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# 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 bondholders. 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. We identify significant gaps in the literature, emphasize the potential differences between bondholder wealth changes in market- and stakeholder-oriented governance systems, and provide valuable insights into methodological advances. Many issues obviously remain, as empirical evidence is still incomplete and focuses almost exclusively on the US. In stakeholder-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.*

**Keywords:** *bondholder wealth; corporate restructuring; mergers and acquisitions; event studies; bond returns.*

**JEL Classification:** *G12, G14, G34, G35*

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## Executive Summary

**Luc Renneboog and Peter G. Szilagyi, *Corporate Restructuring and Bondholder Wealth*.**

This paper provides a comprehensive overview of existing academic research on how corporate restructuring affects bondholder wealth. Fixed creditor claims are affected not only by the firm's post-restructuring performance, but also by changes in its capital structure and cash flow volatility which have a direct impact on default risk. That shareholders can benefit from risk-increasing restructuring to the detriment of creditors is demonstrated by several examples such as the leveraged buyout of Revlon, the establishment of Polaroid's executive stock option plan and the spin-off of Marriott's management businesses.

The agency costs of the shareholder-creditor conflict are generally held to be less pronounced in the stakeholder-oriented governance regimes of Continental Europe and Japan than in the Anglo-American market-oriented world. Still, most existing studies on bondholder wealth preclude the impact of such institutional factors by confining their focus to US restructuring activity. Overall, evidence on how US bondholders are affected by corporate restructuring is often inconclusive or conflicting. The empirical results presented in the literature can be summarized as follows. Of *asset portfolio restructuring* transactions which make disposals from or additions to a firm's businesses, (i) spin-offs and asset sell-offs generally reduce bondholder wealth by expropriating collateral and increasing cash flow volatility, while (ii) mergers and acquisitions reduce or leave bondholder wealth unchanged except under specific conditions. Of *financial restructuring* transactions which change the firm's capital structure rather than its asset portfolio, (i) leverage-increasing debt issues do not reduce bondholder wealth unless they are motivated by cash flow shortfalls, (ii) leverage-reducing equity issues tend to increase bondholder wealth, though negative signalling effects can dominate; (iii) the impact of security exchanges is unclear due to strong signalling implications; (iv) executive stock options reduce bondholder wealth, reflecting the realignment of managerial and shareholder interests at the expense of bondholders; (v) leveraged buyouts reduce bondholder wealth, while there is conflicting evidence on the impact of leveraged recapitalizations; and (vi) dividend changes and share repurchases have an ambiguous impact, which again reflects more the signals they convey than the impact they have on capital structure.

In stakeholder-oriented governance regimes, the potential for research remains constrained by the limited size and liquidity of corporate debt markets, which disclose information on shocks to bondholder 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 conclusively whether the bondholder wealth effects of each restructuring transaction are affected by the greater influence of banks and other risk-averse stakeholders on corporate decision making. That this issue is of paramount importance is captured by Renneboog and Szilagyi (2006), who show that M&As involving Continental European firms are systematically more bondholder-friendly than are US deals. Secondly, an important question is whether the types and conditions of restructuring transactions are different in stakeholder-oriented regimes, and to what extent this owes to powerful creditors blocking transactions that may be economically desirable but would otherwise hurt creditor interests. And thirdly, the internationalized corporate environment has been shown to feed a gradual convergence of governance systems. In stakeholder-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. A key research question is whether these events change the way bondholder wealth is altered by corporate restructuring actions.

## **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 bondholders, a critical issue that has still not been addressed adequately in the literature. Fixed creditor claims are affected not only by the firm's post-restructuring performance, but also by unexpected changes in its capital structure and cash flow volatility, which have a direct impact on default risk. The view that restructuring decisions may induce substantial wealth redistributions between shareholders and creditors has been universal since Black and Scholes (1973). Their landmark paper views a leveraged firm's equity as a call option on the firm's assets, which implies that risk-increasing restructuring benefits shareholders to the detriment of creditors. The empirical literature provides several examples for such expropriations of bondholder wealth, such as the 1985 leveraged buyout of Revlon, the 1988 establishment of Polaroid's executive stock option plan and the 1997 spin-off of Marriott's management businesses.

