

Efficiency and Distribution in Financial Restructuring: The Case of the Ferruzzi Group

Alessandro Penati

Università di Padova

and

Luigi Zingales*

University of Chicago, NBER, & CEPR

<http://gsblgz.uchicago.edu>

First Version: November 26, 1996

This Draft: December 23, 1997

Abstract

This paper analyzes the efficiency and distributional consequences of the largest out-of-court restructuring ever (\$20 billion of debt). The restructuring was engineered by a five-bank committee composed of the largest creditors, which took effective control of the company at the onset of financial distress. We compare the payoffs obtained by creditors under the restructuring plan with those they would have obtained in the absence of it. We show that the plan implied a large redistribution among creditors with equal priority. This redistribution occurred without generating any apparent efficiency gain. When we factor in the value of control, we find that the restructuring plan favored the Restructuring Committee, at the expense of other banks. Our analysis shows the importance of the allocation of control in financial restructuring and the possible efficiency costs of debt for equity swaps in restructurings. We discuss the implications of these findings for the debate on the optimal bankruptcy procedures.

*©Penati & Zingales. Part of his study originated from work done for the Italian Antitrust Authority (Autorità Garante della Concorrenza e del Mercato). We thank them from stimulating our interest on this topic. We acknowledge the useful comments of Julian Franks, Steve Kaplan, Paola Sapienza, and participants to seminars at Bocconi University, London Business School, Harvard Business School, European Financial Meetings in Gersensee. Zingales is also grateful for support from the National Science Foundation.

On June 4, 1993, the Ferruzzi Group, a multinational conglomerate stunned the European financial community by announcing that it was unable to meet its debt obligations. Burdened with nearly \$ 20 billion of debt, the Group's collapse appeared all but certain.¹ Eight months later the Group was fully restructured and it has managed an impressive turnaround since then. The financial restructuring was engineered by a five bank committee, led by Mediobanca, the leading investment bank in Italy. The Group was taken out of distress with an out-of-court restructuring involving a series of debt concessions and debt-for-equity swaps, which is typical of Continental European financial restructuring (e.g., Eurotunnel, Metallgesellschaft). Very few divestments were planned and even fewer were executed; capacity remained untouched and redundancies in the labor force were insignificant. As a result, the Group emerged from financial distress almost unchanged, except for a new management and the former creditors replacing the old shareholders.

At first, this restructuring appears an unqualified success, especially considering that it involved over 300 banks (130 were foreign institutions, predominantly British, French and Swiss banks), and over 300 companies scattered around the world (17 were publicly traded in three different countries). The success was obtained without any court supervision or formal bankruptcy procedure, notwithstanding the extremely large number of creditors. It was due to the ability of banks to step in the company's management through a form of equity receivership quite similar to that prevailing in the United States at the turn of the century (Baird, 1995) and in the UK today (Franks and Torous (1993)).

Besides its sheer size (it is the largest out-of-court restructuring ever done), there are several reasons why we think this case deserves close scrutiny. First, the apparent success of this restructuring. While there are many studies analyzing the performance of the U.S. bankruptcy system, we still know very little about the costs and benefits of financial restructuring in other countries, with different banking systems and corporate structures. Many authors (e.g., Sheard, 1990) have touted the superiority of universal banking in coping with financial distress. The only available evidence, however, comes from Japan (Hoshi et al. (1990) and Sheard, 1990). Yet, there appears to be a Continental European approach to financial distress, which has been followed in all the major restructurings (e.g., Metallgesellschaft, Eurotunnel) including the

¹Throughout the paper we express data in Italian lira, to make them strictly comparable with those appearing in the official restructuring documents. In parenthesis, however, we report the equivalent amount in US dollars at the 1,500 lira/US\$ exchange rate.

Ferruzzi's one. In this approach banks play a predominant role, in line with universal banking system prevailing in Europe. An in-depth study of the Ferruzzi's case can shed some light on the cost and benefits of the "Continental approach" to financial restructuring.

Second, because of the particular nature of the Group - a conglomerate consisting of mostly traded companies with a pyramidal structure - and the availability of detailed data on the plan, we are able to compare the efficiency and distribution consequences of the plan with what would have happened without it. We are also able to compare the plan with an hypothetical break up alternative, equally feasible, that would have ensured absolute priority. By comparing the alternative strategies, we can identify, to an extent unavailable before, the efficiency and distributional consequences of the restructuring plan.

Finally, by analyzing a financial restructuring in a different institutional environment we can do something no U.S.-based study could ever do: assess the positive effects of the most effective rules present in the United States, but absent elsewhere. Precisely because they are the most effective, they will tend to eliminate distortions, and thus the possibility to detect their efficacy. It may sound ironical, but only by looking at countries where no such rules exist, can we appreciate their functions. Thus, we will not limit our analysis to what happened, but we also speculate on whether U.S.-style rules could have changed the course of events for better or for worse.

Our estimates indicate that all the Group's major industrial and financial service companies were solvent. Insolvency was concentrated in a few holding companies at the top of the Group pyramid. These were de facto closed end mutual funds, comprising highly diversified companies, with little synergy among them, whose only apparent purpose was to enable the Ferruzzi's family tight control over a vast conglomerate: a common situation in Continental Europe, especially Belgium, France, Sweden, and Italy.

We show that by breaking-up and divesting these holding companies, there would have been no adverse efficiency consequences. In fact, given the discount at which conglomerates generally trade with respect to the value of the underlying assets, a convincing case can be made that a break-up would have created value. This result allows us to focus solely on the plan's distributional effects, avoiding the difficult task of striking a balance between efficiency gains and distributional costs.

Our estimates suggest that the restructuring plan implied a substantial transfer of value

among creditors of different companies of the Group. We find that the plan imposed a 15% cost on bank creditors of Montedison, the major industrial conglomerate of the Group, even though it was perfectly solvent. The cost amounts to Lit 1,047 billion or \$698 million. Correspondingly Montedison shareholder's gained from the plan. In addition the plan forced Alca creditors, a Ferfin's subsidiary trading soy, to take Lit 202 million (\$ 135 million) more losses on their exposure. As in the case of Montedison, shareholders gained.

Since Ferfin (the holding company one level up) is the major shareholder of Montedison and Alca, the plan increased the value of Ferfin's assets by Lit 554 billion (\$370 million).

Overall, it appears that the banks in charge of the restructuring plan ended up losing from it, as did the creditors as a whole. The only beneficiaries of the plan appears to have been the outside shareholders, who were neither represented in the restructuring committee, nor had any saying in the process.

This paradoxical result, however, is completely overturned if we factor in the value of control. When we estimate the value of control (a number in line with what has been found in many empirical studies), the redistribution of value is much more skewed in favor of large creditors. If we assume – consistently with what actually happened – that the entire value of control accrued to the largest shareholders, the bank restructuring committee gained a net Lit 1,952 billion (\$1.3 billion) from the plan, with respect to an equally feasible break-up alternative.

At first impression, these findings seem consistent with the U.S.-based evidence (e.g., Weiss, 1990), which documents frequent violations of absolute priority in corporate reorganizations. There are, however, three important differences.

First, the way in which these violations are computed. The deviations documented in the US only show that shareholders receive some value from company reorganizations, even if creditors are not paid in full. They do not document that creditors would have received more had a different course of actions been chosen. Indeed, in Chapter 11 – where most of these violations occur – a plan can be imposed to creditors only if it documents that creditors receive more than they would under liquidation. In other words, violations of absolute priority are not evidence that shareholders subtract value from creditors, but simply that they share some of the gains obtained by keeping the company alive. In contrast, thanks to the particular nature of the Group under investigation, we can document that most creditors ended up receiving less than what they could have obtained under an alternative, equally feasible, strategy that was constructed

by using market prices and with the constraint of meeting absolute priority.

Second, in the United States violations of absolute priority are strongly associated with the shareholders' power in reorganizations (Betker (1995)). When management is appointed by creditors, and its compensation linked to creditors' payoff, the violations disappear. In contrast, we show that these violations occur even when the management is nominated by creditors. In other words, we find evidence – for the first time to the best of our knowledge– of the possible distortions intrinsic in a system that attributes control of an insolvent debtor to their large creditors

Finally, the magnitude of these violations. The average violation in the United States is 2.6% of firm's value, for an absolute amount of only \$5.6 million (Betker, 1995). In our case, even ignoring the value of control, the largest violation represent 10% of firm's value, for an absolute amount of Lit 1,235 billion (\$823 million).

There are a few lessons that can be learned from these findings. First, the importance that the value of corporate control plays in financial restructuring. Only by inserting a value for control can we understand what happened. While a large literature focuses on the value of control in corporate acquisitions, little is known on the role control plays in financial restructuring (Gilson, 1990 is an exception). This aspect is particularly important in a pyramidal Group, where control over many companies is concentrated at the top.

Second, the presence of a significant value of control generates a conflict of interest among creditors with equal priority. While large creditors prefer control to be transferred in the hands of creditors without a formal auction, small creditors do not. In fact, an auction monetizes a company's private benefits of control, making it possible to share them pro rata among all creditors. By contrast, a debt-for-equity swap allows large creditors to get control of the company (with the private benefits associated to it) without having to share it with the smaller creditors. As discussed in the final section, this problem can create two types of inefficiencies: ex-ante inefficiencies in the allocation of credit and ex-post inefficiencies in the allocation of control.

Finally, the case illustrates the importance of the U.S. lender liability doctrine, which discourages large creditors from taking control of a financially distressed company. This rule has been widely criticized by economists and legal scholars because it exacerbates the free rider problem among creditors (e.g., Gilson, 1990). Our analysis suggests, however, that this rule might produce benefits too: without it, large creditors have better chances to distort the restructuring

process to their own advantage.

The rest of the paper is organized as follows. Section 1 describes the structure of the Ferruzzi Group and the institutional and legal environment in which the restructuring took place. Section 2 describes the events leading to financial distress and the plan approval. Section 3 describes the restructuring plan, which is then evaluated in Section 4. Section 5 derives the creditors' payoffs in the absence of the plan and under an alternative, equally feasible, plan that involved breaking up Ferfin. Section 6 presents our findings on the efficiency and distributional effects of the restructuring plan. Finally, Section 7 discusses the implications of these findings for the debate on the costs and benefits of different institutional constraints to financial restructuring.

1 The Institutional Environment

1.1 The Group structure

At the end of 1992, the Ferruzzi Group was the second largest industrial conglomerate in Italy with total assets of Lit 43,120 billion (\$29 billion) and 52,000 employees. The Group was a truly multinational company with only 30% of revenues generated in Italy, 14% in France, 24% in other European countries and 18% in the United States.² It operated 254 industrial plants: 107 were located in Italy, 104 in other European countries, 38 in North America and 5 in the Far East, with a geographical composition similar to sales. Over half of total revenues were generated in the food and non food agricultural business, 28% in the chemical and pharmaceutical business, and 11% in the engineering and construction business.

The Ferruzzi Group consisted of nearly 300 companies, 100 were registered in Italy, with a pyramidal structure: at the top was Serafino Ferruzzi, named after the company founder, which was a holding company tightly held by the members of the Ferruzzi's family.³

Figure 1 and 2 present a simplified flow chart picture of the Group structure, with the main equity holdings. Serafino Ferruzzi controlled 47.8% of the voting stock in Ferruzzi Finanziaria (Ferfin henceforth), which was listed at the Milan stock exchange. Ferfin was a holding company with a broadly diversified portfolio of participations, mostly controlling stakes, in several

²Data are taken from the Ferruzzi's 1993 consolidated balance sheet.

³Arturo Ferruzzi, the only son of the late company's founder owned 31%, two of his sisters held 23% each, while the remaining was controlled by a Luxembourg company, itself controlled by the three siblings.

sectors. Its main holding was Montedison, itself another holding company, with business in energy (Edison), food and agricultural (Eridania-Beghin Say, EBS henceforth), and chemical and pharmaceuticals (Himont, Ausimont, Tecnimont, and Antibioticos). Ferfin's other main holdings were in the insurance business (Fondiaria), cement (Calcestruzzi and Heracles), newspaper (Messaggero), banking (Banca Mercantile), shipbuilding (Intermarine and IMH), television broadcasting (TMC), maritime transportation (Feromar), horse racing (Trenno), real estate (ISVIM), and commodity trading (Alca). A total of 15 companies were publicly traded at the Milan stock exchange, the largest being Ferfin, Montedison, and, Fondiaria. EBS, the largest sugar producer in Europe, was traded at the Paris stock exchange. Heracles, one of the largest publicly owned Greek companies, was traded at the Athens stock market. Two of the US based chemical companies, Himont and Ausimont, were formerly traded on the NYSE⁴; finally, Montedison's ADR is listed at the NYSE.

The complexity of the Group structure, the diversity of the business, and the privately held company at the top are not unusual in the Italian corporate sector, and are common to other Continental European countries (e.g., Franks and Mayer, 1997).

1.2 The Legal Environment

Although the restructuring took place out of court, it is important to understand the legal environment in which it took place, because this environment affects the parties' outside options. The Italian bankruptcy code includes two main procedures to deal with an insolvent company: liquidation (fallimento) and reorganization (amministrazione controllata). Liquidation is similar to Chapter 7 in the United States, the major difference being that it carries criminal consequences for bankrupt managers.

