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Seeking safety: The relation between CEO inside debt holdings and the riskiness of firm investment and financial policies ☆

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ABSTRACT

CEO inside debt holdings (pension benefits and deferred compensation) are generally unsecured and unfunded liabilities of the firm. Because these characteristics of inside debt expose the CEO to default risk similar to that faced by outside creditors, theory predicts that CEOs with large inside debt holdings will display lower levels of risk-seeking behavior (Jensen and Meckling, 1976). Consistent with the theoretical predictions, we find a negative association between CEO inside debt holdings and the volatility of future firm stock returns, R&D expenditures, and financial leverage, and a positive association between CEO inside debt holdings and the extent of diversification and asset liquidity. Collectively, our results provide empirical evidence suggesting that CEOs with large inside debt holdings prefer investment and financial policies that are less risky.

1. Introduction

The recent near-collapse of global financial markets led to renewed scrutiny of executive compensation practices by journalists, academicians, politicians, and regulators. Much of the scrutiny focused on alleged excesses in the compensation packages of the executives deemed (at least partially) responsible for the economic turmoil (e.g., Karaian, 2008; Rappeport, 2008; McCann, 2009). However, the financial crisis also highlighted the vulnerability of certain components of firm-specific executive wealth during times of financial distress as several prominent chief executive officers (CEOs) surrendered significant portions of their inside debt holdings (pension benefits and/or deferred compensation) when their firms failed during the crisis.[1] Inside debt holdings are at risk because they generally represent unsecured

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[1] Jensen and Meckling (1976) refer to debt-like compensation components as "inside debt." In general, executive pension plans are defined benefit plans and pay an employee a fixed amount per year after retirement. Deferred compensation refers to defined contribution plans in which specific contributions are made to a retirement plan in the form of either deferred employee compensation or employer contributions. Throughout the remainder of the paper, we adopt the terminology of Jensen and Meckling (1976) and refer to the sum of cumulative

and unfunded liabilities of the firm, rendering these executive holdings sensitive to default risk similar to that faced by other outside creditors (Sundaram and Yermack, 2007; Edmans and Liu, 2011).[2] We investigate whether CEOs with large inside debt holdings protect the value of their holdings by implementing less risky investment and financial policies.

In a corporate setting characterized by the separation of ownership and control, agency conflicts arise due to differences in the incentive structures of principals (shareholders and debt holders) and agents (CEOs). Agency conflicts between CEOs and shareholders arise because CEOs bear the entire cost of their efforts to generate returns for shareholders, but retain only a portion of the returns as compensation for their efforts. Moreover, because CEO wealth is generally less diversified than that of shareholders, CEOs tend to have a lower risk-appetite than what shareholders would prefer (Jensen and Meckling, 1976). A large body of research has investigated compensation mechanisms designed to mitigate the costs associated with these agency conflicts. In general, the results suggest that equity holdings (e.g., stock and stock options) encourage risk-averse CEOs to manage their firms in ways that benefit shareholders (see, e.g., Guay, 1999; Coles, Daniel, and Naveen, 2006; Low, 2009).[3]

Agency conflicts between managers and debt holders arise when managers increase firm risk (e.g., through firm investment and financial policies) in ways that benefit shareholders at the expense of debt holders (Jensen and Meckling, 1976; Dewatripont and Tirole, 1994). Debt holders prefer firms to be more conservative because debt holdings are characterized by an asymmetric payoff function with respect to the firm's net assets (Watts, 2003). While payoffs are fixed (at the nominal interest rate) when firm performance is good, debt holders face substantial risk if firm performance is poor (i.e., if the firm goes bankrupt). Thus, equity-based compensation can lead to behavior which negatively impacts debt holders because excessive risk-taking can contribute to an increased probability of default. This so-called "asset substitution" or "risk-shifting" problem is generally referred to as the agency cost of debt.

Jensen and Meckling (1976) theorize that inside debt holdings encourage CEOs to make investment and financing decisions which mitigate the agency costs of debt. Because inside debt obligations are unsecured, unfunded, and payable at a future date, CEOs (like outside creditors) face asymmetric payoffs with respect to firm performance. That is, the value of CEO inside debt holdings is sensitive to both the probability of bankruptcy and the liquidation value of the firm in the event of bankruptcy or reorganization (Edmans and Liu, 2011). This unique characteristic suggests that inside debt holdings could help improve the alignment of CEO and debt holder incentives by encouraging managers to make decisions which reduce the overall risk of the firm.

