

Corporate Restructuring and Bondholder Wealth

Finance Working Paper N° 124/2006

March 2006

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ECGI Working Paper Series in Finance

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TILEC

TILEC Discussion Paper

Corporate Restructuring and Bondholder Wealth

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Abstract - This paper provides an overview of existing research on how corporate restructuring affects the wealth of creditors. Restructuring is defined as any transaction that affects the firm's underlying capital structure. Thus, it reaches well beyond asset restructuring and includes transactions such as leveraged buyouts, security issues and exchanges, and the issuance of stock options. The analysis identifies significant gaps in the literature, emphasizes the potential differences between creditor wealth changes in market- and network-oriented governance systems, and provides valuable insights into methodological advances. Many issues obviously remain, as empirical evidence is still incomplete and focuses exclusively on the US. In network-oriented regimes, the potential for research remains constrained by the lesser development of bond markets that disclose information on creditor wealth shocks. Still, on-going debt securitization should now allow for the investigation of at least some critical issues. This is imperative, as the position of creditors in the firm differs substantially across governance systems despite the gradual convergence of these regimes across the world.

JEL Classification: G12, G14, G34, G35

Keywords: Bondholder wealth, corporate restructuring, mergers and acquisitions, event studies, bond returns

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Corporate Restructuring and Bondholder Wealth

1. Introduction

The last decade or so has witnessed a spectacular surge in corporate restructuring across the globe. Market deregulation, technological shocks and intense competition for capital supply have pressured firms into moving beyond changing their business and financing strategies, and making major changes in their organizational structures. Restructuring activity has been most pronounced in the US, where the merger wave of the latter part of the decade was the fifth of the twentieth century. Firms have increasingly found that sheer size was no longer sufficient to deter a takeover threat. As a result, and also motivated by other sources of managerial discipline, restructuring activity has largely focused on increasing corporate efficiency, through corporate refocusing and financial restructuring. In Europe, where market-based disciplinary mechanisms have historically been weaker, the reconfiguration of firms has been slower but has accelerated in response to the on-going economic and financial integration of the continent, driven by concerted efforts of the European Union. In Japan, the restructuring process has been measured and painful, but most firms have undergone some form of reorganization in response to the burst of the asset bubble in the late 1980s, and the banking crisis and continued economic stagnation that followed.

This paper provides a comprehensive overview of existing academic research on how restructuring affects the wealth of creditors, a critical issue that has still not been addressed adequately in the literature. Fixed creditor claims are impacted not only by the firm's post-restructuring performance and cash flow volatility, but also by any unexpected changes in its capital structure, which in turn have a direct impact on default risk. The view that the firm's capital structure choice may be specifically motivated by the creditor-shareholder conflict has been universal since Black and Scholes (1973). Their landmark paper views a levered firm's equity as a call option on the firm's assets, which implies that risk-increasing changes in capital structure benefit shareholders to the detriment of creditors. The literature has established that such capital structure changes may also impact operating performance through investment distortions such as excessive risk taking (Jensen and Meckling, 1976) and underinvestment (Myers, 1977), although at the same time the disciplinary effect of leverage on management has also been emphasized (Jensen, 1986; Grossman and Hart, 1983).

It is important to note that the various agency costs of the shareholder-creditor conflict are more pronounced in the market-oriented corporate governance systems of the Anglo-American countries. In these regimes, managers are provided arm's-length incentives by developed security markets to maximize shareholder and creditor wealth simultaneously (Fama, 1978). Informational asymmetries may be accentuated however, as public information disclosure reduces investors' incentives to individually invest in monitoring (Boyd and Prescott, 1986). In the network-oriented regimes of Continental Europe and Japan, corporate debt markets remain less developed. Still, banks as delegated monitors can better ease distortions emanating from asymmetric information through forming long-run relationships with firms, and, through monitoring, contain moral hazard (Stiglitz, 1985; Diamond, 1991). Crucially, this setup should also guarantee that in these systems the shareholder-creditor conflict is less severe.

Thus far, direct empirical evidence on how corporate restructuring affects creditors has been limited to the US, with the exception of the study by Renneboog, Szilagyi and Martynova (2006) on European merger activity. The analysis presented here identifies significant gaps in the literature, emphasizes the potential differences between creditor wealth changes in market- and network-oriented governance systems, as well as provides valuable insights into the evolution of the methodology used. In network-oriented regimes, the potential for research remains constrained by the limited size and liquidity of corporate debt markets, which disclose information on shocks to creditor wealth. But, on-going debt securitization should now allow for the investigation of at least some of the critical issues. Firstly, it has yet to be demonstrated empirically that intermediaries as delegated monitors are better at mitigating agency problems and protecting creditors in restructuring transactions. If this is indeed the case, wealth losses suffered by bondholders should be lower than in a market-oriented system. Secondly, an important question is whether the types and conditions of restructuring transactions are different in network-oriented regimes, and to what extent this owes to powerful creditors blocking transactions that may be economically desirable but would hurt creditor wealth. Thirdly, the internationalized corporate environment has been shown to feed a gradual convergence of governance systems. In network-oriented regimes, this process implies a shift of priority from stakeholder consensus to shareholder value, and involves the promotion of debt securitization and the deterioration of creditor influence. Banks' incentives to invest in monitoring are reduced by these factors, which implies a qualitative change in their economic role. This comes at a time when market-based disciplinary devices are being increasingly questioned in their ability to control agency problems, not least due

to the recent massive overinvestment in the US technology sector and some of the biggest corporate scandals in history. A key research question is whether these events change the way creditor wealth is altered by corporate restructuring actions.

The rest of this paper is outlined as follows. Section 2 gives an overview of academic theory that explains the potential motivations and effects of restructuring transactions with special regard to the impact of these on creditor wealth. A detailed analysis of the empirical evidence on the bondholder wealth effects of corporate restructuring is provided in Section 3. Section 4 allows for concluding remarks and raises some questions for future research.

2. Theoretical background

Restructuring activity is generally associated with three motivations in the academic literature, namely (i) to address poor performance; (ii) to exploit strategic opportunities and (iii) to correct valuation errors. The literature distinguishes three different types of transactions, encompassing multiple forms of change in firm organization (Stewart and Glassman 1988; Bowman and Singh 1993; Gibbs 1993). *Portfolio restructuring* makes disposals from and additions to a firm's businesses, through asset sales, spin-offs, equity carve-outs or mergers and acquisitions (M&As). *Financial restructuring* changes the firm's capital structure e.g. through leveraged buy-outs (LBOs), recapitalizations (LRs), share repurchases, or employee stock ownership plans (ESOPs). Finally, *organizational restructuring*, represents a change from a functional to a business-unit design. These restructurings often occur simultaneously or sequentially.

The empirical literature has given notable attention in recent years to the immediate reaction of equity and bond markets to restructuring activity in the US. Security price reactions are complex and represent a net reaction to a number of factors that influence how restructuring affects shareholder and creditor wealth. In this section, the main hypotheses that affect the size and direction of these wealth changes are presented, emphasizing in particular the wealth of creditors.

(a) Value creation

The classic motivation for corporate restructuring is to redeploy the firm's assets to higher valued uses. As long as the restructuring improves the firm's operating performance and increases its post-transaction cash flow and debt servicing ability, it creates value for both shareholders and creditors.

(b) Agency costs of outside equity

The basic principal-agent conflict between shareholders and managers arises from management trying to extract both pecuniary and non-pecuniary benefits from the firm, while transferring some or all of the costs incurred to the outside shareholders. An important source of such benefits may be managerial empire building and managerial entrenchment (Murphy 1985; Jensen 1986). Empire building is closely tied to the argument that managers prefer building less risky, diversified firms with lower leverage, so they can reduce the uncertainty of their human capital investment (Amihud and Lev 1981), and lessen the probability of bankruptcy and employment risk (Jensen and Meckling 1976; Ramakrishnan and Thakor 1984). To that end, managerial interests are naturally aligned with those of creditors.