It is important to note that the agency costs of the shareholder-creditor conflict are more pronounced in the market-oriented corporate governance systems of the common law Anglo-American countries. These regimes basically view creditors and other stakeholders as independent parties that maintain arm's-length contractual arrangements with the firm (Jensen and Meckling, 1976). In the civil law-based, more stakeholder-oriented systems of Continental Europe and Japan, the dynamics of the firm-creditor relationship are very different. Banks act as concentrated lenders and

delegated monitors, playing a key role in mitigating informational asymmetries and agency problems (Stiglitz, 1985; Diamond, 1991), and reducing the marginal utility of external market mechanisms. Other stakeholders also develop long-term relationships with the firm, and closely-held equity and pyramid-like group memberships are in place. The greater influence of banks and other risk-averse stakeholders on corporate decision making dictates that bondholders in stakeholder-oriented governance regimes could benefit relatively more from corporate restructuring.

Existing studies on bondholder wealth preclude the impact of such institutional factors by generally confining their focus to US restructuring activity; the only exception being Renneboog and Szilagyi (2006) on European mergers and acquisitions (M&As). Overall, evidence on how US bondholders are affected by corporate restructuring is often inconclusive or conflicting. This reflects bond price sensitivity to both wealth redistributions between shareholders and creditors induced by risk changes and the signal on future firm performance conveyed by restructuring transactions. The two can have the opposite effect on creditor wealth, to the extent that greater default risk imposes additional discipline on management and thus leads to improved firm performance (Grossman and Hart, 1983; Jensen, 1986). The empirical results presented in the literature can be summarized as follows. Of *asset portfolio restructuring* transactions which make disposals from or additions to a firm's businesses:

- spin-offs and asset sell-offs generally reduce bondholder wealth by expropriating collateral and increasing cash flow volatility, unless subsequent improvements in operating performance are large enough to compensate; while
- M&As reduce or leave bondholder wealth unchanged except under specific conditions, even though they create larger, less risky firms *ceteris paribus*.

Of *financial restructuring* transactions which change the firm's capital structure rather than its asset portfolio:

- leverage-increasing debt issues do not reduce bondholder wealth unless they are motivated by a shortfall in cash flows;
- leverage-reducing equity issues tend to increase bondholder wealth, though negative signalling effects can dominate;
- the impact of security exchanges is unclear due to strong signalling implications;
- executive stock options reduce bondholder wealth, reflecting the realignment of managerial and shareholder interests at the expense of bondholders;

- leveraged buyouts reduce bondholder wealth, but there is conflicting evidence on the impact of leveraged recapitalizations; and
- dividend changes and share repurchases have an ambiguous impact, which reflects more the signals they convey than the impact they have on capital structure.

The analysis presented here identifies significant gaps in the literature, emphasizes the potential differences between bondholder wealth changes in market- and stakeholder-oriented governance systems, as well as provides valuable insights into the evolution of the methodology used. In stakeholder-oriented governance regimes, the potential for research remains constrained by the limited size and liquidity of corporate debt markets, which disclose information on shocks to bondholder 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 conclusively whether the bondholder wealth effects of each restructuring transaction are affected by the greater influence of banks and other risk-averse stakeholders on corporate decision making. That this issue is of paramount importance is nicely captured by Renneboog and Szilagyi (2006), who show that M&As involving Continental European firms are systematically more bondholder-friendly than are US deals. Secondly, an important question is whether the types and conditions of restructuring transactions are different in stakeholder-oriented regimes, and to what extent this owes to powerful creditors blocking transactions that may be economically desirable but would otherwise hurt creditor interests. Thirdly, the internationalized corporate environment has been shown to feed a gradual convergence of governance systems. In stakeholder-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 bondholder 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 M&As. *Financial restructuring* changes the firm's capital structure rather than its asset portfolio 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.

The empirical literature has given notable attention in recent years to the immediate reaction of equity and bond markets to asset portfolio and financial restructuring 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 bondholder wealth. In this section, the main hypotheses that affect the size and direction of creditor wealth changes are presented.

