

Equity Prices and the Risk of Expropriation: an Analysis of the Italian Stock Market

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Abstract

We relate stock returns and asset values of closely held Italian listed companies to a measure of the risk of expropriation faced by minority shareholders. The risk of expropriation is measured using proxies for the power and the incentive to divert resources from the company by the controlling shareholder. We find that a high risk of expropriation does not affect stock returns, while it has a quite strong negative impact on firm value when the ultimate owner is either the State or a family. These evidences are consistent with the model of Jensen and Meckling (1976), suggesting that rational investors require a price discount when they buy stocks issued by closely held companies whose controlling shareholder has both the power and the incentive to divert resources from the firm, and that, in equilibrium, the price discount is large enough to compensate for the expected diversion. These results have important policy implications, as they indicate that disclosure rules on ownership and governance structures are the only measures that really matter for investor protection, while statutory provisions that restrict companies freedom in choosing the desired ownership structure (through pyramiding or issuing of non voting shares) are at best useless.

Keywords: equity returns, shareholders expropriation, closely held firms, firm valuation, corporate governance

JEL Classifications: G14, G32

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I. Introduction

The line of research initiated by the work of La Porta *et al.* (1998, 1999) provides strong evidences that countries with weak legal protection of outside investors and shareholders have less developed equity and capital markets and that in these countries equity ownership tends to be more concentrated. More generally, this line of research highlights the fact that the major agency problem that affects closely held corporations is the expropriation of minority shareholders by the controlling shareholders. More recent theoretical and empirical research focusing on closely held firms shows that poor legal protection of minority shareholders adversely affects corporate valuation and dividends (La Porta, Lopez-de-Silanes, Shleifer and Vishny (2000 and 2002), Claessen, Djankov, Fan and Lang (2002), Shleifer and Wolfenzon (2002)). In countries with poor legal protection outside shareholders will pay shares less because they anticipate that part of the profits will be appropriated by controlling shareholders and distributed dividends will be lower. The model by Jensen and Meckling (1976) suggests that rational investors will discount the risk of being expropriated into the price at which they are willing to buy stocks up to the point in which the price discount completely offsets the expected loss from expropriation. Hence, in equilibrium, the value of the firm is lower but stock returns are insensitive to the risk of expropriation or to the degree of investor protection.

This result is explicitly provided by Shleifer and Wolfenzon (2002) and by Lombardo and Pagano (2002) in the case of perfect capital mobility and fully integrated equity markets, whereby investor protection has no impact on expected stock returns. Under the assumption of perfect capital mobility, the supply of equity is perfectly elastic and rational outside investors will require the world return on equity no matter how large is the risk of expropriation. In the case of segmented markets and imperfect capital mobility, the model of Shleifer and Wolfenzon (2002) shows that the supply of external funds to firms is upward sloping in the required return, while the demand of outside equity by the individual firm (and hence the aggregate demand) is downward sloping and is inversely related to the risk of expropriation. One implication of the model proposed by Shleifer and Wolfenzon is that, in equilibrium, a higher risk of expropriation (or a lower degree of investor protection) reduces both the expected return on equity and the amount of equity raised by entrepreneurs. The same result is obtained by Lombardo and Pagano (2002) who show that when managers (or controlling shareholders) can credibly commit themselves to reduce the amount of diversion (because of either better incentives or better legal system) expected stock returns are higher. Conversely, a higher risk of expropriation would translate into lower stock returns (although the cost of capital to the firm is higher).

The focus of the literature that we have briefly mentioned is mainly on the cross-country analysis of the impact of the level of investor protection on various features of capital markets and corporate finance. In particular, under the reasonable assumption of segmented equity markets (as suggested, for example, by the results of Bekaert and Harvey (1995) and Harvey (1995)), existing theoretical models predict that expected returns are higher in countries with better investor protection. However, if the results of the models by Shleifer and Wolfenzon (2002) and Lombardo and Pagano (2002) apply to individual firms, we should also expect stock returns to vary across firms of the same country (i.e. holding the level of investor protection constant) depending on the power and incentives to diversion by the ultimate owner of the firms¹. In any case, this result holds only if a higher level of diversion (related to the ownership structure of the firm) shifts the (downward sloping) demand schedule down on the left (i.e. reduces the demand of equity finance

¹ In the model of Shleifer and Wolfenzon (2002) the risk of expropriation is captured by the probability that the controlling shareholder is caught if he diverts resources from the firm and for simplicity it is assumed to be independent of the ownership structure. However, the optimal level of diversion chosen by the controlling shareholder does depend on the ownership structure of the firm (i.e. on the proportion of cash flow ownership sold to outside investors).

for any given level of the return on equity): in this case, given an upward sloping supply schedule, an increase in the level of diversion implies lower returns to outside investors. However, in the model of Shleifer and Wolfenzon (2002) this assumption is not warranted. In fact, the risk of expropriation increases as the entrepreneur reduces his cash flow ownership, but by doing so he can sell some additional shares to outside investors. Rational investors react anticipating a higher level of diversion and thus require a higher price discount. Hence, the marginal impact of the risk of expropriation on the demand of equity is ambiguous, since the price effect could be outweighed by the quantity effect. Shleifer and Wolfenzon (2002) argue that in countries with lower investor protection it is more likely that the negative price effect will dominate (and vice versa when investor protection is high). In this case the demand for equity would be adversely affected by a higher risk of expropriation by the controlling shareholder.

Gompers, Ishii and Metrick (2003) find that US firms with inefficient governance structures (measured essentially on the basis of the degree of discretionality and the range of options in resisting an hostile takeover given to the management by corporate charters) have earned significantly lower returns over the period 1991-1999. They explain such finding arguing that investors may underestimate the full agency costs associated with inefficient corporate charters, so that stock prices are too high and ex post returns are lower than expected. Gomper *et al.* also find that US firms with inefficient governance structures are less valuable (and less profitable) than other firms. This means that investors realize that certain governance structures are inefficient but do not fully discount this inefficiency into the price at which they buy stocks. In other words, stock prices of firms with inefficient governance arrangements are lower than those of other firms, but not as low as they should be. The empirical work of Gompers, Ishii and Metrick (2003) on US firms with dispersed ownership complements those of La Porta, Lopez-de-Silanes, Shleifer and Vishny (2002) and Claessen, Djankov, Fan and Lang (2002) conducted on firms that have a controlling shareholder. These papers show that firm valuation (proxied by Tobin's q) is positively associated to the fraction of cash flow ownership of the ultimate owner, which is a measure of the incentive (not) to divert resources from the company or consume private benefits.

