

When controlling shareholders “live like kings”. The case of Telecom Italia*

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Abstract

The evolution of the control of Telecom Italia, the sixth largest telecommunication company in the world by turnover, is an exemplary textbook case for studying minority expropriation. Our study consists of three parts. First we analyse how Olivetti’s and Pirelli’s acquisitions of Telecom Italia were achieved and, in particular, who paid for the acquisition of control by tracing down all operations performed in the market. Second, we provide evidence that, in the case of Telecom Italia, the implementation of pyramids is connected with the existence of large private benefits, measured both by the size of premium paid for the acquisition and by the voting premium. Third, we investigate how minorities are affected by the pyramidal control. Our analysis reveals that despite the introduction of the Draghi reform in 1998, aimed to strengthen investors’ and minorities’ rights, minority protection law is still inadequate in the Italian financial market. The case of Telecom Italia shows how, despite recent regulations, a controlling shareholder can still “live like a king”.

JEL Classification: G32, G34.

Key words: Ownership structure; Minority protection; Wealth transfer; Business groups; Voting premium.

1 Introduction

The main contribution of this paper is to bring into the literature further evidence on expropriation by studying the evolution of Telecom Italia (TI henceforth), nowadays the sixth largest telecommunication company in the world by turnover. This unique Italian case shows how powerful a controlling shareholder becomes when it is allowed to use alternative devices to separate ownership and control. TI, the first Italian public company to be privatised, was founded in 1994 as a state-owned company and it was fully privatised in 1997. In 1999, the company suffered a hostile takeover by Olivetti, controlled by Roberto Colaninno. In 2001 he sold its stake to the Italian private group Pirelli. These operations are the main object of our study. They took place after the approval of the Draghi reform in 1998 that, though largely improving the Italian financial market law, did not prevent to carry out massive expropriation of minorities in the TI case.

In this paper, first, we analyse how Olivetti's and Pirelli's acquisitions were achieved and, in particular, who paid for the acquisition of control by tracing down all operations performed in the market by all companies in the two groups. We estimate that Olivetti's acquisition involved a direct investment from a controlling shareholder of 4b(illion) Euro to carry out an operation evaluated around 33b Euro, thus covering only 12% of required funds. In the Pirelli's acquisition, the controlling shareholder invested only 0.31b Euro out of an estimated 8.20b Euro operation, in this case covering only 3.80% of required funds. Thus, the case of TI shows how by recurring to a pyramidal structure a controlling shareholder can acquire control of a company with a very low cash stake.

The existence of a strong separation between ownership and control is familiar in the literature (e.g. Becht and Röell, 1999; La Porta et al., 1999). Our paper provides evidence of how a pyramidal structure is used to exploit minorities. Thus, the second aim of the paper is to provide evidence that the implementation of pyramids in the case of TI is connected with the existence of large private benefits measured both by the size of premium paid for the acquisition (Barclay and Holderness, 1989) and by the voting premium (Rydqvist, 1987; Zingales, 1994, 1995, and Nenova, 2001). In our case, the size of the acquisition premium is 41% of the market value for the first acquisition, and 81% for the second one. The voting premium reached its peak of 50% when Colaninno was controlling the company, while it was around 30% during the Pirelli's era, the same level of when the company was state owned.

Third, we investigate how minorities are affected by the pyramidal con-

trol. By an event-study analysis we show how portfolio value is affected in the short term because of acquisitions achieved by means of a pyramid. Around the announcement of Olivetti's acquisition, TI experienced positive abnormal returns. By contrast, during the second acquisition, all companies of the pyramid (Olivetti, Pirelli spa, Pirelli & C.) were negatively affected. In addition, we undertake a variance analysis to investigate whether minorities' volatility may have been modified by the ownership structure.

This paper considers the effects of acquisitions on companies directly involved in the deals, as well as on companies connected by ownership relationships. Our empirical results reveal how minority protection is still inadequate in the Italian market, despite the introduction of the Draghi reform aimed to strengthen minority protection. While a consistent improvement in Italian corporate governance has been documented in recent literature (Melis, 2000), this case shows how a controlling shareholder can still "live like a king".

The remainder of the paper is organised as follows. Section 2 contains a short description of the stylized facts on TI. Section 3 reports a description of the methodology used for the empirical analysis, also reported in Section 3. We summarise how controlling shareholder live like kings in Section 4, while Section 5 concludes. In the Appendix, we briefly describe the Italian corporate governance system, and we provide a short description of the data used in this paper.

2 The history of Telecom Italia

This section provides a summary of the main events in recent history of TI, with a particular focus on the operations involving the structure of the group.

On 30 June 1994, the IRI Board¹ approved the "Telecommunications restructuring plan". Under this Plan, the five companies in the IRI-Stet Group operating in the telephone industry (SIP², Iritel, Italcable, Telespazio and Sirm) were to merge, while a new company, TI, was to be formed. On 28 June 1995, the rulings of the TI shareholders' meeting of 5 May were implemented, as paperwork were completed for a partial split of the company subsequent to foundation of TI Mobile Spa (TIM), which started

¹IRI was the holding company directly controlled by Ministry of Treasure, managing public ownership shares in industrial enterprises.

²SIP was the state-owned listed company (owned via the holding STET) in charge of telecommunication.

operations in July, taking over mobile telecommunications-related services. On 30 January 1997, the TI Board of Directors started to undertake the incorporation of TI into Stet. On 18 July, TI merged with Stet, which subsequently changed its company name to TI.

In 1997 the Council of Ministers published the Law Decree for the privatisation of TI, and the sale of shares held by the Treasury took place between October 20 and 24. This was the first Italian public company with widespread public share ownership. This massive privatisation involved more than two millions of individual investors. The ownership structure was featured by a stable core of shareholders representing the 6% of the ordinary capital and among them there was the Italian Treasury, owning a golden share (granting the power of veto on particular operations such as mergers, etc).

In February 1999, Olivetti, that was run by Roberto Colaninno, announced it was keen to launch a takeover bid for TI's equity capital. After receiving Consob authorization, the offer was officially launched on 30 April, and was successfully concluded on 21 May. The offer, with a total value estimated in 59.9b Euro, was the first successful hostile takeover and the greatest financial operation in the history of Italian market. After the acquisition was accomplished, TI entered a group structure depicted in Figure 1. The ultimate owner of Telecom became Bell, a non-listed company controlling the pyramid with a 17% stake in Olivetti³.

At the end of July 2001 Olimpia Spa, a vehicle company owned by Pirelli Spa, Edizione Finance International SA (Benetton Group), Intesa Bci and UniCredito Italiano Spa⁴, acquired approximately 27.7% of Olivetti's ordinary share capital⁵, 21% directly from Bell and 6% from the market. The new management started a financial restructuring plan to focus TI's activity on the core business. The cost of the restructuring caused a decline in net earnings in 2001 and 2002 (see Table 1). Figure 2 and Figure 3 depict the position of TI immediately before and after Olimpia's acquisition of Olivetti.

On 13 December 2002, the Treasury announced that on 9 December it had sold its stake owned in TI. Nevertheless, it kept its golden share in the

³Though this percentage does not suggest a strong control on the group, it is worth noticing that the strong financial leverage of Olivetti made the contestability of the group quite unlikely.

⁴Banks, in Italy, have been able to acquire ownerships in industrial companies since 1993. Unicredito Italiano Spa and Intesa Bci are the two biggest Italian banks for market capitalisation with market value at the end of 2003 of 26.438m(illion) and 18.679m Euro, respectively.

⁵According to Italian law, a public offer on the whole equity capital is mandatory only after the acquisition of a share above the 30% boundary.

company. In the same year, Pirelli Real Estate (Pirelli RE), a company dealing with real estate operations for Pirelli group since the beginning of the '90s, went public through an IPO.

On 24 and 26 May 2003, TI and Olivetti Shareholders' Meetings approved the plan to merge TI into Olivetti. The move was completed on 4 August, when the shares of a new TI company, resulting from the Olivetti and TI merger, began trading on the market. At the same time the Pirelli group's chain was shortened also at the top, with the merger between Pirelli & C. and Pirelli Spa into Pirelli & C. Spa.

Following rumors lasted for months, on 7 December 2004 the tender offer of TI on TIM was announced, and a merger followed. The new company has been traded on the market since 1 July 2005.

Nowadays TI is the sixth biggest telecommunication company worldwide by turnover. Its position in Pirelli's pyramid at the end of 2004 is illustrated in Figure 4. Pirelli's ownership through Olimpia is not higher than 21%, but from the dimension of the company, and because of the high level of debt that makes a new operation unlikely to happen, control can be considered stable. Information about the companies involved in TI's control history is briefly provided in Table 2. Market capitalisation data provided in Table 3 show how the controlling pyramid is larger at the base (TI and TIM), and shrinks as we follow the chain to the top (Camfin). Information on Board of Directors' composition is provided in the Appendix.

[Insert somewhere here Tables 1-3 and Figures 1-4]

3 Methodology and empirical evidence

The idea that ownership structure affects market value plays a central role in modern finance and corporate governance literature (Demsetz and Lehn, 1985, Morck et al., 1988, Cho, 1998, Hovakimian et al., 2001, Claessens et al., 2002, La Porta et al., 2002, Lins, 2003).

An interesting strand of the literature concerns with the variety of ownership structures of large size companies. In the UK and USA, ownership is largely dispersed, even though there are a few examples of big companies where a family (in general the founders) still holds a significant fraction of the equity capital, i.e. Ford and Wal-Mart (La Porta et al., 1999). In Continental Europe (Franks and Mayer, 2001), in Japan and in many other Asian countries (Hiraki et al., 2003), we often observe two different structures: the government control of big companies in regulated industries which are going to be liberalized, such as the energy and telecommunication industries

(Boubakri et al., 2004) and a private control, by means of pyramids, in the other cases (La Porta et al., 1999).

A similar pattern is evident also when we consider how ownership and control are separated. In the UK and USA, public companies live side by side with family companies. Sometimes the separation is performed by adopting a dual-class structure, with limited or no-voting rights for a group of shareholders. In continental Europe the situation is quite different (Becht and Röell, 1999, La Porta et al., 1999, Buysschaert et al., 2004). A dual-class structure is often working in conjunction with pyramids, where the controlling shareholder just controls the quoted company with the highest position in the group (Bebchuck et al., 2000). This allows the group to conduct relevant financial investments with minimal financial resource from the majority shareholders (Slovin and Sushka, 1997), with no chance for minorities to affect/dismiss the operation. A similar analysis concerning East Asian Countries is provided by Claessens et al. (2002).

Recent literature expresses concerns about the pyramidal ownership structure in continental Europe. Those concerns are discussed from different perspectives. First of all, when the separation between ownership and control is obtained via groups, high managerial agency cost may arise (Claessens et al., 2002; La Porta et al., 2002; Bekaert et al., 2003; Lins, 2003), and private control benefits are larger (Burkart et al., 1998; Nenova, 2003; Doidge, 2004; Dyck and Zingales, 2004). Secondly, recent studies in corporate finance underline how pyramids adversely affect the protection of minority shareholders (Bebchuck et al., 2000; La Porta et al., 2000). Third, a pyramid structure determines an underdeveloped market for corporate control and this point is commonly investigated in the literature by analysing how markets award voting rights (Nenova, 2003; Doidge, 2004).

In Italy, groups are empowered to use several instruments to separate ownership and control, such as complex pyramidal structures, dual-class shares and voting pacts. These devices allow the ultimate owner to maintain control over a large group of companies through cascades of holding companies while owning only a fraction of their cash flow rights (Zingales, 1994, Bianco and Nicodano, 2004, Bigelli, 2004, Nicodano and Sembenelli, 2004). In this paper, we provide clear evidence that for TI minority expropriation existed despite the introduction of the Draghi reform for listed companies, welcomed as an enhancement of minority protection. We conduct our analysis in three steps. First, we analyse in detail how Olivetti's and Pirelli's acquisitions were carried out, and in particular who effectively paid for the acquisition of control. Second, we focus on evaluating the position of the controlling shareholder. In the literature the implementation of

pyramids is often connected to the existence of large private benefits, thus we are interested in providing evidence on this issue. Third, we investigate how minorities' wealth is affected by the pyramidal control, supported by two complementary analyses.

3.1 Who paid the bill?

In order to identify who is the ultimate payer in Olivetti's and Pirelli's acquisitions, let us consider all operations that a pyramidal group carries out to drain financial resources from the market. We take the group as a single entity, but we split its financial resources in three main components: (a) equity capital provided by the controlling shareholder, (b) equity capital collected from minorities, and (c) debt.

Therefore, when analysing an operation, we refer to the following definition:

$$Deal = CS + MS + D \quad (1)$$

where *Deal* represents an operation involving an important financial commitment with reference to the group dimension, i.e. the total amount paid for the acquisitions; *CS* is the contribution of the controlling shareholder, i.e. equity and convertible bonds; *MS* is the contribution of minorities in the deal, i.e. equity and convertible bonds; *D* is the amount of debt in the deal, i.e. loans and bonds.