*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.

*Agency costs of outside equity.* The principal-agent conflict between shareholders and managers arises from management trying to extract 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 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 leveraged 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 independent boards 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 stakeholder-oriented systems where ownership and credit supply are more concentrated, the active involvement of risk-averse stakeholders in the monitoring of management has historically provided a substitute for these devices.

In market-oriented governance systems, greater default risk can also contribute to the disciplining of management, 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).

*Agency costs of risky debt.* Corporate decision making can be specifically motivated by the principal-agent conflict between creditors and shareholders. 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. Creditors may also mitigate outright expropriation by keeping the debt maturity short (Ozkan, 2000) and writing protective covenants into the debt contract, while private lenders can also have the capacity to step up monitoring and force contract renegotiations. 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 2005). Since shareholders ultimately bear the costs of inefficient investments in the form of lower equity values, they have strong 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.

*Signalling effect of restructuring decisions.* Several theoretical models show that under informational asymmetries, corporate restructuring has important signalling implications, 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) show that leverage-increasing transactions that potentially exert discipline on management induce positive share prices reactions. The response of bond prices then depends on the tradeoff between the negative risk effect of increased leverage and the positive role of the same in controlling managerial discretion. 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). Bhattacharya (1979), Kalay (1980) and Miller and Rock (1985) emphasize the signalling effects associated with corporate payout decisions.

*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 stakeholder-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.

*Expected bankruptcy and reorganization costs.* The theoretical literature shows that the expected costs of involuntary bankruptcy and reorganization have a significant effect on the value of leveraged 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 transaction 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 banks and other intermediaries. However, it is otherwise extremely difficult to quantify the impact of restructuring in an event study framework.

#### 3.1. *Asset 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 volatility (or *co-insurance*) of cash flow streams can redistribute wealth between shareholders and bondholders, which immediately follows from Black and Scholes' (1973) view of a leveraged firm's equity as a European call option.

3.1.1. *Asset portfolio expansion: mergers and acquisitions.* The potential motives for M&A 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 M&As. 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 M&As simply occur because they enhance the welfare of the acquirer's management. Under informational asymmetries and inadequate monitoring, managers are afforded sufficient discretion to pursue such strategies. Accordingly, Morck, Shleifer and Vishny (1990) show that M&As 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 M&As. Creditors fundamentally benefit from a reduction in default risk.

Thus, if the deal 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 M&As, 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 M&As, 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 M&As (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 deal 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 M&A announcements. Eger (1983) and Maqueira, Megginson and Nail (1998) focus on stock-for-stock M&As exclusively, omitting any effect the payment method may have. Eger finds positive excess returns, but Maqueira, Megginson and Nail only confirm these for non-conglomerate deals.

Of the earlier studies, those that separately consider target firms unanimously report insignificant abnormal 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 *et al.* (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 relatively more 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 and Szilagyi (2006) investigate European M&As using a large sample of investment-grade Eurobonds, and are the first to provide non-US evidence on how bondholders are affected by corporate restructuring. The authors find that M&As involving European firms are generally more bondholder-friendly than are US domestic deals, thus capturing the different dynamics of the creditor-firm relationship in market- and stakeholder-oriented governance regimes. The key results contained in this paper can be summarized as follows. Firstly, bondholders benefit systematically

more from deals involving Continental European firms, where strong banks and other risk-averse stakeholders actively support creditor interests. Secondly, acquirer bondholders earn lower returns from cross-border deals, but the negative cross-border effect is counterbalanced (i) if creditor protection is better in the target country; and (ii) if a UK acquirer approaches a target firm in Continental Europe. For example, the bondholders of the UK firm BPB incurred substantial wealth gains from acquisitions of the Swiss firm La Platriere in 2000 and the Dutch firm Gyproc Benelux in 2002. And thirdly, acquirer bondholders earn higher gains from acquisitions of unlisted targets, a result previously documented for shareholder returns by Faccio, McConnell and Stolin (2006) and Draper and Paudyal (2006).

