

Debt Rollover via Reclassifications: Determinants and Real Impact^{*}

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Debt Reclassifications and Rollover: Determinants and Real Impact

ABSTRACT

Debt reclassifications indicate intent by firms to roll over their short-term debt on a long-term basis. Using a hand-collected sample of about 15,000 firm-years over the period 1993-2005, we empirically examine the factors that determine the decision of firms to reclassify (and therefore roll over) existing or new short-term debt as long-term debt. On average, 33% of the firms reclassify short-term debt as long-term debt each year. Almost all reclassifications are done under a “revolving credit facility” or line of credit. Among firms that reclassify short-term debt, the average percentage of reclassified debt to total debt is 40%. We show that debt reclassifications occur when firms have major investment projects, market conditions are not favorable for equity and long-term debt issuance, and firms face refinancing risk. Firms that reclassify overcome the financing frictions and achieve significantly higher sales and asset growth, and invest more in both fixed assets and working capital. Consistent with the idea that firms face tighter financial constraints around periods of reclassification than expected future constraints, we find that the cash flow-sensitivity of investment increases and that of cash holdings decreases at the time of debt reclassification.

JEL classification: G21, G31, G32

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1. Introduction

Debt rollover risk and the freeze in the market for the rollover of short-term debt have been at the center of the recent credit crisis. While the ability to raise and roll over very short-term finance on a day-to-day basis has been an integral part of the business models of financial companies, non-financial companies need not automatically roll over short-term debt. Relatively little is known about the factors that affect the rollover decision of non-financial companies. For example, we do not know how prevalent debt rollovers are, what causes firms to roll over short-term debt, or how non-financial firms' real decisions, such as investment and growth, are likely to be affected if the ability to roll over debt is impaired. In this paper, we attempt to address these issues.

Information on debt rollover with guaranteed financing is obtained based on firms' short-term debt reclassification decisions. According to the Statement of Financial Accounting Standard (SFAS No.6), a firm can reclassify its short-term debt as long-term debt if two conditions are met: (a) the firm *intends* to refinance the short-term obligation on a long-term basis, and (b) the firm can demonstrate that it *has the ability* to consummate the refinancing. Therefore, we argue that debt reclassifications can be used to identify when firms *plan to* (and can) roll over their short-term debt on a long-term basis. We investigate the determinants of debt reclassification decisions in order to understand firms' debt rollover decisions.

We collect the information on debt reclassifications from annual 10-K SEC filings for almost 15,000 firm-year observations over the period 1993-2005 for S&P 1500 firms. We find that debt reclassifications are surprisingly common – in each year, on average, 33% of the firms reclassify existing or new short-term debt as long-term debt. The percentage of firms that reclassify short-term debt increases through the nineties and

peaks at around 40% in the years 1999 and 2000, and falls to an average of 27% in the five years after the 2001 recession. Among the firms that reclassify short-term debt, the average percentage of reclassified debt to total debt over our sample period is as high as 40%, and shows a similar time trend.¹

Reclassifications are almost always done under a line of credit or a revolving credit facility.² This is not surprising as SFAS No. 6 requires firms to demonstrate the ability to roll over the short-term debt. We find that the reclassifications mostly involve reclassifications of short-term debt to medium term debt of maturity between 3 to 5 years. Importantly, firms often reclassify *new* short-term debt, rather than postponing the maturity of *existing* short-term debt.³ Among firms that start to reclassify debt, i.e., do not have reclassified debt in the previous year but do have some in the current year, the percentage of firms that reclassify new short-term debt is 62%. This suggests that firms plan to roll over (and reclassify) short-term debt when their financing needs increase.

Reclassifiers are firms in need of liquidity but are not firms in financial distress. Consistent with Sufi's (2009) evidence that more profitable firms are more likely to have lines of credit, we find that more profitable firms are also more likely to reclassify; however, the effect of profitability on the likelihood of reclassification is present even among firms with existing lines of credit and even when the existence of credit lines is

¹ S&P 1500 firms are larger and older, and have higher stock returns, profitability and lower likelihood of bankruptcy than the average firm in Compustat. In other words, these firms are financially healthier. The nature of this sample makes it very unlikely that the high percentage of debt reclassifications that we observe is driven by the need to avoid covenant violations in response to deteriorating financial conditions, as we discuss later in Section 5(a). As a robustness check, we randomly select 500 firms from Compustat over the period 1993-2005 and collect the information on debt reclassification. Untabulated results (discussed in Section 7) show that most of our results still hold for the random sample.