By collecting data on all operations carried out by the whole group in a certain window of time, we can evaluate contribution from controlling shareholders and minorities according to the following definitions:

$$CS = \sum_{t=0}^T (\Delta k_{t,n}^v \sigma_{t,n}^v + \Delta k_{t,n}^{nv} \sigma_{t,n}^{nv}) \quad (2)$$

$$MS = \sum_{i=1}^n \sum_{t=0}^T \Delta k_{t,i}^v (1 - \sigma_{t,i}^v) + \sum_{i=1}^n \sum_{t=0}^T \Delta k_{t,i}^{nv} (1 - \sigma_{t,i}^{nv}) \quad (3)$$

$$D = \sum_{i=1}^n \sum_{t=0}^T \Delta d_{t,i} \quad (4)$$

where T is the "deal window" (the period in which the deal has been financed by the group), $i = 1 \dots n$ represents the number of companies composing the group, sorted from the lowest level to the top of the pyramid; $\Delta k_{t,i}^{v/nv}$

represents the amount of capital issued or exchanged with the market; v represents the voting shares and nv the non-voting shares; $\sigma_{t,i}^{v/nv}$ is the fraction of equity capital owned by the controller of company at level i ⁶; $\Delta d_{t,i}$ represents amounts of debt involved in the acquisition (obtained as residuals). The controller is a company of the group at the closest superior level for $i = 1$ to $i = n - 1$, while it is the ultimate controlling shareholder for $i = n$.

Concerning debt, we are interested in evaluating a pro quota measure for the controlling shareholder, applying the following definition⁷:

$$D_{CS} = \sum_{i=1}^n \left[\sum_{t=0}^T \left(\Delta d_{t,i} \prod_{j=1}^n \sigma_{t,j}^v \right) \right] \quad (5)$$

Once these values are obtained, to show how relevant is the contribution of the controlling shareholder we calculate the following measures:

$$CS \text{ Equity Ratio} = \frac{CS}{CS + MS} \quad (6)$$

$$CS \text{ Debt Ratio} = \frac{D_{CS}}{D} \quad (7)$$

$$CS \text{ Leverage} = \frac{CS + MS + D}{CS + D_{CS}} \quad (8)$$

The first and second indices measure the relative contribution of the controlling shareholder in the deal both in equity and debt. The third represents the interaction between controlling shareholders and other sources. It represents the amount of money “moved” by the controlling shareholder with a single currency unit.

In practice we use (1)-(4) as follows. We focus on the payment for the deal itself, taking into account all methods of payment for the deal. We split these payments according to the three sources we are interested: controlling shareholders, minorities and debt. Further, where relevant, we split minorities payment into identified minorities (block shareholders of not-listed companies), unidentified minorities and bank equity. We do this to classify the contribution of all shareholders operating in the market (unidentified

⁶See Brioschi et al. (1989) and Fedenia et al. (1994).

⁷This definition assigns to the controlling shareholder a proportion of debt corresponding to her/his integrated ownership in each company of the group. This is only an approximation when debt positions are reciprocal between companies. However, in this case, positions of this kind are not relevant.

minority), i.e. the less informed subject of the expropriation activity we are studying. Once evaluated the contribution of the controlling shareholder of the bidder, we move to the upper level of the group, where we consider all operations carried out in the "deal window", and again we split the contribution according to the former classification. We move to the top of the chain until we identify the direct contribution of the ultimate controlling shareholder. Moreover, we consider further operations carried out in the "deal window" that can be connected with the deal (due to financial restructuring, for instance), and with the same criteria we identify the source of the contribution.

A crucial point in our methodology is the choice of T , the "deal window". The choice of this window is in part discretionary, because the period a group needs to "digest" the operation cannot be fixed in advance. A great financial operation generates a sort of "earthquake", whose epicentre is well identified in time (the date of the operation) and space (the bidder of the deal), while further effects can be identified by the "deal window" and alongside the pyramid chain. After analysing all operations carried out by the two pyramids acquiring TI before and after the deal, we set the "deal window" to $(0;+2)$ years.

Over such a long period, a group may carry out not only operations to finance an acquisition, but also readjust its financial composition, finance its growth and so on. As a consequence, the deal value does not equal by definition the amount of money drained from the market. Nevertheless, we find a strong correspondence between financial needs and amount of money collected in this window. Moreover, even if what we consider is the whole set of operations performed by a group, and not only those directly connected to the acquisitions, we have the chance to evaluate the recur to different sources in a particular moment in the life of a group. Therefore the choice is not affecting the outcome of our analysis, but on the contrary we think that we can learn about the behaviour of a group, and in particular about the relationship between controlling shareholders and minorities.

Empirical results

To summarise, we start by analysing the two main operations in the history of TI, namely the Olivetti's hostile takeover in 1999 and the Pirelli's acquisition of control in 2001, using a $(0; +2)$ "deal window". We then provide evidence on who actually paid for the two acquisition that involved a control change in recent history of TI.

Olivetti's acquisition. This operation focuses on a takeover, success-

fully concluded on 21 May 1999 that allowed Roberto Colaninno to become the ultimate controller of TI. Details of the operation are provided in Table 4. In Table 5 we show how the takeover affected the structure of the group, how the “Bell chain” enlarges when the TI Group acquisition occurs and shortened before the following deal took place.

[Insert somewhere here Tables 4-5]

Olivetti’s takeover was the biggest acquisition ever in the Italian market and it targeted the only big public company in the market. Since a public offer took place, all TI shareholders were therefore given a chance to sell their stake in the company, or to reject the offer. Furthermore the bid was carried out by Tecnost, a listed company controlled almost 100% by Olivetti⁸. Olivetti was controlled by Bell, a non-listed company owned by Roberto Colaninno and other entrepreneurs. Table 6 provides a clear picture of the sources of money used for this operation.

[Insert somewhere here Table 6]

In Panel A we gather information concerning the direct payment of the takeover by Tecnost. We can see that almost half of the price was paid recurring to debt (bank debt and bond issue). The rest was paid using an equity issue as a mean of payment⁹. With respect to the shareholder contribution, Olivetti participated in Tecnost’s equity issue for 12,000m Euro, that partly became available from a 7,932m Euro (see Panel B) divestment¹⁰, partly from bank debt, and partly from an equity issue. Considering Bell’s ownership share at that time we evaluate the contribution from the main shareholders amounting to 1,555m Euro, which includes part of the revenues from divestments.

In Panel C we consider a second group of operations which were carried out by Olivetti in the following two years to change the financial structure. These operations are strictly connected with the massive 1999 takeover. As before, we consider the 506m Euro paid by Bell, and we add this up to a total contribution from the owner of 2,061m Euro to complete the deal.

⁸Six months before the deal Tecnost suffered a residual public offer aimed to delist the company. It acted as a vehicle company for this takeover and was merged with Olivetti.

⁹The equity capital issued was reserved to Telecom Italia’s shareholders accepting the offer.

¹⁰The most relevant divestment was the sale of Omnitel, the second Italian mobile company. A 6% share was sold to Mannesmann and the residual stake was acquired by Bell Atlantic.

We evaluate the controlling shareholder's contribution by calculating the CS Equity Ratio and the CS Debt Ratio, respectively close to 11% and 13%. By dividing the total value of the deal by the sum of the contributions in equity and debt, we get a value of the controlling leverage, equal to 8.31, meaning that for each Euro invested in the group, Bell was able to acquire effectively a value corresponding to 8.31 Euro. This is our first clear evidence of how in this case the use of a longer chain helps the controller shareholder in getting a much higher value for each Euro invested.

Pirelli's acquisition. The role of Colaninno was very relevant, but his fortune did not last for long. After two years the main controller Bell, which had strongly reshaped the group by merging Olivetti and Tecnost and the acquisition of Seat, sold its share to Pirelli, as reported in Table 7. In Table 8 we show how Pirelli group structure is enlarged by this acquisition. Immediately after the deal Olimpia, the new company employed for the acquisition, links the Pirelli group to Telecom group, creating a complex pyramidal structure, with Marco Tronchetti Provera as a ultimate controller.

[Insert somewhere here Tables 7-8]

A few points concerning Pirelli's acquisition are worth mentioning. First, this operation was carried out mainly outside the market, as the ownership quote acquired was slightly lower than 30%. Second, Olivetti's acquisition was conducted by a quoted company, while in the case of Pirelli the acquisition was conducted by a vehicle company, Olimpia, which carried out the payment by cash.

[Insert somewhere here Table 9]

We turn now to the evaluation of the ultimate cash flow stake for the controlling shareholder. In Table 9, we consider separately Olimpia's minority investors¹¹ (identified minorities). They participate with a relevant capital (3,286m Euro, summing up to 40% of Olimpia's equity) to Pirelli's project, and they are part of a controlling agreement, so that their position is not comparable to minorities operating on the market. Olimpia carried out a cash payment financed by an equity issue in July 2001 (Panel A). The direct controller of Olimpia was Pirelli Spa, which contributed for 4,931m Euro financed by debt and cash (Panel B). The direct controller of Pirelli Spa was Pirelli & C., which contributed for 1,084m Euro, collected from the market via an equity issue in 2003 and the spin-off of Pirelli RE (Panel

¹¹Edizioni Holding, controlled by the Benetton's, Intesa Bci and Unicredito Italiano.

C). The direct controller of Pirelli & C. was Camfin, which contributed for 244m Euro financed by means of two equity issues. The controller of Camfin was Marco Tronchetti Provera family, the ultimate controller of the group, whose direct investment was limited to 134m Euro in equity capital.

From our calculations, the CS Equity Ratio is 2% and the CS Debt Ratio is 6%, and the value of the controlling leverage is 26.25. This means that for each Euro invested by the controlling family, the market value moved was more than 26 Euro, almost four time as much as it was in the first operation. Moreover, if we consider the set of operations that Olivetti undertook to correct its financial leverage, we have that the controlling leverage increases to 36.93, as reported in Table 10.

[Insert somewhere here Table 10]

3.2 Private benefits

The second part of our analysis focuses on the position of the controlling shareholders, both Colaninno and Tronchetti Provera. One of the reasons why the presence of complex group structures is detrimental to the development of markets is that they give rise to high managerial agency cost and therefore private benefits are higher. Evidence is provided indirectly via the assumption that better protection of minorities is correlated with higher financial development (La Porta et al., 2002). While many contributions deal with private benefits, only a few report estimates of their size (Dyck and Zingales, 2004). Two methods are used to quantify private benefits.

Size of the premium paid by the acquisition. The first methodology, pioneered by Barclay and Holderness (1989), focuses on privately negotiated transfers of controlling blocks in public traded companies. The price per share an acquirer pays reflects the cash flow benefits from his fractional ownership and the private benefits stemming from his controlling position in the firm. By contrast, the market price of a share after the change in control reflects only the cash flow benefits that non-controlling shareholders expect to receive under the new management. Hence the difference between the price per share paid by the acquiring party and the price per share prevailing on the market reflects the differential payoff accruing to the controlling shareholder.

Voting premium. The second method uses the price difference between two classes of stocks, with similar or identical dividend rights, but different voting rights. If control is valuable, then corporate votes should be valuable as well. This is the strategy followed by Rydqvist (1987), Zingales (1994,

1995) and Nenova (2001)¹².

We utilise these two methodologies to investigate the nature of private benefits. By using the first method, we provide a point estimation of benefits in a particular moment of the life of firms. By contrast, the second method allows to evaluate private benefits over time¹³.

We evaluate the premium by:

$$VP = \frac{P_{ord} - P_{sav}}{P_{ord}} \quad (9)$$

where P_{ord} is the price of an ordinary share and P_{sav} is the price of a saving share¹⁴.

This ratio represents the premium that the market assigns to an ordinary share for its voting power¹⁵. Since the importance of this power changes during the four different phases of TI history (see Table B1 in the Appendix), it is interesting to observe how this measure varies. Most importantly, since the public price represents the value of an ordinary share for minorities, but not for the controlling shareholder (whose share does not actually fluctuate on the market), we can observe the evolution of minorities' importance over time.

¹²Note that the two methods to evaluate private benefits may suffer from a common bias (they capture only the ordinary pecuniary value component of private benefits, disregarding the non-financial, or psychic, aspect) and may underestimate the value of control (Dyck and Zingales, 2004).

¹³The nature of voting premium is widely discussed in the literature. Several empirical studies of dual class shares investigate why often superior voting shares (ordinary share in Italy) sell at a premium relative to their counterpart restricted share (saving share in Italy): such superior voting shares premium is reported in DeAngelo and DeAngelo (1985), Megginson (1990) and Bergstrom and Ridqvist (1992). Since minority shareholders do not have sufficient votes to affect corporate decisions, control benefits may not be a sufficient reason for them to pay a premium. Megginson (1990) suggests the extra merger premium hypothesis as one explanation for the existence of the price premium. Megginson argues that the premium at which superior voting shares ordinarily trade reflects the joint probability that a takeover offer will be made and that the superior voting share bid price will be higher than the bid price for restricted voting shares. Nenova (2003) and Doidge (2004) study voting premium to evaluate the efficiency of market for corporate control. Neumann (2003) investigates the effect of liquidity as further determinant of voting premium. Given the wide distribution of both ordinary and saving shares of all the companies we deal with in this paper, this effect can be disregarded in our study.