The natural aim of managers and creditors to reduce firm riskiness is in direct conflict with shareholder interests. This relationship was first formalized by Black and Scholes (1973) who regard levered equity as a European call option on a firm's assets. In this classic view, the realignment of managerial and shareholder interests inevitably damages creditor interests. In market-oriented governance regimes, this realignment is largely done by making management a residual claimant in the firm through equity-based compensation plans. Managerial discretion is also controlled by a variety of disciplinary mechanisms such as boards of independent directors and external pressures from competitive markets, including capital and product markets (Köke and Renneboog 2005) and the markets for corporate control (Manne 1965) and managerial labour (Fama 1980). In network-oriented systems, where ownership and credit supply are more concentrated, the active involvement of the firm's stakeholders in the monitoring of management has historically provided a substitute for these devices.

In market-oriented systems, controlling the manager-shareholder problem is also potentially tied to increasing the firm's default risk, which directly damages creditor interests. Jensen (1986) describes the implicit incentive effect of increased leverage, which commits the firm's free cash flow to repaying debt. Grossman and Hart (1983) find that the increased threat of bankruptcy and loss of control may also induce managers to avoid policies they might prefer but which reduce firm value. Short-term borrowing is further shown to limit the tendency of borrowers to increase asset risk (Harris and Raviv 1990; Calomiris and Kahn 1991).

(c) Agency costs of risky debt

The principal-agent conflict that exists between creditors and shareholders gives rise to several agency problems. Shareholders may substitute high-risk assets for low-risk

ones, thus reducing creditor value to the benefit of shareholders (Jensen and Meckling, 1976). Claims dilution by way of new borrowings may also damage the interests of existing creditors. These problems are anticipated by creditors, who price their debt accordingly and transfer the ensuing costs to the firm itself. Intuitively, keeping debt maturity short mitigates the agency costs of debt. Bondholders may also write protective covenants into the bond indenture, while private lenders respond through increased monitoring and renegotiation of the debt contract. Billett, King and Mauer (2006) show that the use of covenants is increasing in debt maturity and leverage, both proxies for the severity of agency costs associated with debt.

The creditor-shareholder conflict is of course multidimensional and may have significant costs for shareholders as well, to the extent that it leads to investment distortions (Myers 1977; Lyandres and Zhdanov 2003). Since shareholders ultimately bear the costs of inefficient investments in the form of lower equity and firm values, they have economic incentives to resolve or ameliorate the shareholder-creditor conflict by accepting restrictive debt covenants, or through monitoring and auditing activities. John and Nachman (1985) show that shareholders may also want to mitigate these problems due to reputational concerns.

(d) Signalling effect of the financing decision

Several theoretical models show that under informational asymmetries, the financing method of corporate restructuring has an important signalling effect, as it may reflect management's private information about the value of the assets in place. Leland and Pyle (1977), Ross (1977) and DeAngelo and Masulis (1980) expect that share prices react positively to leverage-increasing transactions. The response of bond prices depends on the tradeoff between the negative risk effect of increased leverage, and the positive role of the same in controlling managerial discretion over the firm's cash flows. Flannery (1986) argues that the choice of debt maturity also sends a signal about the firm's default probability.

Other studies emphasize that new capital offerings inherently emit a negative signal. Additional security issues may suggest that the firm is overvalued (Myers and Majluf, 1984), or that its future cash flows are less than anticipated (Miller and Rock, 1985). Recent empirical studies lend support to these hypotheses (Spiess and Affleck-Graves 1995 and Hertz, Lemmon, Linck and Rees 2002 on equity; Spiess and Affleck-Graves 1999 on bonds; and Billett, Flannery and Garfinkel 2003 on bank loans).

(e) Tax benefit of debt

Fama and Miller (1972) show that when a firm employs leverage in its capital structure, its value increases by the market value of the tax subsidy on the interest payments. These gains accrue entirely to the shareholders of the firm, but may indirectly benefit all other stakeholders including creditors through improved cash flows. The tax benefits of debt may not be present for firms that consistently alternate between new debt and equity issues, but may be of great economic significance for firms that undertake leveraged restructuring. Still, it is debated whether potential tax benefits constitute a true motive for undertaking leveraged corporate actions (Modigliani and Miller 1963; Miller, 1977; DeAngelo and Masulis 1980). Nevertheless, Bartholdy and Mateus (2003) find that tax advantages and provisions for tax loss carry-forwards do motivate capital structure decisions. They also note that tax benefits may be better exploited in network-oriented governance regimes where the amount of debt lent to a firm is not used as an incentive device and is therefore less sensitive to agency problems.

(f) Expected bankruptcy and reorganization costs

The theoretical literature has shown extensively that the expected costs of involuntary bankruptcy and reorganization has a significant effect on the value of levered firms. These costs include lawyer and accountant fees, legal costs and the costs of managerial time involved in bankruptcy and reorganization proceedings. Warner (1977) estimates however that the direct costs of bankruptcy are small relative to firm value. Masulis (1980) approximates capital structure changes by investigating exchange offers, but does not detect any such bankruptcy cost effect.

3. Empirical evidence

In this section, we consider each type of restructuring in turn, recounting how they are predicted to affect creditors and what the existing evidence tells us. Empirically, the creditor wealth effects of corporate restructuring are approximated by bond price shocks in the literature. This is an imperfect measure, as it does not account for other creditors such as intermediaries. However, it is otherwise extremely difficult to quantify the impact of restructuring in an event study framework.

It is important to emphasize that the agency and signalling implications of corporate restructuring cannot be discounted. Nonetheless, restructuring affect creditors through two main channels: operating performance and changes in the firm's capital structure.

At the same time, portfolio restructuring also alters the firm's cash flow variance, collateral and liquidation value.

3.1 Portfolio restructuring

Portfolio restructuring changes the contracting relationship that exists between shareholders and creditors through altering the firm's underlying collateral and liquidation value. In addition, changes in the riskiness of the firms' cash flow streams can benefit shareholders at the expense of creditors and vice versa. This wealth redistribution effect, defined as the "co-insurance effect" by Lewellen (1971), immediately follows from Black and Scholes' (1973) view of a levered firm's equity as a European call option, and is also predicted by Higgins and Schall (1975) and Galai and Masulis (1976).

3.1.1 Portfolio expansion: mergers and acquisitions

The potential motives for merger activity are discussed extensively in the academic literature (Martynova and Renneboog, 2005). The conventional argument is the existence of synergistic gains that would raise the value of the combined firm (Bradley, Desai and Kim, 1988). Operating synergies can be derived from economies of scale, greater market power or the elimination of duplicate activities. There is also scope for financial synergies such as lower cost of capital, reduced tax liability or better efficiency of the internal capital market. The latter prescribe that the cash flow streams of the merging firms be imperfectly correlated, which reduces bankruptcy risk through co-insurance (Levy and Sarnat, 1970; Lewellen, 1971; Higgins and Schall, 1975).

Modern theory recounts that synergistic gains are often insufficient to justify mergers deals. Roll's (1986) hubris hypothesis argues that there may be no synergies in the first place, due to the susceptibility of managers to make mistakes. An equally undesirable explanation is that mergers simply occur because they enhance the welfare of the acquirer's management. Agency theory dictates that managers can have personal incentives to diversify their personal portfolio (Amihud and Lev, 1981), mitigate bankruptcy and employment risk (Ramakrishnan and Thakor, 1984), and increase their own compensation through empire building (Murphy, 1985). Under informational asymmetries, inadequate monitoring and a lack of equity-based compensation, managers are afforded sufficient discretion to pursue such strategies,

and transfer some or all of the costs to the outside shareholders of the firm. Accordingly, Morck, Shleifer and Vishny (1990) show that mergers that are potentially motivated by managerial private benefits trigger a reduction in shareholder wealth.

The complexity of these issues makes it difficult to predict how bondholders are affected by merger activity. Creditors fundamentally benefit from a reduction in default risk. Thus, if the merger induces sufficient co-insurance, or is motivated by managerial agency problems, it will tend to increase bondholder wealth. If the deal otherwise creates no value, this will occur through a wealth shift from shareholders. Galai and Masulis (1976) make this point for conglomerate mergers, which are typically penalized with a “conglomerate discount” as there is no discerning economic relationship between the parties (Rajan, Servaes and Zingales, 2000). In non-conglomerate mergers, operating synergies dominate, but bondholders may still share some of the ensuing wealth benefits. Strong shareholders may try to reverse any reduction in default risk, however, for example by financing the deal with leverage.