The reorganization procedure is on the surface similar to Chapter 11 in the US. As in Chapter 11, it guarantees an automatic staying of all the debt. The Italian procedure, however, gives more saying to creditors than the US equivalent: the admission to the reorganization must be approved by the majority of the unsecured creditors and authorized by the court, which has to verify the long term viability of the company.

Large companies, though, have access to a third procedure also known as "Prodi's Act". This procedure, introduced in 1979, has the main objective of protecting the integrity of a firm

⁴They became private when they were purchased by the Ferruzzi Group.

and employment levels. The “Prodi’s Act” is automatically invoked for large companies that are declared insolvent by a court and omit paying workers’ salary for at least three months. Given its size, the Ferruzzi Group was well within the limits stated by the “Prodi’s Act”.

It is widely accepted (e.g., Boccuzzi and Cercone, 1994) that every time this procedure has been applied, creditors claims have been substantially weakened, because of the priority attached to the protection of employment. In addition, it has been shown (Caprio et al. (1997)) that restructuring processes with this procedure tend to last over ten years, making the Prodi’s Act the most unfavorable option for creditors.

1.3 The structure of banking industry

Until 1993, banking activity in Italy was divided between short-term lending and long-term lending (more than three years). Commercial banks were restricted to the first activity, while those specializing in the second activity (investment and long-term credit banks) could be involved in long-term lending and security underwriting; there were limits, however, to the equity stakes in manufacturing companies that investment banks could take. In September 1993, (just before our case) the banking law was modified by allowing universal banking (commercial banks could enter investment banking and vice versa), in line with the European Community Directive that aimed at establishing a common banking system across Europe. It is interesting to note that the Ferruzzi case was the first episode where Italian banks had the option of becoming equity holders in the restructured Group. This remark is important for two reasons. First, it suggests that the effects of the potential distortions arising in the renegotiations could not have been anticipated. Second, it represents an interesting example of what could happen in the United States, if such a change occurs.

The restructuring of the Ferruzzi Group was led by Mediobanca, the most successful investment bank in Italy. At the time of the Ferruzzi restructuring, this bank was controlled by a voting trust, which owned 50% of its voting stock. As Figure 3 illustrates, three commercial banks (Credito Italiano, Banca Commerciale Italiana and Banca di Roma) had a prominent position within the voting trust, controlling collectively 25% of the votes (8.8%, 8.8% and 7.4% respectively). The remaining 25% of the shares trust were spread among 18 other investors, none of which owning more than 2%. Because of these relations, in the paper we will refer improperly to Mediobanca and its three bank shareholders as the Mediobanca Group even though

they do not form a Group by any legal definition.

Mediobanca can be considered a truly universal bank: this is illustrated in Figure 3, which reports its relation with the Ferruzzi Group. Mediobanca was among Edison creditors (the energy company of the Montedison Group); at the same time, it was the third largest shareholder in Montedison, with a 3.3% stake; the second largest shareholder in Ferfin, with 3.5%; and the second largest shareholder in Fondiaria, with 15%.

2 The Financial Distress

2.1 The causes

A detailed investigation of the reasons that led the Group into financial distress is beyond the scope of this paper. It is important to stress, however, that all the evidence points to a pure financial distress, with no economic distress in the underlying businesses.

At the end of 1992, the vast majority of the Group's companies (and certainly all the important ones) had positive and growing operating margins, in spite of the severe recession looming in Italy and in Europe. Indeed aggregate sales in 1992 grew by 12% with respect to the previous year, and aggregate operating margin by 18%.

The main reason of financial distress is probably to be found in the mounting stock of debt, accumulated to fund the rapid acquisition policy being pursued: the Group's net financial debt went from Lit 11,937 billion (\$ 7.9 billion) at the end of 1990, to Lit 14,964 billion (\$ 9.9 billion) at the end of 1991, and then jumped to Lit 23,300 billion (\$ 15.5 billion) at the end of 1992. The economic recession that hit Europe in that year and the sharp increase in interest rates that accompanied the lira exchange crisis in the second half of 1992, at the time of the European Monetary System collapse, only worsened the liquidity position of the Group. By contrast, there is scant evidence that the fall of the Italian lira had a sizable impact on the Group financial position because, despite the large stock of debt denominated in foreign currencies, the Group had nearly 70% of its revenue denominated in foreign currencies.

2.2 The numbers

On June 4, 1993, when the Ferruzzi Group declares it is unable to meet interest payments on time, total indebtedness amounts to Lit 29,923 billion (\$ 19.9 billion): Montedison consolidated

exposure is Lit.17,235 billion (\$ 11.5 billion), while Ferfin's exposure is Lit 11,874 billion; in addition the holding company Serafino Ferruzzi, which will be excluded from the restructuring plan, has an exposure of Lit 815 billion (\$ 543 billion). The vast majority of the debt, Lit. 22,348 billion (\$ 14.9 billion), is held by banks: Italian banks are predominant, with 75.2% of the total bank exposure, even though foreign bank involvement is fairly sizable at Lit. 5,548 billion (\$ 3.7 billion). Most of the remaining debt (Lit. 4,643 billion or \$ 3.1 billion) is mostly bonds floated in the eurocurrency market.

Table 1 presents a break-down of the consolidated financial position at the onset of financial distress. There are three distinguishing features worth pointing out.

First, unsecured bank debt represents the vast majority of the debt outstanding, while bonds are only 16%, and secured debt is a very small fraction (7%).

Second, Table 1 highlights the importance of intragroup loans. This intricate web of intragroup lending and borrowing is further displayed in Table 2. As the table shows, the industrial companies at the bottom of the pyramid (like Tecnimont, Edison, Himont, and Ausimont) are providing funds to the holding company (Montedison Spa). On the whole Montedison Spa is net debtor towards its controlled entities for Lit 1,318 billion (\$ 878 million). Ferfin instead is a net lender to the other companies of the Group for Lit 618 billion (\$ 412 million); in particular is lending Lit 157 billion (\$ 104 million) to Serafino Ferruzzi. Funds are, therefore, shifted around the Group, becoming a stumbling block in the restructuring process.

Third, the distribution of Italian and foreign banks' exposure is skewed. As Table 3 shows, Italian banks mostly lend to the holding companies in the upper layers of the control pyramid, while foreign banks' lending is concentrated with the industrial companies at the bottom of the pyramid. Thus, foreign banks account for 41.7% of the Montedison Group bank debt, but only 6.7% of Ferfin's debt.

2.3 The chronology of major events

Ferfin and Serafino Ferruzzi (the family holding) simultaneously announce their default and the appointment of a creditors committee to work out a restructuring plan. The five banks forming the committee (Mediobanca, Banca Commerciale Italiana, Credito Italiano, Banca di Roma, and San Paolo), accounts for 31.7% of the Group debt exposure, and include the three single largest creditors: San Paolo, Credito Italiano and Banca di Roma, in descending order. Except for San

Paolo, all these institutions belong to what we have defined as being the Mediobanca Group. Within the committee, the leading role in the restructuring process is given to Mediobanca. It is stated in the mandate that Mediobanca acts as the sole counterpart with the shareholders, thus coordinating the committee work.

The mandate, which is granted by the principal shareholder, the Ferruzzi family, effectively transfers the control of the Group into the hands of the committee. The letter of appointment (published in the press a few days later) states that the mandate to the committee is “exclusive and irrevocable”; that the members of the Ferruzzi’s family are ready to surrender all their shares in Ferfin to the banks as collateral; that all Board of Directors members and chief executives of the Group companies are to step down in favor of creditors appointed members; that the Ferruzzi family gives its proxy votes in all Group companies to a professional indicated by the committee; that the family members abstain from every strategic decision, such as acquisitions or asset disposal, from undertaking intragroup operations, and from every negotiation whatsoever which might affect the Group activity and its financial position: those negotiations which are in place must be interrupted immediately.

In this respect, the restructuring process resembles the equity receivership prevailing in the UK. There is, though, a non-trivial difference. In the UK the right to seize control is granted to creditors by the law; in our case it is the majority shareholder who grants control to a few selected creditors. This difference raises the obvious question of why it is in the interest of the controlling shareholder to do so. We will return to this issue later on.

Immediately after receiving the mandate, the creditors’ committee appoints a new top management. The new management promptly calls for a shareholders’ meeting not only to announce the magnitude of the losses, but also to approve a reduction in the stated capital. Because of this decision, Ferfin falls in violation of the minimum legal ratio of saving shares to ordinary shares. As a consequence, only two options are left to Ferfin: either to raise new capital (and restore the original ratio) within three months or face a forced liquidation. This decision, thus, imposes a strict deadline on the restructuring plan: without the approval of a plan, no equity issue is possible; but without an equity issue, the company will enter bankruptcy and trigger the application of the “Prodi’s Act”. This possibility represents an inferior outside option for the creditors, and is effective in achieving a voluntary agreement among such a large number of banks.

A restructuring plan is initially circulated among creditors in mid September; but only November 30, the last useful day to avoid the declaration of default, does a modified plan receive the approval by 87% of creditor banks; the same day it also received final approval by the shareholders.⁵

During this period, it was unclear what would have happen to Serafino Ferruzzi, the family's holding company, which was never included in the formal restructuring process. On January 18, its Board decided to underwrite the Ferfin's capital increase, which was part of the restructuring plan (as we explain later), thus retaining a significant stake in the company. Because Serafino Ferruzzi did not have the financial means, banks lent the money needed to convert the rights issue into new shares, which were then turned to the banks. Serafino Ferruzzi, still insolvent, was spared from default on June 10, 1994, when banks agreed to a partial debt forgiveness, a complete capital write off, and a recapitalization, by converting existing bank debt into equity. Despite the financial restructuring, Serafino Ferruzzi was liquidated on December 19, 1994.

3 The Restructuring Plan

Table 4 summarizes the major characteristics of the final restructuring plan. The plan divides the Ferruzzi Group's companies into three categories: those unaffected by the restructuring, those requiring an interest moratorium and debt concessions, and those requiring a debt-for-equity swap. Because most of the value is concentrated in the two main holding companies, Montedison and Ferfin, we describe the features of the plan for these two companies.

3.1 The plan for Montedison

The plan for Montedison gives two options to unsecured creditors. The first option is a mixture of debt concessions and equity issue. The second option is a straight write-off of a bigger proportion

⁵All foreign banks, but Citibank and UBS, approve the final plan. Foreign banks initially oppose the plan arranged by Mediobanca. The initial plan, presented at the beginning of October, is rejected by foreign banks, even though immediately accepted by the top twenty-one Italian banks, accounting for 70% of the Group's bank debt. The argument of foreign banks is that more assets could be sold to face liabilities, that creditors interest are sacrificed to those of shareholders, and that an independent assessment of financial statements is needed. On October 18, UBS and Societe Generale resign from their advisory role in the restructuring committee. On October 29, foreign banks are requested to approve the restructuring plan or face bankruptcy. On November 1, the Ferfin chairman meets with American banks in New York to discuss revisions to the original plan; the revisions, however, are once more rejected on November 10, leading to a modified restructuring plan on November 25, which is, finally, approved five days later.

of the loan. Both options include the forgiveness of 1993 interest, with a few exceptions. In addition, the concessions required from the Lit.7,074 billion (\$ 4.7 billion) of Montedison Spa's bank debt under restructuring are the following:

1. Lit. 1,782 billion (\$ 1.2 billion) of debt issued by Montedison USA (a subsidiary of Montedison consolidated in Montedison Spa) is restructured at 75% of the prime rate for an average period 4.5 years. In addition, should the Montell joint venture go through (a joint venture between Montedison and Shell-Royal Dutch in the chemical business under negotiation since 1992) and Montedison debt be conferred to the new company (as it occurred in June 1994), Montedison USA loans will be given priority. Once transferred, the interest will be set at a market rate. Montedison USA debt is exempted from the forgiveness of 1993 interest payments.
2. Lit 866 billion (\$ 0.6 billion) of debt issued by Finagro and European Sugars France (two other subsidiaries consolidated in Montedison Spa) is restructured at 80% of the prime rate and only to the end of 1995. In addition, the difference between the interest paid and the market interest rate will be refunded on January 1, 1996. There is no forgiveness of 1993 interest rates.
3. The remaining debt of Montedison is consolidated in two tranches: the first one of Lit 700 billion (\$ 0.47 billion) at 75% of the prime rate for an average period of 4.5 years; the second one of equal amount at 50% of the prime rate for an average maturity of 7 years.
4. Banks are also requested to guarantee, in proportion to their debt exposure, a Lit 2,916 billion (\$ 1.9 billion) capital increase, which is to be used to reimburse, pro rata, an equivalent amount of outstanding bank debt

The capital increase consists of one new ordinary share offered to each existing share (whether ordinary, saving or preferred) at a strike of Lit 1,000.⁶ Each new share also receives, at no cost, a warrant to buy 1 Montedison ordinary share every 2 warrants, exercisable for 3 years at the price of Lit 1,000, and a warrant to buy 1 Edison ordinary share every 20 warrants, exercisable

⁶At the time of the restructuring, Montedison's share capital consists of 2.18 million ordinary share, 0.013 million convertible saving shares, and 0.723 million non voting saving shares. Montedison owns 0.125 million own shares.

for 3 years at the price of Lit 5,500.⁷ As requested by the Italian code, the capital increase is to take place by offering rights to existing shareholders: banks will have to step in only to the extent that rights are not exercised; this is the only way in which a debt-for-equity swap can take place in Italy.