¹⁴Saving shares are labelled RNC ("Risparmio Non Convertibili") in the Italian market.

¹⁵In the literature the voting premium is also analysed on the value of a company.

Empirical results

To summarise, in this section we provide a point estimate of private benefits based on acquisition premium. We then investigate voting premium to show how different controlling schemes affect private benefits.

Acquisition premium: a signal for size of private benefits. In Olivetti's acquisition, Tecnost acted as a bidder targeting TI. As already reported in Table 4, the amount paid by Tecnost was quite high (31,069m Euro), even if only a small amount was paid cash. The final offer for a single share was of 11.50 Euro, while the average market value on the previous month was of 8.12 Euro (41% premium per share). Since the operation involved the exchange of approximately 2.70m of shares, the premium paid to the market is approximately 9,13m Euro.

In the 2001 Pirelli's acquisition, Pirelli Spa actually acquired a block in Olivetti to gain control of TI. As reported in Table 7, the offer was agreed to be equal to 4.17 Euro per share, while the relevant market value was 2.30 Euro per share (81% premium per share)¹⁶. As the offer regarded more than 1,970m of share, the premium is 3,684m Euro.

The voting premium: private benefits and market for corporate control. We focus now on the second way to evaluate private benefits, as for instance proposed in Rydqvist (1987), Zingales (1995, 1995) and Nenova (2001). We study the voting premium to show how the importance of voting evolves in time, also taking into consideration the signal about the efficiency of market for corporate control.

In Figure 5 we plot on the left the TI's ordinary and saving share, and on the right the behaviour of the voting premium. Moreover, in Table 11 we report averages on the four periods, and considering the Tronchetti Provera's control period, we evaluate the ratio over four sub-periods of time.

[Insert somewhere here Figure 5 and Table 11]

Focusing on the voting premium trend, we can observe the importance of minority shareholders over the four periods we have identified. Before October 1997, TI was state-owned, and the role of voting rights was not particularly awarded by the market (31.28% in average). A slight change can be seen after October 1997 privatisation, when the Italian Treasury sells almost all its share in this company, allowing most of its capital to freely float

¹⁶These ratios cannot be compared using absolute values, as they refer to different ownership shares. However, we do not evaluate a normalised value of these ratios because the two acquisitions are different. The first followed a public offer on the whole capital, while the second was a private acquisition of a controlling share.

on the market. We note a dramatic increase in the voting premium, as the market fixed a high value for the voting rights. This value had an erratic behaviour. It started its strongest rise after Olivetti's hostile takeover in May 1999, when ordinary shareholders were awarded by the market a voting premium over the 50%. When the ownership became more or less stable, the voting premium started a slow decrease, and with Pirelli's acquisition, in 2001, it slowly came back to the level prior to TI's privatisation. In particular, during the four years of Tronchetti Provera's control, the voting premium fell back from an average of 42.69% in 2001 to an average of 27.35% in 2004. Thus, as reported in Zingales (1994), a minority shareholder in a company owned by a group with a stable ownership has the same voting right value of a minority shareholder in a state-owned company.

In Figure 6 we plot on the left the ordinary and saving share, and on the right the behaviour of the voting premium for TI Mobile, which was spun-off in 1995 from TI, but the latter kept control until the end of 2004, when the merger of the two companies was announced.

When we analyse the behaviour of the premium in connection with the relevant events in TIM history, we detect its peak just after Olivetti's acquisition, when the possibility of a public offer on the mobile-telephone subsidiary was considered to be very likely. As this opportunity would reward all minorities, the market of ordinary shares reacted positively. In the following months, the possibility of the public offer for TIM disappeared, and the market discounted it. After Pirelli's acquisition the voting premium slowly but steadily decreased. Rather than the ownership share, which was stable, what really matters is the effective "power of the Pirelli group". As in 2004 rumours of a merger with TI came up, the voting premium rapidly moved to zero.

Further lessons can be learnt from Pirelli Spa's and Pirelli & C.'s voting premium (Figure 7). For the Pirelli Spa we have to consider the effect of the merger in August 2003. The sharp fall of voting premium in this case is due to the market price of ordinary shares being close to the nominal one. The dividend premium prevails on voting premium, and our measure becomes negative. When we analyse Pirelli & C., a company controlled by a stable controlling alliance, it is evident that the voting premium was kept by the market at a very low level.

[Insert somewhere here Figure 6-7]

3.3 Effects on minorities

In this section we consider the effects on minorities after big acquisitions. We consider not only companies directly involved in the deals, but also all companies of the group (Olivetti first and then Pirelli).

Several papers explore the existence of private benefits with expropriation at the expense of small shareholders. Barclay and Holderness (1989) and Bergstrom and Rydqvist (1990) find some evidence of small shareholder expropriation in the United States and in Sweden, respectively, while Zingales (1994) suggests that small shareholder expropriation is significant in Italy. In contrast, Malitz (1989) and Slovin and Sushka (1997) find no evidence of small shareholder expropriation in listed companies in the United States. Shleifer and Vishny (1997) report cases where Korean chaebols sold their subsidiaries to relatives of chaebol founders at below-market prices. Other studies find that financial institutions which own large stake in corporate subsidiaries reap private benefits off the expense of the minority shareholders of those subsidiaries. See for instance Byeon (1998), Weinstein and Yafeh (1998), or Weiss and Nikitin (1998).

Short-period expropriation: an event analysis. We employ event study analysis as proposed by Brown and Warner (1985). We evaluate whether each abnormal return is significant¹⁷. Therefore we refer to expropriation as a persistent negative abnormal return in a window of time corresponding to an acquisition. This negative abnormal return is seen as expropriation at the expenses of minorities shareholders for two reasons: a) in a pyramidal structure a controlling shareholder owns a share in a company by means of a series of ownership relationships, with a net effect being only a small percentage of the abnormal return; b) as shown in the previous section, a controlling shareholder has a chance to extract private benefits that offsets the negative effect on a share price.

We evaluate Abnormal Returns (AR) at particular dates as follows¹⁸:

$$AR_t = R_t - R_{mt} \tag{10}$$

¹⁷Note that given the nature of the exercise, we evaluate whether individual abnormal returns are significant, rather than the sample average as in the above mentioned contribution.

¹⁸As alternative, we may also employ market model and evaluate the expected return using estimates of $\hat{\alpha}$ and $\hat{\beta}$. We opted to use directly the market index as it does not involve the estimation of different parameters over the whole sample. However, sensitivity analysis reveals that results from the two approaches are similar. Further details are available on request.

where R_t and R_{mt} indicate the individual asset and the index (in our case the Italian market index MIB30) returns series at time t respectively.

We define the Cumulative Abnormal Returns (CAR) over a particular window of time as:

$$CAR(-s + 1; +r) = \sum_{t=-s+1}^{+r} AR_t \quad (11)$$

with s and r are the window event boundaries.

We consider three windows: forward and backward windows, of different length, to discriminate between anticipated and forthcoming effects, plus a long two-tail (-30;+30) window to test for the duration of the effects.

To evaluate the significance of the CAR, we employ the following test:

$$\frac{CAR(-s + 1; +r)}{\sigma_{CAR(-s+1;+r)}} \sim t_{s-1+r} \quad (12)$$

with

$$\sigma_{CAR(-s+1;+r)} = \sqrt{(s - 1 + r)\hat{\sigma}_{AR_t}^2} \quad (13)$$

$$\hat{\sigma}_{AR_t}^2 = \frac{\sum_{t=1}^{200} (AR_t - \overline{AR})^2}{200} \quad (14)$$

$$\overline{AR} = \frac{\sum_{t=1}^{200} AR_t}{200} \quad (15)$$

with a 200-observation estimation window, per convention, a starting date one year before each event.

Announcement dates we used in the following analysis are provided in the Appendix (Table B2). Earlier in the paper we dealt with Olivetti's and Pirelli's acquisitions. In what follows, we consider the shrinking of the chain that took place in August 2003, following the Pirelli's acquisition.

This first analysis refers to a short-term concept of expropriation. If we could show that in the long-term the management has actually produced value, than we could not really say that minorities have been expropriated. Nevertheless, we think that two issues should be considered together. First, from a financial point of view we cannot underestimate the relevance of such effects, tough temporary, for minorities. The group is actually subjected to a period of high turbulence at the expenses of less informed investors. Second, the evaluation of long-term return is not generally feasible, as groups are dynamic entities whose shapes change continuously. However we evaluate

long-term return rates to provide a first evidence of how groups of minorities seem to be strongly expropriated also in the long term.

Portfolio Risk-profile: Analysis of Variance. In this second subsection, we evaluate the effects of specific events on the volatility using GARCH model (Bollerslev, 1986). To test for the presence of changes in volatility in corporate governance, we include two dummies in the basic equation of a GARCH model in correspondence of Colaninno's and Tronchetti Provera's periods of control¹⁹ (see Appendix, Table B1). We also include a variable to measure a leverage effect. The volatility model we use is:

$$r_t = \mu + \varepsilon_t \quad \varepsilon_t \sim N(0, h_t) \quad (16)$$

$$h_t = \alpha_0 + \delta_1 DCol_t + \delta_2 DTr_t + \delta_3 Lev_t + \alpha_1 \varepsilon_{t-1}^2 + \beta_1 h_{t-1} \quad (17)$$

where r_t is the daily return of each asset; μ is an estimate of the daily mean return; ε_t is the daily shock; h_t is the conditional variance; $DCol_t$ is a dummy variable for Colaninno's control; DTr_t is a dummy variable for Tronchetti Provera's control; Lev_t is the company's leverage. Equations (16) and (17) are linked by the following relationship:

$$\varepsilon_t = z_t \sqrt{h_t} \quad (18)$$

with:

$$z_t \sim N(0, 1) \quad (19)$$

For each asset we are therefore estimating a mean return value (μ), three standard coefficients for the conditional variance (α_0 measures a constant component, α_1 is the coefficient of the squared error term and β_1 for the autoregressive component), one or two coefficients (δ_1 and δ_2) for the impact of a change in the corporate governance framework, and δ_3 checks for the role of Leverage. Statistically significant values for δ_1 and δ_2 provide evidence of a shift in the variance caused by the change in the corporate governance²⁰.

¹⁹ Considering companies at the bottom of the chain (Olivetti, TI and TIM) we include one dummy for the Olivetti's period (when the ultimate controller was Colaninno) and one for the Pirelli's period (when the ultimate controller was Tronchetti Provera). Regarding the other companies not involved in the first stage of TI's history (Camfin, Pirelli & C., Pirelli Spa), we consider only the impact of Pirelli's acquisition that we capture by adding one extra dummy variable.

²⁰ Sensitivity analysis shows that the market does not present a shift in the constant component of variance in the same period.

Empirical results

To summarise, we provide evidence on the effects suffered by minorities when big acquisitions are carried out. Our objective is to show how an acquisition achieved by a pyramidal group strongly changes the position of minorities, both concerning value and risk of their investment.

Short-period expropriation: an event analysis. In Table 12 we report the results of this event analysis around the announcement of Olivetti's bid to acquire TI. The announcement was reported for the first time by Italian newspaper on 19 February 1999²¹. We find out that TI's share price anticipated the announcement (See Panel A), while AR's evaluated in forward windows are statistically significant only over a very short term (Panel B). At the same time, we cannot find a significant negative impact on Olivetti's share price. These two findings are exactly what we were expecting, considering that this operation was carried out with a public offer, so that the positive effects for the target have been potentially absorbed by all minority shareholders. We do not find any significant effect on the TI and TIM's saving shares, as the offer did not include these shareholders. Given that the effects are fully anticipated, our results are consistent with the hypothesis of insider trading, which we do not investigate any further in this paper.

[Insert somewhere here Table 12]

In Table 13 we report the results of the analysis around announcement of Pirelli's acquisition of TI. First, while a negative effects is significant on Olivetti's value, there is no beneficial effect on the bottom of the chain. By contrast, the effect for TI is negative on a thirty-day term (See Panel B), as it became clear that no public offer was going to be carried out. Second, the effect at the top of the chain is negative, but we observe how important is the pyramid structure: while Pirelli Spa suffers the entire impact (in a three-day window it suffers a significant loss of 24.2%), at higher levels (Camfin) we see that the impact is not statistically significant. We like to interpret this as a kind of wave, that after hitting with all its power Pirelli Spa, affected with a less influence Pirelli & C., while Camfin is protected by the former two groups.