(Insert Table 1)

Empirically, the literature provides ambiguous results but suggests that the bondholders of US acquiring firms do not gain from merger activity (see Table 1). Billett, King and Mauer (2004) report significantly negative excess bond returns regardless of the acquirer’s bond rating, the payment method, and whether the merger is conglomerate or not. Earlier, Kim and McConnell (1977), Asquith and Kim (1982), Walker (1994) and Dennis and McConnell (1986) find that bondholders neither gain nor lose following merger announcements. Eger (1983) and Maquieira, Megginson and Nail (1998) focus on stock-for-stock mergers exclusively, omitting any effect the payment method may have. Eger finds positive excess returns, but Maquieira, Megginson and Nail can only confirm these for non-conglomerate deals.

Of the earlier studies, those that separately consider target firms unanimously report normal returns for target bondholders. To the extent that target firms tend to be smaller and lower rated, this goes against the expectation that target bondholders should benefit more from co-insurance. Billett, King and Mauer (2004) show strong evidence for this contention. The authors find positive excess returns, which however are not uniformly significant across all specifications. The positive gains are driven by junk-grade targets, which indeed should profit from lower credit risk in the combined firm. Excess returns in investment-grade targets are significantly negative, showing that the benefits of co-insurance can be negligible in creditworthy firms.

Renneboog, Szilagyi and Martynova (2006) are the first to provide non-US evidence on how bondholders are affected by corporate restructuring through mergers. The authors investigate European domestic and cross-border mergers using a large sample of investment-grade Eurobonds. The results nicely capture the different dynamics of the creditor-firm relationship in market- and network-oriented governance regimes. The authors find generally better acquirer excess returns than those reported for the US. Gains are highest from domestic mergers in continental Europe, where strong banks actively support creditor interests. UK bondholders benefit most from cross-border deals where creditor protection and claims dispute resolution are better in the target country. Bond prices in the UK also respond more to fundamentals and perceived asset risk, which in continental Europe are disregarded in domestic deals. The excess bond returns are also positive but insignificant for target firms, which reinforces the modest co-insurance benefits that exist for large, highly rated targets.

3.1.2 Portfolio reduction: corporate refocusing

Since the early 1980s, a distinctive element of US corporate activity has been the prevalence of restructuring actions that increase a firm's business focus. Firms may choose one of three main mechanisms to divest an operating unit: *equity carve-outs*, *spin-offs* and *asset sell-offs*¹. Aside from the economic gains associated with asset restructuring, carve-outs and spin-offs may be particularly effective in reducing agency costs. These transactions take subsidiaries public, thus disclosure and external monitoring are improved, and managerial compensation can be tied closer to the subsidiary's market value. Carve-outs may also signal that the subsidiary is over-, while the parent firm is undervalued (Welch 1989; Nanda 1991). Spin-offs have no signalling effect, as the shares of the subsidiary are distributed on a pro rata basis to the parent's existing shareholders. Spin-offs do not provide the parent firm with cash either, thus agency problems related to free cash flow are avoided.

Shleifer and Vishny (1992) stress the importance of sell-offs as a means to resolve financial distress. They are typically negotiated privately, thus bypass external monitoring and potentially generate free cash flow concerns. Owing to these conditions, sell-offs tend to be perceived less favourably than are spin-offs and carve

¹ *Equity carve-outs* are initial public offerings of subsidiary equity, where the parent maintains a controlling interest. *Spin-offs* are pro rata stock dividends that distribute subsidiary ownership to the shareholders of the parent. In effect, the firm is divided into two (or more) firms with an identical set of shareholders. *Asset sell-offs* are sales of subsidiaries to third parties, typically via private negotiation. For a more elaborate description see Slovin, Sushka and Ferraro (1995).

outs. The reverse side of these transactions, partial acquisitions, induce agency problems similar to those seen in mergers and acquisitions. Of course, partial acquisitions are usually smaller relative to the size of the parties involved, and are typically friendly and synergistic.

It is evident that all three forms of corporate refocusing can trigger wealth transfers between shareholders to creditors. Galai and Masulis (1976) describe how unexpected spin-offs expropriate collateral and liquidation value available to creditors, and carve-outs and sell-offs have a similar impact. The literature documents several cases where creditor interests are damaged by an uneven allocation of debt between the parent and the subsidiary. Corporate refocusing also leads to a loss of co-insurance, particularly in cross-industry transactions where the cash flows of the parent and subsidiary are not highly correlated (John, 1993).

(Insert Table 2)

The empirical literature on the actual wealth effects of corporate refocusing remains relatively scarce (see Table 2). No evidence is available on how bondholders are affected by equity carve-outs. Schipper and Smith (1983) briefly examine the behaviour of bond prices and bond ratings around spin-off announcements, and find little evidence of bondholder expropriation. Hite and Owers (1983) find insignificant negative abnormal bond returns, which may be due to the small sample used, but suggests that bondholders anticipate and contain wealth transfers. This latter argument is confirmed by Veld and Veld-Merkoulova (2005) who show insignificant or significant gains depending on the specification, suggesting that firm value increases compensate for the wealth transfer effect. Contrasting evidence is presented by Maxwell and Rao (2003). The authors find that on average, parent bondholders suffer significant losses, which depend on changes in leverage and the underlying collateral, but not on a reduction in co-insurance. Parrino (1997) examines a single textbook case, the 1993 spin-off of Marriott's management businesses, and also finds evidence of substantial bondholder losses².

The wealth effects of asset sell-offs are documented by Datta and Iskandar-Datta (1996) and Datta, Iskandar-Datta and Raman (2003). These papers find that sell-offs typically enhance bondholder wealth. However, many transactions damage

² The infamous Marriott spin-off has been subject to much discussion. The deal's original plan left the parent firm with the bulk of Marriott's long-term debt, but stripped it of most of its assets and cash flow. In the end, Marriott's bondholders were able to force the firm to alter its plans and won more favourable terms.

bondholders depending on the underlying motive and the way the proceeds are distributed. For the acquirers of the disposed assets, Datta and Iskandar-Datta (1995) and Datta et al. (2003) find significant bondholder losses. The authors ultimately show that the benefits of co-insurance and increased collateral do not compensate for a simultaneous increase in leverage and the deterioration of performance expectations.

Easterwood (1998) examines the special case of divestments made by firms that underwent leveraged buyouts in the 1980s. He reports that on average, these transactions are not associated with bondholder wealth changes, which may indicate that their wealth enhancing effect is balanced out by possible wealth expropriation in the highly levered firm. This is supported by the author's finding that divestments induce positive abnormal bond returns in firms that are not financially distressed, but negative ones in those firms that are. Furthermore, the bondholder losses in distressed firms are only significant when core assets are divested.

These results, and Easterwood's (1998) finding that abnormal returns are negatively related to the firm's post-buyout capital structure, also lend weak support to the intra-creditor wealth transfer hypothesis of Rajan (1992) and Diamond (1993). This hypothesis postulates that when a firm is in distress, private lenders may press for the early liquidation of assets at the expense of other, less senior creditors. Of course, early liquidation may be most detrimental when it involves core assets, whereas the disposal of non-core assets may be beneficial, to the extent that the proceeds are used to pay off existing debt (Datta and Iskandar-Datta 1995).

3.2 Financial restructuring

Transactions of financial restructuring are fundamentally different from portfolio restructuring, as they are directly aimed at altering the firm's capital structure. Creditors are directly affected by any such capital structure changes, since they may entail a sizeable change in the firm's leverage ratio and *ceteris paribus* change the firm's default probability. Masulis (1980) takes account of the three effects that broadly define creditor wealth changes entailed by capital structure alterations: the wealth redistribution effect (Jensen and Meckling 1976) and the expected bankruptcy cost effect (Robichek and Myers 1966; Kraus and Litzenberger 1973), counterbalanced by a more modest corporate tax effect (Modigliani and Miller 1963). The direction and size of creditor wealth changes is also impacted by the incentive effect of leverage and any ensuing investment effect associated with the use of the funds.

3.2.1 New debt issues

The creditor wealth effects of changes in the firm's capital structure can be most simply investigated through the response of existing bondholders to announcements of new capital offerings. The empirical literature provides scarce and inconclusive direct evidence on the wealth effects of debt issuance (see Table 3). Kolodny and Suhler (1988) report that the announcement of new debt issues has a positive effect on existing bondholders, and the wealth gains actually increase in the firm's initial leverage and the size of the issue. To some extent, this result is compatible with Akhigbe, Easterwood and Pettit (1997). The authors find that bond prices respond negatively only when the new debt issue is motivated by a current cash flow shortfall. Ultimately, these findings are consistent with Miller and Rock's (1985) signalling hypothesis rather than with the motive of creditor expropriation. Accordingly, shareholders have also been shown to be unaffected by debt issue announcements (Eckbo, 1986; Mikkelsen and Partch, 1986; Akhigbe, Easterwood and Pettit, 1997).