The alternative option offered to unsecured creditors, up to a maximum of Lit 1,200 billion (\$ 0.8 billion), consists in a 15% debt write off. The payment of the remaining debt, however, is deferred until September 30, 1994 with no interest.

3.2 The plan for Ferfin

The Ferfin restructuring plan, which involves Lit 5,084 billion of unsecured debt (\$3.4 billion), is structured in a similar way. Two options are offered to the bank creditors. The first option mainly consists of:

1. interest rate forgiveness for 1993;
2. consolidation of Lit 3,000 billion (\$ 2 billion) of bank debt in two tranches: the first one of Lit 800 billion (\$0.5 billion) at 75% of prime rate for an average maturity of 4.5 years; while the second one, for the remaining Lit 2,200 billion (\$ 1.46 billion), is consolidated at 45% of the prime rate for an average maturity of 7.5 years.

In addition to these concessions, banks are required to guarantee three capital increases for a total of Lit 2,484 billion (\$1.6 billion); Lit 2,084 billion is designed to repay existing bank debt, on a pro rata basis, while the remaining is allocated to underwrite Montedison capital increase, thus perpetuating Ferfin control in Montedison:

- a first right issue at the strike price of Lit 1,000 in the ratio of 34 new to 1 old share (equivalent to Lit 193 billion or \$128 million). This capital increase is designed to reintegrate the minimum ratio of ordinary to savings shares. The proceeds are to repay outstanding bank debt, on a pro rata basis.
- a second right issue in the ratio of 3 new to 4 old shares of every type (ordinary and savings) at the strike price of Lit 5,000, for a total of Lit 1,494 billion (\$ 0.99 billion).

⁷The Edison shares necessary to meet the warrant rights were taken from those already in Montedison portfolio.

Each right also includes a Ferfin warrant, to be exercised within 5 years at a price of Lit 1,500. The proceeds are to repay existing bank debt, on a pro rata basis.

- a third right issue in the ratio of 1 new to 1 old share of every type at a strike price of Lit 2,000 for a total of Lit 797 billion (\$ 531 million). Approximately Lit 400 billion from the proceeds are to be used to underwrite Montedison capital increase. The rest is to repay outstanding bank debt.

The plan offers a second option, but only for up to Lit 800 billion (\$ 530 million) of unsecured bank debt. This alternative consists of:

1. forgiving interest for the period 1.1.93 to 9.30.94;
2. writing off 30% of bank debt exposure to be repaid on 30.9.94.

In addition to Montedison Spa and Ferfin, an important role in the restructuring plan is played by Alca's debt (Lit 1,426 billion or \$ 952 million): this is partly (46%) consolidated at the same conditions as those of the second tranche of Ferfin's debt, and partly (54%) swapped into Ferfin's equity at the same conditions of the second and third right issues of the plan.

4 The Valuation of the Plan

4.1 The data

The two major companies involved in the restructuring plan, Ferfin and Montedison, are publicly traded. As such, detailed documents concerning the restructuring were deposited with Consob, the Italian stock market regulatory agency. We base our valuation on four volumes (and a subsequent letter of agreement) which contain detailed data on all the major companies' balance sheets, their cash flow projections for the subsequent five years, and their bank-by-bank debt exposure. The volumes were prepared by the restructuring committee together with the new management, and represents the documentation made available to creditors for evaluating the plan. By taking this approach we deliberately neglect the informational advantage that the writers of the plan likely had. This choice makes it harder for us to find any redistributive effect among creditors. Because we do find an effect, however, we can be confident that this represents a lower bound of the actual one. We can also rule out that our findings are due to

an informational advantage of some lenders. Our estimated redistribution, therefore, can only be explained by the different bargaining powers of the parties involved.

In addition to the plan, we use contemporaneous stock market prices and information reported by the press at that time. Market prices are those of December 2, 1993, the day after the plan receives its final approval, thus incorporating the concessions that it envisages. All the payoffs, therefore, should be understood as of that date.

4.2 The cost of the plan for Montedison

In Table 5 we present the break down of the cost of concessions for Montedison creditors implied by the plan. Following the final letter of agreement, we set the cost of forgiving the 1993 interest payments at Lit 444 billion (\$ 296 million). In addition, we estimate a cost of Lit 188 billion (\$ 125 million), stemming from the consolidation of the debt at below-market rates.⁸

The implicit put option given by the banks in extending credit lines for 4.5 and 7 years is estimated in two steps. First, we estimate the market value of Montedison's assets at the time of financial distress by using the fact that equity can be seen as a call option on the value of the underlying asset. Thus, we obtain A (the value of assets) by solving numerically the following non linear equation:

$$E = C(A, D, \sigma, r, T) \tag{1}$$

where E is the market value of equity, $C(A, D, \sigma, r, T)$ is the Black and Scholes formula for the value of a call option on A , with a strike price D , volatility σ , risk free rate r , and maturity T . As a strike price we use the total debt of Montedison D (after the concessions and capitalized at the proper rates until the maturity of the option); the time to maturity T equals the average debt consolidation period (3.57 years), the risk free rate r is the lira Libor rate (9%), and the volatility σ is calculated from the volatility of the portfolio of assets owned by Montedison.⁹ Since we use the level of debt after concessions, the value of equity in equation (1) is given by the

⁸The 3-month eurolira Libor rate plus 50 basis points (9.5%) is our estimate of the market rate for lending, that is the opportunity cost for banks for accepting the concessions.

⁹The volatility used is 27.09%. Because Montedison is an holding company, it was calculated as the weighted average of the 3 year volatilities of its controlled companies. Because the chemical companies are not traded, we take the average volatility of a pool of competitors, ICI, Akzo, Dow Chemical and Union Carbide. The energy sector (36.15% of the assets) contributes with a volatility of 30%; the food sector (weight 31.62%) with a volatility of 25%; and the chemical sector (weight 27.4%) with a volatility of 25.5%.

sum of the total market capitalization after the approval of the plan (which should incorporate all information about the debt concessions) and the amount of capital to be raised in the right offering. In this way we obtain a market-value based estimate of the unimpaired asset value of Montedison.

Second, with the value of assets, we can easily compute the value of the put options creditors offer to shareholders by extending the company's lines of credit for several years.¹⁰ We use the Black Scholes put option price on total assets, with a strike equal to Montedison total debt at maturity, and the same risk free rate, time to maturity and volatility as in step one. The cost of this implied put is estimated to be Lit 399 billion (\$ 266 million).

The plan also requires banks to underwrite the right offering. To compute the cost of this guarantee, we first need to compute the intrinsic value of this right. This is accomplished in several steps. First, we estimate the theoretical value of Montedison shares by dividing the value of Montedison equity after the capital increase (the sum of the capital raised and the market price of equity after the plan approval) by the number of shares after all the rights are exercised.¹¹ Second, we add the theoretical price of the Montedison and Edison warrants attached to the rights.¹² In this way, we obtain a theoretical price for the Montedison right of Lit 1,023, just above the strike price of Lit 1,000. It is therefore rational for existing shareholders to exercise the rights (and they did it indeed) at no cost for the bank. However, since the right can be exercised for a month, the banks *de facto* provides a put option to the company for that period. We estimate the cost of this put option to be Lit 199 billion (\$ 132 million).¹³

Summing all the pieces, the total value of debt concessions from banks amounts to Lit. 1,230 billion (\$ 820 million), which implies a cost equivalent to 15% of the unsecured bank exposure. The cost of the first option, offered to creditors by the plan, turns out to be inferior to the cost of the write off option, estimated to be 32.5%.¹⁴

¹⁰The cost of the rate concessions accounts for the below-prime rate offered to Montedison. By contrast, the cost of the implicit put accounts for the fact the rate does not properly account for the credit risk of Montedison.

¹¹We can easily assume that all rights are exercised because of the banks underwriting guarantee.

¹²The prices of the two warrants are obtained with the standard method of correcting the Black Scholes call option value with the dilution factor of the warrant exercise. The Montedison warrant is calculated using the theoretical price of equity found before (but before adding the value of the two warrants), with an equity volatility of 63.34% (obtained from Montedison asset volatility, adjusted for the equity/debt ratio after the concessions). The warrant Edison is calculated with a spot price equal to the market price on December 2, 1993 and the estimated volatility over a five year period to October 1993 (30%). Because the exercise of the Edison warrant did not increase the number of existing shares, there is no dilution factor.

¹³Standard Black Scholes option pricing is used also in this case.

¹⁴The second option includes the forgiveness of 1993 interest (10% of the face value of debt), the forgiveness of

Because of the debt extension, even bondholders and other creditors (mostly the tax authority) participate in the cost of the implied put; the cost for them average 5% of the exposure.

4.3 The cost of the plan for Ferfin

To estimate the costs for Ferfin's creditors implied by the plan, we follow a procedure similar to that used for Montedison (see Table 6). The cost of the 1993 interest forgone amounts to Lit 856 billion (\$ 570 billion), Lit 797 billion (\$ 531 billion) is the present value of the loans consolidation, and the continuation option value implied in the extension of the credit lines is Lit 801 billion (\$ 534 billion).¹⁵

The valuation of the bank underwriting costs requires a more elaborate approach. While we know that all three right offerings will be underwritten (because of the banks guarantee, which is part of the plan), we do not know ex ante who will underwrite them and, thus, we do not know the cost of providing the guarantee. To compute this cost, we need the value of Ferfin's shares after the offering which, in turn, depends upon whether the right offerings are in the money or not.

The market capitalization of Ferfin shares after the approval of the plan, but before the right issues, (M) reflects the value that existing shareholders will retain after the restructuring. This equals the value of the stake in the restructured company which will be owned by the current shareholders minus the new funds they invest in the company, as part of the restructuring plan. More formally,

$$M = (1 - p)NS - ds \tag{2}$$

where ds is the new money paid by existing shareholders; $(1 - p)$ the fraction of equity they will own after the capital increase, N and S are the number and price, respectively, of Ferfin shares after the increase.

To solve this equation we first conjecture which right offering will be underwritten by the existing shareholders. With this conjecture we compute the value of S from (2) and, consequently the value of all the right offerings. Having done so, we can verify the correctness of our

interest up to 9/30/94 (7.5%), and the write off of 15% of the face value of debt.

¹⁵The value of the implied option is calculated using the same two step procedure utilized for Montedison. The volatility of Ferfin's asset is the weighted average three-year volatility of its controlled companies (31%). The equity value is the sum of the market price of equity the day after the plan acceptance and the capital increase. The strike price is the value of the debt, after concessions, accumulated over the average period of concessions (6.7 years), at the proper interest rate. The risk free rate is the lira Libor rate.

conjecture.

Thus, we conjecture that existing shareholders will underwrite only the first right offering. Under this conjecture, the theoretical price of Ferfin after the offerings and ex warrant equals Lit 1,351, well above the strike of the first right issue at Lit 1,000, but well below that of the third, with strike of Lit 2,000. To find whether the second right issue was in the money, we value the price of the Ferfin warrant attached to the right using standard Black Scholes option pricing, modified to take into account the dilution from the warrant.¹⁶ We obtain a price of Lit 691, which added to the theoretical spot ex warrant of Lit 1,351, gives a total of Lit 2,043, vastly below the exercise price of the right issue of Lit 5,000. For Ferfin, thus, the guarantee offered to the second and third capital increase was costly: we estimate a cost of Lit 1,406 billion (\$ 937 million). Because the two rights were deeply out of the money, banks were almost certain to guarantee the underwriting, and thus we do not impute, as was the case for Montedison, an ex ante option cost for the guarantee.

Altogether, the plan envisage total costs for Ferfin unsecured creditors of Lit 3,860 (\$ 2.57 billion), reaching 59% of the debt exposure. This cost is very similar to the cost implied by the write-off option (59.2%).¹⁷ Thus, it is reasonable to expect that some creditors will choose this option. Note, however, that the plan limits the availability of this second option to only 15.6% of the debt under restructuring. Unfortunately, we do not have any direct data to verify which institutions, and for which amount, chose the write off option.

Finally, Alca bank creditors were subject to the same concessions as Ferfin banks, having to guarantee a Ferfin right issue at the same condition of the second and the third issues. The cost for them from the plan is estimated in Lit 735 billion (\$ 490 million) or 52% of their debt exposure. Between Ferfin and Alca, banks suffered a total cost of Lit 3,717 billion (\$ 2.48 billion); adding the cost of the implied put for bond holders and other creditors, we obtain a total cost for creditors of Lit 3,865 billion (\$ 2.58 billion).

The burden of the plan was distributed among banks according to their exposure: as it is shown in panel A of Table 7 the restructuring committee bore 34% of the costs, the other Italian

¹⁶The strike was Lit 1,500, time to maturity 5 years, risk free rate Libor, spot price equal to the theoretical share price ex warrant (Lit 1,351), and volatility derived from that of the assets used before, adjusted for the debt/equity ratio after the right issue and the debt concessions (75.6%).

¹⁷The required write off was 30%. The 1993 interest rate forgiveness (Lit 856 billion or \$ 570 million) amounted to 16.8% of debt exposure; the partial forgiveness for 1994 (the write off would have taken place in September 1994) is estimated in Lit 642 billion (\$ 428 million), or 12.6% of debt exposure. The total cost of the second option is thus estimated in 59.2% of the debt under restructuring.

banks 53% and 13% was the share of foreign banks. To assess the efficiency and distribution of the financial restructuring, we have to compare these costs with those arising from a different plan, equally feasible, which is constructed to meet absolute priority rule (APR) and to use valuations based only on market prices.