² Amir Sufi's website provides information on the availability of lines of credit for a sub-sample of 8,500 firms over the 1996-2003 period. For this sub-sample, almost all the firms that reclassify debt have available lines of credit.

³ Our (conservative) definition of whether a firm reclassifies *new* short-term debt in a given year is that the outstanding amount of reclassified debt exceeds the level reported in the previous year plus debt that would have matured at the end of that year and the year after.

modeled as an endogenous decision. Reclassifications typically start after periods of high growth, and coincide with years in which firms have spikes in acquisition activity and capital expenditures. Firms with higher asset growth are more likely to reclassify, but, their market-to-book ratios (as well as stock returns) are *lower*. Reclassifiers also have high debt ratios prior to reclassification – especially long-term debt. This suggests that weak equity market conditions and either reluctance or inability to issue additional long-term debt, combined with a pressing need to invest, are important reasons for firms to roll over short-term debt. Reclassifiers also have lower liquidity ratios, which is consistent with the evidence that firms draw down their cash reserves as they pursue high-growth strategies. Therefore, firms reclassifying short-term debt are achieving at least two objectives: (1) at a time when they have a need for funds (and debt and equity market conditions are not favorable), they are reducing the risk of refinancing short-term debt by utilizing their revolving loan facilities, and (2) they are reducing the possibility of violating liquidity-based covenants by moving short-term debt to the long-term liability section of the balance sheet.

Reclassification is somewhat persistent – half of the firms that reclassify in a given year also have reclassified debt five years later. We find an interesting – and consistent – contrast in the characteristics of firms that start reclassification and those that end reclassification. Firms are more likely to end reclassification when their growth slows, when they become less profitable, when their liquid reserves improve, and when their stock returns are higher – precisely the opposite characteristics of firms that start reclassifications.

We find that firms are also more likely to reclassify and reclassify larger amounts when the term spread decreases, and returns in the overall stock market are lower.

Lower term spreads are supposed to be precursors of weak economic conditions, which are not ideal for long-term debt, or short-term debt without the back-up of bank lines of credit. The term spread is highly and negatively correlated in our sample period with the credit spread, a measure of default risk.⁴ The importance of overall equity market conditions in explaining the reclassification decisions confirms that reclassifications, to some extent, reflect firms' desire to avoid equity financing when conditions for equity issuance are not favorable. We also directly test whether firms switch in favor of reclassified debt relative to short-term debt that is not reclassified and long-term debt in response to changing market conditions, and find supportive evidence.

In a recent paper, Kahl, Shivdasani, and Wang (2008) study firms that have commercial paper (CP) programs, and argue that the issuance of commercial paper provides financial flexibility. Commercial paper issued under CP programs is often backed by lines of credit and is typically rolled over, so that long-term projects can be financed without having to issue riskier long-term debt. However, Kahl, Shivdasani, and Wang (2008) find that CP programs are exclusive to a relatively small number of large well-established firms. In contrast, while we do find instances of commercial paper backed by credit lines being reclassified as long-term debt, smaller and younger firms in our sample are much more likely to reclassify debt than more established firms.⁵ Therefore, it seems unlikely that a major part of the debt reclassified in our sample represents commercial paper-related debt. Indeed, when we classify firms in our sample into four groups based on their S&P credit ratings (high, intermediate, low and no

⁴ The correlation between the term spread and the credit spread is -0.81 in our sample period. The credit spread is defined as the difference between the annualized yields on the 3-month commercial paper and the rate on the 3-month US Treasury bill. The term spread is defined as the difference between the 10-year Treasury bond yield and the 3-month Treasury bill yield.

⁵ Indeed, firms that have commercial paper programs appear to have quite different characteristics to those that reclassify debt. For example, while Kahl, Shivdasani, and Wang (2008) report that the former have low overall debt levels, we find that for the latter, exactly the opposite holds.

ratings), we find that firms with intermediate ratings and unrated firms reclassify much more. In fact, the effects of sales growth and stock market conditions on the reclassification decision come mostly from these two groups.