3.1.2. *Asset 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*<sup>1</sup>. 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. These transactions are typically negotiated privately, thus bypass external monitoring and potentially generate free cash flow concerns (Alexandrou and Sudarsanam, 2001). Owing to these conditions, sell-offs tend to be perceived less favourably than are spin-offs and carve-outs. The reverse side of sell-offs, partial acquisitions, induce agency problems similar to those seen in M&As. However, 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 appropriate collateral and liquidation value available to creditors, and carve-

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<sup>1</sup> *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 detailed description see Slovin, Sushka and Ferraro (1995).

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).

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 implies 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 positive signalling effects can compensate for wealth redistributions.

Contrasting evidence is presented by Maxwell and Rao (2003). The authors find that on average, parent bondholders suffer significant losses, the size of which depend on the change in leverage and the underlying collateral, but not on the loss of co-insurance. Their results coincide with Dittmar (2004) who finds that spin-offs tend to leave parent firms with more leverage than their spun-off subsidiaries. How parent firms may specifically undertake spin-offs to expropriate bondholders is illustrated by Parrino (1997). The author examines a single textbook case, the 1993 spin-off of Marriott's management businesses, which 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, but initially suffered huge wealth losses.

(Insert Table 2)

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 lead to substantial reductions in bondholder wealth, though the size of the losses depends on the underlying motive and the way the proceeds are distributed. Datta and Iskandar-Datta (1995) and Datta *et al.* (2003) find that bondholders in the acquirers of the disposed assets also suffer wealth losses. This implies that the benefits of partial acquisitions in terms of co-insurance and increased collateral do not compensate for a simultaneous increase in leverage and 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 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, lend some support to the intra-creditor wealth transfer hypothesis of Rajan (1992) and Diamond (1993). This hypothesis postulates that when a firm is in distress, secured private lenders (banks) may press for the early liquidation of assets at the expense of other, less senior creditors such as bondholders. 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, in that they alter the firm's capital structure rather its underlying asset portfolio. Creditors could be strongly affected by such capital structure changes, since these 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: a wealth redistribution effect (Jensen and Meckling 1976) and an 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 should also be strongly affected by signalling considerations, reflecting expectations on managerial discipline and firm performance, and any ensuing investment effects.

3.2.1. *New security issues and security exchanges. (i) New debt issues.* The creditor wealth effects of capital structure changes 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 Panel A of 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. This suggests that the positive signal conveyed by new debt issues dominates the negative impact of greater leverage. To a large extent, this result is compatible with Akhigbe, Easterwood and Pettit (1997), who find that bond prices

respond negatively only when the new debt issue is motivated by a current cash flow shortfall.

(Insert Table 3)

(ii) *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).

Creditors are also expected to respond negatively to adverse signals about the firm's future prospects. However, they should benefit *ceteris paribus* from the leverage-reducing effect on equity issuance. Kalay and Shimrat (1987) find that the former effect dominates, by showing that bond prices react negatively to new SEO announcements (see Panel B of Table 3). Elliott, Prevost and Rao (2004) find stronger evidence for a wealth redistribution from shareholders to bondholders; the authors report considerable bondholder gains that increase with debt maturity and firm default risk, Eberhart and Siddique (2002) find similar results across a number of event windows spanning from one month to five years.

(iii) *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 types of transactions entail the exchange of different classes of firm securities. However, while exchange offers are voluntary, recapitalizations generally require the participation of all security holders and thus have a more pronounced impact on capital structure. Masulis (1980) jointly examines the impact of debt-for-stock exchange offers and recapitalizations on bondholders (see Panel C of Table 3). Capital structure theory predicts that both should redistribute wealth from bondholders to shareholders by inducing an increase in leverage. Accordingly, the author reports significant bondholder losses and simultaneous shareholder gains, which are largest when bondholders are 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. The importance of signalling considerations is reinforced

by their finding that leverage-reducing equity-for-debt exchanges induce a negative rather than positive bondholder response.

Mikkelson (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 equity-for-debt exchanges. There is no evidence that bondholders would reap considerable benefits from such transactions, which Mikkelson also attributes to negative signalling effects.