5 Value and Payoffs in the Absence of the Plan

5.1 The value in the absence of the plan

In the previous section we computed the payoff to the different creditors according to the restructuring plan. In this section we compare this payoff with the payoff creditors would have obtained under an APR. Note that in order to compute the payoff under APR we have to make an assumption on how the total value of assets change if we change the distribution of payoff.

The implicit assumption of all the papers in this literature is that the value of assets is invariant to the distribution of payoffs. In general, though, there are three reasons to doubt this assumption. First, if there are significant costs of bankruptcy and the APR forces bankruptcy, then the value of asset is reduced. Second, if a company necessitates of specific human capital, then a manager/shareholder might refuse to contribute it unless she receives a fraction of the value. In this case, the observed violation of absolute priority would not be evidence that shareholders subtract value from creditors thanks to the privileged position offered them by Chapter 11 (Bebchuk and Chang, 1992), but simply that they share some of the gains they help generate. Third, the liquidation value of an asset might differ from the going concern value.

The particular nature of the Ferruzzi Group and of its financial position, however, eliminates these potential concerns. As we shall show, insolvency was mostly concentrated in a few holding companies at the top of the Group pyramid. These were de facto closed end mutual funds, comprising highly diversified companies, with little synergy among them. Breaking these holding companies up, thus, would have had no adverse efficiency consequences. Similarly, it is hard to argue that the violations of absolute priority represent payment to essential human capital because the original managers were fired. Finally, the vast majority of the assets that would need to be liquidated under the break-up alternatives are controlling stakes in publicly traded companies, for which the market price can be easily and reliably computed.

In summary, in this case we can reliably compute the payoff of the party involved in the

absence of the plan, while maintaining the total value of the company unchanged.

5.2 A market value approach

Since we have argued that the plan is not likely to change the total value of assets, we can compute the difference between value of assets and value of liabilities in the absence of restructuring as the difference between the value of equity after the approval of the plan and the present value of debt concessions.

The market value of Montedison the day after the plan is approved and known to the market reflects the value of Montedison's equity without concessions plus the expected value of the concessions. The worst case scenario from our point of view (because lowers the value of the company) is that the market fully incorporates the value of the concessions. In such case, the value of Montedison's equity without restructuring can be obtained as the market value of Montedison minus the present value of concessions (see Table 8.A). The market capitalization of Montedison on December 2, 1993 is Lit 1,990 billion (\$ 1.33 billion) while we estimate the value of debt concession at Lit 1,235 billion (\$ 823 million). The difference is Lit. 775 billion (\$ 503 million). Thus, the plan obtained concessions from the creditors of a solvent company.

A similar calculation for Ferfin is shown in Table 9.A. The only difference is that Ferfin market capitalization after the restructuring reflects not only the value of debt concessions made by Ferfin's creditors, but also the value of debt concessions made by the creditors of companies owned by Ferfin. Thus, to compute the the difference between the value of assets and the value of liabilities of Ferfin in the absence of the restructuring plan the value of theses concessions need to be subtracted off.

In particular, Ferfin owns 38% of Montedison and, thus, enjoys a capital gain equal to 38% of value of concessions granted by Montedison's creditors (352 billion (\$ 235 million). Similarly, the plan consolidates Alca's debt in Ferfin. As we will see, the plan imposes a Lit 735 billion (\$ 490 million) cost to Alca creditors, whereas they would have lost only Lit 533 billion (\$ 355 million) if they decided to liquidate the company assets. The Lit 202 billion (\$ 135 million) difference is again a benefit of the restructuring plan brought to Ferfin.

The market value of Ferfin immediately after the plan is Lit 273 billion (\$ 182 million). The value of debt concessions made by Ferfin's creditors is Lit. 3,865 billion (\$ 2,577 billion). As a result, by eliminating the direct and indirect (through Montedison and Alca) impact of the

restructuring plan from the market value of Ferfin after the plan approval, we get an estimate of the difference between assets and liabilities of Ferfin in the absence of the plan. It is a negative value of Lit 4,146 billion (\$ 2.76 billion). Ferfin was thus clearly insolvent. In the absence of any plan creditors would have lost 60.7% of their debt exposure.

5.3 A DCF approach

While the Ferfin insolvency leaves very little doubts, one could wonder about the robustness of our result for Montedison. In fact, if there are benefits of avoiding financial distress, these would certainly be reflected in the equity value of Montedison. As a result, we might overestimate the effective value of Montedison in the absence of the plan.

For this reason, in Table 8.B we compute the value of Montedison in the absence of the plan following an alternative method. For each company of the Group, we compute the asset value and the net equity value using the best possible method given the data at our disposition. Because the plan provides us with the cash flow projections (typically extended over a five year horizon) of the operating companies of the Group, we calculate the value of these companies using a Discounted Cash Flow Analysis (DCF henceforth), following the compressed adjusted present value method outlined in Kaplan and Ruback (1995). The details of the calculations are reviewed in the Appendix. An example of the estimation procedure being adopted is reported in Table 10, where we report the valuation spreadsheet for Edison, a subsidiary of Montedison operating in the energy sector, whose stock is also listed at the Milan stock exchange.

For each company, we subtract the net financial position from DCF value. We take bonds, bank, and intragroup debt at their face value.¹⁸ Liquid financial assets and investments in publicly traded stock are taken at market prices. Purely portfolio investments in non-traded companies, which are not part of the Ferruzzi's Group as indicated in the restructuring plan, are conservatively taken at 50% of their book value; real estate at 70% of book value. Any positive net trade credits is set equal to zero; the others credits and debts are evaluated on a case by case basis: in principle, we value at face value only sure claims, such as tax credits.¹⁹

¹⁸Interest payments for the second semester of 1993 are capitalized at market rates. The plan reports the existing debt exposure on June 30, 1993; the creditors are valuing the plan on the first day of December, and they know that it will go into effect in mid December, after the approval by the shareholders' meeting on the last day November. Hence we have to take into account accrued interest for the second semester.

¹⁹The only remark pertains to Finagro. As shown in Figure 1, Montedison controlled EBS via Finagro (91% held by Montedison). The market value of Finagro's shares represents the value of minority interests. Thus, to

When a subsidiary is itself a holding company, we value all traded assets at their market value, all operating companies at their DCF value, and all other assets at 50% of their book value.

In only two cases, Tencara and Novamont, the estimated equity value is negative. In these cases, we take the conservative approach of liquidating these companies, and of transferring the full burden of their debts to the holding company (Montedison). In addition, any intragroup debt that they might have had vis a vis their holding companies is completely written off.²⁰

Interestingly, even under this different valuation exercise (notwithstanding our stringent valuation assumptions) Montedison is solvent, with an equity value of Lit 937 billion (\$ 625 million), extremely close to what was found by subtracting the value of concessions from the market value. Note that we obtain this result in spite of the fact that we took at face values all the projections contained in the restructuring plan. Since these projections have been released during the negotiation phase by the Restructuring Committee, that was trying to convince the other creditors of the necessity of the concessions, they are likely to be downward biased.

Thus, all evidence indicates that Montedison is solvent and, thus, that the restructuring plan succeeded in extracting concessions from the creditors of a solvent company. We will return on how this could possibly be.

For completeness, we undertake the same exercise for Ferfin (Table 9.B). We follow the same valuation criteria, with only two exceptions: *Messaggero* and *Fondiaria*. Since *Messaggero*, a newspaper, was among the few companies to be sold, the plan did not provide cash flow projections. Thus, we evaluated it at a multiple of the number of daily copies sold, which was close to one million lira per copy (730 \$). This parameter corresponds to the market value at which *Messaggero*'s main competitor in Rome, *La Repubblica*, was trading in the stock market.²¹ This procedure also corresponds to investment bank practices in Continental Europe. For *Fondiaria*, an insurance company, we do not have cashflow projections and, thus, we use

compute the value of Montedison we add the entire value of EBS stake held by Montedison via Finagro (50.8%) and then we subtract the value of the stake held by minority shareholders in Finagro (i.e., 9% of Finagro's market capitalization).

²⁰Montedison could have reduced the losses from some of their defaulting companies by invoking limited liability. We did not consider this case because we want to consider the worst case scenario for Montedison and because we do not know of possible cross default clauses among the debt of various companies. In addition, the Italian code prescribes unlimited liability in the case of a company owned by only one shareholder. This is the case of Tencara and Novamont.

²¹*La Repubblica*'s market capitalization was Lit 500 billion in October 1993. Long term debt was Lit 221 billion, for a total asset value of Lit 771 billion, which, divided by 660,000 copies sold gave a unitary price of Lit 1.09 million. *Il Messaggero* was selling 285,000 copies at the time. To get to the estimated net equity value, we have also subtracted Lit 85 billion intragroup debt.

the market value. Fondiaria was unaffected by the plan, and thus market valuation are not distorted by the expectation of concessions.

In Table 9.B there are two participations that have a negative equity value. The negative equity value for Fermar reflects Ferfin's unlimited liability (Fermar is 100% owned by Ferfin). By contrast, the negative equity value of TMC simply reflects Ferfin's losses on its credits to TMC (in fact all TMC debt is with Ferfin).

Also from this analysis emerges that Ferfin is insolvent for an estimated Lit 3,055 billion (\$ 2,037 billion), even though all the major companies it controls are perfectly solvent. As with Montedison, we come up with an estimated negative equity value close to what was found independently in the previous section. The results are therefore quite robust.

The insolvency of Ferfin, however, poses a new problem. In the absence of any plan, Ferfin would have entered bankruptcy under the "Prodi's Act", at a significant cost to creditors. Was it possible, then, for creditors to "manage" the restructuring process in any other way?

5.4 The Break-Up Plan

Since Ferfin is *de facto* a closed-end fund, a feasible strategy would have been that of liquidating its assets piecemeal. As for the liquidation of a closed-end fund, this would have had no effects on any operating company and thus no efficiency costs. In fact, it is well known that closed end funds and conglomerates (Lang and Stulz (1994), Berger and Ofek (1995)) trade at a discount with respect to their net asset value. This is not unique to the United States, but has been documented also in Germany, Japan, and the U.K. (Lys and Servaes (1996)). Italian conglomerates are no exception. For example, in the four years following the restructuring Ferfin market capitalization traded at an average 30% discount with respect to its net asset value. Therefore, rather than destroying value, the piecemeal liquidation of Ferfin is likely to have generated significant efficiency gains.

Our task of computing the break-up value of Ferfin is made easier by the fact that many assets of the Group were sold in the three years after the restructuring.²² Therefore, by using

²²In three years, Himont, Moplefan, Novamont, Nikols, Agribusiness, Fermar, Trenno, Calcestruzzi, TMC, Messaggero, most of SIFI and ISVIM assets and a large fraction of the real estate holdings were divested. The main sale was the chemical business (Himont and Moplefan) to Montell. The sale occurred in two tranches. The first one, on June 10, 1994: a 50% equity share in Himont and Moplefan were conferred to Montell, a joint venture with Shell-Royal Dutch together with an endowment of debt for Lit 3,500 billion (\$ 2.3 billion) for a total value of Lit 7,070 billion (\$ 4.7 billion). On September 13, 1997, the residual 50% of the two companies was sold to

the present value of these private sales we we can estimate a break-up of Ferfin that incorporates the value of control associated to Ferfin's holdings.

Table 11 reports the break-up value of Ferfin. All the companies sold are estimated at the present value of their future sales. The companies which were not sold, are evaluated at their net DCF value (if an operating company) or at their break-up value (if a holding company). An exception is Fondiaria, which is an insurance company. For insurance companies, the closest concept to break-up value is that of embedded value: the reported book value adjusted to resemble U.S. GAAP book value. Thus, we chose to use this.

Table 11 shows that by selling its assets piecemeal Ferfin would have been able to pay its creditors in full (with a net equity value of Lit 159 billion).

The reason for this remarkably different outcome has to be found in the value of control. In fact, the difference between the value of assets under break-up and the value of assets reflected into the market price of minority shares (as computed in Table 9.A) can be used to compute the value of control in Ferfin. We estimate it to be Lit 3,036 billion (\$ 2,024 billion). While astonishing, this estimate is quite sensible. For one thing, it is perfectly in line with empirical estimates on the value of control in Italy.²³

Most importantly, it explains why banks were willing to finance Ferfin. Remember that there was no major shock in profitability or in the value of the assets. It would be difficult, then to explain, why until May 1993 banks were willing to extend credit to a company with over a Lit 3,000 billion negative equity value. Furthermore, such a high value of control not only explain why banks were willing to lend in the past, but also explains why default occurred when it did: because the net equity value became close to zero.

6 Efficiency and Redistribution in Financial Distress

We are finally in the position to discuss the efficiency and distributional effects of the plan.

Montell for a price of Lit 3,590 billion (\$ 2.4 billion) paid in cash. Considering the existing initial debt of the two Montedison company, the sale amount to a total of Lit 6,850 billion (\$ 4.6 billion) in net present value in December 1993. Gaic, Paleocapa and Tencara were liquidated.

²³Zingales (1994) has shown that the Italian equity market is approximately 30% of total market capitalization (which reflects the minority shareholders equity valuation). Using this rough estimate for the control premium to the value of all controlling stakes held by Ferfin we obtain that the control embedded in Ferfin equals approximately Lit 3,500 billion.