In Table 14 we report the results of the event analysis on the chain shortening. Several negative impacts can be detected. We notice that Camfin

²¹In general the event date is set one day before the announcement. In this study we test sensitivity on different-length windows.

absorbed the negative effect of the former leveraged acquisitions, particularly considering the forward windows, reported in Panel B. TI's saving shares were subdued to the impact of debt absorbed from Olivetti, the effect is anticipated, as showed in Panel A. Both effects are typical consequences of a strong increase of leverage. In the case of TI, the potential loss in earnings is particularly detrimental to saving shareholders, given they are preferred to potential dividend distributions; the impact on Camfin, by contrast, is a consequence of ownership structure, as in the control chain the presence of debt gets closer to the holding, though none of these effects is significant in a two-tail window (See Panel C).

[Insert somewhere here Tables 13 and 14]

To summarise, the two acquisitions had different consequences on minorities. This can be better understood by considering Figure 8.

[Insert somewhere here Figure 8]

The left figure reports abnormal returns for target and bidder in Olivetti's acquisition, while the right figure plots abnormal return for Pirelli Spa and Telecom, target and bidder of an operation only formally carried out by Olimpia as a bidder and Olivetti as a target. While in the first case we observe the positive effect of the public offer on the target's value, in the second case we detect a strong negative impact on the Pirelli Spa's public price. Since the controlling stake is firmly in the hands of a stable controlling agreement, we conclude that this acquisition was paid at minorities' expenses.

In order to consider long-term effects, in Table 15 we report the rates of return for all companies which have had a role in different periods of TI's history (See Appendix, Table B1). We report annual equivalent rates of returns for the post-privatisation era, for Colaninno's and Tronchetti Provera's control periods, and for the whole period 1997-2004. The most astonishing effect is the sharp change in price performance of companies used by controlling shareholder to carry out acquisitions. Both Olivetti after 1999 and Pirelli Spa after 2001 experienced a decline in their returns, as a direct consequence of the strong abnormal effect around the acquisition. By contrast, at the bottom of the chain we notice how TI performs better than the all indices over the considered periods²².

²²In theory we should also take into account the dividend policy in evaluating effects on minorities. However, weak form of market efficiency suggests that prices already contain

[Insert somewhere here Table 15]

This shows how the wealth accumulated by the pyramid has been invested for the acquisition of Telecom, strongly reducing the return for all minority investors all along the chain. The convenience of such an operation can be understood only considering the existence of private benefits for control. Another astounding result refers to Tronchetti Provera's period of control. While under the former control structure we cannot identify a common trend of all companies with respect to the market, after the 2001 acquisition all companies of the chain endured a minor return rate with respect to the market, that can be easily connected to the necessary phase of "digestion" following the big acquisition.

Portfolio Risk-profile: Analysis of Variance. We turn now our attention to the variance, to study how the level of risk was affected.

[Insert somewhere here Tables 16-17]

In Table 16 we report results from estimating a GARCH (1,1) model²³. We evaluate the change-of-control impact on variance by testing the significance of the two dummies. Considering Colaninno's period of control, we would expect the dummy variable to have a significant positive coefficient for TI, as a consequence of the contestability of the company. The results suggest that, though maybe correct in sign, there is no statistic significance. Concerning Tronchetti Provera's period of control, we expect an increase in Pirelli Spa's variance, because of the change in financial structure, and a decrease for TI and TIM, as the control becomes stable. The results of our analysis suggest that the coefficient on the dummy is significant and, in most cases, negative: -0.29 for Camfin, -0.06 for Pirelli & C (ord), -0.12 for Pirelli & C. (sav), -0.39 for Olivetti (ord), -0.13 for TI (sav), -0.19 for TIM (ord) and -0.22 for TIM (sav). The main conclusion is that shareholders enjoyed a decrease in volatility after Pirelli's acquisition, probably due to a lack in contestability de facto.

information on expected dividend policy. Note that Telecom Italia followed a generous dividend policy since Pirelli took over the control of the company. This may have occurred mainly to pay back financial expenses to the firm's controller.

²³We have compared this model with several alternative specifications, and in all cases the Schwartz Bayesian Information Criterion was in favour of the choice of a GARCH (1,1). Results for alternative specifications (i.e. GARCH-M, IGARCH, EGARCH, APARCH and GJR-ARCH) are available upon request.

4 Why controlling shareholders do "live like kings"

In this final section, we identify the main factors which we think explain why controlling shareholders may "live like kings" in Italy, and we provide policy recommendations on how to make the protection of minorities indeed effective.

1. Pyramid structure and dual class shares

Pyramid structure and dual class shares are used in Italy to separate ownership from control of the company. This framework allows company to face tough financial constraints to drain money from the market from a wide set of channels, as reported in Nicodano (1998) and Bebchuck et al. (2000). For the case of TI, the pyramid structure and the dual-class structure allowed the controlling shareholder an excessive power that increased minority expropriation. We think that the actual legislation needs to be reinforced with the introduction of an option to exit for minorities when such a concentration of power takes place.

2. Minority splitting

A high concentration of power is not unusual in corporate governance systems such as those in place in UK and USA, where though the controller (manager) owns a small number of shares, shareholders' meetings assess manager's decisions. By contrast, when a group is controlled by a pyramidal structure, the controlling shareholder keeps tight control of a series of shareholders' meetings at different levels of the pyramid structure, and thus (s)he can rely on a (usually) solid majority in all of them. Therefore the various shareholders' meetings cannot carry out an effective control: minorities are split at each level and thus they do not have the choice to reject the controlling shareholder decisions. In our view, in the presence of a pyramid structure, group shareholders' meetings need to be integrated, so that group minorities may play an effective role in the corporate governance of the group.

3. Equity issues with rights method ("enforced subscription")

We have reported plenty of evidence for the case of TI on how a controlling shareholder reduces her/his financial liabilities by using not just "debt leverage" but also "equity leverage", given that minorities

at different levels in the group are "forced" to invest in the deal because a group may issue equities with rights method. When the issuing is carried out at a substantial lower price than the market price, the right to subscribe has a high positive value, and it can be traded on the market. Even though a shareholder may not want to buy new shares, he has to sell its right to another investor if he does not want to suffer losses in value. As a consequence, minorities cannot refuse to take part in the game, and thus an equity issue it is unlikely to fail. This is what we call "enforced subscription". To reinforce this important issue, let us consider Table 18: it is clear that most equity issues were carried out at a lower price than their market value for different companies of the group. For instance, Tecnost's equity issue in June 1999 was carried out at 2.87 Euro per share, while the price market was of 3.78 Euro; Olivetti, in the same year, issued equities at 2.01 Euro while the market price was of 5.00 Euro; in 2001, again Olivetti issued equities at 2.60 Euro while the market price was 6.61 Euro and later in the same year issued equities at 1.00 Euro with a market price of 1.86. On the other hand, Camfin in 2003 issued equities at 1.50 Euro while the market price was 1.81 Euro. In conclusion, "enforced subscription" was widely used by Olivetti and Pirelli's groups over the period 1999-2003, the only exceptions being Camfin in 2001²⁴. We think that the use of rights method for equity issues at prices lower than their market values should be reconsidered.

4. Rule on Public Offer

A very important form of protection for minorities is the mandatory public offer that a controlling shareholder must, according to Italian law, carry out when owning a share larger than 30%. In the case of TI, Colaninno's takeover took place via a public offer, but the Pirelli group acquisition avoided the public offer via a private 27% share acquisition from Bell, as reported in Figures 2 and 3. Thus, the latter acquisition gives rise to doubts on the effectiveness of market enforcement law in Italy in a context where in general institutional investors do not play a substantial role and thus leaving minorities dispersed.

²⁴Tecnost's issue in August 1999 was peculiar, as it was to be subscribed by former Telecom Italia shareholders accepting the public offer, so that rights were excluded for Tecnost. Tecnost had the role of a vehicle company in this operation. The issue caused a dilution effect for controlling shareholder, whose stake went from 96.9% to 70%. Pirelli & C.'s issue in 2003 was not at market price indeed. This operation involved the allocation of a warrant right, with the same effect of a discount.

We think that the 30% threshold, appropriated in other European countries, should be reconsidered for Italian big companies belonging to business groups. In this case, Consob, the financial market monitoring authority, should have the power to intervene when a minority expropriation is likely to happen.

5. Media pressure

Dyck and Zingales (2004) show how media pressure can be a crucial factor to decrease the relevance of private benefits extracted by controlling shareholder. However, if media systems are strongly connected with industrial groups and politicians, as in Italy, this minority protection effect can be indeed limited.

[Insert somewhere here Table 18]

5 Conclusions

In this paper, we studied the case of TI and showed how controlling shareholders had expropriation power despite the Draghi reform in 1998.

First, we analysed how important acquisitions of control have actually been paid, finding out that in Colaninno's hostile takeover, carried out in 1999, minorities contributed with an 88% of the total equity investment; further, in 2001, the family controlling Pirelli group did pay only less than 4% of the acquisition.

Second, we considered the role of controlling shareholders in the two acquisitions of TI. We evaluated the acquisition premium which we found to be 41% and 81% of the price after the acquisition, for Olivetti's and Pirelli's takeovers respectively, a very large size of private benefits for the control of the business group. In order to study the evolution of private benefits, we observed the voting premium, which is affected by the changes in the corporate governance structure. When TI's control was contestable (corresponding to Colaninno's era), the voting premium was up to 50%; it dropped to around 30% when the company was acquired by Pirelli group, the same level of premium experienced during the 1994-1997 state-ownership period.

Third, we considered the effects on minorities during the two acquisitions. Following the Pirelli acquisition, the market was strongly negative for the bidder companies (-48.70% in a two-month window for Pirelli Spa), while Camfin was unaffected by the takeover. An analysis of variance showed

that, as consequence of the Pirelli acquisition, the bottom of the chain of the Pirelli group was positively affected by the takeover.

This analysis provides clear evidence of the impact of the ownership structure on financial markets and how powerful a controlling shareholder can be. In presence of contemporaneous presence of pyramids, dual-class structure and rights method, we show that minorities can be expropriated, despite the substantial reforms such as the Draghi reform in Italy. This lead us to the conclusion that groups owning several listed companies ("listed groups") deserve a special discipline, as many are the policy implications of their presence in the market.

In our view, the case of TI provides useful lessons on how business groups are formed and why they frequently adopt a pyramidal ownership structure. An interesting methodological implication is that groups have to be observed as single entities, rather than simple summations of individual companies. Moreover groups grow over time, often starting from a single firm. This calls for the development of a theory of business groups and pyramids able to model their dynamic evolution (see Aganin and Volpin, 2003, Almeida and Wolfenzon, 2005) and an appropriate evaluation of the creation of aggregate wealth. Moreover, while we provide evidence that the controlling shareholder is empowered to expropriate minorities, a few other questions remain. For instance it is not clear why in these circumstances investors continue to invest in pyramidal groups, raising doubts on the efficiency of financial markets as well as on the rational behaviour of investors. Finally, as the recent cases of Cirio and Parmalat crashes, and Banca Nazionale del Lavoro and Banca Antonveneta takeovers demonstrated, it is evident that the banking system and bank authorities play a crucial role for the existence of groups, with relevant policy implications. All those issues deserve further investigation and we leave this to future work.

Appendix

A. Italian corporate governance background

Today's developed economies are predominated by two main basic corporate governance systems: the relationship-based corporate system and the market-oriented corporate system (Franks and Mayer, 1992, Moerland, 1995). In Continental Europe, the former may then be distinguished in two main sub-groups: the Latin and the Germanic systems (De Jong, 1997, Melis, 1999). The Italian corporate governance system belongs to the Latin sub-group, although it has its own individual features.

The Italian company law has probably favoured excessively the certainty of control at the expenses of shareholders' protection (Bianchi et al., 1997), and this has probably been a cause of the limited development of the Italian market. Empirical evidence shows that the great majority of Italian senior manager believes that the main objective for their companies is to maximise the value for shareholders (Melis, 1999), but this concept does not represent the same concept as in the Anglo-American corporate model. In fact, the average ownership structure in Italy is characterised by the relevant presence of blockholders, so that the value maximisation probably refer just to this group of shareholders. For this reason, both Consob and Bank of Italy have stressed the importance of a reform that would have reorganised the entire corporate governance system in Italy. The consequent debate has led to a new law for listed companies: the Draghi reform, in force since July 1998. This law regulates financial markets and corporate governance in listed companies, aimed to strengthen investor's protection and minority shareholders, by regulating listed companies on issues such as shareholders' agreements, internal controls, minority shareholders' rights and public bids. The Draghi reform differs from the previous codes on corporate governance for two main reasons: first, it is not merely a Code of practice, but is legally binding for all the listed companies; second, it does not cover any topic regarding the board of directors. A detailed review of the Italian Corporate Governance system after the Draghi reform is provided by Melis (2000). The ownership structure of the Italian non-financial listed companies is featured by a high level of concentration of approximately 48% on average, according to Consob's surveys. The identity of owners reveals that families, coalitions and other companies have a major role. The great majority of the companies' control structure is characterised by the dominance of a main shareholder, who acts as blockholder. Blockholders tend to have a major control over management not only because of their high level of direct ownership, but also

due to some devices, such as pyramidal groups, the issue of non-voting shares and shareholders agreement, while cross-shareholdings are rarely important because of the limit imposed by the Italian company law (2% for traded companies).