(iv) *Executive stock option plans.* ESOPs are an increasingly controversial device used to mitigate the manager-shareholder conflict. The issuance of stock options to the benefit of employees tends to have a relatively modest impact on capital structure due to their relatively low scale, and do not induce an immediate change in capital structure because they are out of the money at issue. Rather, ESOPs are predicted to induce significant bondholder losses by realigning managerial and shareholder interests at the expense of creditors. Accordingly, DeFusco, Johnson and Zorn (1990) show compelling evidence that the announcement of ESOPs lead to significant reductions in bondholder wealth (Panel D of Table 3). Similar results are provided by Bruner and Brownlee (1990) who examine a single case study of Polaroid's 1988 leveraged ESOP. In June 1988, Polaroid announced the establishment of a leveraged ESOP amounting to about 5% of its outstanding common stock, but later increased the size of the plan to 14% due to an unsolicited acquisition offer. The authors show that over a six-month period, the bondholders of Polaroid suffered an abnormal loss of 10.97%, while shareholders gained 15.97%.

3.2.2. *Highly leveraged transactions.* (i) *Public-to-private transactions.* Public-to-private 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), 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 of each of these transaction types.

Jensen (1986) notes that LBO firms typically provide stronger incentives for management to maximize firm value. Accordingly, the literature observes that LBOs are often followed by disposals of non-core assets. LBOs fundamentally contain managerial agency problems by introducing high leverage and concentrating equity ownership. The control function of debt is particularly pronounced, 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 realign managerial and shareholder interests (Renneboog, Simons and Wright, 2005).

In LBOs, better expectations of future firm performance tend not to compensate creditors for the huge wealth redistribution effect of the leverage increase. This is reflected in the finding of Marais, Schipper and Smith (1989) that the rating agency Moody's Investor Service regularly downgrades firms undergoing LBOs. The authors also cite a well-known example, the 1985 LBO of Revlon which induced a contraction of bond prices in excess of 12.1% over a two-day period. However, they find no evidence that the bondholder wealth losses would be systematic in LBO firms (see Panel A of Table 4). Asquith and Wizman (1990), Travlos and Cornett (1993), Cook, Easterwood and Martin (1992) and Warga and Welch (1993) offer stronger evidence of bondholder expropriation by reporting substantial losses in bondholder wealth around LBO announcements. Warga and Welch (1993) show particularly severe bondholder losses in the LBOs of Midland Ross, Lear Siegler, Federated, Borg Warner and RJR Nabisco between 1985 and 1989. The existing studies show that the negative abnormal bond 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 prior bond ratings (Warga and Welch 1993).

(Insert Table 4)

(ii) *Leveraged recapitalizations.* Leveraged recapitalizations (LRs) are often used to fend off hostile acquisition offers. Under this strategy, firms incur substantial additional debt to repurchase shares or distribute a large special dividend to the current shareholders. Like LBOs, LRs entail huge increases in leverage, and thus should induce significant wealth redistributions from bondholders to shareholders. In lieu of the cash payout, managers also tend to increase their own shareholdings (through stock options or retirement plans), which should instigate better performance but increases the realignment of managerial and shareholder interests at the expense of creditors.

The massive leverage associated with LRs is expected to induce considerable bondholder wealth losses through increased risk. However, the empirical literature offers only limited evidence for such an effect (see Panel B of Table 4). Handa and Radhakrishnan (1991) find that on average, bondholders incur 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 negative 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 bondholder wealth losses is provided by frequent rating downgrades of post-LR firms by Moody's and Standard and Poor's.

3.2.3. *Corporate payout.* 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 can also be driven by both wealth redistributions and signalling considerations. 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, these payout mechanisms also increase leverage, and in the absence of adequate protection, creditors may suffer losses as a result.