Summing up, the available theoretical work suggests that we should expect either no correlation between equity returns and the risk of expropriation related to firm-specific governance and ownership structures or an negative relationship (especially in countries with low investor protection and in a world of segmented markets and imperfect capital mobility). The empirical evidences on a high investor protection country, such as the US, coming from the work of Gompers, Ishii and Metrick (2003), also point to a sort of "behavioral finance" (or "inefficient markets") explanation of why stock returns may be adversely affected by inefficient ownership and governance structures. On the side of firm valuation, instead, theoretical and empirical works indicate that inefficient governance structures and high incentives to expropriation by controlling shareholders are invariably associated with lower firm value.

In this paper we try to empirically test these hypothesis, relating stock returns and firm value to a measure of the risk of expropriation by the ultimate owner of closely held firms. In particular, we evaluate the impact of power and incentives to expropriation on stock returns and firm value in a single-country environment characterized by a low (and hence constant) degree of investor protection. The choice of a low investor protection environment is motivated by the findings of Shleifer and Wolfenzon (2002) and La Porta *et al.* (2002) that, controlling for ownership structure, expected expropriation tends to be higher in countries with lower investor protection.

From this point of view, Italy represents a perfect laboratory to study such issues. High concentration of control rights and high diffusion of pyramidal structures and non voting shares (as we will show later), high *premia* on voting shares and on control block transactions, the civil law

origin of the commercial code are all indicators that are widely recognized as being signals of low investor protection and high private benefits of control (see, respectively, Bebchuk (1999), Wolfenzon (1999), Zingales (1994), Nenova (2000), Dyck and Zingales (2002), La Porta *et al.* (1998)).

The paper is organized as follows. In Section II we describe the data and the methodology. We have assembled a data set that keeps track of the ownership structure of all the Italian listed companies over ten years going from 1991 to 2000. On the basis of such information we create a dummy variable that identifies closely held firms for which the risk of expropriation by the controlling shareholder is high (or very high). The risk of expropriation is high when the controlling shareholder has both a strong power (high fraction of voting rights) and strong incentives (low fraction of cash flow rights) to extract private benefit from the company. In Section III we test whether returns are significantly related to the risk of expropriation, using the four factors performance attribution model by Fama-French-Carhart. In Section IV we analyze the relationship between firm value and the risk of expropriation. We regress Tobin's q of individual firms over the risk of expropriation dummy, controlling for growth opportunities and industrial sectors. Section V concludes.

We show that a high risk of expropriation does not affect stock returns, while it has a strong negative impact on firm value when the ultimate owner is either a family or the State. Italian firms tightly controlled by a family through a pyramidal group or with non voting shares in excess of 20% of total equity capital have a Tobin's q that is on average 17.5 percentage points lower, while similar firms controlled by the State have a Tobin's q that is on average 15.1 percentage points lower. These evidences are consistent with the model of Jensen and Meckling (1976), suggesting that stock return are unaffected by the risk of expropriation because rational investors discount such risk into the price at which they are willing to buy stocks, and that the price discount is large enough to offset the expected loss from expropriation.

Our approach follows the line of research of La Porta, Lopez-de-Silanes, Shleifer and Vishny (2002) and Claessen, Djankov, Fan and Lang (2002). We also provide evidences similar to that of Gompers *et al.* on the relation between governance and stock returns, although we focus on closely held firms that have powerful controlling shareholders, rather than on widely held corporation with powerful managers. We face however the same problem of endogeneity of the governance and ownership structure so that we can not make strong claims about causality relationships. For example, if the controlling shareholder has private information on future poor performance (or that the firm is overvalued) he can choose to reduce his cash flow ownership; so *ex post* lower stock returns and firm value are not due to higher expropriation. Hence, low cash flow ownership can signal either expectations of low performance or high incentive to expropriation.

II. Ownership data and measures of the risk of expropriation

We first discuss how we measure the risk of expropriation faced by outside shareholders in closely held firms. Appendix A contains a more accurate description of the variables that we will quote in the following discussion and of the source of the data.

We model the risk of expropriation as a dummy variable that takes the value of one when such risk is high (or very high). This dummy is in turn the product of two other dummy variables: the first dummy captures the power to divert resources from the firm by the ultimate owner ("power dummy"), while the second dummy captures the presence of adequate incentives by the ultimate to do so ("incentive dummy"). The "power dummy" is set to 1 when: 1) the firm has a controlling

shareholder (i.e. is closely held), and 2) the largest outside shareholder (i.e. the largest shareholder different from the controlling shareholder) controls less than 10% of the voting rights of the firm. A firm is considered to be closely held when the largest shareholder (ultimate owner) controls more than 30% of the voting rights of the firm. Note that our threshold of 30% to identify a controlling shareholder is higher than the 20% (or even 10%) used in other studies (La Porta *et al.* 1999, Faccio and Lang (2002)). This choice is motivated by the fact that we have many small firms in our sample for which a threshold of 20% (or 10%) could be too low to guarantee full control of the firm to the ultimate owner. However, setting the threshold to 20% would have a marginal impact on the number of firms that we classify as closely held (the average proportion of such firms across the years 1991-2000 would increase only from 0.81 to 0.88²). Following the literature (La Porta *et al.* 1999, Pagano and Roel 1998), we assume that the presence of a large outside shareholder can significantly reduce the power of the ultimate owner to divert resources from the firm.

The “incentive dummy” captures the existence of strong incentives by the ultimate owner to divert resources from the firm, due to a significant wedge between cash flow rights and voting rights. The “incentive dummy” is set to 1 when 1) the firm is controlled through a pyramidal group³ and/or 2) the ratio between non voting (or limited voting) shares and the total number of outstanding shares is greater than 20%⁴. We will assume that the risk of expropriation is “high” when the “power dummy” is one and either condition 1) or 2) of the “incentive dummy” is satisfied; when the “power dummy” is one and both conditions 1) and 2) are satisfied we will assume that the risk is “very high”. Note that we do not take into account cross-shareholdings (i.e. cases in which a firm owns shares in its controlling shareholder or in firms along the chains of control of a pyramidal group) because we find that they have an extremely limited role as a mean to separate ownership from control in Italian listed companies (this is consistent with the evidences reported in La Porta *et al.* 1999). In fact, we have only 12 firms across the years 1991-2000 (1.2 firms per year) that have shares in their controlling shareholders (and the average shareholding is well below 1% of the voting rights of the controlling shareholder). Multiple voting shares or shares with superior voting rights have also no role as a mean to separate ownership from control in Italy, since they are not allowed by the Italian Civil Code.

A potentially better measure of the incentives (not) to divert resources which is used in other studies is the share of cash flow ownership by the ultimate owner. However, as noted by La Porta *et al.* (2002), since cash flow and voting rights ownership are highly correlated, a high cash flow ownership may capture simultaneously both a strong power to divert resources from the firm and a strong incentive not to do so. In order to disentangle the power from the incentive effect, Claessens *et al.* (2002) consider both cash flow ownership and the wedge between voting rights and cash flow ownership.