6.1 Efficiency Consequences of the Plan

In light of our analysis it is very difficult to argue that the plan brought in significant efficiency improvements. All the major operating companies were solvent even in the absence of the plan. The only large company that was insolvent was Ferfin.²⁴ But this is a financial holding company, with no production, no trade creditors, and almost no workers. In other words, Ferfin is a closed-end mutual fund. As pointed out by Merton (1991), the default of a company composed only of financial assets is no different than the out-of-the money expiration of a call option. As the latter event does not generate any financial distress, so should not the former.

This conclusion carries two important consequences. First, in the rest of the analysis we can solely focus on the plan's redistributive effects, avoiding the difficult task of striking a balance between efficiency gains and distributional costs. Second, if we want to find a justification for why the plan was designed in this way we cannot appeal to efficiency arguments. In fact, as we argued in section 5.4, a strong case can be made that, from an efficiency point of view, the restructuring plan is strictly worse than the break-up alternative.

6.2 Redistribution effects

The calculations made so far enables us to estimate the creditors' losses under the two different scenarios. Table 7.A presents the losses of different groups of creditors under the restructuring plan, Table 7.B their losses in the absence of the plan. The table is obtained by multiplying each bank credit (as from Table 3) times the estimated percentage loss under the plan. The loss imposed to the various creditors reflect their different exposure to the different companies of the Group: the losses from two financial subsidiaries of Montedison Spa (Montedison USA and Finagro) were relatively small (respectively 9% and 5%). By contrast, the concessions required by the creditors of Montedison Spa were about 15%. Ferfin bank creditors lose 59% of their loan values, while Alca's creditors 52%. (Tables 5 and 6).

Table 7.B performs the same analysis in the absence of the plan. Since Montedison is solvent, its creditors do not lose anything under this scenario. By contrast, Ferfin creditors still lose 61% of their loans (Table 6).

Table 12 compares the loss with and without the plan. If we look at the winners and losers

²⁴Of course, Serafino Ferruzzi was also insolvent. It was however a purely holding company with the sole purpose of detaining the Ferruzzi's family equity stake in Ferfin.

by columns (i.e., by identity of the company the money was lent to), we find that the creditors of Montedison lost with the plan (lit 1,047 billion or \$ 698 million) and so did, to a less extent, the creditors of Ferfin (only Lit 21 billion or \$ 14 million) and those of Alca (Lit 202 billion or \$ 135 million).

More interesting, however, is to look at Table 12 by rows, i.e., assessing the overall impact of the plan for each group of lenders, factoring in the different expositions to different companies. The first striking result is that creditors as a whole lose under the plan: a staggering Lit 1,270 billion (\$ 847 million). Thus, not only does the plan not generate any efficiency gains, but also appears as strictly inefficient from the creditors' point of view. The big beneficiaries of the plan appears to be the shareholders of Montedison and, to a less extent, of Ferfin. Notice that the shareholders were not represented in the restructuring committee, which was made only of banks and had full control over the operations of the company.

The second striking result is that the large redistribution that takes place does not seem to benefit the organizers of the financial restructuring. Only on a relative basis can we say that the members of the committee benefit from the plan. As a matter of fact, foreign lenders are penalized more heavily by the plan than Italian lenders, scaling the losses by the percentage of their exposition: the plan forced them to lose Lit 379 billion (\$ 253 million) or 8% of their total exposure to the Group, while the restructuring committee lost Lit 428 billion (\$ 285 million), 6% of their total exposure. This is due to the fact that foreign lenders were more exposed to Montedison, whose creditors got more heavily penalized by the plan. This finding is consistent with the stronger opposition to the plan manifested by foreign creditors. Interestingly, this effect is more accentuated in the plan initially proposed, which we analyzed separately and do not report here for space considerations. This distortion got reduced, but not eliminated in the final plan.

Even considering this feature, however, it is hard to understand why the plan was enacted the way it was. Only by turning to the value of control can we make a sense of it.

6.3 Redistribution Considering the Value of Control

A better understanding of the plan's motivations can be obtained by explicitly recognizing the existence of a value of control. Thus far, our valuations have ignored any premium attached to the controlling stake that majority shareholders might be willing to pay for control. There are

good theoretical and empirical reasons, however, to attribute a value to the block of shares that provide control over a company. On a theoretical level, value can be created by changing the existing management with a more efficient one; the new owner can create synergy with other companies; and policies can be pursued that dilute the equity value of minority shareholders. Empirically, such a premium has been documented in numerous studies (e.g., Barclay and Holderness, 1989, Zingales, 1994 and 1995); it is used by practitioners in real transactions (Pratt, 1986); and appears to be an important feature of the Italian equity market (Zingales, 1994).

By using the break-up value estimates, the total value of control in Ferfin is approximately Lit 3,000 billion. Breaking up Ferfin would have unlocked this value to the benefit of all Ferfin's former creditors, who would have shared equally any proceeds obtained from auctioning off the different controlling stakes. By contrast, the plan, maintaining the original pyramidal structure, preserved the control in the hands of Ferfin and, thus, indirectly in the hands of the controlling shareholder of Ferfin.

Since all the Ferfin's creditors received a certain number of votes, it is difficult to establish exactly how much control value each creditor received through these votes. Undoubtedly, though, the payoff is non linear in the percentage of votes controlled. As a result, large creditors, who, following the debt for equity swap, became large shareholders, found themselves in a better position to seize control and, thus, in expectation enjoyed a larger share of the value of control.

When we work through the complete series of equity issues, taking into considerations which one will be exercised by the existing shareholders and which one will be purchased by the banks (Table 13), we obtain that the Restructuring Committee ends up with a 33% stake in Ferfin (20% controlled by the Mediobanca Group and 13% by San Paolo). The rest was spread among other Italian banks (49%), foreign banks (7%) and former shareholders other than Serafino Ferruzzi (10%). No other shareholder, however, held more than 4% of Ferfin voting shares.

The estimates contained in the first column of Table 13 are likely to underestimate the voting stake held by the Restructuring Committee. In fact, given the quasi-indifference between the debt-equity swap and the write-off, it is likely that at least some small banks opted for the latter. As a result, the proportion held by the large creditors becomes even larger. Probably a better guess of the actual proportion held by the Restructuring Committee is represented by the

second column of Table 13, obtained from various newspapers some time after the debt-equity swap. According to these estimates the Restructuring Committee controls 38% of the votes.

No matter what the exact figures are, the Restructuring Committee enjoys a dominant position within Ferfin. It is not unreasonable, thus, to attribute to it the entire value of control. This method is also consistent with the final outcome, since the Mediobanca Group ended up controlling the Ferruzzi Group.

Table 14 compares creditors' losses under the plan with their losses under the break-up alternative. Not surprisingly, under this assumption the main beneficiary of the restructuring plan is the Restructuring Committee, while all the other creditors are strongly penalized.

This is clearly an extreme (perfect foresight) assumption. The right ex-ante value is some way in between Table 12 and Table 14. Regardless of what the right estimates is, the robust result is that in the presence of a large value of control a debt-for-equity swap favors the large creditors/shareholders at the expense of the small ones. Bebchuk (1988) foresaw this problem in discussing possible objections to his option-based approach to financial restructuring. Our analysis documents that this can actually be a serious problem in practice.

6.4 What Made the Redistribution Possible?

One question that needs to be answered is why creditors (especially the creditors of Montedison) accepted a plan if the plan offered them a lower payoff than a feasible alternative strategy. The answer is very simple and relies on the difference between what was feasible to the organizers of the plan and what was feasible to the individual creditors.

At the time the plan was proposed (beginning of October 1993), each single creditor was faced with the alternative of accepting the plan or rejecting the plan and facing the prospect of a bankruptcy procedure under the Prodi's Act. Since the latter outcome was vastly inferior, it was rational for the creditors to accept the plan.

Creditors, however, did not have to be confronted with such a choice. A creditor's committee representing all creditors could have avoided triggering the clause that forced Ferfin to face the choice between reaching an agreement within ninety days or liquidate. This would have reduced the pressure to accept an inferior solution. More importantly, a creditor's committee representing all creditors could have easily designed an orderly break-up of the financial holdings.

Thus, what was possible to the creditors as a whole was not necessarily possible to individual

creditors, after control was allocated in the hands of the largest ones. This problem points to the importance of the mechanism regulating the allocation of control in bankruptcy.

7 Implications

It is obviously very dangerous to generalize from one data point, no matter how big this point is. Our analysis, thus, is in no way conclusive and should be regarded merely as a demonstration of the existence of certain problems. Only future work will be able to establish how pervasive these problems are. It is, nevertheless, valuable to summarize the tentative lessons we can draw from this case.

7.1 The Value of Controlling the Restructuring Process

It is well recognized both theoretically (Bebchuk and Chang, 1992) and empirically (Betker, 1995) that granting control to shareholders during the bankruptcy proceedings tend to increase their payoff. Our analysis shows that this is not unique to shareholders. The control of the restructuring process can also increase the payoff of some creditors at the expense of others, in spite of the equal priority of their claims. Perhaps more importantly, the desire to increase their payoff leads the “controlling” creditors to choices that are inefficient.

The insurgence of these problems may explain the positive role played by the lender’s liability rule in the United States. A creditor who assumes control of its debtor before the beginning of a formal bankruptcy proceedings can be held liable for all the debtors’ obligations. This rule has prevented banks from becoming more involved in the management of their financially distress customers. This is clearly a potential cost of the U.S. system, as pointed out by Gilson (1990). Our analysis suggests that this might also be a benefit of the U.S. system, which ensures a better protection of small creditors.

7.2 Who Appoints the Administrator?

This result emphasizes the importance of the rules overseeing the allocation of control during the bankruptcy proceedings. As our analysis documents, coordination costs may lead to an inefficient allocation. In fact, the equity receivership of the type described in the paper are often initiated by the incumbent manager (who in Italy tends to be the majority shareholder).

In case of a formal bankruptcy procedure, the incumbent manager is likely to face severe criminal charges (which are common in Continental European bankruptcy systems). In such a situation, the greatest concern for an incumbent manager is to avoid a formal bankruptcy procedure. As a result, the incumbent manager does not have an incentive to select an administrator that maximizes the value of the creditors claims; rather he would opt for one that minimizes the probability of a formal bankruptcy procedure. The banks with the best reputation in avoiding bankruptcy will be most likely to be appointed to manage the process. To what extent these banks coincide with the most efficient manager of the restructuring process remains to be established.

7.3 Potential Inefficiency Generated by This Redistribution

Even ignoring fairness considerations, the ex post transfer of value generated by this “Continental approach” to financial restructuring may have negative efficiency consequences. In what follows we present two examples of such effects, which we consider particularly relevant.

7.3.1 Ex-post Inefficiency in the Allocation of Control

First, in the presence of large private benefits of control, a debt-for-equity swap may permanently lead to an inferior allocation of ownership. The idea is very simple. By taking control of the company through a debt for equity swap, large creditors can appropriate the value of the private benefits, without having to share it with the other creditors. By contrast, if the company is auctioned off to the highest value bidder, the proceeds are divided among all creditors in proportion to their exposure. This different outcome may induce the large creditors in charge of the restructuring process to bias the outcome against an auction, even when this is the most efficient outcome. This point is best illustrated with an example

Example: Consider a company with one large creditor, holding a claim equal to 60, and many small creditors collectively holding a claim equal to 40. The company is currently in default and the only role of the bankruptcy procedure is to allocate the control of this company. There are three potential investors interested in this company. One is the large creditor. By managing the company he will generate 50 in security value (verifiable cash flow that can be divided among all shareholders) and will enjoy 40 in private benefits of control. The two other potential buyers have no private benefits of control, but are able to generate 100 in security

value if they manage the company. There is no question, thus, that it is efficient that ownership goes to one of these two higher valuation buyers.

Sure enough, an auction will deliver this outcome. Ownership will go to one of the two efficient managers, who will end up paying exactly 100 for the company. In such way all creditors are paid in full (60 and 40).

Consider now the case of a debt for equity swap. By converting its credit, the large creditor obtains 60% of the shares. As a result, he captures 60% of the security benefits that he generates plus the entire value of control, for a total of 70. Since 70 is more than 60 the large creditor/shareholder will prefer this alternative. Most importantly, he will prevent the auction from taking place. In the auction, his private benefits of control are monetized and, thus, must be shared with all the creditors.

Note also that the value of the controlling block for the large creditor/shareholder is bigger than its value for the superior buyer. It follows, that even afterwards ownership will not change hands, but will inefficiently remain in the hands of the large creditor/shareholder.

□

Interestingly, the value that creditors attribute to control may also be a function of the banking regulatory environment. For example, in the United States where commercial banks are prevented from owning equity but for a few years after a financial restructuring, banks might not be so keen to seize control. By contrast, universal banks, especially those with vast share holdings may be more interested in it. Therefore, a universal banking system may increase, rather than decrease, the potential efficiency losses in financial distress.

7.4 Ex Ante Inefficiency in the Allocation of Credit

The fact that the creditors' payoff in default substantially deviates from the intrinsic value of the claims may also affect the efficiency of the credit market.

First, to the extent that creditors payoffs become, at least partially, independent of the quality of borrower, incentives to invest in information gathering and financial analysis are reduced.

Second, a very skewed distribution of the creditor's losses at the expense of small creditors distort the incentives to become a large creditor ex-ante. If small creditors perceive they might

be consistently penalized in case of a financial restructuring, they will have an incentive to become large by concentrating lending, and consequently risk.