As discussed above, some of our results suggest that a combination of unfavorable security market conditions and investment needs cause firms to reclassify. It is important to know whether the firms reclassifying debt under the revolving facilities manage to overcome the financing frictions and invest more, i.e., do the reclassifications affect firms' "real" decisions. We estimate a simultaneous equations model that treats both reclassifications and investment (alternatively, sales growth, asset growth and or change in working capital) as endogenous variables. Our three-stage least square estimates reveal that there is a bi-directional causality with respect to each of these variables: the amount reclassified positively affects each of these variables, and higher levels of these variables in turn cause firms to reclassify higher amounts of short-term debt. Since reclassifications occur when firms are in need of funds but alternative financing is more difficult, our results indicate that the ability to roll over short-term debt is especially valuable under these circumstances.

To the best of our knowledge, ours is the first paper to examine the circumstances of the debt rollover decision for a large cross-section of firms. As noted, reclassifications are very often done under the backup of credit lines, and in fact represent a particular use (but not necessarily a draw-down) of lines of credit. As such, our paper is related to several recent papers that study bank lines of credit. Sufi (2009) finds that bank lines of credit are a substitute for cash holdings in mitigating the impact of adverse liquidity shocks. Firms prefer lines of credit to holding cash as they become more profitable, presumably because lines of credit typically have cash flow-based covenants that might

be violated by firms with poor profitability. Our analysis complements Sufi's by showing that the ability to roll over short-term debt, especially when external market conditions are unfavorable, is an important benefit that firms derive from bank lines of credit. Yun (2009) shows that corporate governance affects firms' choices between cash and lines of credit. Ivashina and Scharfstein (2009) find that during the peak period of the recent financial crisis, low credit quality firms drew down their lines of credit and possibly caused banks with larger overhang of lines of credit relative to deposits to reduce lending. Gao and Yun (2009) examine the use of lines of credit by CP-rated firms after the collapse of Lehman Brothers and find that firms with high default risk dramatically reduced their commercial paper borrowings, and drew heavily from existing lines of credit to substitute lost borrowing from the commercial paper market.

The rest of the paper is organized as follows. Section 2 briefly discusses debt reclassification and revolving facilities and reviews the related literature. The data and variables are described in Section 3. Section 4 presents univariate results. Regression results on the determinants of the debt rollover decision via reclassifications are presented in Section 5. Section 6 discusses the real impact of debt reclassifications. Section 7 discusses how the results extend to a random sample of Compustat firms. Section 8 concludes.

2. Reclassification, Revolving Facilities, and Relevant Literature

a. Background information on reclassification and revolving facilities

According to the Statement of Financial Accounting Standard (SFAS No.6), short-term obligations expected to be refinanced can be excluded from current liabilities, and reclassified as long-term liability, if the enterprise can demonstrate both intention and

ability to refinance the obligation on a long-term basis. This standard is effective from 1975.

Most reclassifications are done under a “revolving facility” or a line of credit (also called a revolving credit agreement or revolving credit loans). Under such a facility, a bank or several banks stand ready to lend to a borrower on demand at any time during a given period a pre-agreed amount of funds. In contrast to installment credit, borrowers may use or withdraw funds up to the credit limit whenever they want and the credit may be used repeatedly. The terms of agreement generally extend over one to five years, and can be renewed or revised during or at the end of the agreement period. In many cases, banks require a “compensating balance”, i.e., the borrower has to deposit a certain percentage of the commitment amount of the line as collateral. The level of compensating balance is negotiable based on the bank-borrower relationship and the borrower’s financial condition.

There are two basic forms of revolving facility, committed and uncommitted. For uncommitted lines, banks and borrowers do not enter into a binding agreement, and banks can unilaterally deny credit to borrowers. As the ability to consummate the refinancing is not fully ensured, reclassification cannot be done under uncommitted lines. For committed lines, however, a formal written agreement is required, which binds the bank to provide funds when requested. Therefore, committed lines generally have covenants to ensure that the borrower adheres to certain conditions. The interest rate on the debt outstanding under the line is generally a floating rate linked to the prime rate or a market-determined rate such as the LIBOR, plus a spread reflecting a customer-specific risk premium. A commitment fee is charged on the unused portion of the credit line. In short, the committed credit line is a commitment on the part of banks that ensures that

borrowers get the funds whenever needed, as long as the covenants are met, and, therefore, can be used to demonstrate the ability of refinancing.