Our approach tries to sidestep the problem of disentangling power from incentives, but at the price of clustering firms that can be in different situations. Consider firm A with an ultimate owner who owns 0.1 of cash flow rights and 0.3 of voting rights and firm B with an ultimate owner who owns 0.4 of cash flow rights and 0.7 of voting rights. For both firms the risk of expropriation will be high, although the controlling shareholder of firm A will have more incentive and less power

² This is confirmed by the data provided by Faccio and Lang (2002) who report that the proportion of Italian listed firms not widely held at the 20% threshold was roughly 0.87 in 1997.

³ This criteria partly overlaps with the previous dummy since in order to be controlled through a pyramidal group a firm must be necessarily closely held. We ignore this only for the sake of the clarity of the discussion.

⁴ Non voting shares include ordinary shares bought back by the firms (own shares), since according to the Italian Civil Code those shares have no vote. So, by having a firm buying back its own shares, the controlling shareholder can increase his share of voting rights. The average proportion of Italian listed firms across the years 1991-2000 that have own shares at the end of December is 17,3%, and for those firms the average proportion of own shares on total voting capital is 2,2%.

than the controlling shareholder of firm B. Consider now the case in which firm A has an ultimate owner who owns 0.3 of both cash flow and voting rights while firm B has an ultimate owner who owns 0.4 of cash flow rights and 0.7 of voting rights (because firm B is controlled through a pyramidal group and/or has issued non voting shares). We assume that the risk of expropriation is high in firm B and not in A because, although cash flow ownership is higher in B, the power to divert resources from the firm is also higher for the controlling shareholder of B. In other words, we are assuming that the presence of a wedge is the strongest signal of the willingness of the ultimate owner to use costly devices (pyramids and non voting shares) in order to divert resources from the firm. This assumption is consistent with the theoretical model of Wolfenzon (1999) who shows that the presence of a pyramidal group is invariably associated with a high level of diversion and with the empirical evidence provided by Nicodano (1998) who shows that pyramids and non voting shares tend to combine in Italian business groups and that this is associated to a higher voting premium.

We also identify firms that are at the top of a pyramidal group (so called “holding companies” or “Chinese boxes”, that are usually closely held). We classify as “holding companies” those listed firms whose assets are made essentially by stakes in other listed firms, so that we can infer that the purpose of setting up such companies was that of controlling other listed firms (see Wolfenzon 1999). As shown by Bianco and Nicodano (2002), Italian holding companies provide most of the financial resources used by the controlled companies downstream by issuing debt and equity. Hence, holding companies play a central role in the allocation of resources within the group. The “inefficient internal capital markets” and “diversification discount” literature⁵ may suggest that the value of the holding company can be lower, because it uses inefficiently the resources raised on the market to “enlarge the empire” and finance inefficient subsidiaries. On the other hand, one may conjecture that outside investors are willing to hold shares of the holding company rather than shares of the controlled companies downstream because, as argued by Nicodano (1998), the shares of the holding company can be more valuable in a takeover contest (as shown by the fact that the voting premium is higher). As mentioned above, however, nearly all holding companies in our sample are closely held, and hostile takeover will be therefore very infrequent.

Table 1 shows some descriptive statistics on the proportion and characteristics of closely held firms. In 1991, 90% of the Italian listed companies were closely held at the 30% threshold (75% in 2000) and 63% were closely held with no outside shareholder having more than 10% of voting rights (65% in 2000). The proportion of closely held firms with no outside shareholder having more than 10% of voting rights and controlled through a pyramidal group drops to 29% (21% in 2000) while the proportion of closely held firms with no outside shareholder having more than 10% of voting rights and with non voting shares exceeding 20% of total nominal equity capital drops to 19% (8% in 2000). The proportion of firms for which the “risk of expropriation high” dummy is set to one (closely held firms with no outside shareholder having more than 10% of voting rights and either controlled through a pyramidal group or with non voting shares exceeding 20% of total nominal equity capital) reduces from 39% in 1991 to 25% in 2000, while the proportion of firms for which the risk of expropriation is “very high” reduces from 8% in 1991 to 3% in 2000. The proportion of holding companies reduces as well, going from 8% to 5% over the ten years under analysis.

⁵ See Sharfstein and Stein (1999) and Rajan, Servaes and Zingales (1999).

Table 1 –Proportion of closely held firms among Italian listed companies (percentages over total number of listed companies; for definitions and sources see appendix A)

| | Years | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|--|-------------------------|------|------|------|------|------|------|------|------|------|------|
| Closely held firms | | 0.90 | 0.89 | 0.86 | 0.82 | 0.81 | 0.80 | 0.75 | 0.72 | 0.76 | 0.75 |
| | <i>Ultimate owner</i> | | | | | | | | | | |
| | Family | 0.46 | 0.49 | 0.48 | 0.40 | 0.39 | 0.36 | 0.35 | 0.36 | 0.36 | 0.37 |
| | State | 0.18 | 0.18 | 0.16 | 0.14 | 0.13 | 0.13 | 0.10 | 0.08 | 0.09 | 0.09 |
| | Widely held corporation | 0.18 | 0.17 | 0.14 | 0.19 | 0.17 | 0.18 | 0.19 | 0.19 | 0.20 | 0.19 |
| | Widely held financial | 0.07 | 0.04 | 0.06 | 0.07 | 0.09 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 |
| | Others | 0.01 | 0.02 | 0.01 | 0.02 | 0.04 | 0.05 | 0.03 | 0.02 | 0.02 | 0.03 |
| Closely held and largest outside shareholder has less than 10% of voting rights | | 0.63 | 0.65 | 0.63 | 0.59 | 0.63 | 0.60 | 0.58 | 0.61 | 0.65 | 0.65 |
| Closely held, largest outside shareholder has less than 10% of voting rights and ultimate owner controls through pyramid | | 0.29 | 0.31 | 0.28 | 0.25 | 0.28 | 0.23 | 0.22 | 0.22 | 0.22 | 0.21 |
| Closely held, largest outside shareholder has less than 10% of voting rights and non voting plus restricted voting shares exceeds 20% of total issued shares | | 0.19 | 0.17 | 0.16 | 0.14 | 0.12 | 0.12 | 0.12 | 0.10 | 0.09 | 0.08 |
| Closely held, largest outside shareholder has less than 10% of voting rights and either non voting plus restricted voting shares exceeds 20% of total issued shares or ultimate owner controls through pyramid (firms where the “risk of expropriation high” dummy is 1) | | 0.39 | 0.39 | 0.37 | 0.34 | 0.35 | 0.30 | 0.29 | 0.27 | 0.28 | 0.25 |
| Closely held, largest outside shareholder has less than 10% of voting rights, non voting plus restricted voting shares exceeds 20% of total issued shares and ultimate owner controls through pyramid (firms where the “risk of expropriation very high” dummy is 1) | | 0.08 | 0.09 | 0.07 | 0.05 | 0.05 | 0.04 | 0.04 | 0.05 | 0.03 | 0.03 |
| Holding companies | | 0.08 | 0.08 | 0.09 | 0.09 | 0.07 | 0.07 | 0.06 | 0.06 | 0.07 | 0.05 |
| Total N. of listed firms | | 238 | 235 | 227 | 219 | 217 | 210 | 208 | 218 | 241 | 237 |