(Insert Table 3)

3.2.2 Seasoned equity offerings

Theory suggests that stock markets tend to react negatively to new equity issues (Myers and Majluf 1984; Asquith and Mullins 1986; Masulis and Korwar 1986). The perception that seasoned equity offerings (SEOs) convey a negative signal about the issuing firm's prospects is supported by the general finding that on average, operating performance declines after such transactions (Loughran and Ritter 1997; Jegadeesh 2000).

(Insert Table 4)

Creditors are also expected to respond negatively to adverse signals about the firm's future prospects (see Table 4). However, they should benefit *ceteris paribus* from the leverage-reducing effect on equity issuance. Kalay and Shimrat (1987) find that bond prices react negatively to new SEO announcements. This suggests that the signalling effect dominates, but a wealth transfer from shareholders to bondholders cannot be ruled out. Elliott, Prevost and Rao (2002) find stronger evidence for such a wealth transfer. They report considerable bondholder gains that increase with debt maturity and firm default risk, and emphasize the redistribution effect. Eberhart and Siddique (2002) find similar results across a number of event windows spanning from one month to five years.

3.2.3 Exchange offers and recapitalizations

Security exchange offers and recapitalizations come closest to approximating pure capital structure changes in a firm, as they do not involve simultaneous asset structure changes (in the form of cash inflows or outflows). Both transactions entail the exchange of different classes of firm securities. However, while exchange offers are voluntary, recapitalizations generally require the participation of all securityholders and thus have a more pronounced impact on capital structure. In a joint study, Masulis (1980) empirically examines debt-for-stock exchange offers and recapitalizations. Capital structure theory predicts that both types of transactions should destroy creditor wealth as they increase leverage in the firm (see Table 5). The evidence provided by Masulis is consistent with this contention, and the author observes simultaneous gains for shareholders. This ultimately supports the wealth transfer hypothesis, reinforced by the finding that bondholders suffer the largest losses when unprotected by covenants. Masulis (1983) later develops a linear model to estimate the firm valuation effects of these transactions and broadly finds the same results. Cornett and Travlos (1989) report different results that lend support to signalling theory. The authors show that bondholders do not lose from debt-for-equity exchanges, because the negative impact of increased leverage is offset by better performance expectations. Their conjecture is reinforced by the negative bondholder response to leverage-reducing equity-for-debt exchanges.

(Insert Table 5)

Mikkelsen (1981) examines how the forced conversion of convertible bonds affects security holders in the firm. Debt conversion reduces leverage much the same way as do debt-for-equity exchanges. There is no evidence that bondholders would reap considerable benefits from such a transaction, which Mikkelsen also attributes to negative signalling effects.

3.2.4. Public-to-private transactions

Portfolio refocusing is often preceded by public-to-private transactions. These transactions are often referred to collectively as leveraged buyouts (LBOs), as they are almost exclusively financed with massive leverage. The majority of LBOs are management-led, but firms may be taken private by a variety of entities: the incumbent management (management buyout, MBO), an outside management (management buyin, MBI), employees (employee buyout, EBO), or institutional

investors and private equity firms (institutional buyout, IBO). Renneboog and Simons (2005) provide a detailed discussion and empirical testing of each of these transaction types.

Jensen (1986) notes that LBO firms typically provide stronger incentives for management to increase firm value, which is often the main impetus behind subsequent asset disposals. The agency costs of managerial discretion are addressed through higher levels of leverage and greater concentration of equity ownership. The control function of debt is particularly pronounced in LBOs, since the restructured firm's post-transaction leverage ratio often approaches unity. At the margin, this mostly requires management to borrow from banks, which are often given an equity interest through strip financing. To the extent that managers become shareholders themselves, LBOs can also directly mitigate the manager-shareholder conflict (Renneboog, Simons and Wright, 2005).

(Insert Table 6)

In leveraged transactions, increased monitoring tends not to fully compensate creditors for the potentially vast agency costs of risky debt. This is reflected in the finding of Marais, Schipper and Smith (1989) that the rating agency Moody's Investor Service systematically downgrades firms undergoing LBOs. The empirical literature does not provide fully conclusive evidence either way (see Table 6). Asquith and Wizman (1990), Travlos and Cornett (1993), Cook, Easterwood and Martin (1992) and Warga and Welch (1993) find statistically significant bondholder losses, which provides evidence for wealth expropriation. Conversely, Marais, Schipper and Smith (1989) find insignificantly negative abnormal returns and conclude that bondholders adequately protect themselves, or that the wealth expropriation effect is offset by improvements in the expected cash flows. Of these studies, several demonstrate that abnormal returns are sensitive to covenant protection (Asquith and Wizman 1990; Walker 1991; Cook et al., 1992); maturity (Walker 1991; Warga and Welch 1993; Cook et al. 1992) and bond ratings (Warga and Welch 1993).

3.2.5 Leveraged recapitalizations

Leveraged recapitalizations (LRs) are often used to fend off a hostile takeover bid. Under this strategy, the firm incurs substantial additional debt to repurchase shares or distribute a large special dividend to the current shareholders. Like LBOs, a typical LR entails a huge increase in leverage, and thus should lead to better alignment of

shareholder and managerial interests. In lieu of the cash payout, management can often increase their own shareholdings either directly or indirectly (through stock options or retirement plans).

(Insert Table 7)

The massive leverage associated with LRs is expected to induce considerable creditor losses through increased risk. However, the empirical literature offers limited evidence for such an effect (see Table 7). Handa and Radhakrishnan (1991) find that on average, bondholders earn insignificant negative abnormal returns in the two weeks around an LR announcement, and significant positive gains immediate before the announcement date. Gupta and Rosenthal (1991) also report insignificant negative abnormal bond returns for longer time periods. A drawback of both these studies is that they work with small samples, which downward biases the detectability of any impact associated with LRs. Moreover, many of the firms undertaking LRs are under imminent takeover threat, which complicates the investigation of announcement returns. An indication of longer-term creditor wealth losses is provided by frequent rating downgrades of the restructuring firms by Moody's and Standard and Poor's.

3.2.6 Dividend payouts and share repurchases

Many studies on how a firm can outright expropriate its creditors cite the classic case where the firm borrows cash to distribute dividends or repurchase shares. The creditor wealth implications of these transactions are driven by two main hypotheses. The signalling hypothesis (Bhattacharya 1979; Kalay 1980) suggests that redistributing cash flows to shareholders conveys positive information about the prospects of the firm. This holds for dividend increases in particular, which indicate a permanent commitment to higher payouts. However, all else equal these payout mechanisms also increase leverage, and in the absence of adequate protection, creditors may suffer losses as a result.

(Insert Table 8)

There are numerous studies that examine the signalling versus wealth transfer hypotheses of both dividend announcements and share repurchases (see Table 8). The evidence for dividend increases is very mixed. Woolridge (1983) and Handjinicolaou and Kalay (1984) find insignificantly positive bond price reactions. This lends support to a signalling effect, while not ruling out a wealth transfer in highly levered firms in particular. Jayaraman and Shastri (1988) report similar results for special dividends.

Dhillon and Johnson (1994) find that bond prices actually fall upon the announcement of dividend increases, which is more supportive of the wealth transfer hypothesis.

Dann (1981) investigates the wealth effects of share repurchase announcements. On the announcement day, he finds insignificantly negative bond returns and positive abnormal stock returns, which suggests that bondholders may lose more than they gain from the signalling effect. Maxwell and Stephens (2003) find much stronger evidence for both hypotheses, reporting significant bondholder losses on average, but sizeable gains in firms where shareholders respond favourably to the transaction. The authors also show that bondholder losses are greater when the repurchase program is large, and when the firm's bond rating is non-investment grade. This suggests that a share repurchase program is still viewed by the market as a positive signal, but any wealth benefits accrued to bondholders are expropriated. Rating agencies are found to be twice as likely to downgrade as upgrade bond ratings after repurchase announcements.