Inside debt holdings are prevalent and often substantial (Sundaram and Yermack, 2007). Wei and Yermack (2011) find that 84% of CEOs in their sample hold some form of inside debt and that average inside debt holdings are approximately $10 million for sample CEOs. Despite its widespread use, limited disclosure requirements have hindered researchers' ability to investigate the implications of debt-like CEO holdings. However, recent empirical research provides preliminary evidence on the implications of CEO inside debt holdings.[4] Sundaram and Yermack (2007) document a positive association between CEO inside debt holdings and the distance to default.[5] Wei and Yermack (2011) find that initial disclosures of CEO inside debt positions (in early 2007) generated increases in existing bond prices, decreases in equity prices, and decreased volatility for both types of securities. Several recent studies find a negative association between inside debt holdings and the cost of debt (Anantharaman, Fang, and Gong, 2010; Wang, Xie, and Xin, 2010a), the use of restrictive covenants in debt contracts (Anantharaman, Fang, and Gong, 2010; Chava, Kumar, and Warga, 2010; Chen, Dou, and Wang, 2010; Wang, Xie, and Xin, 2010a), and accounting conservatism (Chen, Dou, and Wang, 2010; Wang, Xie, and Xin, 2010b). Other studies find that inside debt holdings are associated with higher firm liquidation value (Chen, Dou, and Wang, 2010) and lower credit default swap spreads (Bolton, Mehran, and Shapiro, 2010).

A common thread among the previously discussed studies is that the authors conjecture, but do not test, that their results are attributable to an *expected* negative

(*footnote continued*)
defined pension benefits (including supplemental executive retirement plans (SERPs)) and deferred compensation as total inside debt.

[2] Two recent examples highlight the vulnerability of CEO inside debt holdings during times of financial distress. As a result of the General Motors (GM) bankruptcy, Rick Wagoner (GM's former CEO) stands to lose approximately $20 million of his SERP because the plan was unfunded and was to be paid out of the firm's general assets (Sterne, 2009). In another highly publicized case, Lee Iacocca (former Chrysler chief executive) lost a substantial portion of his pension benefits as a result of the Chrysler bankruptcy (Chasan, 2009).

[3] Theory suggests that stock options provide a powerful way to mitigate the managerial risk-aversion problem due to the convex payoff structure that they provide (Jensen and Meckling, 1976; Haugen and Senbet, 1981; Smith and Stulz, 1985; Lambert, 1986; Copeland and Weston, 1988; Lambert, Larcker, and Verrecchia, 1991; Hirshleifer and Suh, 1992; Murphy, 1999; Hemmer, Kim, and Verrecchia, 1999). The theoretical arguments are supported by a large body of empirical research. Specifically, prior research finds a positive association between the sensitivity of CEO wealth to stock price volatility (the vega) (Guay, 1999) and levels of research and development (R&D) investment (Nam, Ottoo, and Thornton, 2003; Coles, Daniel, and Naveen, 2006) and leverage (Nam, Ottoo, and Thornton, 2003; Coles, Daniel, and Naveen, 2006), and a negative association between the vega and the extent of firm diversification (Coles, Daniel, and Naveen, 2006). In addition, Rajgopal and Shevlin (2002) examine oil and gas firms and find that stock option incentives induce greater risk-taking in the form of increased future exploration and decreased use of oil price hedging.

[4] New Securities and Exchange Commission (SEC) disclosure rules have facilitated much of the recent research on the implications of CEO inside debt holdings. Specifically, effective for 2006 fiscal year-ends, the SEC issued a requirement that firms disclose their CEOs' inside debt positions. The requirement called for detailed disclosures related to CEO pension benefits and deferred compensation, including the actuarial net present value and annual increases of such balances.

[5] Sundaram and Yermack (2007) define the distance to default as the number of standard deviation decreases in a firm's asset value that it would take for the firm to default.