III. Risk of expropriation and stock returns

We try now to evaluate whether stocks issued by firms for which the risk of expropriation is either high or very high earn returns that are systematically and significantly different from those of other firms. Using the four factors model proposed by Carhart (1997), which adds to the three factor model originally proposed by Fama and French (1993) the so called *momentum* variable, we estimate the following regression:

$$(1) \quad R_t = a + b*RMRF_t + s*SMB_t + h*HML_t + m*MOMENTUM_t + e_t$$

We follow basically the approach of Gompers, Ishii and Metrick (2003) and define the dependent variable of equation (1) as the difference between the monthly return on

- a) a portfolio of stocks with “high” or “very high” expropriation risk;
- b) a portfolio of holding companies

and the return on a portfolio that includes other firms. Hence R_t is the monthly return of zero investment strategy that buys a portfolio stocks issued by companies for which the risk of

expropriation is high or very high (or a portfolio of holding companies) and sells a portfolio of stocks issued by other companies. Portfolios are formed on the basis of the value of the expropriation dummy and holding company dummy at the end of December of each year from 1991-2000; returns are detected in the following 12 months, from July to June.

The intercept or “alpha” in equation (1) is the abnormal return of such strategy in excess of what could have been achieved by a passive investment in the four factors portfolios.

The variable $RMRF_t$ in equation (1) is the monthly difference between the return on the value-weighted market portfolio and the return of the risk-free rate (3 month treasury bill, so called BOT or *Buoni Ordinari del Tesoro*). The variables SMB_t (small minus big) and HML_t (high minus low) are the monthly returns of the mimicking portfolios intended to capture the size and book-to-market factors, respectively. Those portfolio are constructed following basically the approach of Fama and French (1993), but with slightly different size and BTM break points in order to form portfolio with a significant number of stocks. In June of each year t we sort all common stocks issued by Italian listed firms on the basis of their size (market capitalization, source *Taccuino dell’Azionista* edited by *Il Sole 24 Ore* and *Borsa Italiana*) and book-to-market, BTM, (ratio between book equity at the end of fiscal year $t-1$ and market capitalization at the end of December of $t-1$, source Worldscope). Stocks are then split into 3 size portfolios. The first size portfolio includes stocks of 1st and 2nd size quintile (small stocks, S), the second group includes stocks of the 3rd size quintile (M, medium size stocks), and the third group includes stocks of the 4th and 5th quintile (B, big stocks). We form 3 BTM portfolio (H, high book-to-market, I, intermediate BTM, and L, low BTM) in exactly the same way as the size portfolios. From the intersection of the 3 size portfolios and the 3 BTM portfolios we form 9 portfolios (S/L, S/I, S/H, M/L, M/I, M/H, B/L, B/I, B/H) and for each portfolio we compute monthly equally weighted returns from July of year t to June of $t+1$, and the portfolio are reformed in June of $t+1$ (returns for each stock are adjusted for dividends and capital operations, source Thompson Financial). The SMB (small minus big) size factor is the monthly difference between the simple average of the returns of three small portfolios (S/L, S/I, S/H) and the simple average of the returns of three big portfolios (B/L, B/I, B/H), while the HML (high minus low) BTM factor is the monthly difference between the simple average of the returns of the three high BTM portfolios (S/H, M/H, B/H) and the simple average of the returns of three low BTM portfolios (S/L, M/L, B/L).

The variable $MOMENTUM_t$ is the difference between the monthly return of the equally weighted portfolio of stocks with yearly returns in the preceding 12 month in the two highest quintile and the monthly return of the equally weighted portfolio of stocks in the two lowest performance quintile.

If one wants to take an agnostic approach to the current debate on asset pricing, equation (1) can be viewed simply as a method of performance attribution (see Carhart 1997), without making any claim on whether the four factors are actually proxies for risk. In fact, the coefficients of the four factors can be interpreted as the proportion of average returns attributable to four elementary strategies: high versus low beta stocks, large versus small market capitalization stocks, value (low BTM) versus growth (high BTM) stocks, and one-year return momentum (high one-year performance) versus contrarian (low one-year performance) stocks.

First we give some evidences on how the Carhart-Fama-French four factors model works with our data, since as far as we now there is no empirical study on the Italian Stock Market that performs a similar analysis. In table 2 we show the results of the OLS estimates of equation (1) taking as dependent variable the returns of each of the 9 portfolios that result from the intersection of the 3 size and BTM portfolios.

The results shown in table 2 for returns on Italian stocks tend to be similar to those of Fama and French (1993). The loadings for the market factor are close to 1, like in the US data, and their t statistic is always well above ten. The SMB factor is also large and tend to decrease with size for any given BTM group like in Fama and French (1993), although losing some of its statistical significance. Similarly, the HML factor tend to increase with BTM for any size group. Adding SIZE and BTM to a simple CAPM model improves R^2 substantially together with the precision of estimates of the market factor (results not reported for brevity, available from the authors). On the contrary, adding the momentum factor does not contribute significantly to the total variance already explained by the Fama-French three factor model. In fact, the coefficients of the MOMENTUM factor tend to be quite small and are significant mainly for big stocks.

Table 2 – Fama-French-Carhart four factor model test for Italian stock returns 1991-2000

| Portfolios | | Alpha | RMRF | SMB | HML | MOMENTUM | adjusted R ² | F-stat |
|------------|-----|-----------------|-------------------|--------------------|--------------------|--------------------|-------------------------|--------|
| Size | BTM | | | | | | | |
| S | H | 0.00 (0.00) | 0.96*** (0.03) | 0.86*** (0.07) | 0.54*** (0.09) | -0.12* (0.06) | 0.94 | 420.5 |
| S | I | 0.00 (0.00) | 0.81*** (0.06) | 0.76*** (0.12) | -0.15 (0.17) | -0.35*** (0.12) | 0.72 | 73.9 |
| S | L | -0.01 (0.00) | 0.92*** (0.05) | 1.21*** (0.10) | -0.48*** (0.14) | -0.05 (0.10) | 0.79 | 109.7 |
| M | H | 0.00 (0.00) | 0.92*** (0.06) | 0.16 (0.12) | 0.91*** (0.17) | -0.09 (0.12) | 0.82 | 134.0 |
| M | I | -0.01 (0.00) | 0.77*** (0.06) | 0.08 (0.12) | 0.53*** (0.17) | -0.23 (0.12) | 0.75 | 86.3 |
| M | L | 0.00 (0.00) | 0.95*** (0.06) | 0.64*** (0.13) | -0.51*** (0.18) | -0.27*** (0.12) | 0.73 | 78.3 |
| B | H | 0.00 (0.00) | 0.95*** (0.04) | -0.20*** (0.08) | 0.65*** (0.11) | -0.23*** (0.08) | 0.92 | 344.0 |
| B | I | 0.00 (0.00) | 0.83*** (0.04) | -0.17* (0.09) | 0.39*** (0.13) | -0.38*** (0.09) | 0.87 | 183.9 |
| B | L | 0.00 (0.00) | 0.95*** (0.03) | 0.06 (0.06) | -0.22*** (0.09) | -0.10 (0.06) | 0.93 | 384.8 |