Pyramidal groups have been defined as “a cascade of companies which can exert control through a complicated shareholding structure at a minimum cost” (Kendall and Sheridan, 1992). In these groups the holding company controls the majority of voting rights of the companies which belong to the group and its ultimate control is either by a single entrepreneur or a family or coalition. This device is generally used to maximise the ratio between the amount of the resources controlled and the own capital invested to maintain the control.

The issue of non-voting shares is largely diffused among the Italian companies (Barca, 1993), with the only limitation in the total par value no higher than the total par value of voting shares. With this mechanism, the senior management has an alternative source for corporate funding, which is “risk-free” for the control of the company, since it has no voting right.

Shareholders’ agreement are a fundamental device, especially at the highest level of the control chains. The Draghi reform has modified their regulation, in order to weaken their power as mechanism to maintain the control of the company by a coalition of blockholders.

Other features of the Italian corporate governance system are the following:

- the market for corporate control does not have an important relevance and hostile takeovers are rare;
- despite the similar framework of “universal bank”, the Italian system is not characterised by a main bank relationship as the German system (the practise of multiple loans is strongly diffused);
- the other financial institutions, in particular institutional investors, usually play a marginal role (Bianchi et al., 1997), although things are changing rapidly, so that they are starting to have an active role in some shareholders meetings.

Quoting Melis (2000), the expression “weak managers, strong blockholders and unprotected minority shareholders” may effectively summarise the Italian situation.

B. Data

In order to carry out the analysis provided in this paper, we have collected from several sources four categories of data:

1. Historical data

We have collected information on the history of TI and other companies involved in Olivetti's and Pirelli's pyramids from two internet sites (www.telecomitalia.it and www.pirelli.com), which provide a complete chronology of main events. In particular we split the history of TI in four periods according to the type of control, in order to carry out our both voting premium and variance analysis. Details are provided in Table B1.

A detailed information about all financial operations is provided by several issues of "Calepino dell'Azionista" and "Indici e dati", two annual publication edited by Mediobanca. In particular, every issue of "Indici e dati" provides in Table IX a list of all operations comporting a variation in equity capital of all listed companies (such as equity issues, convertible bond issues, acquisitions and so on).

All event dates used in this paper are collected from "Il Sole 24 Ore", the most important Italian financial newspaper. In particular, for the event analysis we refer to the announcement dates listed in Table B2, selected as first mention in "Il Sole 24 Ore".

2. Ownership data

We collected ownership data from Consob (Commissione Nazionale per le Società e per la Borsa), the Italian authority for the market.

3. Balance Sheet data

All balance sheet data are collected from Datastream and official company's sources.

4. Market data

All market data are collected from Datastream. All price series have been collected from 1 January 1997. Concerning market value on Datastream, it is defined as the share price multiplied by the number of ordinary shares in issue. The amount in issue is updated whenever new tranches of stock are issued or after a capital change.

[Insert somewhere here Tables B1-B2]

C. Board of Directors

[Insert somewhere here Table C]

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Figures and Tables in the Appendix

Table B1

The different “eras” of Telecom Italia’s control

Period	Start	End
State-owned company	30 June 1994	23 October 1997
Public Company	24 October 1997	20 May 1999
Colaninno’s control	21 May 1999	27 July 2001
Tronchetti Provera’s control	28 July 2001	Nowadays ¹

Table B2

Announcement dates

Event	Date
First rumours on Colaninno’s hostile takeover	19 February 1999
Pirelli’s acquisition announcement	28 July 2001
Announcement of chain shortening	13 March 2003

¹ We are estimating models till the 31 December 2004.

Figures and Tables in the Text

Figure 1

Ownership Structure immediately after Colaninno's hostile takeover (21/05/1999)

The figure shows the ownership and control structure of listed companies: each box represents a listed company; arrows represent control; the numbers above each box represent the percentage of voting rights directly owned by the controlling party; * represents dual-class structure; the ultimate owner is represented at the top of the figure.

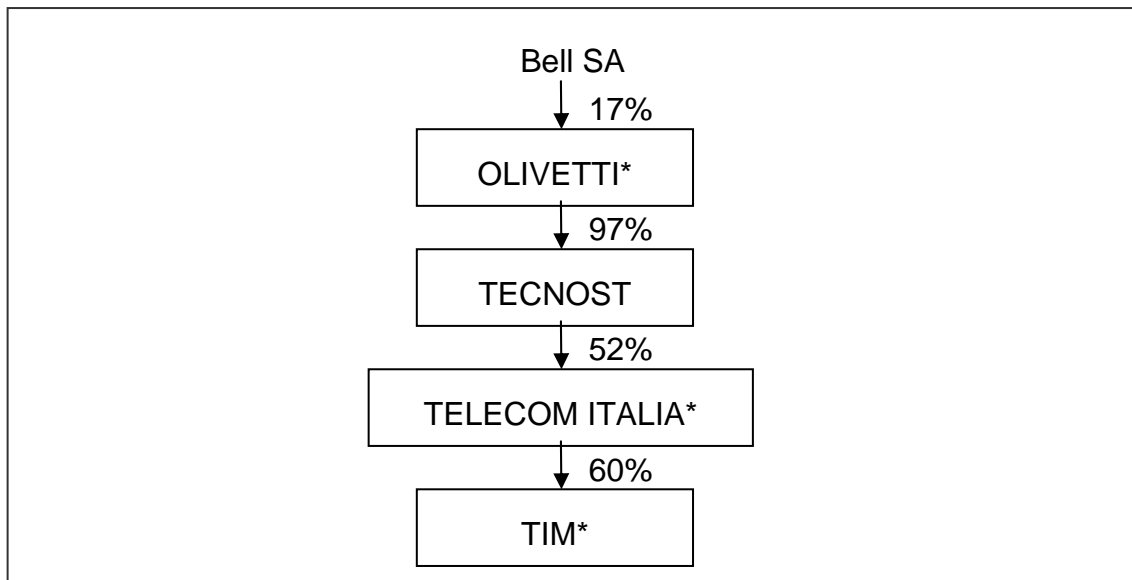


Figure 2

Ownership structure immediately before Pirelli's acquisition (before 28/07/2001)

For explanation see notes to Figure 1.

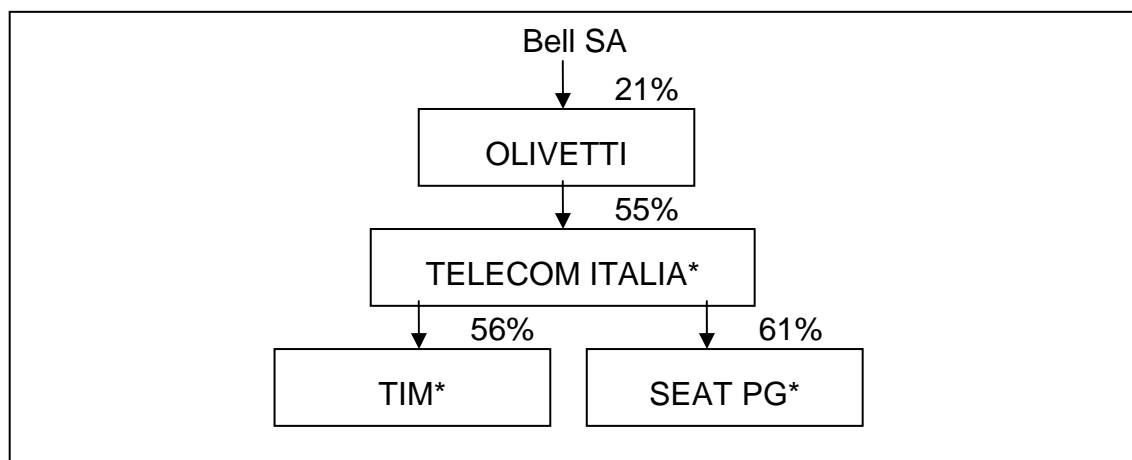


Figure 3

Ownership structure immediately after Pirelli's acquisition (after 28/07/2001)

For explanation see notes to Figure 1. In addition: the Figure reports also the position in the pyramid of Olimpia, a non-listed newco company, and of the voting pact controlling Pirelli & C.

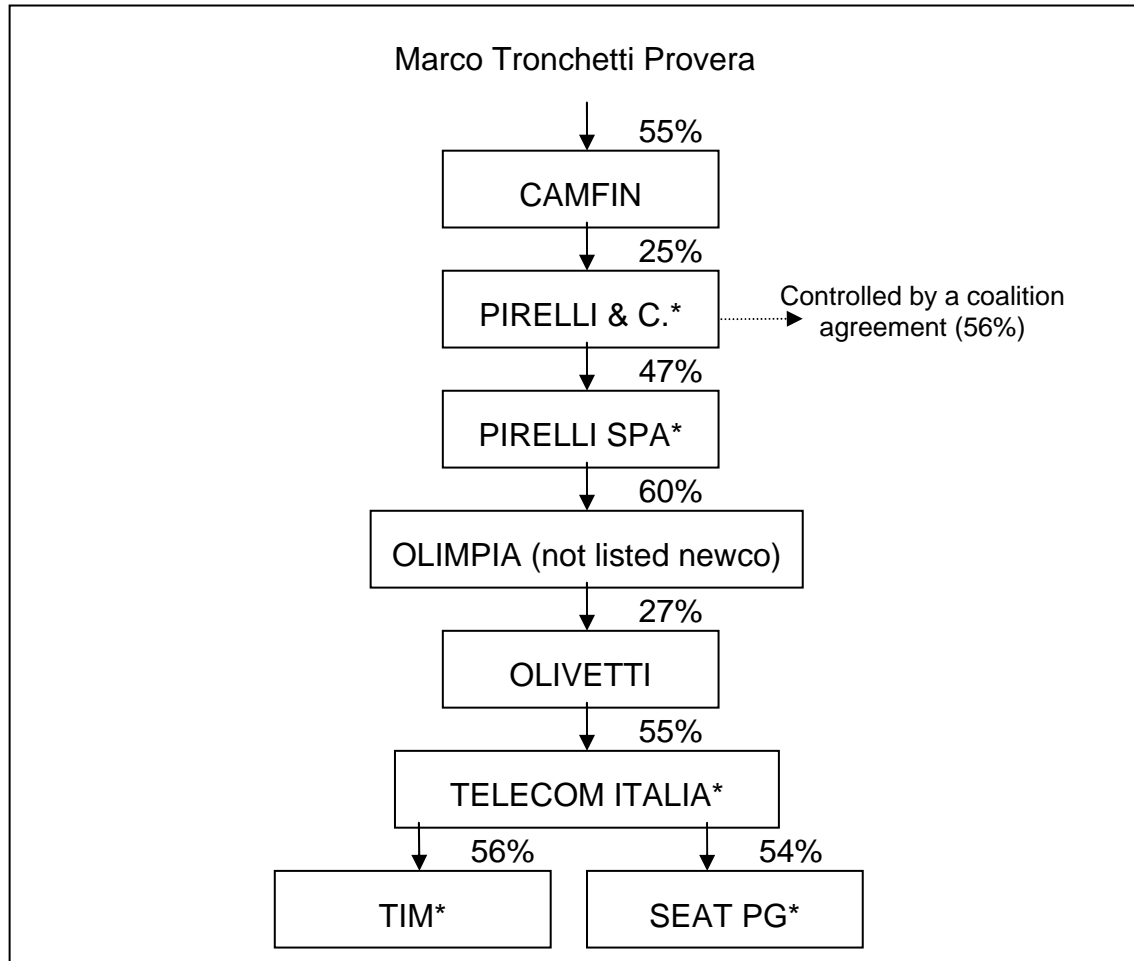


Figure 4

Ownership structure at the end of 2004.