3.2.7 Executive stock option plans

Finally, executive stock option plans are an increasingly controversial device used to mitigate the manager-shareholder conflict. ESOPs tie managerial compensation to the firm's share price, which is meant to realign managerial interests with those of the shareholders. As managerial and creditor interests inherently coincide otherwise, ESOPs should damage creditors to the benefit of shareholders. Table 9 shows compelling evidence in this regard provided by DeFusco, Johnson and Zorn (1990). Bruner and Brownlee (1990) take a single case study of Polaroid's 1988 leveraged ESOP, and find similar results.

(Insert Table 9)

4. Concluding remarks and research agenda

This paper has provided a comprehensive overview of the empirical literature on how corporate restructuring affects bondholder wealth. As has been shown, evidence on restructuring and its consequences for the firm and its creditors remains patchy. This largely owes to the fact that restructuring is a complex and multidimensional event, whose impact on creditor wealth is the net effect of a variety of factors.

The validity of existing studies has come to be increasingly criticized for issues related to sample size, data quality and the methodologies employed. Kahle, Maxwell and Xu (2005) find that the various methodologies historically used to examine bondholder wealth changes, such as mean-adjusted models, value-weighted portfolio approaches and factor models may be subject to serious misspecification. The authors stop short of naming a single best methodology. Rather, they propose that bonds should be priced using matched equal-weighted portfolios or individual bonds, and that these two methods are largely complements. Some general guidelines are also drawn, which warn that much of the empirical evidence should be treated with caveats and call for future research in most areas.

The lack of related studies on the network-oriented governance systems of Continental Europe and Japan represents another gap in the existing literature. Existing US studies unambiguously show that restructuring can trigger significant wealth transfers between bondholders and shareholders, which suggests that creditors are not fully protected against deliberate wealth expropriation. In network-oriented systems, agency problems in the context of the firm are addressed differently, and bondholder-shareholder agency problems may be consequently less severe. This is captured by the European M&A study of Renneboog, Szilagyi and Martynova (2006), the first non-US paper in this field. Further exploration of this issue would provide useful insights into the link between restructuring and creditor wealth, yet it has been virtually ignored by empirical research, or examined only indirectly. Until recently, the potential for research on network-oriented regimes was also constrained by the limited number of marketable debt issues by restructuring firms, which are the only instruments that allow for a direct investigation of this issue. On-going developments in the international corporate environment now demand greater attention being paid to these countries. In Europe, in particular, market deregulation, increased competition, economic and financial integration, new tax and accounting regulations, as well as recent struggles with pension reform have not only triggered frantic restructuring activity, but also set off a gradual convergence of corporate governance regimes towards the market-oriented model. This comes at a time when market-oriented systems are being increasingly questioned in their ability to control agency problems themselves, not least due to the recent massive overinvestment in the US technology sector and some of the biggest corporate scandals in history.

References:

- Akhigbe, Aigbe, John C. Easterwood, and R. Richardson Pettit, 1997, Wealth effects of corporate debt issues: The impact of issuer motivations, *Financial Management* 26, 32-47.
- Amihud, Yakov, and Baruch Lev, 1981, Risk reduction as a managerial motive for conglomerate mergers, *Bell Journal of Economics* 12, 605-617.
- Asquith, Paul, and David W. Mullins, J., 1986, Equity issues and offering dilution, *Journal of Financial Economics* 15, 61-89.
- Asquith, Paul, and E. Han Kim, 1982, The impact of merger bids on the participating firms' security holders, *Journal of Finance* 37, 1209-1228.
- Asquith, Paul, and Thierry A. Wizman, 1990, Event risk, covenants, and bondholder returns in leveraged buyouts, *Journal of Financial Economics* 27, 195-213.
- Bartholdy, Jan, and Cesario Mateus, 2003, Debt and taxes: Evidence from a bank based system, Working Paper.
- Bhattacharya, Sudipto, 1979, Imperfect information, dividend policy and the 'bird in hand' fallacy, *Bell Journal of Economics* 10, 259-270.
- Billett, Matthew T., Mark Flannery, and Jon Garfinkel, 2003, The long-run performance of firms following loan announcements, Working Paper, University of Florida and University of Iowa.
- Billett, Matthew T., Tao-Hsien Dolly King, and David C. Mauer, 2004, Bondholder wealth effects in mergers and acquisitions: New Evidence from the 1980s and 1990s, *Journal of Finance* 59, 107-135.
- Billett, Matthew T., Tao-Hsien Dolly King, and David C. Mauer, 2006, Growth opportunities and the choice of leverage, debt maturity, and covenants, *Journal of Finance*, forthcoming.
- Black, Fischer, and Myron S. Scholes, 1973, The pricing of options and corporate liabilities, *Journal of Political Economy* 81, 637-654.
- Bowman, Edward H., and Harbir Singh, 1993, Corporate restructuring: Reconfiguring the firm, *Strategic Management Journal* 14, 5.
- Bradley, Michael, Anand Desai, and E. Han Kim, 1988, Synergistic gains from corporate acquisitions and their division between the stockholders of target and acquiring firms, *Journal of Financial Economics* 21, 3-40.
- Bruner, Robert F., and E. Richard Brownlee, II, 1990, Leveraged ESOPs, wealth transfer, and "shareholder neutrality": The case of Polaroid, *Financial Management* 19, 59-74.
- Cook, Douglas O., John C. Easterwood, and John D. Martin, 1992, Bondholder wealth effects of management buyouts, *Financial Management* 21, 102.
- Cornett, Marcia Millon, and Nickolaos G. Travlos, 1989, Information effects associated with debt-for-equity and equity-for-debt exchange offers, *Journal of Finance* 44, 451-468.
- Dann, Larry Y., 1981, The effects of common stock repurchase on security holders' returns, *Journal of Financial Economics* 9, 101-138.
- Datta, Sudip, and Mai E. Iskandar-Datta, 1995, Corporate partial acquisitions, total firm valuation and the effect of financing method, *Journal of Banking & Finance* 19, 97-115.
- Datta, Sudip, and Mai E. Iskandar-Datta, 1996, Who gains from corporate asset sales?, *Journal of Financial Research* 19, 41-58.
- Datta, Sudip, Mai Iskandar-Datta, and Kartik Raman, 2003, Value creation in

- corporate asset sales: The role of managerial performance and lender monitoring, *Journal of Banking & Finance* 27, 351-375.
- DeAngelo, Harry, and Ronald W. Masulis, 1980, Optimal capital structure under corporate and personal taxation, *Journal of Financial Economics* 8, 3-29.
- DeFusco, Richard A., Robert R. Johnson, and Thomas S. Zorn, 1990, The effect of executive stock option plans on stockholders and bondholders, *Journal of Finance* 45, 617-627.
- Dennis, Debra K., and John J. McConnell, 1986, Corporate mergers and security returns, *Journal of Financial Economics* 16, 143-187.
- Dhillon, Upinder, and Herb Johnson, 1994, The effect of dividend changes on stock and bond prices, *Journal of Finance* 49, 281-289.
- Diamond, Douglas W., 1993, Seniority and maturity of debt contracts, *Journal of Financial Economics* 33, 341-368.
- Easterwood, John C., 1998, Divestments and financial distress in leveraged buyouts, *Journal of Banking & Finance* 22, 129-159.
- Eberhart, Allan C., and Akhtar Siddique, 2002, The long-term performance of corporate bonds (and stocks) following seasoned equity offerings, *Review of Financial Studies* 15, 1385-1406.
- Eckbo, B. Espen, 1986, Valuation effects of corporate debt offerings, *Journal of Financial Economics* 15, 119-151.
- Eger, Carol E., 1983, An empirical test of the redistribution effect in pure exchange mergers, *Journal of Financial and Quantitative Analysis* 18, 547-572.
- Elliott, William B., Andrew K. Prevost, and Ramesh P. Rao, 2002, The announcement impact of seasoned equity offerings on bondholder wealth, Working Paper.
- Fama, Eugene F., 1980, Agency problems and the theory of the firm, *Journal of Political Economy* 88, 288-307.
- Fama, Eugene F., and Merton H. Miller, 1972. *The theory of finance*, New York: Holt, Rinehart and Winston.
- Flannery, Mark J., 1986, Asymmetric information and risky debt maturity choice, *Journal of Finance* 41, 19-37.
- Galai, Dan, and Ronald W. Masulis, 1976, The option pricing model and the risk factor of stock, *Journal of Financial Economics* 3, 53-81.
- Gibbs, Philip A., 1993, Determinants of corporate restructuring: The relative importance of corporate governance, takeover threat, and free cash flow, *Strategic Management Journal* 14, 51-68.
- Grossman, Sanford J., and Oliver D. Hart, 1983, Corporate financial structure and managerial incentives, *NBER Working Paper No. R0398* 107-140.
- Gupta, Atul, and Leonard Rosenthal, 1991, Ownership structure, leverage, and firm value: The case of leveraged recapitalizations, *Financial Management* 20, 69-83.
- Handa, Puneet, and A. R. Radhakrishnan, 1991, An empirical investigation of leveraged recapitalizations with cash payout as takeover defense, *Financial Management* 20, 58-68.
- Handjinicolaou, George, and Avner Kalay, 1984, Wealth redistributions or changes in firm value : An analysis of returns to bondholders and stockholders around dividend announcements, *Journal of Financial Economics* 13, 35-63.
- Harris, Milton, and Artur Raviv, 1990, Capital structure and the informational role of debt, *Journal of Finance* 45, 321-349.

