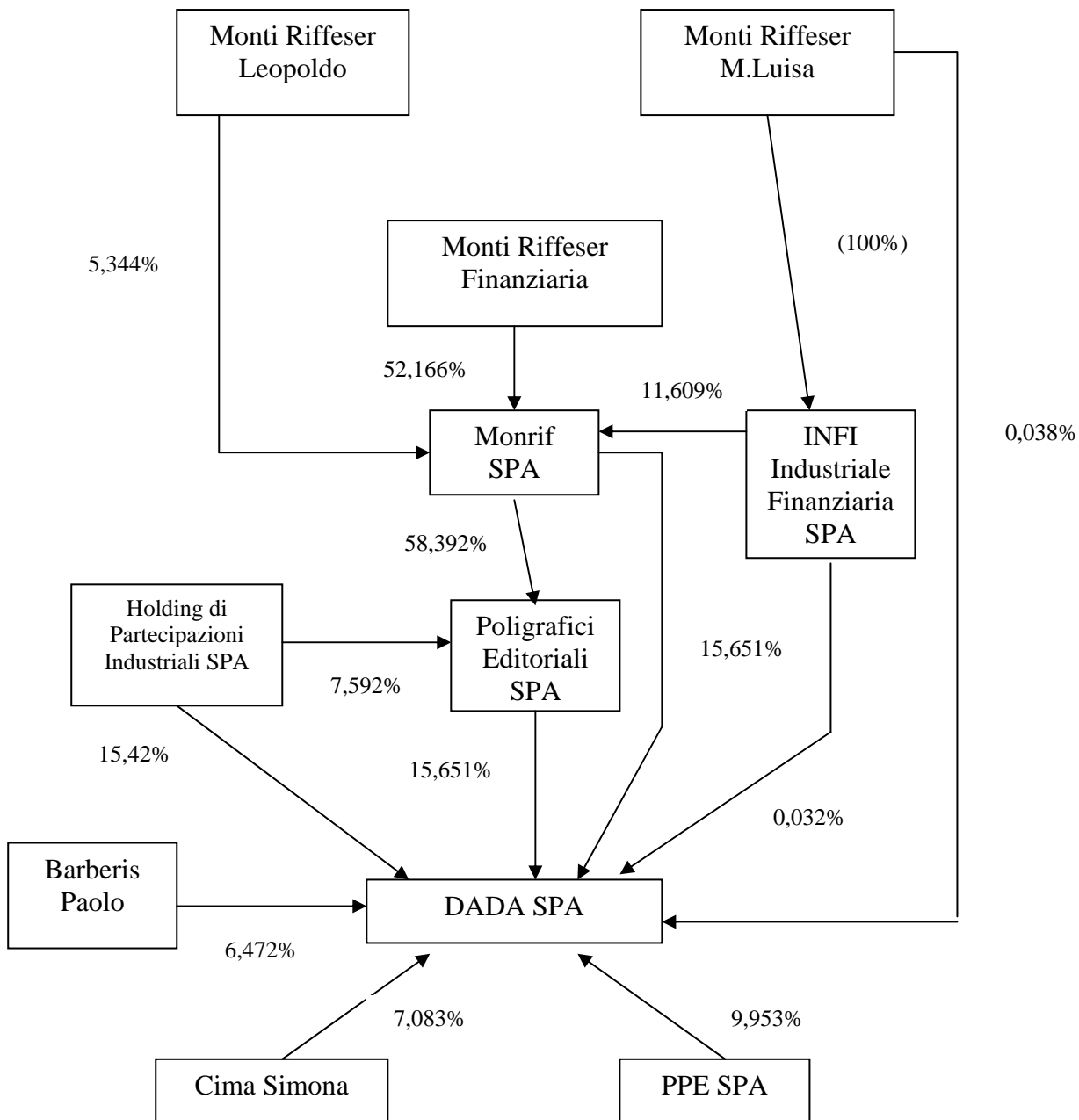
Fiat, 2000

The ultimate owner is Agnelli family; his ultimate ownership is the product of the ownership stakes along the chain = (50% * 33,433% * 9,726%)+(50% * 20,336% * 9,726%)+(50% * 17,811%)= 11,52% and his ultimate control stakes the weakest link along the control chain: 9,726%+17,811%=27,537%.
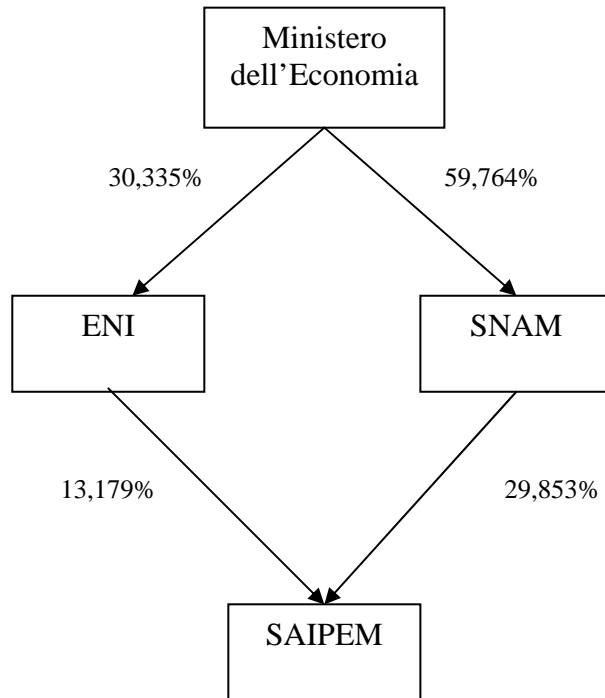
Dada, 2002

The ultimate owner is Monti Riffeser family; his ultimate ownership is the product of the ownership stakes along the chains (5,344%*58,392%*15,651%)+(52,166%*58,392%*15,651%)+(52,166%*3,02%)+0,038%+(11,609%*58,382%*15,651%)+0,0032%=7,96 % and his ultimate control stake is the weakest link along the control chain: 5,344%+15,651%+11,609%+0,032%+0,038%+3,02%=35,7%.

Saipem, 2001

The ultimate owner is Ministero dell'Economia; his ultimate ownership is the product of the ownership stakes along the chain = (30,335% * 13,179%)+(59,764% * 29,853%)=21,83 % and his ultimate control stakes the weakest link along the control chain: 13,179%+28,853%=42,03%.

Table 1

	Age	StdDev	Log Assets	StdDevEst
State	45,77	13,06	14,41	0,57
Widely	26,58	9,21	12,54	0,43
Founder	33,46	4,04	12,58	0,18
Heir	46,16	6,15	12,66	0,37
Profess	38,62	4,02	12,83	0,21
Total	38,69	2,56	12,85	0,12