For explanation see notes to Figure 1 and Figure 3

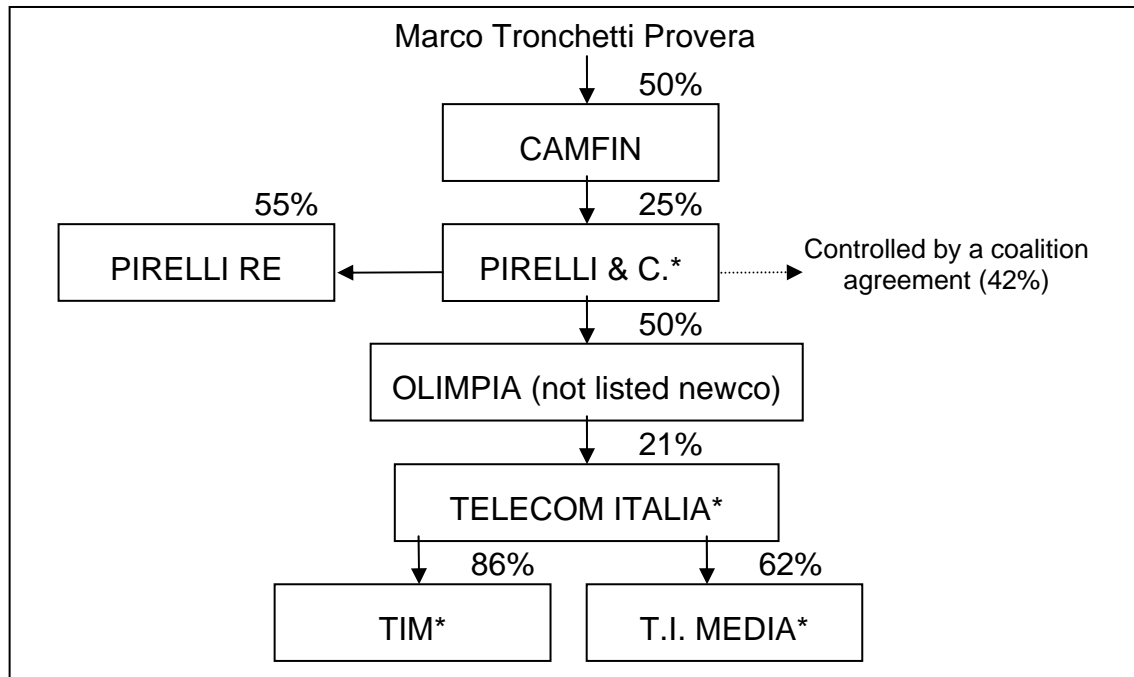


Figure 5

Telecom Italia's ordinary and saving shares trends; voting premium trend

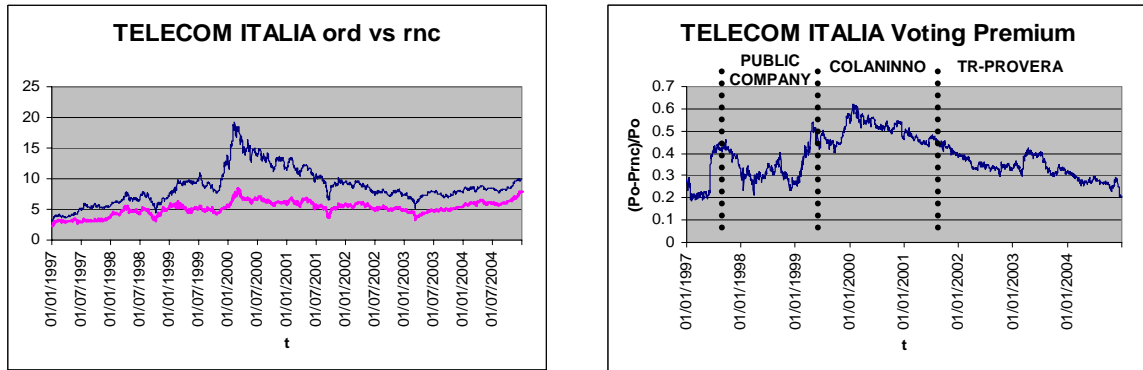


Figure 6

Telecom Italia Mobile's ordinary and saving shares trends and voting premium trend

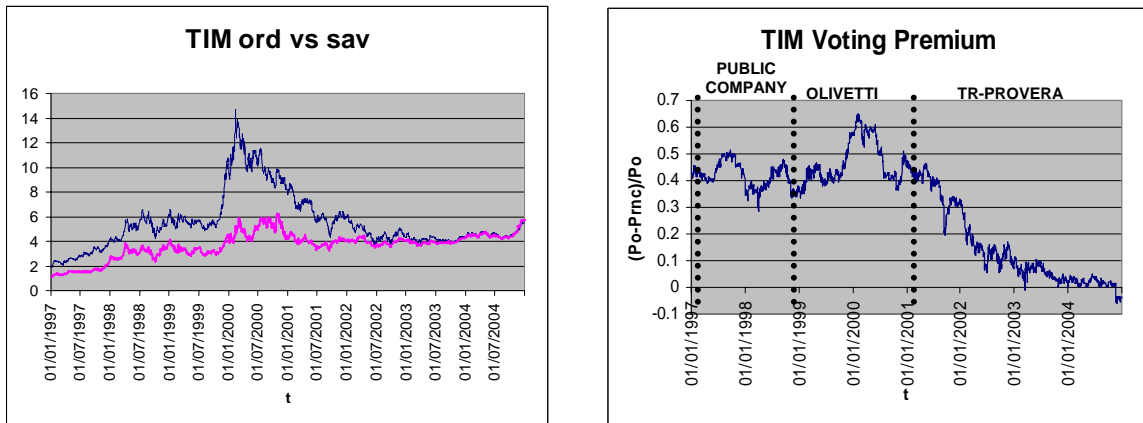


Figure 7

Pirelli & C.'s and Pirelli Spa's ordinary and saving shares; voting premium trends

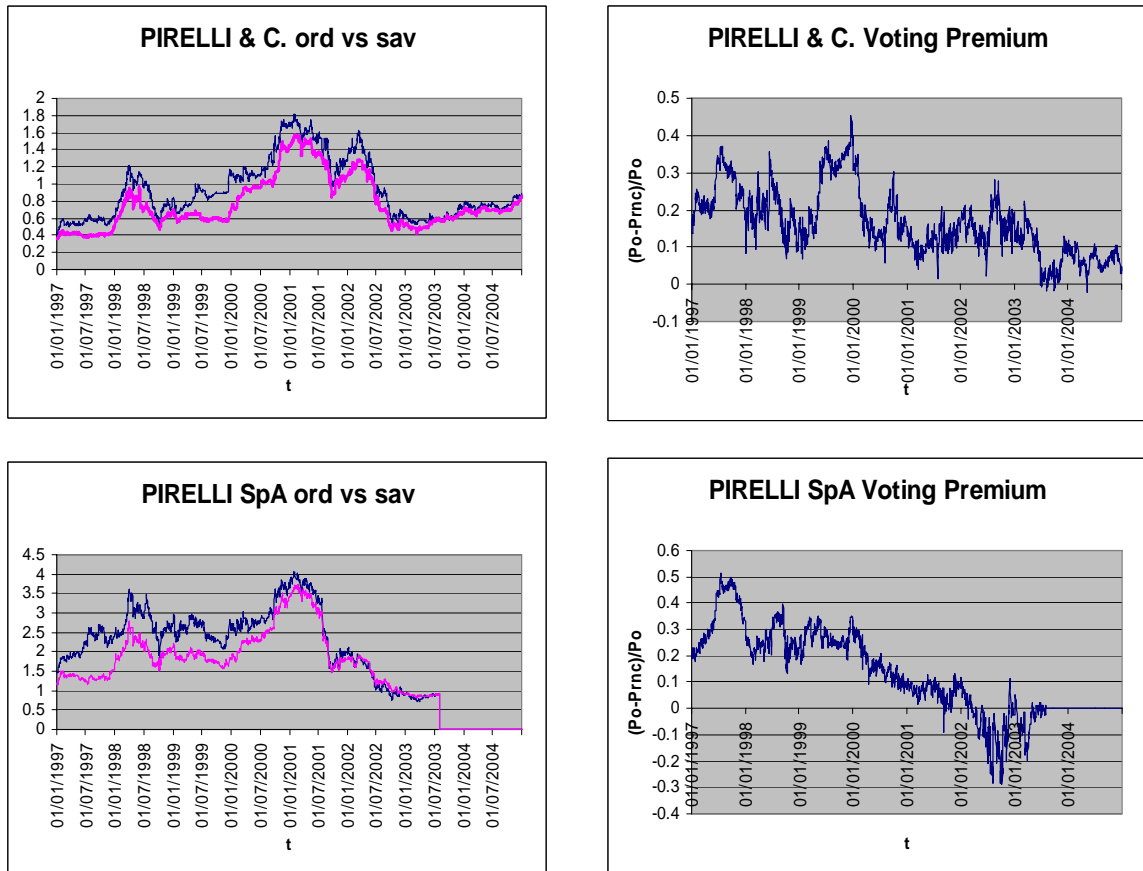


Figure 8

Relevant CAR across acquisition's announcements

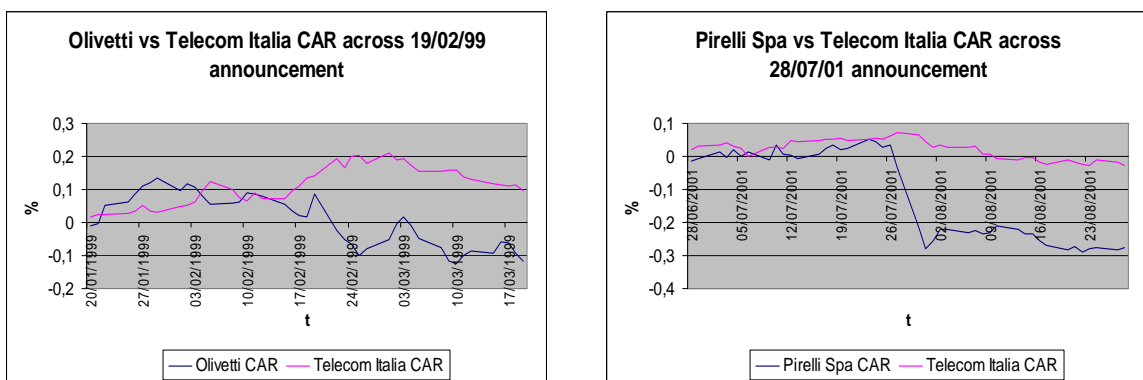


Table 1

Telecom Italia's consolidated data (m €)

	31.12.1998	31.12.1999	31.12.2000	31.12.2001	31.12.2002	31.12.2003
Proceeds	24,432	26,674	28,591	30,179	30,701	30,701
Ebitda %	45.9%	43.1%	41.2%	41.0%	41.1%	42.1%
Ebit %	23.7%	23.1%	21.5%	20.2%	22.0%	20.0%
Net earnings	1,978	1,737	2,028	-2,068	-322	1,192
Dividends paid	751	1,096	2,324	2,309	2,307	2,291
Net fin. pos.	8,287	8,187	20,080	22,496	18,518	33,809
Employees (tns)	123,966	122,662	114,669	116,020	106,620	93,187

Table 2

Companies involved in Telecom Italia's control history.

This table lists all companies involved in the pyramids controlling Telecom Italia over the period 1997-2004. Ultimate owner and main activity refers to the same period.

Note that: 1) Telecom Italia and Olivetti merge on 04/08/03. The new company is named Telecom Italia; 2) Pirelli SpA and Pirelli & C. merge on 01/08/03. The new company is called Pirelli & C. SpA.

Company	Ultimate owner	Main activity
Camfin	Marco Tronchetti Provera	Holding
Pirelli & C.	Marco Tronchetti Provera	Holding
Pirelli Spa	Marco Tronchetti Provera	Tyres, Cables and Systems
Pirelli RE	Marco Tronchetti Provera	Real Estate Investment
Olimpia	Marco Tronchetti Provera	Holding
Olivetti	Bell (R. Colaninno) until 2001 Then Marco Tronchetti Provera	Hardware, Office Products
Tecnost	Bell (R. Colaninno)	Holding
Telecom Italia	State-owned until 1997 Public company until 1999 Bell (R. Colaninno) until 201 Then Marco Tronchetti Provera	Telecommunication
Telecom Italia Mobile	Telecom Italia until 1999 Bell (R. Colaninno) until 2001 Then Marco Tronchetti Provera	Mobile Telecommunication

Table 3

Market capitalisations of main business group companies.

Panel 1 contains market capitalisations for ordinary shares. Panel 2 contains market capitalisation for both saving and preferred shares (during the period, only Olivetti had preferred equity standing). Panel 3 reports the sum of capitalisations for all classes of shares.

For explanation see also note to Table 2.