8 Conclusions

In this paper we analyze the efficiency and distributional consequences of the largest out-of-court financial restructuring ever. Based on detailed contained in the restructuring plan, we show that the efficiency benefits generated by the plan were very limited (possibly negative), while the redistribution effects were quite substantial. These redistribution effects should not be perceived as pure transfers, however, because they might have important effects both ex ante and ex post: an inefficient provision of credit ex ante and an inefficient allocation of ownership ex post.

Our analysis can only be considered illustrative of the existence of certain problems, being based on a single case study. Nonetheless, our findings raise two important points that warrant further research.

First, previous studies have criticized the U.S. lender's liability doctrine, which discourages creditors from getting involved in their financially distressed customers. Our analysis shows that this doctrine might have some benefits as well. It would be interesting to study where these benefits are likely to be large vis-à-vis its costs. Our conjecture, based on this case, is that this doctrine might be especially beneficial in countries where the private benefits of control are very large.

Second, our analysis is an example where a debt-for-equity swap leads to an inefficient allocation of ownership. This example casts doubt on the optimality of bankruptcy procedures that automatically transforms creditors into shareholders: while small creditors tend to be over-protected in financial distress, they become under-protected when they turn into minority shareholders.

References

- AGHION, P., O. HART, AND J. MOORE 1992, "The Economics of Bankruptcy Reform," *Journal of Law, Economics, and Organization* 8: 523-546.
- AOKI, M. AND H. PATRICK ED. 1994, *The Japanese Main Bank System*, Oxford University Press, New York.
- BARCLAY, M. J., AND C. G. HOLDERNESS , 1989, "Private Benefits from Control of Public Corporations," *Journal of Financial Economics*, XXV, 371-395.
- BECHUK, L. A. , 1988, "A New Approach to Corporate Reorganizations," *Harvard Law Review*, 101, 775-804.
- BECHUK, L. A., AND H. F. CHANG , 1992, "Bargaining and The Division of the Value in Corporate Reorganization," *Journal of Law, Economics, & Organization*, VIII, 253-279.
- BETKER, B. , 1995, "Management's Incentives, Equity's Bargaining Power, and Deviations from Absolute Priority in Chapter 11 Bankruptcies", *The Journal of Business*, Vol. 68, No. 2, 161-185.
- BARONTINI, R. 1996, "Costi del Fallimento e Gestione della Crisi nelle Procedure Concorsuali," Università Cattolica, working paper.
- BOCCUZZI, G. AND R. CERCONE , 1994, "Tutela dei Creditori e riallocazione d'Impresa nella Normativa Fallimentare" *Il Mercato della Proprieta' e del Controllo delle Imprese: Aspetti Teorici e Istituzionali*. Banca d' Italia, Rome.
- CAMPBELL, 1966 "Consumption and the stock market: interpreting international experience," NBER Working Paper #5610.
- CORNELLI, F. AND L. FELLI 1966 "Ex Ante Efficiency of Bankruptcy Procedures" LBS Working Paper.
- FRANKS, J., AND C. MAYER , (1997), "The Ownership and Control of German Corporations" *mimeo* LBS.
- FRANKS, J., AND K.G. NYBORG , (1996), "Control Rights and the Loss of Private Benefits: The Case of the U.S. Bankruptcy Codes" *Review of Financial Studies* forthcoming.
- FRANKS, J. AND W. TOROUS , 1992, "Lessons from a Comparison of U.S. and U.K. Insolvency Codes," *Oxford Review of Economic Policy* 8: 70-81.
- GILSON, S. 1989, "Management Turnover and Financial Distress" *Journal of Financial Economics*, 25: 241-262.
- GILSON, S. 1990, "Bankruptcy, Boards, Banks, and Blockholders: Evidence on changes in corporate ownership and control when firms default" *Journal of Financial Economics*, 27: 355-389.
- GILSON, S., K. JOHN AND L. LANG 1990, "Troubled debt restructurings: An empirical study of private reorganizations of firms in default", *Journal of Financial Economics*, 27, 315-353.

- HOSHI, T., A. KASHYAP, AND D. SCHARFSTEIN 1990, "The Role of Banks in Reducing the Costs of Financial Distress in Japan", *Journal of Financial Economics*, 27: 67 - 88.
- 1995, *Cost of Capital Quarterly*.
- KAPLAN, S. 1989 "Campeau's Acquisition of Federated: Value Destroyed or Value Added?" *Journal of Financial Economics* December.
- KAPLAN, S. 1994 "Campeau's Acquisition of Federated: Post-Bankruptcy Results," *Journal of Financial Economics* 35.
- KAPLAN, S. AND R. RUBACK 1995 "The Valuation of Cash Flow Forecasts: An Empirical Analysis," *Journal of Finance* 50: 1059-1093.
- JAMES, C. 1987, "Some Evidence on the Uniqueness of Bank Loans", *Journal of Financial Economics* 7, 217-235.
- JAMES, C. 1995, "When Do Banks Take Equity in Debt Restructuring?", *The Review of Financial Studies*, Vol. 8, No. 4, 1207-1234.
- MERTON, R. 1991, "No-Fault Default: A Possible Remedy for Certain Dysfunctional Consequences of Corporate Leverage," Harvard Business School, *mimeo*.
- WEISS, L. 1990, "Bankruptcy Resolution: Direct Costs and Violation of Priority Claims", *Journal of Financial Economics*, 27: 285 - 314.
- ZINGALES, L. (1994), "The Value of the Voting Right: A Study of the Milan Stock Exchange," *The Review of Financial Studies* 7, 125-148.
- ZINGALES, L., 1995, "What Determines the Value of Corporate Votes?" *Quarterly Journal of Economics*, November.

Appendix

Parameters Used in the Discounted Cash Flow Analysis

To compute the proper discount rate for a company's cashflow we use the Capital Asset Pricing Model, with a market price for risk of 5%. This figure is consistent with perfectly integrated capital markets, and was found by computing the weighted average of the excess return of stock over Government bonds in the industrialized world for the last 20 years (see Campbell, 1996).²⁵ The risk free rate use is the yield on a 10 year government bond at the end of October 1993, or 9.4%.

The unlevered betas are from Ibbotson Associates (1995) and represent the market estimates for the corresponding industry sectors (defined by the two or three digits SIC code) which best matched the industry classification of each Ferruzzi's Group company. Only for Edison and EBS, two publicly traded companies which were unaffected by the restructuring plan, we estimated the unlevered beta directly. We weighted the beta of debt, set equal to 0.2 for both firms, with the beta of equity, estimated over the previous five year period.²⁶

The terminal value is calculated by assuming that the last period cash flow, obtained by setting investment equal to depreciation, grew in perpetuity at the constant rate nominal rate of 5.5%, which corresponds to a real growth of 2.5% under the reasonable assumption of a steady state inflation rate of 3%.

This terminal growth rate is obtained by calibrating the DCF value to the market price of the two companies of the Group (EBS and Edison) which were publicly traded and unaffected by the restructuring. The calibration exercise was done to ensure sensible results when DCF was utilized with unlisted companies. We obtain an estimated equity value of Lit 5,693 billion for EBS, close to its the market value of Lit 5,496 billion. In the case of Edison, the same growth rate gave an estimated equity value of Lit 4,008 billion, compared to a market value of Lit 4,286 billion. For two other cases we had both cash flow projections and market values: for Calcestruzzi we obtained a value of Lit 508 billion with respect to a market value of Lit 471 billion; for Trenno Lit 175 billion and Lit 154 billion, respectively.

An example of the estimation procedure being using is reported in Table 10.

²⁵The measure of the market price for risk for Italian equities is notoriously difficult, because there have been many long periods during which it was not sufficiently high to compensate a rational investor for risk. From 1973 to 1993, the simple arithmetic average of the difference between the yearly holding period return of the Comit stock market index and that on a bond portfolio with 3 years of duration (the average duration of the stock of Government debt) is 3.62%, way below the equivalent number found for other economies. Using short interest rates, quarterly observations, and a slightly different sample period (from q2 1971 to q2 1993), Campbell (1996) finds a premium of 2.1% for Italy. The Italian market underwent many important structural changes during period: most important of all the complete liberalization of capital movements and deregulation since 1992. It is reasonable to imagine that the insufficient return on Italian equities was partly due to market segmentation, and deemed to disappear in the future. We therefore took the view the prospective risk premium relevant for the valuation could not be vastly different from the weighted average of the risk premia in the world, which turned out to be 5% using Campbell's figures.

²⁶The weights were found by dividing the 1993 long term debt to total assets.

Table 1:

Structure of the Ferruzzi Group's Debt

This table reports the composition of Ferruzzi Group's debt at the time of financial distress. Other companies in Montedison include Agribusiness, Trade Factoring and other minor companies. Other Ferfin companies include Nikols, Agribusiness, and other Minor Companies. Intragroup net debt does not add up to zero because it includes also the position with Serafino Ferruzzi, which was not included in the restructuring plan. All the figures are as of 6/30/93 and are expressed in billion of Italian lira unless indicated otherwise. Source: Restructuring Plan, Vol. 1 and 3.

Company	# of banks	Unsecured bank debt	Secured bank debt	Unsecured bonds	Total external debt	intragroup net debt	Total debt
EBS	152	1,942	383	2,327	4,651	-42	4,609
Edison	28	868	180	25	1,073	-207	866
Himont	37	1,825	7	2	1,834	-538	1,296
Moplefan	22	103	42	2	147	114	261
Ausimont	28	356	114	26	496	-499	-3
Tecnimont	17	54	0	0	54	-405	-351
Antibioticos	22	202	4	11	217	70	287
Tencara	12	16	1	3	20	151	171
Novamont	23	65	0	0	65	4	69
SIFI	30	309	0	65	374	69	443
Other companies	15	4	0	0	4	129	133
Montedison Spa	125	6,765	133	1,182	8,080	1,375	9,455
<hr/>							
1. Total Montedison Group	≈ 230	12,509	864	3,643	17,015	220	17,235
<hr/>							
Paleocapa	12	237	29	0	266	0	266
Gaic	10	155	0	0	155	0	155
Fondiaria	17	1,795	0	779	2,574	-45	2,529
Trenno	3	0	2	0	2	-10	-8
ISVIM	21	50	9	0	59	345	404
Calcestruzzi	90	1,081	63	7	1,151	-159	992
Fermar	12	59	114	1	174	271	445
Messaggero	4	8	0	0	8	-34	-26
Alca	59	1,426	842	0	2,268	-305	1,963
TMC	4	0	2	0	2	207	209
Other companies	5	149	0	0	149	201	350
Ferfin	83	4,879	121	213	5,213	-618	4,595
<hr/>							
2. Total Ferfin Group without Montedison	≈ 200	9,839	1,182	1,000	12,021	-147	11,874
<hr/>							
Total Ferfin Group (1+2)	≈ 300	22,347	2,046	4,643	29,036	73	29,108

Table 2:

Intragroup Debt

This table shows the intragroup borrowing and lending of the two main holding companies (Montedison Spa and Ferfin) with their major subsidiaries as of 6/30/93. In panel B, Montedison Spa net financial position includes that with ISVIM. Ferfin net financial position includes that with Serafino Ferruzzi. All the figures are as of 6/30/93 and are expressed in billion of Italian lira. Source: Restructuring Plan; Vol. 1, Gaic and ISVIM 1993 Annual Reports.

A: Montedison Group						
	Credit to Montedison	Debt to Montedison	Credit to Ferfin	Debt to Ferfin	Net position with others	Net position intragroup
EBS	13	-56	69	0	16	42
Edison	399	-191	0	0	-1	207
Himont	520	-50	0	0	68	538
Moplefan	2	-55	0	0	-61	-114
Ausimont	592	-95	0	0	2	499
Tecnimont	467	-15	0	-49	2	405
Antibioticos	0	-44	0	0	-26	-70
Tencara	3	-147	0	0	-7	-151
Novamont	18	-22	0	0	-0	-4
SIFI	15	0	0	-84	0	-69
Other companies	37	-190	24	0	0	-129

B: Ferfin Group						
	Credit to Montedison	Debt to Montedison	Credit to Ferfin	Debt to Ferfin	Net position with others	Net position intragroup
Montedison Spa			288	-345	-1,318	-1,375
Paleocapa	0	0	0	0	0	0
Gaic	0	0	0	0	0	0
Fondiaria	0	0	45	0	0	45
Trenno	0	0	11	0	-1	10
ISVIM	217	-101	20	-481	0	-345
Calcestruzzi	0	0	180	-20	-1	159
Fermar	0	0	194	-416	-49	-271
Messaggero	0	0	119	-85	0	34
Alca	0	0	384	-79	0	305
TMC	0	0	19	-226	-0	-207
Other companies	0	0	2	-188	-15	-201
Ferfin Spa	345	-288			561	618

Table 3:

Composition of Unsecured Bank Debt

Because the restructuring plan treats the debt of Montedison subsidiaries in different ways, we break it down accordingly. As a result the debt of Montedison is broken down in three parts: Montedison Usa, Finagro, and Montedison Spa. “Other” stands for the remaining companies in the Montedison Group as listed in Table 1 and 2. The Mediobanca Group is defined as the combination of Mediobanca and its three largest shareholders (Banca Commerciale, Credito Italiano, Banca di Roma). All the figures are in billion of Italian lira. Source: Restructuring Plan, Vol. 3.