Table 1: Decomposition of age and size by ownership status in 2002

Table 2

	Age	Log Assets	Log Leverage	ROA	ROE	Tobin_Q	RelRet	Rel_Mib30	Rel_Stoxx
Mean	37.75	12.71	12.1	0.00995	0.06611	1.44643	0.04505	0.07207	0.06914
Stdev	34.99	1.76	1.93	0.08379	0.43948	2.24895	0.45953	0.52210	0.50669
Min	1	7.63	6.80	-0.8695	-5.6049	0.0139	-3.6606	-0.7630	-0.7709
Max	151	18.5	18.3	0.39833	2.8392	42.6083	3.85431	6.7513	6.37926
N	1099	1054	1054	1054	1044	843	651	714	714

Table 2: Average statistics for the whole sample.

Table 3

	ROA	ROE	Tobin Q	RelRet	Rel_Mib30	Rel_Stoxx
State	0.0231	0.0903	0.8672	0.1031	-0.0480	0.0350
	(0.0086)	(0.0285)	(0.1151)	(0.0985)	(0.0745)	(0.0713)
Widely	-0.0733	-0.2075	1.0741	0.0843	-0.2709	-0.1878
	(0.0546)	(0.1885)	(0.1976)	(0.0694)	(0.0853)	(0.0786)
Founder	-0.0193	-0.0399	1.0452	-0.0056	-0.1349	-0.0430
	(0.0133)	(0.0488)	(0.0914)	(0.0421)	(0.0649)	(0.0647)
Heir	-0.0044	0.0295	0.5872	0.0031	-0.0709	-0.0086
	(0.0085)	(0.0256)	(0.0696)	(0.0719)	(0.0463)	(0.05)
Profess	0.0075	0.0532	1.1059	0.0741	-0.0796	-0.0006
	(0.0123)	(0.0403)	(0.1139)	(0.0362)	(0.0341)	(0.0343)
Total	-0.0061	-0.0135	0.9646	0.0579	-0.0884	-0.0112
	(0.0071)	(0.037)	(0.0527)	(0.0264)	(0.0258)	(0.0257)

Table 3: Decomposition of performance indicators by ownership status in 2002.