Panel A: Market capitalisation: ordinary shares (m €)							
Company	31.12.1998	31.12.1999	31.12.2000	31.12.2001	31.12.2002	31.12.2003	31.12.2004
TIM	41,832	73,628	71,686	52,879	36,686	36,349	46,403
T Italia	38,268	73,572	62,823	50,511	38,051	24,210	31,049
Olivetti	8,377	13,574	12,505	10,494	8,598	-	-
Pirelli Spa	5,182	5,169	7,206	3,778	1,689	-	-
Pirelli & C.	1,004	1,381	2,109	1,611	841	2,684	3,301
Pirelli RE	-	-	-	-	730	1,023	1,592
Camfin	109	152	373	361	269	392	480
Panel B: Market capitalisation: saving and preferred shares (m €)							
Company	31.12.1998	31.12.1999	31.12.2000	31.12.2001	31.12.2002	31.12.2003	31.12.2004
TIM	6,288	7,402	614	568	531	568	751
T Italia	11,635	13,105	13,863	12,319	9,876	9,360	13,852
Olivetti sav	215	190	0	0	0	-	-
Olivetti pr.	44	36	0	0	0	-	-
Pirelli Spa	5,182	5,169	7,206	3,778	1,689	-	-
Pirelli & C	56	56	118	89	42	98	129
Pirelli RE	-	-	-	-	0	0	0
Camfin	0	0	0	0	0	0	0
Panel C: Total Market capitalisation (m €)							
Company	31.12.1998	31.12.1999	31.12.2000	31.12.2001	31.12.2002	31.12.2003	31.12.2004
TIM	48,120	81,030	72,300	53,447	37,217	36,917	47,154
T Italia	49,903	86,677	76,686	62,829	47,926	33,570	44,901
Olivetti	8,635	13,800	12,505	10,494	8,598	-	-
Pirelli SpA	10,365	10,338	14,412	7,557	3,377	-	-
Pirelli & C	1,061	1,437	2,227	1,700	882	2,782	3,430
Pirelli RE	-	-	-	-	730	1,023	1,592
Camfin	109	152	373	361	269	392	480

Table 4

Colaninno's hostile takeover: Main features

Total value of the takeover (evaluated at final offer price) (100% of Telecom Italia ordinary shares):	€59,909 m
Total market value of the ordinary capital controlled: (Ord. shares, on announcement: 19/02/1999)	€47,769 m
Total market value of the equity capital controlled: (Ord. + Saving shares, on announcement: 19/02/1999)	€61,155 m
Percentage of the ordinary capital delivered	51.86%
Total value of the deal	€31,069 m
Market value of the ordinary share before the offer (Last month av.)	€8.12
Value offered for an ordinary share (first offer)	€10.00
Value offered for an ordinary share (final offer)	€11.50
Offering period: from 21/4/99 to 21/5/99	
Bidder company: Tecnost (controlled by Olivetti)	
Payment (per share): Cash: €6.92 + new Tecnost Bonds: €2.90 + new Tecnost Ordinary shares: €1.68	

Table 5

Colaninno's hostile takeover: Change in ownership

Numbers in brackets represent voting rights directly owned by the controlling party.

Before the deal:

Bell (12%) - Olivetti (97%) – Tecnost

Immediately after the deal:

Bell (17%) – Olivetti (73%) – Tecnost (52%) – Telecom Italia (60%) – TIM

Before the Pirelli deal:

Bell (21%) – Olivetti (55%) – Telecom Italia (56%) – TIM

Table 6

Colaninno's hostile takeover: Financial Resources – Who Paid the Bill? (m €)

We are considering a “deal window” (0;+2) with respect to the operation date: 21 May 1999.

Operation	Total Amount	Controlling company	Minorities	Bonds	Bank debt
Panel A: Direct payment		OLIVETTI			
Tecnost equity issue (Jun 99)	16,602	12,000	4,602		
Tecnost bonds issue	9,443			9,443	
Tecnost bank debt	5,024				5,024
<i>Total value of the deal</i>	<i>31,069</i>	<i>12,000</i>	<i>4,602</i>	<i>9,443</i>	<i>5,024</i>
Panel B: Olivetti's contribution		BELL			
Olivetti equity issue (Jun 99)	3,016	603	2,413		
Olivetti divestments	7,932	952	6,980		
Olivetti bank debt	1,052				1,052
<i>Total</i>	<i>12,000</i>	<i>1,555</i>	<i>9,393</i>		<i>1,052</i>
Panel C: Olivetti's follow-up operations		BELL			
Olivetti equity issue (Feb 01)	1,262	252	1,010		
Olivetti convertible bonds issue (Feb 01)	1,268	254	1,014		
<i>Total</i>	<i>2,530</i>	<i>506</i>	<i>2,024</i>		
Panel D: Summary of contributions					
Equity coming from MS: (4,602+9,393+2,024)					€16,019 mln
Equity coming from CS: (1,555+506)					€2,061 mln
Total amount of equity: (16,019+2,061)					€18,080 mln
Total amount of debt: (5,024+9,443+1,052)					€15,519 mln
Debt in charge of CS:					€1,974 mln
Total amount of operations (acquisition and follow-up): (31,069+2,530)					€33,539 mln
Total contribution of MS:					€29,504 mln
Total contribution of CS:					€4,035 mln
CS Equity Ratio: (2,061/18,080)					0.11
CS Debt Ratio: (1,974/15,519)					0.13
CS Leverage: (33,539/4,035)					8.31

Table 7

Pirelli's acquisition: Main features

Totale value of the takeover (27% of Olivetti ordinary shares):	€8,217 m
Total market value of the ordinary capital controlled: (Ord shares, on announcement: 01/07/2001)	€15,984 m
Total market value of the equity capital controlled: (Ord + Saving + Pref shares, on announcement: 01/07/2001)	€16,378 m
Market value of the ordinary share before the transaction:	€2.30
Value paid per ordinary share:	€4,17
Transaction date: 28/7/01	
Payment: Cash	
Bidder company: Olimpia, not-listed vehicle company controlled by Pirelli Spa (60%)	

Table 8

Pirelli's acquisition: Change in ownership.

Numbers in brackets represent voting rights directly owned by the controlling party. The * indicates that control is guaranteed via controlling agreement.

Before the deal:

M. Tronchetti Provera (55%) - Camfin (25%)* - Pirelli&C (43%)* - Pirelli Spa (60%)

Immediately after the deal:

M. Tronchetti Provera (55%) - Camfin (25%)* - Pirelli&C (47%)* - Pirelli Spa (60%) -
Olimpia (27%) - Olivetti (55%) - Telecom Italia (56%) - TIM

At the end of 2004:

M. Tronchetti Provera (57,5%) - Camfin (26%)* - Pirelli&C (60%) - Olimpia (22%) -
Telecom Italia (56%) - TIM

Table 9

Pirelli's acquisition: Financial resources – Who Paid the bill? (m €)

We are considering a “deal window” (0;+2) with respect to the operation date: 28 July 2001.

Operation	Total Amount	Contr. Company	Identified Minorities	Other Minority	Bank Equity	Bank Debt
Panel A: Direct payment		PIRELLI SPA				
Olimpia equity issue (July 2001)	8,217	4,931	1,643		1,643	
Panel B: Pirelli Spa's contribution		PIRELLI & C.				
Pirelli Spa cash	2,168	1,084		1,084		
Pirelli Spa debt	2,763					2,763
<i>Total</i>	<i>4,931</i>	<i>1,084</i>		<i>1,084</i>		<i>2,763</i>
Panel C: Pirelli & C.'s contribution		CAMFIN				
Pirelli & C eq. Issue (June 2003)	814	244		570		
Pirelli RE spinoff	270			270		
<i>Total</i>	<i>1,084</i>	<i>244</i>		<i>840</i>		
Panel D: Camfin's contribution		MTP* FAMILY				
Camfin equity issue (June 2001)	82	45		37		
Camfin equity issue (June 2003)	162	89		73		
<i>Total</i>	<i>244</i>	<i>134</i>		<i>110</i>		
Panel E: Summary of contributions						
Equity coming from all MS: (1,643+1,643+1,084+840+110)					€5,320 mln	
Equity coming from <i>unidentified</i> MS: (1,084+840+110)					€2,034 mln	
Equity coming from CS:					€134 mln	
Total amount of equity: (5,320+134)					€5,454 mln	
Total amount of debt:					€2,763 mln	
Debt in charge of CS:					€179 mln	
Total value of operation (acquisition):					€8,217 mln	
Total contribution of MS:					€7,904 mln	
Total contribution of CS:					€134 mln	
CS Equity Ratio: (134/5,454)					0.02	
CS Debt Ratio: (179/2,763)					0.06	
CS Leverage: (8,217/313)					26.25	

* Marco Tronchetti Provera's family

Table 10

Pirelli's acquisition: Olivetti's financial restructuring. (m €)

We are considering a "deal window" (0;+2) with respect to the operation date: 28 July 2001.

Issue type	Total amount	Contr. Company	Identified Minorities	Other Minorities	Bank Equity	Bank Debt
Panel A: Olivetti's contrib..		OLIMPIA				
Olivetti equity issue (Nov 01)	1,491	403		1,088		
Olivetti convertible bonds (Nov 01)	2,405	649		1,756		
<i>Total</i>	<i>3,896</i>	<i>1,052</i>		<i>2,844</i>		<i>1,485</i>
Panel B: Olimpia's contrib.		PIRELLI SPA				
Olimpia eq. issue	1,052		1,052			
Panel C: Summary of contributions						
Equity coming from all MS: (5,320+2,844+1,052)					€7,573 mln	
Equity coming from <i>unidentified</i> MS: (2,034+2,844)					€4,878 mln	
Equity coming from CS:					€134 mln	
Total amount of debt: (2,763+1,485)					€4,248 mln	
Debt in charge of CS:					€194 mln	
Total value of operations (acquisition and follow-up): (8,217+3,896)					€12,113 mln	
Total contribution of MS:					€11,805 mln	
Total contribution of CS:					€328 mln	
CS Equity Ratio: (134/7,573)					0.02	
CS Debt Ratio: (194/4,248)					0.05	
CS Leverage: (12,113/328)					36.93	

Table 11

Telecom Italia's voting premium.

Daily voting premia are evaluated according to their definition in Section 3 (9). Means and Standard Deviations are calculated in different periods as indicated in the first column.

Period	Voting Premium – Mean	Voting Premium – Std
Panel A: the four “eras”		
State-owned company (30/06/94-23/10/97)	31.28%	10.14%
Post-Privatisation (24/10/97-20/05/99)	33.53%	6.61%
Colaninno's control (21/05/99-27/07/2001)	50.07%	4.70%
Tronchetti Provera's control (28/07/01-31/12/2004)	33.75%	5.51%
Panel B: Tronchetti Provera's control		
2001	42.69%	5.50%
2002	34.75%	5.49%
2002	35.37%	5.47%
2004	27.35%	5.48%

Table 12

Event analysis on Colaninno's hostile takeover announcement (19/02/1999):

CAR (%) on different length windows.

*, ** and *** indicate respectively less than 10%, 5% and 1% significance level. Significant coefficients are highlighted at less than 10% are highlighted.

	Olivetti	Olivetti (saving sh.)	Olivetti (pref. sh.)	Telecom Italia	Tel. Italia (saving sh.)	TIM	TIM (saving sh.)
Panel A: BACKWARD WINDOWS							
CAR(-1;1)	-0.047	-0.055	-0.066	0.081	0.050	0.068	-0.012
<i>Std</i>	0.047	0.052	0.047	0.024**	0.034	0.023*	0.030
CAR(-5;1)	-0.109	-0.128	-0.096	0.103	0.020	0.113	-0.030
<i>Std</i>	0.071	0.080	0.071	0.037**	0.052	0.035**	0.047
CAR(-10;1)	-0.105	-0.132	-0.116	0.096	-0.002	0.071	-0.077
<i>Std</i>	0.093	0.105	0.093	0.048*	0.068	0.046	0.061
CAR(-30;1)	0.031	-0.011	-0.037	0.251	0.070	-0.006	-0.154
<i>Std</i>	0.153	0.171	0.153	0.078***	0.112	0.076	0.100
Panel B: FORWARD WINDOWS							
CAR(-1;1)	-0.047	-0.055	-0.066	0.081	0.050	0.068	-0.012
<i>Std</i>	0.047	0.052	0.047	0.024**	0.034	0.023*	0.030
CAR(-1;5)	-0.101	-0.037	-0.119	0.068	0.068	0.080	0.084
<i>Std</i>	0.071	0.080	0.071	0.037	0.052	0.035*	0.047
CAR(-1;10)	-0.072	-0.037	-0.102	0.043	-0.065	0.049	-0.033
<i>Std</i>	0.093	0.105	0.093	0.048	0.068	0.046	0.061
CAR(-1;30)	-0.145	-0.062	-0.175	0.008	-0.079	0.061	-0.002
<i>Std</i>	0.153	0.171	0.153	0.078	0.112	0.076	0.100
Panel C: TWO-TAIL WINDOW							
CAR(-30;30)	-0.067	-0.018	-0.146	0.177	-0.059	-0.012	-0.144
<i>Std</i>	0.211	0.236	0.211	0.108*	0.154	0.104	0.137

Table 13

Event analysis on Pirelli's acquisition announcement (28/07/2001):

CAR (%) on different length windows.

*, ** and *** indicate respectively less than 10%, 5% and 1% significance level. Significant coefficients are highlighted at less than 10% are highlighted.