- Hertzel, Michael G., Michael Lemmon, James Linck, and Lynn Rees, 2002, Long-run performance following private placements of equity, *Journal of Finance* 57, 2595-2617.
- Higgins, Robert C., and Lawrence D. Schall, 1975, Corporate bankruptcy and conglomerate merger, *Journal of Finance* 30, 93-111.
- Hite, Gailen L., and James E. Owers, 1983, Security price reactions around corporate spin-off announcements, *Journal of Financial Economics* 12, 409-436.
- Jayaraman, Narayanan, and Kuldeep Shastri, 1988, The valuation of specially designated dividends, *Journal of Financial and Quantitative Analysis* 23, 301-312.
- Jegadeesh, Narasimhan, 2000, Long-term performance of seasoned equity offerings: Benchmark errors and biases in expectations, *Financial Management* 29, 5-30.
- Jensen, Michael C., 1986, Agency costs of free cash flow, corporate finance and takeovers, *American Economic Review* 76, 323-329.
- Jensen, Michael C., and William H. Meckling, 1976, Theory of the firm: Managerial behavior, agency costs and ownership structure, *Journal of Financial Economics* 3, 305-360.
- John, Kose, and David Nachman, C., 1985, Risky debt, investment incentives, and reputation in a sequential equilibrium, *Journal of Finance* 40, 863-878.
- John, Teresa A., 1986, Mergers and investment incentives, *Journal of Financial and Quantitative Analysis* 21, 393-413.
- John, Teresa A., 1993, Optimality of spin-offs and allocation of debt, *Journal of Financial and Quantitative Analysis* 28, 139-160.
- Kahle, Kathleen M., William F. Maxwell, and Danielle Xu, 2005, Measuring Abnormal Bond Performance, Working Paper.
- Kalay, Avner, 1980, Signalling, information content, and the reluctance to cut dividends, *Journal of Financial and Quantitative Analysis* 15, 855-869.
- Kalay, Avner, and Adam Shimrat, 1987, Firm value and seasoned equity issues : Price pressure, wealth redistribution, or negative information, *Journal of Financial Economics* 19, 109-126.
- Kim, E. Han, and John J. McConnell, 1977, Corporate mergers and the co-insurance of corporate debt, *Journal of Finance* 32, 349-365.
- Köke, J. and Luc Renneboog, 2005, Do corporate control and product market competition lead to stronger productivity growth? Evidence from market-oriented and blockholder-based governance regimes, *Journal of Law and Economics* 48, 475-516.
- Kolodny, Richard, and Diane R. Suhler, 1988, The effects of new debt issues on existing security holders, *Quarterly Journal of Business and Economics* 27, 51-72.
- Kraus, Alan, and Robert H. Litzenberger, 1973, A state-preference model of optimal financial leverage, *Journal of Finance* 28, 911-922.
- Leland, Hayne E., and David H. Pyle, 1977, Informational asymmetries, financial structure and financial intermediation, *Journal of Finance* 32, 371-381.
- Levy, Haim, and Marshall Sarnat, 1970, Diversification, portfolio analysis and the uneasy case for conglomerate mergers, *Journal of Finance* 25, 795-802.
- Lewellen, Wilbur G., 1971, A pure financial rationale for the conglomerate merger, *Journal of Finance* 26, 521-537.
- Loughran, Tim, and Jay R. Ritter, 1997, The operating performance of firms conducting seasoned equity offerings, *Journal of Finance* 52, 1823-1850.
- Lyandres, Evgeny, and Alexei Zhdanov, 2003, Underinvestment or overinvestment?

- The effect of debt maturity on investment, Bradley Policy Research Center Financial Research and Policy Working Paper No. FR 03-28.
- Manne, Henry G., 1965, Mergers and the market for corporate control, *Journal of Political Economy* 73, 351.
- Maquieira, Carlos P., William L. Megginson, and Lance Nail, 1998, Wealth creation versus wealth redistributions in pure stock-for-stock mergers, *Journal of Financial Economics* 48, 3-33.
- Marais, Laurentius, Katherine Schipper, and Abbie Smith, 1989, Wealth effects of going private for senior securities, *Journal of Financial Economics* 23, 155-191.
- Martynova, Marina and Luc Renneboog, 2005, Takeover waves: triggers, performance and motives, ECGI Finance Working Paper No. 97/2005.
- Masulis, Ronald W., 1980, The effects of capital structure change on security prices: A study of exchange offers, *Journal of Financial Economics* 8, 139-178.
- Masulis, Ronald W., 1983, The impact of capital structure change on firm value: Some estimates, *Journal of Finance* 38, 107-126.
- Masulis, Ronald W., and Ashok N. Korwar, 1986, Seasoned equity offerings: An empirical investigation, *Journal of Financial Economics* 15, 91-118.
- Maxwell, William F., and Clifford P. Stephens, 2003, The wealth effects of repurchases on bondholders, *Journal of Finance* 58, 895-919.
- Maxwell, William F., and Ramesh P. Rao, 2003, Do spin-offs expropriate wealth from bondholders?, *Journal of Finance* 58, 2087-2108.
- Mikkelson, Wayne H., 1981, Convertible calls and security returns, *Journal of Financial Economics* 9, 237-264.
- Mikkelson, Wayne H., and M. Megan Partch, 1986, Valuation effects of security offerings and the issuance process, *Journal of Financial Economics* 15, 31-60.
- Miller, Merton H., 1977, Debt and taxes, *Journal of Finance* 32, 261-275.
- Miller, Merton H., and Kevin Rock, 1985, Dividend policy under asymmetric information, *Journal of Finance* 40, 1031-1051.
- Modigliani, Franco, and Merton H. Miller, 1963, Corporate income taxes and the cost of capital: A correction, *American Economic Review* 64, 433-443.
- Morck, Randall, Andrei Shleifer, and Robert W. Vishny, 1990, Do managerial objectives drive bad acquisitions?, *Journal of Finance* 45, 31-48.
- Murphy, Kevin J., 1985, Corporate performance and managerial remuneration : An empirical analysis, *Journal of Accounting and Economics* 7, 11-42.
- Myers, Stewart C., 1977, Determinants of corporate borrowing, *Journal of Financial Economics* 5, 147-175.
- Myers, Stewart C., and Nicholas S. Majluf, 1984, Corporate financing and investment decisions when firms have information that investors do not have, *Journal of Financial Economics* 13, 187-221.
- Nanda, Vikram, 1991, On the good new in equity carve-outs, *Journal of Finance* 46, 1717-1737.
- Parrino, Robert, 1997, Spinoffs and wealth transfers: The Marriott case, *Journal of Financial Economics* 43, 241-274.
- Rajan, Raghuram G., 1992, Insiders and outsiders: The choice between informed and arm's length debt, *Journal of Finance* 47, 1367-1400.
- Rajan, Raghuram G., Henri Servaes, and Luigi Zingales, 2000, The cost of diversity: The diversification discount and inefficient investment, *Journal of Finance* 55, 35-80.
- Ramakrishnan, Ram T. S., and Anjan V. Thakor, 1984, The valuation of assets under