Table 4

	State	Widely	Founder	Heir	Profess	Total
Food	0	0	1	2	0	3
Manufacturing	1	4	13	6	17	41
Chemicals	1	0	3	0	3	7
Mineral Products	0	0	2	2	5	9
Manufacture of furniture; recycling	0	0	1	0	1	2
Electricity, gas and water supply	12	1	0	0	1	14
Construction	1	0	1	0	4	6
Wholesale and retail trade	0	1	8	2	9	20
Hotels and restaurants	0	0	0	2	1	3
Transport, storage and communication	2	1	2	1	6	12
Financial intermediation and auxiliary activities	0	0	4	2	5	11
Real estate, renting and business activities	0	2	4	1	14	21
Public administration and defence	0	0	0	0	1	1
Education	0	1	0	0	0	1
Other services	0	0	2	1	5	8

Table 4: Industries and ownership status in 2002

Table 5

POOLED OLS

	ROA	ROE	Tobin_q
State	0.0308 *	0.1165	0.1726
	(0.0173)	(0.0837)	(0.5453)
founder	0.0407 ***	0.0945	0.7486 *
	(0.0128)	(0.064)	(0.3821)
Heir	0.0613 ***	0.1605 **	0.2184
	(0.0142)	(0.0705)	(0.4179)
Profess	0.0428 ***	0.0945	0.5007
	(0.0124)	(0.0621)	(0.3653)
logasset	0.0612 ***	0.1515 ***	0.5159 *
	(0.0086)	(0.0411)	(0.2788)
logleverage	-0.0489 ***	-0.1184 ***	-0.5501 **
	(0.0079)	(0.0376)	(0.2532)
AGE	0.0051 *	-0.0076	-0.4358 ***
	(0.003)	(0.0143)	(0.0885)
privileges	0.0025	0.0112	-0.5367 ***
	(0.0067)	(0.0324)	(0.203)
R square	0,184	0,1247	0,1741
Obs.	817	810	715
Restrict. Test	0.0996 *	0,2759	0,2312
Number of firms	155	155	153

Table 5: Pooled OLS on the whole dataset (ROA, ROE, Tobin's Q)

Table 6

	Rel_Stoxx	ROA on av. obs.	ROA on all obs.
State	0.0637	0.0073	0.0308 *
	(0.1389)	(0.0217)	(0.0173)
founder	0.0795	0.0271 *	0.0407 ***
	(0.1037)	(0.0162)	(0.0128)
Heir	0.0026	0.0404 **	0.0613 ***
	(0.1122)	(0.0176)	(0.0142)
Profess	0.0508	0.0284 *	0.0428 ***
	(0.099)	(0.0155)	(0.0124)
logasset	0.0907	0.1027 ***	0.0612 ***
	(0.0731)	(0.0114)	(0.0086)
logleverage	-0.0886	-0.0836 ***	-0.0489 ***
	(0.066)	(0.0103)	(0.0079)
AGE	0.0224	0.0122 ***	0.0051 *
	(0.0236)	(0.0037)	(0.003)
privileges	0.0097	0.0055	0.0025
	(0.0546)	(0.0085)	(0.0067)
R square	0.1072	0.2633	0.184
Obs.	531	531	817
Restrict. Test	0.9729	0.4779	0.0996 *
Number of firms	128	128	155

Table 6: Pooled OLS on the whole dataset. Note: Return to Stoxx=(Annual returns to share in the i-th firm –β(i)*annual returns to Euro Stoxx 50). Pooled OLS for ROA is reported for the whole sample and for the subsample for which we have market data, in order to rule out selection effects.

Table 7

	ROA	Rel_Stoxx
Dependent Variable(-1)	-0.1992	0.0102
	(0.2438)	(0.0649)
Dependent Variable(-2)	-0.3188	-0.0619 **
	(0.1677)	(0.0312)
Dlogasset	0.0495	0.2181
	(0.055)	(0.3887)
Dlogleverage	-0.0576 *	-0.1789
	(0.0339)	(0.2156)
DAGE	-0.0308	0.218
	(0.1568)	(0.5203)
Dfounder	0.0337	0.3153 ***
	(0.0502)	(0.1042)
Dheir	0.0578	0.3142 ***
	(0.052)	(0.1025)
Dprofess	0.0573	0.1512
	(0.0502)	(0.1099)
Dstate	0.5804	0.5135 **
	(1.055)	(0.2304)
Dprivilege	-0.0199	-0.129
	(0.0591)	(0.1236)
Obs.	330	211
AR(1) p-value	0.41	0.47
AR(2) p-value	0.76	0.26

Table 7: Dynamic panel data 2-step estimates with ROA and REL_STOXX as dependent variables. Robust standard errors are used.

Table 8

Performance

1 year before	To heir	To CEO	Difference	Prob
ROA	0,0166	0,0139	0,0027	0,9028
ROE	0,1358	0,0917	0,0441	0,6799

Table 8: Test for the relationship between firm performance and subsequent change in control.

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