There are numerous studies that examine the signalling versus wealth redistribution hypotheses of both dividend announcements and share repurchases. The evidence on the impact of dividends on bondholder wealth is mixed (see Panel A of Table 5). Dhillon and Johnson (1994) find that bond prices fall upon the announcement of dividend increases, which supports the wealth redistribution hypothesis. However, Jayaraman and Shastri (1988) find that the announcement of special dividends does not affect bondholders, which suggests that any wealth redistributions associated with increased leverage are offset by a positive signalling effect. Woolridge (1983) and Handjinicolaou and Kalay (1984) provide further evidence for the signalling hypothesis by showing that unexpected dividend reductions reduce bondholder wealth, while dividend increases have no impact.

(Insert Table 5)

Dann (1981) investigates the wealth effects of share repurchase announcements (see Panel B of Table 5). On the announcement day, he finds insignificantly negative abnormal bond returns and positive stock returns, which is indicative of both wealth redistribution and signalling effects. 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 share repurchase programs are still viewed by the market as a positive signal, but this is often insufficient to offset the bondholder losses that arise from increased default

risk. Accordingly, Maxwell and Stephens (2003) report that rating agencies are twice as likely to downgrade as upgrade bond ratings after repurchase announcements.

#### **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 empirical results 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 rather than substitutes. 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.

An equally important gap in the existing literature is the lack of related studies on the stakeholder-oriented governance systems of Continental Europe and Japan. Existing US studies unambiguously show that corporate restructuring can trigger significant wealth transfers between bondholders and shareholders, which suggests that creditors are not fully protected against deliberate wealth expropriation. In stakeholder-oriented systems, the greater power of banks and other risk-averse stakeholders dictates that corporate restructuring may be more creditor-friendly. This is captured by the European M&A study of Renneboog and Szilagyi (2006), the first non-US paper in this field. Until recently, the potential for research on stakeholder-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 stakeholder-oriented 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.

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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 Sinqefeld'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%	
Walker (1994)	1980-1988 US	Completed mergers	BBB or below	[0] month	19	0.35%	Matched US Treasury bond
			All		92	0.31%	
			Target		33	0.83%	
Maqueira, Megginson and Nail (1998)	1963-1996 US	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%	
Billett, King and Mauer (2004)	1979-1997 US	All mergers	All	[-1,0] months	282	1.44%***	Lehman Brothers Corporate Bond Indices
			Acquirer		189	1.90%***	
			Target		93	0.50%	
Renneboog and Szilagyi (2006)	1995-2004 Europe	All mergers	Acquirer	[-1,0] months	831	-0.17%***	Investment-grade Eurobonds, matched portfolio with matching criteria currency, rating and duration
			BBB- or above		680	-0.09%*	
			Below BBB-		151	-0.55%*	
Renneboog and Szilagyi (2006)	1995-2004 Europe	All mergers	Target	[-1,0] months	265	1.09%**	Investment-grade Eurobonds, matched portfolio with matching criteria currency, rating and duration
			BBB- or above		167	-0.80%***	
			Below BBB-		98	4.30%***	
			Acquirer		225	0.56%***	
			A. Continental European		146	0.48%***	
			UK		79	0.71%***	
			B. Domestic deal		79	0.84%***	
			Cross-border deal		146	0.41%**	
			Creditor protection worsened		70	0.12	
			Creditor protection improved		37	0.88%***	
C. Unlisted target	149	0.65%***					
Listed target	76	0.39%*					
Target	24	0.62					
A. Domestic	11	1.15					
Cross-border	13	0.17					

Table 2

## The bondholder wealth effects of corporate refocusing

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
<b>Panel A: Spin-offs</b>							
Hite and Owers (1983)	1963-1981 US	Spin-offs	Parent	[-10,10] days	15	-0.30%	Mean-adjusted returns
			Parent		80	-0.89%***	
			A. >20% of total assets		41	-1.46%***	
			< 20% of total assets		38	-0.24%***	
Maxwell and Rao (2003)	1974-1997 US	Spin-offs	B. Cross-industry	[0] month	64	-0.74%***	Mean-adjusted excess returns, US Treasury bonds
			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
<b>Panel B: Asset sell-offs</b>							
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
			Parent		134	-0.22%	
			Non-distressed parent		81	0.75%***	
			Distressed parent		53	-1.70%*	
			Disposal of related assets		30	-2.34%***	
Easterwood (1998)	1982-1990 US	Post-LBO asset sell-offs	Disposal of unrelated assets	[0] month	23	-0.87%	Blume and Keim (1988) index, Merrill Lynch High Yield Index
			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%**	