Results from the regression of monthly excess returns of nine equally weighted portfolios resulting from the intersection of three size and book-to-market ratio (BTM) sorted portfolios on the returns of four mimicking portfolios capturing the four factors of Fama and French (1993) and Carhart (1997). RMRF is the monthly difference between the return on the value-weighted market portfolio minus the return of the risk-free rate. In June of each year t common stocks are split into 3 size (small (S), medium (M) and big (B)) and BTM (low (L), intermediate (I) and high (H)) portfolios. From the intersection of the 3 size portfolios and the 3 BTM portfolios we form 9 portfolios (S/L, S/I, S/H, M/L, M/I, M/H, B/L, B/I, B/H) and for each portfolio we compute monthly equally weighted returns from July of year t to June of $t+1$, and the portfolio are reformed in June of $t+1$. SMB (small minus big) is the size factor computed as the monthly difference between the simple average of the returns of the three small portfolios (S/L, S/I, S/H) and the simple average of the returns of three big portfolios (B/L, B/I, B/H), while the HML (high minus low) factor is the monthly difference between the simple average of the returns of the three high BTM portfolios (S/H, M/H, B/H) and the simple average of the returns of the three low BTM portfolios (S/L, M/L, B/L). MOMENTUM is the difference between the monthly return of the equally weighted portfolio of stocks with yearly returns in the preceding 12 month in the two highest quintile and the monthly return of the equally weighted portfolio of stocks in the two lowest performance quintile. Standard errors are in parenthesis. *, **, *** denote statistical significance the 10%, 5% 1% level, respectively.

In table 3 we show the results of the Fama-French-Carhart model taking as dependent variable the difference between the monthly returns of a portfolio of stocks issued by closely held firms with expropriation risk high or very high (formed on the basis of the value of the expropriation dummies at the end of December of each year from 1991-2000) – or issued by holding companies - and the returns of a portfolio other firms (any other firms, only closely held firms with the risk of expropriation dummy set to zero and widely held firms only), formed on the basis of year-end ownership data as well. Results of table 3 clearly show that the alphas, the abnormal returns of any strategy that buys a portfolio of stocks with high (or very high) risk of expropriation and sells a portfolio of other stocks, are never statistically different from zero. Moreover, the style differences of the long and short portfolio of these strategies (in terms of the exposition to the Fama-French-Carhart four risk factors) can account only for a modest fraction of the total variance of the return to such strategies. Only the SMB factor is large and often statistically significant, indicating that there is a difference in the average size of the two portfolios that can explain some of their difference in performance.

These results seem to confirm the general prediction of the model by Jensen and Meckling (1976): in equilibrium the required return on equity will be insensitive to the risk of expropriation, since rational investors will fully discount such risk into the price at which they are willing to buy shares. Differently from Gompers, Ishii and Metrick (2001), we do not find any significant evidence that investors tend to underestimate the agency cost of inefficient governance and ownership structure. High (or very high) expropriation risk stocks have average returns that are not systematically different from those of other stocks, controlling for the Fama-French-Carhart four factors performance attribution model. The only exception to this is the negative return to the portfolio of holding companies: buying such portfolio and selling short a portfolio made of any other company would have earned a negative abnormal return of roughly 7% on a yearly basis. This result seems to be consistent with the “inefficient internal capital markets hypothesis” and with the hypothesis of Gompers *et al.* that there may be circumstances in which investors may tend to underestimate the full agency costs of inefficient governance structures.

Table 3 – Fama-French-Carhart four factor model of performance attribution for portfolios formed on the basis of the “risk of expropriation (very) high” and ownership dummies

| Portfolios | Alpha | RMRF | SMB | HML | MOMENTUM | adjusted R ² | F-stat |
|---|------------------|-------------------|--------------------|-------------------|----------------|-------------------------|--------|
| Stock issued by closely held companies with risk of expropriation high minus any other stocks | 0.00 (0.00) | 0.03 (0.03) | -0.25*** (0.06) | 0.18** (0.08) | 0.02 (0.06) | 0.24 | 8.9 |
| Stock issued by closely held companies with risk of expropriation high minus stocks issued by other closely held companies | 0.00 (0.00) | 0.03 (0.03) | -0.34*** (0.06) | 0.19** (0.09) | 0.02 (0.06) | 0.31 | 12.9 |
| Stock issued by closely held companies with risk of expropriation high minus stocks issued by widely held companies | 0.00 (0.00) | 0.03 (0.04) | -0.08 (0.08) | 0.22* (0.11) | 0.03 (0.08) | 0.07 | 2.03 |
| Stock issued by closely held companies with risk of expropriation very high minus stocks issued by any other company | 0.00 (0.00) | 0.08* (0.05) | -0.38*** (0.10) | 0.19 (0.14) | 0.08 (0.09) | 0.25 | 9.6 |
| Stock issued by closely held companies with risk of expropriation very high minus stocks issued by any other company except those with risk of expropriation high | 0.00 (0.00) | 0.09* (0.05) | -0.44*** (0.10) | 0.25* (0.14) | 0.08 (0.10) | 0.29 | 11.8 |
| Stock issued by closely held companies with risk of expropriation very high minus stocks issued by other closely held companies | 0.00 (0.00) | 0.08* (0.05) | -0.42*** (0.10) | 0.18 (0.14) | 0.07 (0.10) | 0.27 | 10.7 |
| Stock issued by closely held companies with risk of expropriation very high minus stocks issued by widely held companies | 0.00 (0.00) | 0.09* (0.05) | -0.26** (0.11) | 0.27* (0.15) | 0.08 (0.11) | 0.15 | 5.07 |
| Stock issued by holding companies minus any other stocks | -0.01* (0.00) | 0.26*** (0.05) | -0.01 (0.11) | 0.47*** (0.16) | 0.17 (0.11) | 0.15 | 5.07 |