- moral hazard, *Journal of Finance* 39, 229-238.
- Renneboog, Luc, and Tomas Simons, 2005, Public-to-private transactions: LBOs, MBOs, MBIs and IBOs, ECGI Finance Working Paper No. 94/2005.
- Renneboog, Luc, Tomas Simons and Mike Wright, 2005, Leveraged public-to-private transactions in the UK, ECGI Finance Working Paper No. 78/2005.
- Renneboog, Luc, Peter G. Szilagyi, and Marina Martynova, 2006, How do mergers affect bondholders in Europe? Evidence on the impact and spillover of governance and legal standards, Working Paper.
- Robichek, Alexander A., and Stewart C. Myers, 1966, Conceptual problems in the use of risk-adjusted discount rates, *Journal of Finance* 21, 727-730.
- Roll, Richard, 1986, The hubris hypothesis of corporate takeovers, *Journal of Business* 59, 197-216.
- Ross, Stephen A., 1977, The determination of financial structure: the incentive-signalling approach, *Bell Journal of Economics* 8, 23-40.
- Schipper, Katherine, and Abbie Smith, 1983, Effects of recontracting on shareholder wealth : The case of voluntary spin-offs, *Journal of Financial Economics* 12, 437-467.
- Settle, John W., Glenn H. Petry, and Chi-Cheng Hsia, 1984, Synergy, diversification, and incentive effects of corporate merger on bondholder wealth: Some evidence, *Journal of Financial Research* 7, 329-339.
- Shleifer, Andrei, and Robert W. Vishny, 1992, Liquidation values and debt capacity - A market equilibrium approach, *Journal of Finance* 47, 1343-1366.
- Spiess, D. Katherine, and John Affleck-Graves, 1995, Underperformance in long-run stock returns following seasoned equity offerings, *Journal of Financial Economics* 38, 243-267.
- Spiess, D. Katherine, and John Affleck-Graves, 1999, The long-run performance of stock returns following debt offerings, *Journal of Financial Economics* 54, 45-73.
- Stewart, G. Bennett, III, and David M. Glassman, 1988, The motives and methods of corporate restructuring, part II, *Journal of Applied Corporate Finance* 1, 79-88.
- Travlos, Nickolaos G., and Marcia Million Cornett, 1993, Going private buyouts and determinants of shareholders' returns, *Journal of Accounting, Auditing & Finance* 8, 1-3.
- Veld, Chris, and Julia V. Veld-Merkoulova, 2005, An empirical analysis of the stockholder-bondholder conflict in corporate spin-offs, Working Paper.
- Walker, M. Mark, 1991, Leveraged buyouts and bondholder wealth: The role of indenture covenants, *Akron Business and Economic Review* 22, 121-131.
- Walker, M. Mark, 1994, Determinants of bondholder wealth following corporate takeovers (1980-1988), *Quarterly Journal of Business and Economics* 33, 12-29.
- Warga, Arthur, and Ivo Welch, 1993, Bondholder Losses in Leveraged Buyouts, *Review of Financial Studies* 6, 959-982.
- Warner, Jerold B., 1977, Bankruptcy costs: Some evidence, *Journal of Finance* 32, 337-347.
- Welch, Ivo, 1989, Seasoned offerings, imitation costs and the underpricing of initial public offerings, *Journal of Finance* 44, 429-449.
- Woolridge, J. Randall, 1983, Dividend changes and security prices, *Journal of Finance* 38, 1607-1615.

Table 1: The bondholder wealth effects of mergers and acquisitions

This table shows the estimated bondholder returns of the total public debt of the restructuring firm. Returns are calculated using an event study methodology. N is either the number of different bonds used in the analysis, or in studies where an equally weighted average of the firm's outstanding bonds is used, the number of firms. ***, **, * indicate significance at the 1, 5 and 10% level, respectively.

Study	Sample period / country	Deal type	Merging party	Event window	N	Wealth change	Benchmark/ methodology
Kim and McConnell (1976)	1960-1973 US	Completed conglomerate mergers	All	[0] month	44	-0.45%	Two-index market model using Ibbotson and Sinquefeld's equal-weighted high-quality corporate bond index and value-weighted NYSE stock index
Asquith and Kim (1982)	1960-1978 US	Completed conglomerate mergers	All	[0] month	62	1.07%	Matched bond with matching criteria rating, maturity date, coupon rate, industrial classification.
			Acquirer		38	1.08%	
			Target		24	1.05%	
Eger (1983)	1958-1980	Completed pure stock-for-stock mergers	Acquirer	[-30,0] days	33	1.01%***	Matched portfolio with matching criteria rating and maturity date
Dennis and McConnell (1986)	1962-1980 US	Completed mergers	Acquirer	[-1,0] days	67	-0.17%	Dow Jones Industrial Bond Index
			BBB or below		31	-0.51%*	
			Target		27	0.03%	
			BBB or below		19	0.35%	
Walker (1994)	1980-1988 US	Completed mergers	All	[0] month	92	0.31%	Matched US Treasury bond
			Target		33	0.83%	
		Cash-for-stock	All		35	-0.73%	
		Stock-for-stock	All		12	1.39%	
Maquieira, Megginson and Nail (1998)	1963-1996 US	Conglomerate (completed, stock-for-stock)	All	[-2,2] months	253	0.44%	Matched US Treasury bond with matching criteria maturity date and coupon rate, using mean valuation prediction errors (VPE)
			Acquirer		222	0.33%	
			Target		31	1.22%	
		Non-conglomerate (completed, stock-for-stock)	All		282	1.44%***	
			Acquirer		189	1.90%***	
			Target		93	0.50%	
Billett, King and Mauer (2004)	1979-1997 US	All mergers	Acquirer	[-1,0] months	831	-0.17***	Lehman Brothers Corporate Bond Indices
			BBB- or above		680	-0.09*	
			Below BBB-		151	-0.55*	
			Target		265	1.09**	
			BBB- or above		167	-0.80***	
			Below BBB-		98	4.30***	
Renneboog, Szilagyi and Martynova (2006)	1995-2004 Europe	All mergers	Acquirer	[-1,0] months	225	0.56***	Investment-grade Eurobonds, matched portfolio with matching criteria currency, rating and duration
			A. Listed target		76	0.39*	
			B. Domestic		79	0.84***	
			Cross-border		146	0.41**	
			C. Creditor protection worsened		70	0.12	
			Creditor protection improved		37	0.88***	
			Target		24	0.62	
			A. Domestic		11	1.15	
			Cross-border		13	0.17	

Table 2: The bondholder wealth effects of equity carve-outs, spin-offs and sell-offs

This table shows the estimated bondholder returns of the total public debt of the restructuring firm. Returns are calculated using an event study methodology. N is either the number of different bonds used in the analysis, or in studies where an equally weighted average of the firm's outstanding bonds is used, the number of firms. ***, **, * indicate significance at the 1, 5 and 10% level, respectively.

Study	Sample period / country	Deal Type	Transaction party	Event window	N	Wealth change	Benchmark/methodology
Hite and Owers (1983)	1963-1981 US	Spin-offs	Parent	[-10,10] days	15	-0.30%	Mean-adjusted returns
Datta and Iskandar-Datta (1995)	1982-1990 US	Asset sell-offs	Acquirer	[-1,0] days	63	-0.66%***	Mean-adjusted excess returns, US Treasury bonds
Easterwood (1998)	1982-1990 US	Post-LBO asset sell-offs	Parent	[0] month	134	-0.22%	Blume and Keim (1988) index, Merrill Lynch High Yield Index
			Non-distressed parent		81	0.75%***	
			Distressed parent		53	-1.70%*	
			Disposal of related assets		30	-2.34%***	
			Disposal of unrelated assets		23	-0.87%	
			Onset of distress		31	-2.55%**	
			Disposal of related assets		17	-2.48%**	
			Disposal of unrelated assets		14	-2.62%	
Datta, Iskandar-Datta and Raman (2003)	1982-1992 US	Asset sell-offs	Parent	[-1,0] days	113	-0.54%***	Mean-adjusted excess returns, US Treasury bonds
			Acquirer		96	-0.40%**	
Maxwell and Rao (2003)	1974-1997 US	Spin-offs	Parent	[0] month	80	-0.89%***	Mean-adjusted excess returns, US Treasury bonds
			A. >20% of total assets		41	-1.46%***	
			< 20% of total assets		38	-0.24%***	
			B. Cross-industry		64	-0.74%***	
			Same-industry		16	-1.43%***	
			C. Investment-grade		64	-0.47%***	
			Non-investment grade		16	-2.51%***	
Veld and Veld-Merkoulova (2005)	1995-2002 US	Spin-offs	Parent	[-1,1] days	77	0.80%	Merrill Lynch corporate bond indices

Table 3: The bondholder wealth effects of new debt issues

This table shows the estimated bondholder returns of the total public debt of the restructuring firm. Returns are calculated using an event study methodology. N is either the number of different bonds used in the analysis, or in studies where an equally weighted average of the firm's outstanding bonds is used, the number of firms. ***, **, * indicate significance at the 1, 5 and 10% level, respectively.