Table 3

## The bondholder wealth effects of security issues and exchanges

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
<b>Panel A: New debt issues</b>						
Kolodny and Suhler (1988)	1973-1981 US	New debt issues	[0] month	66	1.95%**	Matched bond
		New debt issues		466	0.04%	
		Motivated by cash flow shortfall		125	-0.40%**	
Akhigbe, Easterwood and Pettit (1997)	1980-1992 US	Motivated by unexpected capex	Shortest available weekly interval	141	0.19%	Shearson Lehman Treasury Index
		Motivated by unexpected leverage change		117	0.29%	
		Motivated by debt refinancing		155	0.29%	
<b>Panel B: Seasoned equity issues</b>						
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	0.90%**	Matched portfolio with matching criteria rating and duration, buy-and-hold returns in event time
		New equity issues		103	0.42%***	
Elliott, Prevost and Rao (2002)	1980-2000 US	A. Effect on long-term debt		69	0.69%***	Mean-adjusted excess returns, US Treasury bonds
		Effect on short-term debt	[0,1] days	49	-0.11%	
		B. Moody's rating > median		57	0.43%	
		Moody's rating < median		50	0.87%***	
<b>Panel C: Security exchanges</b>						
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%***	
Mikkelson (1981)	1963-1978 US	Convertible debt calls where conversion is 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%***	
<b>Panel D: Executive stock option plans (ESOP)</b>						
DeFusco, Johnson and Zorn (1990)	1978-1982 US	Executive stock option plans	[-1] day	26	-0.40**	Dow Jones Industrial Bond Index

Table 4

## The bondholder wealth effects of leveraged 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. TS indicates the day the transaction is announced, while C indicates the day of completion. \*\*\*, \*\*, \* indicate significance at the 1, 5 and 10% level, respectively.

Study	Sample period / country	Deal type	Event window	N	Wealth change	Benchmark/ methodology
<b>Panel A: Public-to-private transactions</b>						
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	Strong covenants Weak covenants No covenants	[0] month	199	-1.10%***	Shearson-Lehman-Hutton Bond Index
				29	-0.10%	
				60	-0.30%	
Walker (1991)	1982-1989 US	All	[0] month	70	-2.60%***	Mean-adjusted excess returns, US Treasury bonds
				24	-2.60%**	
Cook, Easterwood and Martin (1992)	1981-1989 US	MBOs Completed	[0] month	62	-2.56%***	Shearson-Lehman-Hutton Bond Index
				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
<b>Panel B: Leveraged recapitalizations</b>						
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 Firms not 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%	
			[-1,0] days	9	-0.26%	
			[1, C-2] days	8	-3.09%	

Table 5

## The bondholder wealth effects of corporate payout

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.  $x$  and  $y$  indicate the last actual trade before and the first actual trade after the payout announcement, respectively. \*\*\*, \*\*, \* indicate significance at the 1, 5 and 10% level, respectively.

Study	Sample period / country	Deal type	Event window	N	Wealth change	Benchmark/ methodology
<b>Panel A: Dividends</b>						
Woolridge (1983)	1970-1977 US	Dividend increases	[-10,10] days	248	0.10%	Mean-adjusted returns
		Dividend decreases		45	-0.55%**	
Handjinicolau and Kalay (1984)	1975-1976 US	Dividend increases	[-x,y] days	143	0.01%	Mean-adjusted excess returns, US Treasury bonds
		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%***	
<b>Panel B: Share repurchases</b>						
Dann (1981)	1962-1976 US	Share repurchases	[0,y] days	20	-0.33%	Mean-adjusted returns
Maxwell and Stephens (2003)	1980-1997 US	Share repurchases		945	-0.19***	Mean-adjusted excess returns, US Treasury bonds
		Firms with positive change in firm value	[0] month	526	0.29***	
		Firms with negative change in firm value		397	-0.71***	