A. Decomposition of external debt by main lenders

	Montedison Group					Ferfin Group				Total	Total debt
	Montedison		Finagro	Other	Total	Ferfin	Alca	Other	Total		
	Spa	USA									
1. Mediobanca Group	505	171	257	862	1,795	911	262	953	2,126	3,921	
2. San Paolo	861	34	115	781	1,791	808	131	437	1,376	3,167	
Restructuring Committee (1+2)	1,366	205	372	1,643	3,586	1,718	393	1,390	3,502	7,088	
Other Italian Banks	1,523	511	287	1,704	4,025	2,934	742	1,857	5,533	9,558	
Foreign Banks	1,236	1,027	237	2,393	4,894	226	290	138	655	5,548	
Total unsecured bank debt	4,125	1,743	896	5,740	12,509	4,879	1,426	3,534	9,839	22,347	

B. Proportion of debt held by each main lender

	Montedison Group					Ferfin Group				Total	Total debt
	Montedison		Finagro	Other	Total	Ferfin	Alca	Other	Total		
	Spa	USA									
1. Mediobanca Group	0.12	0.10	0.29	0.15	0.14	0.19	0.18	0.27	0.22	0.18	
2. San Paolo	0.21	0.02	0.13	0.14	0.14	0.17	0.09	0.12	0.14	0.14	
Restructuring Committee (1+2)	0.33	0.12	0.41	0.29	0.29	0.35	0.28	0.39	0.36	0.32	
Other Italian Banks	0.37	0.29	0.32	0.30	0.32	0.60	0.52	0.53	0.56	0.43	
Foreign Banks	0.30	0.59	0.26	0.42	0.39	0.05	0.20	0.04	0.07	0.25	
Total unsecured bank debt	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

C. Proportion of lender's exposition by company

	Montedison Group					Ferfin Group				Total	Total debt
	Montedison		Finagro	Other	Total	Ferfin	Alca	Other	Total		
	Spa	USA									
1. Mediobanca Group	0.13	0.04	0.07	0.22	0.46	0.23	0.07	0.24	0.54	1.00	
2. San Paolo	0.27	0.01	0.04	0.25	0.57	0.26	0.04	0.14	0.43	1.00	
Restructuring Committee (1+2)	0.19	0.03	0.05	0.23	0.51	0.24	0.06	0.20	0.49	1.00	
Other Italian Banks	0.16	0.05	0.03	0.18	0.42	0.31	0.08	0.19	0.58	1.00	
Foreign Banks	0.22	0.19	0.04	0.43	0.88	0.04	0.05	0.02	0.12	1.00	
Total unsecured bank debt	0.18	0.08	0.04	0.26	0.56	0.22	0.06	0.16	0.44	1.00	

Table 4:

Main Features of the Restructuring Plan

This table contains the main concessions implied by the final restructuring plan approved by 87% of the creditors on 11/30/93. All intragroup debt is first netted out and then is treated like external debt except for the companies explicitly mentioned below. Source: Restructuring Plan, Vol. 3, and final letter of agreement.

A: Montedison Group				
Company	Forgiveness of 1993 interest	Debt consolidation/ concessions	Debt/equity swap	Different treatment of intragroup Debt
EBS				excluded
Edison				excluded
Himont				excluded
Moplefan				excluded
Ausimont				
Tecnimont				
Antibioticos				
Tencara	Yes	50% prime for 8 years		
Novamont	Yes	50% prime for 8 years		
SIFI				
Other companies	Yes	25% concession		
<u>Montedison:</u>				
Montedison Spa	Yes	50% prime for 8 years	Yes	
Montedison USA		75% prime for 5 years		
Finagro		80% prime for 2 years		
B: Ferfin Group				
Company	Forgiveness of 1993 interest	Debt consolidation/ concessions	Debt/equity swap	Different treatment of Intragroup Debt
Paleocapa	Yes	45% prime for 9 years		
Gaic	Yes	45% prime for 9 years	Yes	
Fondiaria				excluded
Trenno				excluded
ISVIM	Yes	45% prime for 9 years		
Calcestruzzi	(only last quarter)			excluded
Fermar	Yes	45% prime for 9 years		
Messaggero	Yes	25% concession		excluded
Alca	Yes	45% prime for 9 years	Yes	
TMC	Yes	25% concession		
Other companies	Yes	25% concession		
Ferfin	Yes	45% prime for 9 years	Yes	

Table 5:

Cost of the Restructuring Plan for Montedison's Creditors

The table presents the cost of the restructuring plan for Montedison's different Group of creditors. 1993 interest rate forgiveness is the value of interest due for the year 1993 and forgone by the creditors. Debt concessions is the net present value of the lower-than-market interest rate on the portion of the debt consolidated. The implied put is the put option offered to shareholders when creditors commit to extend their risky lines of credit for several years. It is calculated using the Black and Scholes formula, with a volatility equal to the volatility of the Montedison's assets. The underwriting cost is the cost for the banks of the commitment to underwrite the right offering. Since the right is (barely) in the money, the direct underwriting cost is zero, but the cost of the firm commitment offered by the banks (for a month) is positive. Intragroup net concessions are the debt concessions made by companies of the Group, net of the cost borne by Montedison as an equityholder in the company making the concession. For example, Ausimont makes concessions to Montedison, but since it is 100% owned by Montedison the net value of the concessions is zero. The total 7,074 billion debt under restructuring comprises 309 billion debt of SIFI and 6,765 billion debt of Montedison Spa. Panel B gives the loss implied by the plan for each type of credit as a fraction of the debt. All figures are in billion of Italian lira.

A. TOTAL COST	
a. 1993 INTEREST RATE FORGIVENESS	444
b. DEBT CONCESSIONS	188
1. TOTAL INTEREST RATE CONCESSIONS (a+b)	632
2. IMPLIED PUT FROM DEBT EXTENSION	399
3. UNDERWRITING COST	0
4. UNDERWRITING GUARANTEE	199
TOTAL COST OF CONCESSIONS FOR MONTEDISON (1+2+3+4)	1,230
INTRAGROUP NET CONCESSIONS	5
TOTAL COST OF RESTRUCTURING	1,235

B. ALLOCATION OF THE COST			
	Cost	Debt under restructuring	Cost as a fraction of debt
BANK debt of which	1,047	7,074	0.15
to Montedison Spa (including SIFI)	831	4,426	0.19
to Montedison Usa	169	1,782	0.09
to Finagro	48	866	0.05
BONDS	63	1,182	0.05
INTRAGROUP	98	1,732	0.06
OTHER DEBT	27	511	0.05
AVERAGE COST OF RESTRUCTURING	1,235	10,498	0.12

Table 6:

Cost of the Restructuring Plan for Ferfin's Creditors

The table presents the cost of the restructuring plan for Ferfin's different Group of creditors. 1993 interest rate forgiveness is the value of interest due for the year 1993 and forgone by the creditors. Debt concessions is the net present value of the lower-than-market interest rate on the portion of the debt consolidated. The implied put is the put option offered to shareholders when creditors commit to extend their risky lines of credit for several years. It is calculated using the Black and Scholes formula, with a volatility equal to the volatility of the Ferfin's assets. The underwriting cost is the cost for the banks to underwrite the right offering. Since the right is deeply out of the money, the direct underwriting cost is large, but the additional cost of the firm commitment offered by the banks (for a month) is zero. Intragroup net concessions are the debt concessions made by companies of the Group net of the cost borne by Ferfin as an equityholder in the company making the concession. For example, Alca makes concessions to Ferfin, but since it is 100% owned by Ferfin the net value of the concessions is zero. Panel B gives the loss implied by the by the plan for each type of credit as a fraction of the debt. All figures are in billion of Italian lira, unless otherwise indicated.

A. TOTAL COST	
a. 1993 INTEREST RATE FORGIVENESS	856
b. DEBT CONCESSIONS	797
1. TOTAL INTEREST RATE CONCESSIONS (a+b)	1,653
2. IMPLIED PUT FROM DEBT EXTENSION	801
3. UNDERWRITING COST	1,406
4. UNDERWRITING GUARANTEE	0
TOTAL COST OF CONCESSIONS FOR FERFIN (1+2+3+4)	3,860
INTRAGROUP NET CONCESSIONS	5
TOTAL COST OF RESTRUCTURING	3,865

B. ALLOCATION OF THE COST			
	Cost	Debt under restructuring	Cost as a fraction of debt
Bank Debt of which	3,717	6,510	0.57
to Ferfin	2,982	5,084	0.59
to Alca	735	1,426	0.52
BONDS	38	213	0.18
INTRAGROUP	109	578	0.19
AVERAGE COST OF RESTRUCTURING	3,865	7,301	0.53

Table 7:

Distribution of Banks' Losses

This table reports the losses of the various Groups of lenders in the presence of the restructuring plan and in the absence of it. The losses under the plan are simply the share of the costs of concessions as computed in Tables 5 and 6. To compute the losses in the absence of the plan we take the estimated value of Montedison and Ferfin assets (Tables 8 and 9) in the absence of the plan and we distribute it among creditors following absolute priority. The Mediobanca Group is defined as the combination of Mediobanca and its three largest shareholders (Banca Commerciale, Credito Italiano, Banco di Roma). The restructuring committee is composed of the Mediobanca Group and San Paolo. All the figures are in billion of Italian lira.

A: Losses According to the Plan

	Montedison	Ferfin	Alca	Total
Mediobanca Group	129	598	135	863
San Paolo	202	486	68	755
= Tot. restructuring committee	331	1,084	203	1,618
Other Italian banks	373	1,765	383	2,521
Foreign banks	342	133	150	625
= Tot. Banks	1,047	2,982	735	4,764

B. Losses in the Absence of the Plan

	Montedison	Ferfin	Alca	Total
Mediobanca Group	0	553	98	651
San Paolo	0	490	49	539
= Tot. restructuring committee	0	1,043	147	1,190
Other Italian banks	0	1,781	278	2,058
Foreign banks	0	137	109	246
= Tot. Banks	0	2,961	533	3,494

Table 8:

The Value of Montedison

This table presents two estimates of the value of Montedison Spa in the absence of the restructuring plan. The first one (panel A) starts from the market value of Montedison's equity after the approval of the plan (12/2/93) and subtracts the present value of all debt concessions, as derived in Table 5. The second one (panel B) computes the value of all the assets of Montedison and subtracts off the total liabilities before any concession. To compute the value of Montedison assets we use the following criteria. All the investment in operating companies are valued applying a DCF analysis to the cashflow projections of the controlled company, as contained in the plan. SIFI, a holding company, is valued at break-up because it is not traded and thus we lack a market value. All the other assets are taken at their (new) book value contained in the plan. Because the projections in the plan are as of 6/30/93, while the restructuring takes place in mid December 1993, we need to add interest expenses for the second half of 1993. Tencara and Novamont have a negative estimated equity value when valued at DCF. We assume that, being small, Montedison liquidates the companies and pays creditors in full. Thus, the value reported in Panel B for Novamont and Tencara is the net value of assets minus liabilities. All the figures are in billion of lira, unless otherwise indicated.

A. Montedison Spa: valuation at market prices

	Number of shares (million)	Price 12/2/93 (lit)	Market value
MONTEDISON ordinary shares	2,180	769	1,676
MONTEDISON convertible saving shares	13	950	12
MONTEDISON saving shares	724	550	398
Own shares	126	769	97
(a) MARKET VALUE OF EQUITY AFTER RESTRUCTURING PLAN	2,791		1,990
(b) MARKET VALUE OF DEBT CONCESSIONS			1,235
(a +b) ESTIMATED VALUE WITHOUT RESTRUCTURING PLAN			755

B: Montedison: Valuation at DCF

	Value	Proportion of cashflow rights	Total value
EBS	2,937	0.50	5,867
(minority interests in Finagro)	-111	0.91	778
Edison	3,231	0.81	4,007
Himont	731	1.00	731
Moplefan	82	1.00	82
Ausimont	709	1.00	709
Tecnimont	868	1.00	868
Antibioticos	-1	1.00	-1
Tencara	-189	1.00	-189
Novamont	-71	1.00	-71
SIFI	161	0.94	172
Other companies	331	1.00	331
= Total value investments	8,681		
Cash	461		
Financial investments other	142		
Credit to James River	913		
Real estate	762		
Other assets	714		
intragroup credit	1254		
= (a) Total assets	12,926		
Unsecured bank debt	-6,765		
Secured bank debt	-133		
Bonds	-1,182		
Interest expenses 2nd semester	-510		
Other liabilities	-770		
intragroup debt	-2,629		
= (b) Total liabilities	-11,989		
(a +b) Estimated equity value without restructuring plan	937		

Table 9:

The Value of Ferfin

This table presents two estimates of the value of Ferfin in the absence of the restructuring plan. The first one (panel A) starts from the market value of Ferfin's equity after the approval of the plan (12/2/93) and subtracts the present value of all debt concessions of Ferfin's creditors, as derived in Table 6, plus the indirect benefit Ferfin's shareholders as a result of concessions made to other companies of the Group. For example, Ferfin as an equityholder of Montedison, benefits of the concessions made to Montedison by its creditors. The second one (panel B) computes the value of all the assets of Ferfin and subtracts off the total liabilities before any concession. To compute the value of Ferfin's assets we use the following criteria. All the investment in operating companies are valued applying a DCF analysis to the cashflow projections of the controlled company as contained in the plan. All listed companies unaffected by the restructuring are valued at their market capitalization. The value of Montedison, which is affected by the restructuring in a major way, is derived in Table 8. Il Messaggero (a newspaper) is valued as a multiple of daily copies sold. All the other assets are taken at their (new) book value contained in the plan. Since all the debt of TMC is to Ferfin, we report the loss suffered by Ferfin on its debt to TMC as a negative equity value. Since Ferfin owns 100% of Fermar, it loses the benefit of limited liability, according to Italian corporate law. By contrast, we apply limited liability to Alca, because Ferfin owns only 99.9% of it. Because the projections in the plan are as of 6/30/93, while the restructuring takes place in Mid December 1993, we need to add interest expenses for the second half of 1993. All the figures are in billion of Italian lira, unless otherwise indicated.