Study	Sample period / country	Deal type	Event window	N	Wealth change	Benchmark/methodology
Kolodny and Suhler (1988)	1973-1981 US	New debt issues	[0] month	66	1.95%**	Matched bond
Akhigbe, Easterwood and Pettit (1997)	1980-1992 US	New debt issues	Shortest available weekly interval	399	0.19%**	Shearson Lehman Treasury Index
		Motivated by cash flow shortfall		133	-0.38%**	
		Motivated by unexpected capex		133	0.13%	
		Motivated by unexpected leverage change		133	0.45%**	
		Motivated by debt refinancing		133	0.19%	

Table 4: The bondholder wealth effects of new equity issues

This table shows the estimated bondholder returns of the total public debt of the restructuring firm. Returns are calculated using an event study methodology. N is the number of firms; as an equally weighted average of the firm's outstanding bonds is used, the number of firms. ***, **, * indicate significance at the 1, 5 and 10% level, respectively.

Study	Sample period / country	Deal type	Event window	N	Wealth change	Benchmark/methodology
Kalay and Shimrat (1987)	1970-1982 US	New equity issues	[-2,0], [-1,1] or [-1,0] days	58	-2.13**	Matched bond
Eberhart and Siddique (2002)	1980-1992 US	New equity issues	[1] month	140	0.9%**	Matched portfolio with matching criteria rating and duration, buy-and-hold returns in event time
Elliott, Prevost and Rao (2002)	1980-2000 US	New equity issues	[0,1] days	103	0.42%***	Mean-adjusted excess returns, US Treasury bonds
		A. Effect on long term debt		69	0.69%***	
		Effect on short term debt		49	-0.11%	
		B. Moody's rating > median rating		57	0.43%	
		Moody's rating < median rating		50	0.87%***	

Table 5: The bondholder wealth effects of exchange offers and recapitalizations

This table shows the estimated bondholder returns of the total public debt of the restructuring firm. Returns are calculated using an event study methodology. N is either the number of different bonds used in the analysis, or in studies where an equally weighted average of the firm's outstanding bonds is used, the number of firms. ***, **, * indicate significance at the 1, 5 and 10% level, respectively.

Study	Sample period / country	Deal type	Event window	N	Wealth change	Benchmark/ Methodology
Masulis (1980)	1962-1976 US	Debt-for-equity exchange offers and recapitalizations	[-1,0] days	49	-0.3%***	Mean-adjusted returns
		No covenant protection		18	-0.84%***	
Mikkelsen (1981)	1963-1978 US	Convertible debt calls where conversion forced	[0] week	19	0.52%	Mean-adjusted returns
Cornett and Travlos (1989)	1973-1983 US	Debt-for-equity exchange offers	[0] day	10	0.11%	Mean-adjusted returns
		Equity-for-debt exchange offers		40	-0.48%***	

Table 6: The bondholder wealth effects of public-to-private transactions

This table shows the estimated bondholder returns of the total public debt of the restructuring firm. Returns are calculated using an event study methodology. N is either the number of different bonds used in the analysis, or in studies where an equally weighted average of the firm's outstanding bonds is used, the number of firms. ***, **, * indicate significance at the 1, 5 and 10% level, respectively.

Study	Sample period / country	Deal type	Event window	N	Wealth change	Benchmark/methodology
Marais, Schipper and Smith (1989)	1974-1985 US	All	[-69,0] days	33	0.00%	Dow Jones Bond Index
			[0, offer completed]	30	0.00%	
Asquith and Wizman (1990)	1980-1988 US	All	[0] month	199	-1.1%***	Shearson-Lehman-Hutton Bond Index
		Strong covenants		29	-0.10%	
		Weak covenants			-0.30%	
		No covenants			-2.60%***	
Walker (1991)	1982-1989 US	All	[0] month	24	-2.60%**	Mean-adjusted excess returns, US Treasury bonds
Cook, Easterwood and Martin (1992)	1981-1989 US	MBOs	[0] month	62	-2.56%***	Shearson-Lehman-Hutton Bond Index
		Completed		32	-3.35%***	
Travlos and Cornett (1993)	1975-1983 US	All	[-1,0] days	10	-1.08%*	CRSP equal-weighted index
Warga and Welch (1993)	1985-1989 US	All	[-2,2] months	36	-5.91%***	Lehman Brothers Corporate Bond Index

Table 7: The bondholder wealth effects of leveraged recapitalizations

This table shows the estimated bondholder returns of the total public debt of the restructuring firm. Returns are calculated using an event study methodology. N is either the number of different bonds used in the analysis, or in studies where an equally weighted average of the firm's outstanding bonds is used, the number of firms. TS designates start of takeover, C stands for completion of recapitalization. ***, **, * indicate significance at the 1, 5 and 10% level, respectively.

Study	Sample period / country	Deal type	Event window	N	Wealth change	Benchmark/methodology
Handa and Radhakrishnan (1991)	1984-1989 US	All	[-1,0] days	19	3.00%**	Mean-adjusted returns
			[-15,15] days	19	-6.15%	
Gupta and Rosenthal (1991)	1984-1988 US	Firms in takeover play	[TS-1,-2] days	18	-3.56%***	Dow Jones Bond Index
			[-1,0] days	18	0.17%	
			[1, C-2] days	18	2.51%	
		Firms not in takeover play	[-1,0] days	9	-0.26%	
			[1, C-2] days	8	-3.09%	

Table 8: The bondholder wealth effects of dividend changes and share repurchases

This table shows the estimated bondholder returns of the total public debt of the restructuring firm. Returns are calculated using an event study methodology. N is either the number of different bonds used in the analysis, or in studies where an equally weighted average of the firm's outstanding bonds is used, the number of firms. ***, **, * indicate significance at the 1, 5 and 10% level, respectively.

Study	Sample period / country	Deal type	Event window	N	Wealth change	Benchmark/methodology
Dann (1981)	1962-1976 US	Share repurchases	[0,y] days	20	-0.33%	Mean-adjusted returns
Woolridge (1983)	1970-1977 US	Unexpected dividend increases	[-10,10] days	248	0.10%	Mean-adjusted returns
		Unexpected dividend decreases		45	-0.55%**	
Handjinicolaou and Kalay (1984)	1975-1976 US	Unexpected dividend increases	[-x,y] days	143	0.01%	Mean-adjusted excess returns, US Treasury bonds
		Unexpected dividend decreases		42	-0.48%***	
Jayaraman and Shastri (1988)	1962-1982 US	Special dividends	[-2,0], [-1,1] or [-1,0]	65	0.02%	Mean-adjusted excess returns, US Treasury bonds
Dhillon and Johnson (1994)	1978-1987 US	Dividend increases	[0,1] days	61	-0.37%*	Mean-adjusted excess returns, US Treasury bonds
		Dividend decreases		70	0.69%***	
Maxwell and Stephens (2003)	1980-1997 US	Share repurchases	[0] month	945	-0.19***	Mean-adjusted excess returns, US Treasury bonds
		Firms with positive change in firm value		526	0.29***	
		Firms with negative change in firm value		397	-0.71***	

Table 9: The bondholder wealth effects of executive stock option plans

This table shows the estimated bondholder returns of the total public debt of the restructuring firm. Returns are calculated using an event study methodology. N is either the number of different bonds used in the analysis, or in studies where an equally weighted average of the firm's outstanding bonds is used, the number of firms. ***, **, * indicate significance at the 1, 5 and 10% level, respectively.

Study	Sample period / country	Deal type	Event window	N	Wealth change	Benchmark/methodology
DeFusco, Johnson and Zorn (1990)	1978-82 US	ESOPs	[-1] day	26	-0.40**	Dow Jones Industrial Bond Index

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