Sometimes, companies, especially those above investment grade, use the revolving facility as a back-up line for their commercial paper programs. They can borrow under the line whenever they do not want to or cannot refinance their commercial paper in the open market. For example, for the financial year 1993, the 10-K filing of Albertson's Inc. (gvkey 1240), a retail grocery store company, has the following note on their commercial paper program:

"...The Company has in place a \$200 million commercial paper program. Interest on the outstanding commercial paper borrowings ranges from 3.10% to 3.17% with an effective weighted average rate of 3.13%. The Company has established the necessary credit facilities, through its revolving credit agreement, to refinance the commercial paper borrowings on a long-term basis. These borrowings have been classified as noncurrent because it is the Company's intent to refinance these obligations on a long-term basis..."

It is worth noting that it is not just short-term debt outstanding under the line or commercial paper with back-up line that can qualify as reclassified short-term debt. As long as it can be refinanced under the line, any short-term debt will do, even if it turns out to be financed by an alternative source.

b. Relevant literature on bank lines of credit

The theoretical literature has long recognized the importance of lines of credit or loan commitments for liquidity management. Boot, Thakor, and Udell (1987) and Holmstrom and Tirole (1998) present models that illustrate the intuition that in a stochastic environment, loan commitments mitigate the adverse consequences of liquidity

shocks. Both models show that moral hazard problems are exacerbated in certain future states of the economy due to adverse shocks to liquid balances or interest rates, causing firms to invest or exert effort suboptimally. By granting firms loan commitments, banks can provide insurance against these liquidity shocks, and recoup expected losses ex-ante by charging commitment fees.

In spite of these theoretical insights, empirical evidence on the importance of lines of credit has only become available recently. For the period 1996-2003, by searching through keywords in the electronic versions of firms' 10-K SEC filings, Sufi (2009) identifies existing lines of credit for Compustat firms. He also compiles more detailed information for a randomly selected sample of 300 firms. Sufi (2009) shows that lines of credit substitute for cash holdings in the context of firms' liquidity management. More profitable firms are more likely to hold lines of credit and hold less in the form of cash balances. Sufi (2009) argues that this is because lines of credit are often associated with cash flow-based covenants, and banks are likely to restrict access to lines of credit if these covenants are violated. Consistent with the theoretical models, Campello, Graham and Harvey (2009) find that a line of credit can be seen as a "cheap" insurance policy against liquidity shortages in bad times. Lines of credit work particularly well for firms that have limited access to the public organized markets. In addition, differently from cash, lines of credit have very low carry costs.

c. Relevant literature on debt reclassifications

The literature on debt reclassifications is sparse, possibly again because the data needs to be directly retrieved from 10-K filings. Gramlich, McAnally, and Thomas (2001) identify a sample of 197 firms (1,765 firm years). The authors show that reclassifications

substantially improve firms' current ratios, which would be lower than previous years in the absence of reclassification, and suggest that reclassifications are a form of balance sheet management, possibly motivated by a need to work around restrictive covenants. Gramlich, Mayew, and McAnally (2006) base their study on a sample of 1,684 firm-year observations between 1989 and 2000. They find that firms with lower operating cash flows, leverage and current ratio are more likely to reclassify debt. The authors conclude that "managers reclassify to obscure the firm's true financial condition and not to simply reveal the likely timing of debt payments." They find that reclassifying firms are more likely to experience a rating downgrade; moreover, market value of equity decreases when firms start reclassifying and increases when they stop reclassifying.

d. Relevant literature on debt maturity structure

Debt reclassifications typically involve firms expressing intent to use revolving credit facilities to refinance existing short-term debt for a certain number of periods. In our hand-collected data from 10-K filings, 60% of the reclassifiers explicitly report a maturity period for the reclassified debt. The mean and median maturities are 3.84 years and 4 years, respectively. Thus, it appears that debt reclassification also involves a choice of debt maturity structure. Firms reclassifying debt are mostly opting for medium term debt as opposed to short and long term debt.