Results from OLS estimates of equation (1). The dependent variable is the difference between monthly returns of a portfolios of common stocks issued by companies with risk of expropriation (very) high (or holding companies) and the monthly returns of stocks issued by other companies (see Appendix A for precise definition of ownership variables). Portfolios are reformed in December of year t from 1991 to 2000. The explaining variables are the Fama and French (1993) and Carhart (1997) four factors (returns on the four mimicking portfolios capturing market wide movements, size, book-to-market ratio and momentum). RMRF is the monthly difference between the return on the value-weighted market portfolio minus the return of the risk-free rate. In June of each year t common stocks are split into 3 size (small (S), medium (M) and big (B)) and BTM (low (L), intermediate (I) and high (H)) portfolios. From the intersection of the 3 size portfolios and the 3 BTM portfolios we form 9 portfolios (S/L, S/I, S/H, M/L, M/I, M/H, B/L, B/I, B/H) and for each portfolio we compute monthly equally weighted returns from July of year t to June of $t+1$, and the portfolio are reformed in June of $t+1$. SMB (small minus big) is the size factor computed as the monthly difference between the simple average of the returns of the three small portfolios (S/L, S/I, S/H) and the simple average of the returns of three big portfolios (B/L, B/I, B/H), while the HML (high minus low) factor is the monthly difference between the simple average of the returns of the three high BTM portfolios (S/H, M/H, B/H) and the simple average of the returns of the three low BTM portfolios (S/L, M/L, B/L). MOMENTUM is the difference between the monthly return of the equally weighted portfolio of stocks with yearly returns in the preceding 12 month in the two highest quintile and the monthly return of the equally weighted portfolio of stocks in the two lowest performance quintile. Standard errors are in parenthesis. *, **, *** denote statistical significance the 10%, 5% 1% level, respectively.

IV. Risk of expropriation and firm value

The work by La Porta, Lopez-de-Silanes, Shleifer and Vishny (2002) and Claessen, Djankov, Fan and Lang (2002) shows that the incentive (not) to expropriate has an economically and statistically significant impact on firm value. Following this line of research we test whether our expropriation dummy can explain cross-sectional differences in firm value, as proxied by Tobin's Q . We estimate the following basic panel regression:

$$(2) \quad Q_{it} = a + b * RISK \ OF \ EXPROPRIATION \ (VERY) \ HIGH_{it} + c * SALES \ GROWTH_{it} + \Sigma d_k * INDUSTRY \ DUMMIES_{it} + f * HOLDING \ COMPANY_{it} + e_{it}$$

Q_{it} is the Tobin's Q for firm i at the end of fiscal year t , computed as the ratio between market value of total assets and book value of total assets (market value of total assets is book value of total assets plus market value of equity less book value of equity; market value of equity is measured at end of current calendar year while accounting data are measured at the end of current fiscal year; source: WorldScope for accounting data, while market value comes from source *Taccuino dell'Azionista* edited by *Il Sole 24 Ore* and *Borsa Italiana*). RISK OF EXPROPRIATION (VERY) HIGH is a dummy variable that equals 1 when the firm is closely held, the second outside shareholder has less than 10% of voting rights and there is a significant wedge between voting rights and cash flow rights obtained through either pyramiding or non voting shares (HIGH), or in both ways (VERY HIGH, see Appendix A for precise definitions). SALES GROWTH is the geometric mean of the growth in sales (or total revenues) in the three year before t (depending on data availability) and is intended to control for the growth opportunities of each firm (we also used the log of total asset and the results, not reported, are essentially the same). We control for industrial sectors (INDUSTRY DUMMIES) using the SIC codes (source WorldScope) grouping proposed by Campbell (1997). We also estimate equation (2) using firms fixed effects rather than industry dummies⁶. The HOLDING COMPANY dummy (see Appendix A for precise definition) should capture any possible positive or negative effect on firm value because firms on top a pyramidal group could be either more valuable, as suggest by Nicodano (1998), or less valuable as suggested by the "inefficient internal capital markets" hypothesis. Finally, we control for year dummies in estimating equation (2).

Table 4 presents the results of the regression. Specifications (1) and (2) control for industry dummies (and year dummies) and use the two different dummies for the risk of expropriation (high and very high). When the risk of expropriation is high Tobin's Q is on average 7.0 percentage points lower, while when the risk is very high Tobin's Q is 10.8 percentage points lower, although the statistical significance is above the 10% threshold (p value is 0.146). Considering that the average Q across years and firms is 1.25 and the median Q is 1.05, the coefficients of the "risk of expropriation high" dummy is quite large and economically significant. A high risk of expropriation has on average a negative impact on firm value comparable to a 64% drop in average sales growth. These results are consistent with the evidences reported by Volpin (2002) who finds that Tobin's Q of Italian listed firms with an ultimate owner having more than 50% of cash flow rights is on average 8 percentage points higher than other firms.

The coefficient for the holding company/"Chinese box" dummy is negative and very large in absolute value: Tobin's Q of companies on top of a pyramidal group is on average 40 percentage

⁶ Random effects estimation yield results that are very similar to fixed effects and for the sake of brevity are not reported.

points lower, controlling for growth opportunities and industrial sector⁷. Such results seem to be consistent with the “diversification discount” and “inefficient internal capital markets hypothesis” and complement those on returns, suggesting that investors do not fully discount into stock prices the potential inefficiency arising from the role played by listed firms on top of a pyramidal group in allocating financial resources within the group itself.

Specifications (3) and (4) use firms fixed effects. In this case results are statistically weaker because ownership structures tend to be relatively constant across firms and years and hence the effect of the risk of expropriation dummies is absorbed by the firm-specific effects. The sign of the “risk of expropriation very high” dummy remains negative but can not be estimated precisely, while the holding company coefficient remains large and statistically significant.

Table 4 – Tobin’s Q and the risk of expropriation

| | (1) | (2) | (3) | (4) |
|-------------------------------------|-----------------------------|-----------------------------|--------------------------------|--------------------------------|
| Risk of expropriation high | -0.070** (0.038) | | 0.017 (0.047) | |
| Risk of expropriation very high | | -0.108 (0.074) | | -0.053 (0.035) |
| Sales growth | 0.110*** (0.040) | 0.111*** (0.040) | 0.020 (0.033) | 0.021 (0.033) |
| Holding company (Chinese box) | -0.410*** (0.068) | -0.398*** (0.068) | -0.124*** (0.040) | -0.128*** (0.041) |
| Industry dummies/firms fixed effect | <i>Industry dummies</i> | <i>Industry Dummies</i> | <i>Firms fixed effects</i> | <i>Firms fixed effects</i> |
| Adjusted R ² | 0.147 | 0.146 | 0.693 | 0.694 |
| N. of observations | 1,871 | 1,871 | 1,871 | 1,871 |