	Camfin	Pirelli & C.	Pirelli & C. (sav.)	Pirelli Spa	Pirelli Spa (sav.)	Olivetti	T Italia	T Italia (sav.)	TIM	TIM (sav.)
Panel A: BACKWARD WINDOWS										
CAR(-1;1)	-0.040	-0.158	-0.054	-0.242	-0.180	-0.155	0.015	0.040	0.044	0.026
<i>Std</i>	0.049	0.036**	0.032	0.028***	0.034**	0.036**	0.024	0.024	0.025	0.038
CAR(-5;1)	-0.070	-0.161	-0.037	-0.236	-0.188	-0.107	0.011	0.027	0.034	0.037
<i>Std</i>	0.075	0.056**	0.049	0.042***	0.052**	0.054*	0.037	0.036	0.038	0.059
CAR(-10;1)	-0.056	-0.156	-0.037	-0.218	-0.169	-0.106	0.018	0.070	0.059	0.059
<i>Std</i>	0.098	0.073**	0.064	0.055***	0.068**	0.071	0.049	0.047	0.049	0.077
CAR(-30;1)	-0.148	-0.086	0.024	-0.252	-0.192	0.011	0.041	0.016	0.096	0.049
<i>Std</i>	0.160	0.119	0.105	0.090***	0.112**	0.116	0.079	0.077	0.081	0.125
Panel B: FORWARD WINDOWS										
CAR(-1;1)	-0.040	-0.158	-0.054	-0.242	-0.180	-0.155	0.015	0.040	0.044	0.026
<i>Std</i>	0.049	0.036**	0.032	0.028***	0.034**	0.036**	0.024	0.024	0.025	0.038
CAR(-1;5)	-0.072	-0.108	-0.101	-0.249	-0.260	-0.162	-0.024	-0.003	0.046	0.038
<i>Std</i>	0.075	0.056*	0.049	0.042***	0.052***	0.054**	0.037	0.036	0.038	0.059
CAR(-1;10)	0.060	0.008	-0.050	-0.240	-0.233	-0.158	-0.058	-0.033	0.010	0.026
<i>Std</i>	0.098	0.073	0.064	0.055***	0.068***	0.071**	0.049	0.047	0.049	0.077
CAR(-1;30)	0.004	-0.065	-0.061	-0.478	-0.431	-0.482	-0.143	-0.113	-0.030	0.081
<i>Std</i>	0.160	0.119	0.105	0.090***	0.112***	0.116***	0.079*	0.077	0.081	0.125
Panel C: TWO-TAIL WINDOW										
CAR(-30;30)	-0.105	0.006	0.017	-0.487	-0.443	-0.316	-0.116	-0.138	0.021	0.104
<i>Std</i>	0.222	0.164	0.145	0.12***	0.15***	0.160**	0.110	0.106	0.111	0.173

Table 14

Event analysis on announcement of chain shortening (13/03/2003):

CAR (%) on different length windows.

*, ** and *** indicate respectively less than 10%, 5% and 1% significance level. Significant coefficients are highlighted at less than 10% are highlighted.

	Camfin	Pirelli & C.	Pirelli & C. (sav.)	Pirelli Spa	Pirelli Spa (sav.)	Olivetti	T Italia	T Italia (sav.)	TIM	TIM (sav.)
Panel A: BACKWARD WINDOWS										
CAR(-1;1)	-0.152	0.001	-0.125	-0.159	-0.013	0.019	-0.018	-0.104	-0.027	-0.026
<i>Std</i>	0.043**	0.043	0.047*	0.034**	0.049	0.027	0.020	0.025**	0.023	0.026
CAR(-5;1)	-0.052	-0.007	-0.114	-0.086	0.026	0.081	-0.017	-0.104	-0.013	-0.020
<i>Std</i>	0.066	0.066	0.071	0.053	0.075	0.041*	0.030	0.038**	0.036	0.040
CAR(-10;1)	-0.036	0.031	-0.101	-0.040	0.022	0.067	-0.043	-0.157	-0.010	-0.007
<i>Std</i>	0.086	0.087	0.094	0.069	0.098	0.054	0.039	0.049**	0.047	0.052
CAR(-30;1)	-0.165	-0.013	-0.139	-0.093	-0.010	-0.011	-0.113	-0.181	-0.031	-0.036
<i>Std</i>	0.141	0.141	0.153	0.113	0.160	0.088	0.064*	0.081**	0.076	0.085
Panel B: FORWARD WINDOWS										
CAR(-1;1)	-0.152	0.001	-0.125	-0.159	-0.013	0.019	-0.018	-0.104	-0.027	-0.026
<i>Std</i>	0.043**	0.043	0.047*	0.034**	0.049	0.027	0.020	0.025**	0.023	0.026
CAR(-1;5)	-0.174	-0.020	-0.085	-0.164	-0.031	0.023	0.010	-0.081	-0.014	-0.048
<i>Std</i>	0.066**	0.066	0.071	0.053**	0.075	0.041	0.030	0.038**	0.036	0.040
CAR(-1;10)	-0.231	0.031	-0.016	-0.138	-0.020	0.051	0.038	-0.066	-0.031	-0.051
<i>Std</i>	0.086**	0.087	0.094	0.069*	0.098	0.054	0.039	0.049	0.047	0.052
CAR(-1;30)	-0.282	-0.033	-0.064	-0.098	-0.105	0.038	0.106	-0.016	-0.035	-0.083
<i>Std</i>	0.141**	0.141	0.153	0.113	0.160	0.088	0.064	0.081	0.076	0.085
Panel C: TWO-TAIL WINDOW										
CAR(-30;30)	-0.294	-0.047	-0.079	-0.031	-0.103	0.008	0.011	-0.093	-0.039	-0.092
<i>Std</i>	0.195	0.195	0.211	0.156	0.221	0.121	0.089	0.111	0.105	0.117

Table 15

Returns of group's companies during the different "eras" of Telecom Italia's control (annual equivalent rates of return %)

Asset	Post-Privatisation (24/10/97-20/05/99)	Colaninno (21/05/99-27/07/01)	Tronchetti Provera (28/07/01-31/12/04)	Medium term (01/01/97-31/12/04)
MIB30	37.3	0.5	-4.4	4.5
EUROTEL	74.3	-8.8	-5.5	5.6
Camfin	6.8	84.7	-6.6	17.3
Pirelli & C.	18.6	44.6	-11.6	7.0
Pirelli Spa	8.2	5.4	-34.3	-11.2
Olivetti	354.1	-11.5	-20.4	30.6
Telecom Italia	48.8	3.4	-1.2	10.8
TIM	41.5	2.5	-1.3	8.7
Pirelli & C. (saving)	36.2	51.0	-10.6	14.9
Pirelli Spa (saving)	34.1	20.4	-33.4	-6.0
Olivetti (saving)	235.8	59.7	-	265.6
Olivetti (preferred)	155.9	46.8	-	156.9
Telecom Italia (saving)	29.1	7.4	12.4	19.0
TIM (saving)	53.6	6.5	16.6	31.9

Table 16

Garch models for group companies' return

Notes: Restrictions: $\alpha_i + \beta_i \geq 0$, $\alpha(1) + \beta(1) < 1$; Returns in percentages; *, ** and *** indicate less than 10%, 5% and 1% level of significance. Significant coefficients are highlighted at less than 10% are highlighted.

	r-Camfin		r-Pirelli & C.		r-Pirelli & C. (sav.)		r-Pirelli Spa	
	Coeff.	Rob-SE	Coeff.	Rob-SE	Coeff.	Rob-SE	Coeff.	Rob-SE
μ (x)	0.062	0.046	0.105	0.041**	0.087	0.034**	0.058	0.053
Alpha0 (h)	1.098	0.298***	0.159	0.036***	0.164	0.032***	0.140	0.043***
Alpha1 (h)	0.155	0.023***	0.115	0.017***	0.122	0.019***	0.075	0.012***
Beta1 (h)	0.688	0.435***	0.872	0.017***	0.853	0.019***	0.901	0.015***
Leverage	-0.035	0.392	-0.012	0.013	0.039	0.014***	0.042	0.042
Col-D (h)	-	-	-	-	-	-	-	-
TrP-D (h)	-0.290	0.104***	-0.062	0.028**	-0.122	0.029***	0.052	0.051
Mean(r)		0.085		0.061		0.063		0.004
Variance(r)		5.904		5.387		4.381		6.189
Skewness(r)		0.546		0.432		0.439		0.095
Kurtosis(r)		7.972		7.614		7.332		5.844
A1+B1		0.843		0.987		0.975		0.976
	r-Pirelli Spa (sav.)		r-Olivetti		r-Olivetti (sav.)		r-Olivetti (pref.)	
	Coeff.	Rob-SE	Coeff.	Rob-SE	Coeff.	Rob-SE	Coeff.	Rob-SE
μ (x)	0.034	0.045	0.096	0.062	0.327	0.107***	0.174	0.106*
Alpha0 (h)	1.221	0.203***	0.365	0.156**	5.181	1.990***	3.040	0.734
Alpha1 (h)	0.277	0.040***	0.098	0.021***	0.140	0.037***	0.171	0.033***
Beta1 (h)	0.547	0.058***	0.862	0.030***	0.533	0.167***	0.709	0.046***
Leverage	-0.399	0.184**	0.052	0.096	-0.793	0.370**	-0.690	0.248***
Col-D (h)	-	-	0.055	0.196	-0.778	0.728	0.526	0.420
TrP-D (h)	-0.151	0.128	-0.388	0.122***	-	-	-	-
Mean(r)		0.014		0.117		0.368		0.276
Variance(r)		5.564		8.879		11.918		14.571
Skewness(r)		0.217		0.347		1.125		1.032
Kurtosis(r)		6.778		6.741		8.377		8.944
A1+B1		0.824		0.960		0.672		0.880
	r-Telecom Italia		r-Tel. Italia (sav.)		r-TIM		r-TIM (sav.)	
	Coeff.	Rob-SE	Coeff.	Rob-SE	Coeff.	Rob-SE	Coeff.	Rob-SE
μ (x)	0.084	0.038**	0.114	0.040***	0.071	0.037*	0.066	0.031**
Alpha0 (h)	0.132	0.050***	0.473	0.124***	0.163	0.053***	0.211	0.068***
Alpha1 (h)	0.070	0.011***	0.080	0.014***	0.081	0.013***	0.090	0.014***
Beta1 (h)	0.912	0.014***	0.867	0.023***	0.885	0.019***	0.875	0.020***
Leverage	-0.055	0.048	-0.068	0.071	0.566	0.242**	0.193	0.095**
Col-D (h)	0.050	0.048	-0.067	0.076	-0.016	0.047	0.027	0.056
TrP-D (h)	-0.019	0.045	-0.132	0.074*	-0.187	0.064***	-0.225	0.077***
Mean(r)		0.077		0.083		0.076		0.103
Variance(r)		4.487		4.933		5.136		4.557
Skewness(r)		0.147		-0.131		0.401		0.473
Kurtosis(r)		5.313		8.920		5.292		7.270
A1+B1		0.982		0.947		0.967		0.964

Table 17

Leverage (Net Financial Position / Equity)

All data used for evaluation are consolidated.

Company	31.12.1998	31.12.1999	31.12.2000	31.12.2001	31.12.2002	31.12.2003
T Italia	0.51	0.48	1.13	1.66	2.12	2.15
Tecnost	-0.64	1.49	3.03	3.20	3.05	
Olivetti	1.28	2.85				
Pirelli SpA	0.28	0.60	-0.57	0.31	0.38	0.60
Pirelli &C	1.87	2.16	-1.07	1.12	1.22	
Camfin	0.37	0.77	0.65	0.53	0.55	0.72

Table 18

Equity capital raised by Olivetti and Pirelli Groups between 1999 and 2004

The table reports all operations involving an equity issue carried out by companies involved in Olivetti's and Pirelli's acquisitions of Telecom Italia. We have reported all operations occurred in the two years preceding or following the acquisitions, excluding those strictly reserved to managers or employee, or connected to conversion lira-euro. Market price (to be contrasted with issuing price) are evaluated on Announcement Date. Note that Olivetti's equity issuing in November 2001 was secured by banking system.

Date	Issuing company	Capital Raised (m €)	Par value (€)	Issuing price (€)	Ann. Date	Market Price (€)
Jun 99	Tecnost	12,000	0.2582	2.8700	06/04/99	3.7800
Jun 99	Olivetti	3,016	0.5165	2.0142	07/04/99	4.9980
Aug 99	Tecnost*	4,602	0.2582	2.8002	30/06/99	2.3900
Feb 01	Olivetti	2,530	1.0000	2.6000	11/12/00	6.6070
Jun 01	Camfin	82	0.5200	4.0000	10/05/01	2.8810
Nov 01	Olivetti	3,896	1.0000	1.0000	27/09/01	1.8640
Jun 03	Camfin	162	0.5200	1.5000	11/03/03	1.8100
Jun 03	Pirelli & C.	814	0.5200	0.5200**	11/03/03	0.5240

* This operation is not homogeneous to the others, as it was carried out without rights method. It regarded an equity issue for the payment of TI shareholders accepting the public offer.

** This operation involves the allocation of a warrant, so that the issuing price should be discounted accordingly.