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# Short-term termination without deterring long-term investment: A theory of debt and buyouts<sup>☆</sup>

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## ABSTRACT

The option to terminate a manager early minimizes investor losses if he is unskilled. However, it also deters a skilled manager from undertaking efficient long-term projects that risk low short-term earnings. This paper demonstrates how risky debt can overcome this tension. Leverage concentrates equityholders' stakes, inducing them to learn the cause of low earnings. If they result from investment (poor management), the firm is continued (liquidated). Therefore, unskilled managers are terminated and skilled managers invest without fear of termination. Unlike models of managerial discipline based on total payout, dividends are not a substitute for debt—they allow for termination upon non-payment, but at the expense of investment since they do not concentrate ownership and induce monitoring. Debt is dynamically consistent as the manager benefits from monitoring. In traditional theories, monitoring constrains the manager; here, it frees him to invest.

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## 1. Introduction

This paper studies the tension between two first-order problems faced by the modern firm. The first is how to terminate unskilled managers early. The financial crisis demonstrates the substantial losses that can occur if misguided decisions are left unchecked. A quite separate challenge is how to incentivize skilled managers to invest for the long-term. Nowadays, competitive success increasingly hinges upon intangible assets such as human capital (Zingales, 2000). Since intangibles only pay off in the long-run, managers may underinvest in them (Stein, 1988).

These two challenges fundamentally conflict. Investors can mitigate the value destroyed by an unskilled manager by forcing him to reveal short-term earnings, thus giving themselves the option to terminate him if profits are low. However, the same termination threat may deter a skilled

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manager from undertaking efficient long-term projects that risk low short-term earnings.

This paper demonstrates how risky debt can alleviate this tension, by playing two distinct roles which address the two separate challenges. The *disciplinary effect* of debt addresses termination by forcing the manager to make an interim payment. The failure to do so reveals that earnings are weak, the manager is likely unskilled, and thus termination is desirable. Indeed, [Jensen \(1989\)](#) argues that this disciplinary effect explains why buyouts are levered: debt is “a mechanism to force managers to disgorge cash rather than spend it on empire-building projects”. However, such a justification leaves many questions unanswered. First, dividends can also impose discipline: as Jensen also notes, “debt is a substitute for dividends”. Second, buyouts typically feature a concentrated shareholder, but if the only effect of debt is discipline, equityholders are irrelevant and dispersed ownership would be equally effective. Third, it is the manager who controls leverage going forward, and he can raise equity to repay the debt and free himself from its discipline. Fourth, the disciplinary effect may deter investment.

This is where the second effect of debt comes in: the *concentration effect*, which addresses investment. The core model contains a single firm, single large investor, and a continuum of atomistic investors. If atomistic investors provide debt, the large investor’s limited funds comprise a greater proportion of the total equity. Thus, a non-paying manager is not automatically fired; instead, the large investor’s concentrated stake gives her an incentive to gather costly information on the underlying cause of weak earnings. If the cause is low managerial skill, the firm is liquidated; if the cause is investment, it is continued. Knowing that investors will make an informed liquidation decision ex post, the manager pursues long-run growth ex ante. A skilled manager invests without fear of termination; an unskilled manager is efficiently terminated.

The concentration effect distinguishes this paper from theories of the disciplinary role of debt: it has different implications for the substitutability of dividends for debt, the effect of debt on investment, the optimal level of debt, and the concurrence of risky debt with concentrated equity. In [Jensen \(1986\)](#), [Stulz \(1990\)](#), and [Zwiebel \(1996\)](#), debt also forces the manager to pay out cash. Dividends would have the same disciplinary effect, since missing a dividend also reveals low earnings, and are thus a perfect substitute—these models are theories of total payout (debt plus dividends) rather than debt in particular. Here, the financing structure must not only allow termination, but also induce investment. The latter requires the concentration effect, which only debt has. Turning to the effect of debt, in [Jensen \(1986\)](#) and [Stulz \(1990\)](#), debt reduces investment by lowering free cash; here, it can have the opposite effect by inducing monitoring. Moving to the optimal level of debt, it is borderline nonrepayable in disciplinary models. Since the only role of debt is to impose discipline, it should be just high enough that a bad type cannot pay it. In [Lambrecht and Myers \(2008\)](#), strictly nonrepayable debt induces excessive divestment; here, it is efficient as it increases concentration. Finally, the model

predicts that leverage should coincide with concentrated equity investors who actively monitor, as shown empirically by [Cotter and Peck \(2001\)](#).

The above predictions are primarily generated by the concentration effect. Moreover, by analyzing two distinct and conflicting agency problems (liquidation and investment), the model studies the interaction between the concentration and disciplinary effects together, which generates additional implications. These relate to the joint determinants of capital structure and dividend policy as a function of the relative severity of a firm’s agency issues. While standard empirical studies analyze the determinants of leverage (e.g., [Rajan and Zingales, 1995](#)), this paper emphasizes that leverage is the product of two factors: the level of total payout and its division between debt and dividends. The importance of short-term termination determines the need for the disciplinary effect and thus the level of total payout. If termination is unlikely to be optimal (e.g., the firm is a start-up with low liquidation value), total payout should be low; indeed, such firms are typically unlevered and pay no dividends. The importance of long-term investment determines the need for the concentration effect and thus the composition of total payout. If growth opportunities are attractive, any payout should be in the form of debt. While [Rajan and Zingales](#) find that leverage is negatively correlated with growth opportunities, the model predicts a positive correlation once total payout is controlled for. Their negative correlation suggests that a growing firm prefers to be unlevered, but if termination is important, being unlevered is not an option. The appropriate comparison is debt versus other forms of payout that would achieve termination; debt is less detrimental to growth than dividends.

One application of the model is to leveraged buyouts (LBOs), which are often undertaken to discipline managers to scrap inefficient projects, but monitoring helps ensure that efficient investment is not also cut. Indeed, [Kaplan and Strömberg \(2009\)](#) show that, from the 1990s, buyouts have predominantly been in middle-aged firms in growing industries such as IT/media/telecoms, financial services, and healthcare. [Lerner, Sorensen, and Strömberg \(2011\)](#) find that LBOs lead to no decrease in innovation activity and an increase in the quality of innovation.

The above single-firm model is analyzed in Section 2. Section 3 extends the model to multiple large investors and heterogeneous managers, where good managers have a higher probability of having growth opportunities than bad types. A separating equilibrium is sustainable where bad managers run unlevered firms financed exclusively by small shareholders, and good managers run levered firms and are financed by both large and atomistic investors.

The two roles of debt, which lead to firm viability in a single-manager setting, also achieve separation in a multi-manager setting. The disciplinary effect of debt renders it a *credible* signal of managerial quality: bad managers avoid leverage as they are likely to default. However, in models where only credibility of the signal matters, borderline nonrepayable debt is optimal—debt is just high enough that a bad type defaults; additional debt would augment signaling costs. In addition, dividends are equally credible as they also have a disciplinary effect: [Bhattacharya \(1979\)](#)

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