Results from OLS estimates of equation (2) with standard errors robust to heteroscedasticity and autocorrelation. The dependent variable is Tobin’s Q , computed as the ratio between market value of total assets and book value of total assets (market value of total assets is book value of total assets plus market value of equity less book value of equity). Risk of expropriation high is a dummy set to 1 when *a*) the firm has a controlling shareholder, *b*) the share of voting rights of the largest outside shareholder is less than 10% and *c*) either the firm is controlled through a pyramidal group or the sum of non voting and restricted voting shares exceeds 20% of total outstanding shares. Risk of expropriation very high is a dummy set to 1 when *a*) the firm has a controlling shareholder, *b*) the share of voting rights of the largest outside shareholder is less than 10% and *c*) the firm is *both* controlled through a pyramidal group *and* the sum of non voting and restricted voting shares exceeds 20% of total outstanding shares. Sales growth is the geometric mean of the growth in sales or total revenues in at least three year before t (depending on data availability). Holding company is a dummy set to 1 when total book value of all the equity stakes in other listed companies exceeds 50% of the book value of total fixed and intangible assets in the unconsolidated balance sheet and zero otherwise. Industry dummies are based on the SIC code grouping suggested in Campbell (1997). Year dummies are included but the coefficients are not reported. All variables are measured at December of each year (or at the end of the fiscal year) from 1991 to 2000 for all Italian companies listed on the official market (Nuovo Mercato and Mercato ristretto companies are excluded). Standard errors are in parenthesis. *, **, *** denote statistical significance the 10%, 5% 1% level, respectively.

⁷ The SIC code of a holding companies (or of a diversified company) is assigned by WorldScope on the basis of the business segment that generates most of the revenues. If a sales breakdown is not available the SIC code is assigned according to WorldScope best judgment.

Table 5 – Tobin's Q , risk of expropriation and the identity of the ultimate owner

| | (1) | (2) | (3) | (4) |
|---|-----------------------------|-----------------------------|--------------------------------|--------------------------------|
| Risk of expropriation high*family | -0.175*** (0.050) | | 0.042 (0.071) | |
| Risk of expropriation high*State | -0.151* (0.083) | | -0.113 (0.082) | |
| Risk of expropriation high*widely held corporation | 0.098 (0.070) | | 0.067 (0.087) | |
| Risk of expropriation high*widely held financial | 0.089 (0.100) | | 0.058 (0.086) | |
| Risk of expropriation very high*family | | -0.075 (0.086) | | -0.011 (0.027) |
| Risk of expropriation very high*State | | -0.358 (0.249) | | -0.401*** (0.131) |
| Risk of expropriation very high*widely held corporation | | -0.166 (0.176) | | -0.004 (0.095) |
| Risk of expropriation very high*widely held financial | | 0.593 (0.735) | | -0.273 (0.303) |
| Sales growth | 0.111*** (0.040) | 0.111*** (0.040) | 0.021 (0.032) | 0.020 (0.033) |
| Holding company | -0.404*** (0.069) | -0.400*** (0.068) | -0.121*** (0.039) | -0.127*** (0.041) |
| Industry dummies/firms fixed effect | <i>Industry dummies</i> | <i>Industry dummies</i> | <i>Firms fixed effects</i> | <i>Firms fixed effects</i> |
| Adjusted R ² | 0.153 | 0.146 | 0.693 | 0.693 |
| N. of observations | 1,871 | 1,871 | 1,871 | 1,871 |

OLS estimates with standard errors robust to heteroscedasticity and autocorrelation. The dependent variable is Tobin's Q , computed as the ratio between market value of total assets and book value of total assets (market value of total assets is book value of total assets plus market value of equity less book value of equity). Risk of expropriation high*family (risk of expropriation high*State, risk of expropriation high*widely held corporation, risk of expropriation high*widely held financial) is a dummy set to 1 when *a*) the controlling shareholder is a family (State, widely held corporation, widely held financial), *b*) the share of voting rights of the largest outside shareholder is less than 10% and *c*) either the firm is controlled through a pyramidal group or the sum of non voting and restricted voting shares exceeds 20% of total outstanding shares. Risk of expropriation very high*family (risk of expropriation very high*State, risk of expropriation very high*widely held corporation, risk of expropriation very high*widely held financial) is a dummy set to 1 when *a*) the controlling shareholder is a family (State, widely held corporation, widely held financial), *b*) the share of voting rights of the largest outside shareholder is less than 10% and *c*) the firm is *both* controlled through a pyramidal group *and* the sum of non voting and restricted voting shares exceeds 20% of total outstanding shares. Sales growth is the geometric mean of the growth in sales or total revenues in at least three year before t (depending on data availability). Holding company is a dummy set to 1 when total book value of all equity stakes in other listed companies exceeds 50% of the book value of total fixed and intangible assets from the unconsolidated balance sheet and zero otherwise. Industry dummies are base on the SIC code grouping suggested in Campbell (1997). Year dummies are included but coefficients are not reported. All variables are measured at December of each year (or at the end of the fiscal year) from 1991 to 2000 for all Italian companies listed on the official market (Nuovo Mercato and Mercato ristretto companies are excluded). Standard errors are in parenthesis. *, **, *** denote statistical significance the 10%, 5% 1% level, respectively.

In table 5 we present the same set of regressions as in table 4, but the “risk of expropriation (very) high” dummy is now interacted with a dummy for the identity of the ultimate owner of the firm. By doing so, it becomes clear that almost all of the negative relation between the risk of expropriation and firm value is due to firms whose ultimate owner is either a family or the State. When the ultimate owner is instead a widely held company (either financial or non-financial) such relationship tends to disappear.

In specifications (1) the coefficients of the “risk of expropriation high” dummy when the ultimate owner is a family or the State are now two times as big (in absolute terms) compared to the “general” coefficient of table 4. When the ultimate owner is a family Tobin’s Q is 17.5 percentage points lower, while when the ultimate owner is the State Tobin’s Q is 15.1 percentage points lower. In the case of “risk of expropriation very high” dummy (specification 2), the interaction with the ultimate owner identity dummies reduces significantly the number of available observations and the coefficients of the interaction can not be estimated precisely. However, using firms fixed effects (specification 4), the coefficient of the interaction remains large and significant when the ultimate owner is the State.

V. Conclusions

Recent theoretical and empirical research shows that firm value is lower the greater the incentive by controlling shareholder to divert resources from the company and the lower the protection granted to minority shareholders by the legal system. The issue of the correlation between the incentive to expropriation by the controlling shareholder and stock returns has received somewhat less attention in the empirical literature, while theoretical works suggest the such correlation should be either zero or negative.

We provide further empirical evidences on both issues using data on Italian listed companies over the year 1991-2000. First, by focusing on a single country - with (supposedly) low investor protection – we hold the “quality of the legal system” variable constant. Second, by taking firms from a country with low investor protection, the correlation between stock returns or firm value and expropriation risk should show up more clearly. In fact, as argued by Shleifer and Wolfenzon (2002) and La Porta *et al.* (2002), controlling for ownership structure, expected expropriation tends to be higher in countries with lower investor protection.