A. Ferfin: valuation at market prices

	Number of shares (million)	Price 12/2/93 (lit)	Market value
FERFIN ordinary shares	6	32,310	189
FERFIN saving shares	199	471	94
Own shares	0	32,310	10
(a) MARKET VALUE OF EQUITY AFTER RESTRUCTURING PLAN			273
(b) MARKET VALUE OF DEBT CONCESSIONS			3,865
(c) FERFIN SHARE OF MONTEDISON CONCESSIONS			352
(d) BENEFIT FROM ALCA CREDITORS' CONCESSIONS			202
(a-b-c-d) ESTIMATED EQUITY SHORTFALL WITHOUT RESTRUCTURING PLAN			-4,146
PERCENTAGE CREDITOR LOSS WITH BREAK UP TOTAL UNSECURED DEBT			6,831
PERCENTAGE LOSS			60.7%

B: Ferfin: Valuation at DCF

	Value	Proportion of cashflow rights	Total value
(listed companies)			
Montedison	267	0.28	937
Fondiaria	134	0.05	2734
Gaic	294	0.39	744
ISVIM	253	0.88	289
Calcestruzzi	149	0.42	357
Trenno	102	0.71	144
(unlisted companies)			
Messaggero	349	1.00	349
TMC	-241	0.51	-241
Alca	0	1.00	0
Fermar	-305	1.00	-305
Nikols	20	0.80	25
Agribusiness	126	1.00	126
SIFI	12	0.06	198
Paleocapa	18	0.34	53
Tipografica Tiburtina	22	0.49	45
Total value investments	1,144		
intragroup credit	1,894		
Cash	166		
Financial investments	155		
Real estate	282		
Other assets	269		
(a) Total assets	3,898		
Unsecured bank debt	-4,879		
Secured bank debt	-121		
Bonds	-213		
Interest expenses 2nd semester	-235		
intragroup debt	-1,505		
(b) Total liabilities	-6,952		
(a +b) Asset minus liabilities	-3,055		
Total unsecured debt	6,831		
Percentage loss unsecured creditors	44.5%		

Table 10:

Example of Discounted Cash Flow Valuation: Edison

The company belongs to the Montedison Group and operates in the energy sector. EBITDA is earnings before interest, depreciation, and taxes. Other cash outflow from operations is a miscellaneous item, which is not detailed in the restructuring plan. The value of assets is computed using the compressed adjusted present value method outlined in Kaplan and Ruback (1995). The market capitalization, which also includes the value of savings shares, is computed as of December 2, 1993, the day following the approval of the restructuring plan. Since the balance sheet data are as of 6/30/93, and the plan takes place in mid December 1993, we need to add interest expenses for the second half of 1993. All the data are in billion of Italian lira, unless otherwise indicated. Source: Restructuring Plan, Vol. 1 and 2.

A: Calculation of the value of assets using DCF

	1993	1994	1995	1996	1997	1998 - ∞
EBITDA	540	620	738	892	1014	1070
- Taxes paid	98	105	222	151	208	219
- Increase (decrease) in working capital	88	15	34	37	42	44
- Other cash flow from operations	151	133	34	77	108	114
- Capital expenditures	202	297	460	312	289	222
- Dividends received	0	0	0	0	0	0
- Sale of assets	0	-391	0	0	0	0
- Acquisitions	0	0	0	0	0	0
= Capital cash flow	1	461	-12	315	367	471
(1) 10 yr Government bond rate	9.40%					
(2) Unlevered beta	0.85					
(3) Market premium for risk	5.00%					
(4=3*2) Company's risk premium	4.25%					
(1+4) Discount rate	13.65%					
Expected growth rate of terminal cashflow	5.50%					
Discounted cash flow	1	408	-9	218	225	3,807
Net present value	4,648					

B: Calculation of the value of equity

Net present value operating assets	4,648
+ Financial assets	0
+ Credit to Montedison	401
+ Credit to related companies	5,049
= (a) Total assets	5,050
Short term debt to banks	-232
Long term debt to banks	-584
Bonds	0
intragroup debt and to related companies	-191
Interest expenses 2nd semester 1993	-35
= (b) Total debt	-1,042
Estimated equity value (a + b)	4,007
Market value	4,415

Table 11:

The Value of Ferfin with Control Premium

This table computes the break-up value of Ferfin when we factor in a value for control. Each holding company is valued at its break-up value. Each operating company that was later sold, is valued at the present value of future sale, which presumably incorporates the premium for control. La Fondiaria, an insurance company, is value on the basis of its embedded value (which is reported book value adjusted to resemble U.S. GAAP book value). All the figures are in billion of Italian lira, unless otherwise indicated.

	Value	Proportion of voting shares	Total value	Method of valuation
(listed companies)				
Montedison	2,657	0.38	6,973	Break-up
Fondiaria	159	0.05	3,235	Market value
Gaic	545	0.41	1,342	Break-up
ISVIM	294	0.88	336	Break-up
Calcestruzzi	132	0.42	316	Private sale
Trenno	87	0.71	123	Private sale
(unlisted companies)				
Messaggero	258	1.00	258	Private sale
TMC	28	0.51	55	Private sale
Alca	0	1.00	0	Limited liability
Fermar	-15	1.00	-15	Private sale
Nikols	21	0.80	26	Private sale
Agribusiness	195	1.00	195	Private sale
SIFI	11	0.06	172	Break-up
Paleocapa	18	0.34	53	Break-up
Tipografica Tiburtina	22	0.49	45	Book value
Total value investments	4,411			
intragroup credit	1,894			
Cash	166			
Financial investments	89			
Real estate	282			
Other assets	269			
(a) Total assets	7,111			
Unsecured bank debt	-4,879			
Secured bank debt	-121			
Bonds	-213			
Interest expenses 2nd semester	-235			
Other liabilities	0			
intragroup debt	-1,505			
(b) Total liabilities	-6,952			
(a +b) Estimated equity value before before restructuring	159			

Table 12:

Distribution of Gains (Losses) Arising from the Plan

This table reports the gains (losses) brought in by the restructuring plan. For all the creditors it is the difference between the losses in the absence of a restructuring plan and in the presence of it (Table 7 B minus Table 7 A). For the shareholders, this is the benefit of the concessions made by creditors under the plan. We report only the benefit enjoyed by outside shareholders (i.e., shareholders not belonging to the Ferfin Group) because the benefit enjoyed by the holdings companies of the Group *qua* shareholders is already factored in the increase in their assets' value. The Mediobanca Group is defined as the combination of Mediobanca and its three largest shareholders (Banca Commerciale, Credito Italiano, Banco di Roma). The restructuring committee is composed of the Mediobanca Group and San Paolo. All figures are in billion of lira.

	Montedison	Ferfin	Alca	Total
Restructuring committee	-331	-41	-56	-428
Other Italian banks	-373	16	-105	-463
Foreign banks	-342	5	-41	-379
= Tot. Banks	-1,047	-21	-202	-1,270
Outside shareholders	884	332	0	1,215
Bondholders	-63	91	0	28
Other creditors	-27	0	0	-27
Rounding error				-54

Table 13:

Voting Stakes in Ferfin After the Debt-Equity Swap

This table reports the ownership structure of Ferfin at different moments in time. The data as of December 1993 are our calculation on the basis of the debt exposure and the terms of the debt-equity swap. No other investor held 5% of more in Ferfin at that date. The data as of October 1995 come from various newspapers. Since all the shares held by the banks resulting from the swap were deposited in trust and could not be traded until that date, the ownership structure at that date is likely to reflect the effective ownership after the debt-equity swap. The data as of December 1995 are official data of the shareholders' meeting and reflect the open market purchases made by Mediobanca.

Proportion of voting shares			
	December	October	December
	1993	1995	1995
Mediobanca Group	0.20	0.22	0.33
San Paolo	0.13	0.16	0.14
Restructuring committee	0.33	0.38	0.48

Table 14:

Gains (Losses) from the Plan with Respect to the Break-Up Alternative

This table reports the gains (losses) brought in by the plan with respect to the break-up alternative when we consider the value of control. The value of control (Lit. 3,036 billion) is obtained as the difference between the market value of Ferfin's assets sold in pieces (Table 11) and the market value of assets of Ferfin as a conglomerate. The entire value of control in Ferfin is attributed to the restructuring committee in virtue of its controlling position. The restructuring committee is composed of the Mediobanca Group and San Paolo. All the figures are in billion of Italian lira.

	Montedison	Ferfin	Alca	Total
Restructuring committee	-331	1,952	-56	1,565
Other Italian banks	-373	-1,765	-105	-2,244
Foreign banks	-342	-133	-41	-516
= Tot. Banks	-1,047	54	-202	-1,195
Outside shareholders	884	332	0	1,215
Bondholders	-63	91	0	28
Other creditors	-27	0	0	-27
Rounding error				21

Figure 1:

The Structure of the Ferruzzi Group

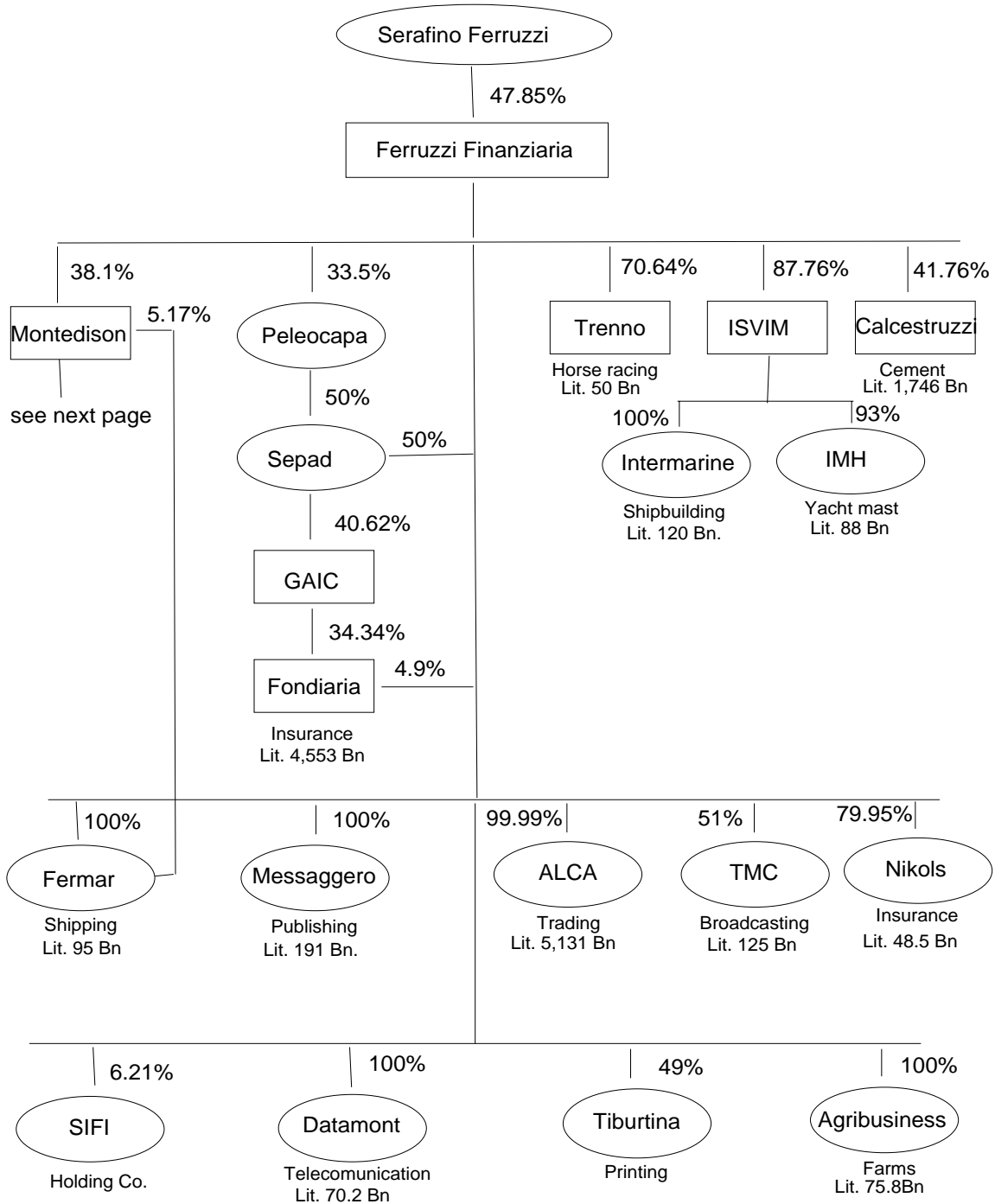


Figure 2:

The Structure of the Montedison Holding



Figure 3:

The Structure of the Mediobanca Group