We evaluate the risk of expropriation by the ultimate owner of the firm using proxies for his power and incentive to do so. The power depends on his share of total voting rights and on the absence of strong outside shareholders, while the incentive depends on the presence of a significant wedge between voting rights and cash flow rights ownership (obtained through either pyramiding or non voting shares or both).

We show that a high risk of expropriation does not affect stock returns, while it has a strong negative impact on firm value when the ultimate owner is either a family or the State. Italian firms tightly controlled by a family through a pyramidal group or with non voting shares in excess of 20% of total equity capital have a Tobin’s q that is on average 17.5 percentage points lower, while similar firms controlled by the State have a Tobin’s q that is on average 15.1 percentage points lower. We also show that listed firms on top of a pyramidal group have a Tobin’ Q that is approximately 40 percentage points lower than those of other listed firms and that a portfolio of such companies would have earned a significantly lower return compared to a portfolio made of all other firms over the years 1991-2000. Although the statistical robustness of this latter result is not very strong, it may suggest that investors do not fully discount into the stock prices the potential inefficiency arising from the role played by listed firms on top of a pyramidal group in allocating financial resources within the group itself.

In general, however, the results provided in the paper are consistent with the model of Jensen and Meckling (1976), suggesting that stock returns are unaffected by the risk of

expropriation because rational investors discount such risk into the price at which they are willing to buy stocks, and that the price discount is large enough to offset the expected loss from expropriation. These results also have strong policy implications, as they indicate that disclosure rules on ownership and governance structures are the only measures that really matter for investor protection, while statutory provisions that restrict companies freedom in choosing the desired ownership structure (through pyramiding or issuing of non voting shares) are at best useless.

APPENDIX A – Description of ownership variables

| Variable | Description |
|---|--|
| <i>Closely held firm (firm with a controlling shareholder)</i> | A firm is defined as closely held if the ultimate owner controls more than 30% of the voting rights of the firm (otherwise is classified as widely held). Similarly to La Porta, Lopez-de-Silanes and Shleifer 1999, total voting rights assigned to the ultimate owner are the sum of direct and indirect voting rights. Indirect voting rights are voting rights held through other firms (or a chain of firms) controlled by the ultimate owner. If such intermediate firms along the chain are unlisted then control is assumed when the ultimate owner controls (directly or indirectly) more than 50% of the voting rights, while if they are listed companies control is assigned assuming the 30% threshold. When two or more ultimate owners satisfy the above criteria, in order to classify the identity of the controlling shareholder or ultimate owner (see next variable), control is assigned to the ultimate owner with the highest voting rights. Source: CONSOB (<i>Commissione Nazionale per le Società e la Borsa</i>) database on shareholdings exceeding 2% of voting capital and <i>Il Taccuino dell'Azionista</i> (edited by <i>Il Sole 24 Ore</i>). |
| <i>Identity of the ultimate owner of closely held firms</i> | The identity of the ultimate owner is classified according to 5 categories: State (central government, local authorities and any other public institutions), widely held financial (widely held banks and insurance companies), widely held corporation (widely held non financial firms), family (individual or group of individual belonging to the same family), other (pension fund, investment funds and voting trust). In almost all of the cases in which according to CONSOB official database the ultimate owner is an unlisted company, additional information contained in the <i>Taccuino dell'Azionista</i> allowed us to classify the ultimate owner as a family (for example, control of the unlisted company Giovanni Agnelli & C. SAPA, which is formally the ultimate owner of Fiat and other Italian listed companies is assigned to the Agnelli family). In the other very few cases in which no information was available the ultimate owner was classified as widely held corporation. Source: as above. |
| <i>Control through a pyramidal group</i> | A closely held firm is controlled through a pyramidal group when there is at least one listed company in the chain of firms through which the ultimate owner exercises control. Source: as above. |
| <i>Voting rights of the largest outside shareholder</i> | The largest outside shareholder is the shareholder with no family or control link with the ultimate owner with the largest share of (direct and indirect) voting rights. This not always the second largest shareholder. Consider in fact the case in which a single individual has directly more than 30% of voting rights (and hence he or she is the ultimate owner), and the second (or third, and so on) largest shareholder is a member of the same family (because he or she has the same family name of the ultimate owner or because this can be inferred from information reported in the publication <i>Taccuino dell'Azionista</i> edited by <i>Il Sole 24 Ore</i>). In this case the largest outside shareholder (in terms of voting right controlled) is the largest shareholder different from the previous ones. Source: as above. |
| <i>Non voting and limited voting shares exceed 20% of total equity capital.</i> | This is the case when the sum of the number non voting shares (azioni di risparmio) – including ordinary shares that come from a buy-back program by the firm (own shares), that according to the Italian corporate law are not allowed to vote - and limited voting shares (azioni privilegiate) exceeds 20% of the total number of outstanding shares. Since according to the Italian corporate law all kinds of shares must have the same nominal value, the criteria is equivalent to the 20% ratio between the book value of non voting and limited voting shares and book value (or nominal value) of total equity. Source: <i>Indici e dati relativi ad investimenti in titoli quotati</i> , edited by <i>Mediobanca</i> and <i>Taccuino dell'Azionista</i> edited by <i>Il Sole 24 Ore</i> |
| <i>Risk of expropriation high</i> | It is a dummy variable that equals 1 when <i>a)</i> the firm has a controlling shareholder, <i>b)</i> the share of voting rights of the largest outside shareholder is less than 10% and <i>c)</i> either the firm is controlled through a pyramidal group or non voting and restricted voting shares are more than 20% of total outstanding shares. It is equal to zero when the above conditions are not simultaneously met. All the above condition are checked on the base of the data available at the end of December of each year from 1991 to 2000. |
| <i>Risk of expropriation very high</i> | It is a dummy variable that equals 1 when <i>a)</i> the firm has a controlling shareholder, <i>b)</i> the share of voting rights of the largest outside shareholder is less than 10% and <i>c)</i> the firm is <i>both</i> controlled through a pyramidal group <i>and</i> non voting and restricted voting shares are more than 20% of total outstanding shares. It is equal to zero when the above conditions are not simultaneously met. All the above conditions are checked on the base of the data available at the end of December of each year from 1991 to 2000. |
| <i>Holding company (“Chinese box”)</i> | It is a dummy variable that equals 1 when the book value of equity stakes in other listed companies is more than 50% of the book value of total fixed and intangible assets in the unconsolidated balance sheet and zero otherwise. Source: R&S, edited by <i>Mediobanca</i> and <i>Taccuino dell'Azionista</i> edited by <i>Il Sole 24 Ore</i> |

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