Theories of debt maturity suggest that certain types of firms may prefer intermediate term debt over longer or shorter term debt. Myers's (1977) debt overhang theory implies that firms with growth options should avoid issuing long-term debt, or debt that cannot be renegotiated, since the benefits of good projects would partially go to debtholders. Diamond (1991, 1993), on the other hand, stresses "liquidation risk"

inherent in short-term debt: firms with growth options but uncertain cash flows may default on short-term debt and lose their growth options.

Bank debt that can be rolled over subject to firms not violating covenants would appear to resolve some of these problems. First, it would avoid the problem of debt overhang since firms can choose not to roll over the debt if market conditions improve in the future. Second, the revolving facilities are ideal for reducing refinancing risk and at the same time allowing firms to pursue their growth options.

3. Data and Variables

a. Data and the time trend of debt reclassification

We start with all non-financial and non-utility U.S.-based firms in Compustat that belong to the S&P 1500 any year during 1993 to 2005.⁶ We set the beginning of the sample period to 1993 because annual 10-K SEC filings are available electronically for all firms in the years after 1993. The information on debt reclassifications is manually collected from annual 10-K SEC filings available through EDGAR (www.sec.gov). We require firms to have 4 consecutive years of non-missing data on short-term debt, long-term debt, total assets, PPE, EBIT, share prices, and stock returns. This enables us to examine how debt reclassifications evolve for a given firm over time. We obtain data on stock prices and returns from the Center for Research on Security Prices (CRSP) files. We exclude firm-year observations where the amounts of long-term debt and total debt in Compustat are inconsistent with those in 10-K filings. Also excluded are observations where the amount of long-term debt changes significantly (changes by $\pm 30\%$ or more) due to restatement in the following year. All dollar values are converted into 2000

⁶ More specifically, we focus on S&P 500, S&P MidCap 400, and S&P SmallCap 600 firms.

constant dollars using the GDP deflator. The final data set is an unbalanced panel consisting of 14,790 firm-year observations.

We also merge our data with Sufi's (2009) sample to obtain information of lines of credit.⁷ Sufi's (2009) sample offers information on whether a firm has lines of credit from 1996 through 2003. About 87% of firms in our sample also exist in Sufi's sample during his sample period (1996 – 2003).

[Insert Table 1 here]

Panel A of Table 1 describes our sample and reveals the prevalence of reclassification and its time trend. On average, 33% of our sample firms in any given year have reclassified debt. The percentage of firms that reclassify increases through the nineties, and peaks immediately prior to the 2001 recession. It drops sharply during the recession, and continues to decline until the end of the sample period. Among the firms that reclassify short-term debt, reclassified debt as a percentage of total assets (*RecA*) averages at 12.8%, and the average reclassified debt to total debt ratio (*RecP*) is 39.6%. These two ratios show a time trend that is very similar to that of the fraction of firms that reclassify.

The fact that reclassifications peak in the year 2000 and decline sharply the following year, we believe, is significant. The Federal Reserve's Senior Loan Officer Opinion Survey on Bank Lending Practices indicates that both standards on Commercial and Industrial loans as well as spreads of loan rates over banks' cost of funds sharply increased in the years 2000 and 2001.⁸ In fact, loan standards were tighter in 2001 than in 2000. In both years, overall stock market returns were -11%. Yet, reclassifications were at a peak in 2000, and experienced a sharp decline in the following year. One

⁷ Sufi's (2009) sample is obtained from Amir Sufi's homepage (<http://faculty.chicagogsb.edu/amir.sufi/>).

⁸ See <http://www.federalreserve.gov/boarddocs/snloansurvey/>.

possible reason for this difference is that the economy was still growing in the year 2000 (GDP growth was a respectable 3.7%), and firms were in need of funds to finance investment. However, issuing equity was not an attractive option due to the state of the stock market, so firms tried to preserve their liquidity by choosing to roll over debt (either maturing or new short-term debt). However, firms cut back on expansion the following year, so the need for funds and reclassifications decreased.

Column (6) in Table 1 shows the number of firm-years that are in common between our sample and Sufi's (2009) sample. Column (9) reveals an important characteristic: a very large fraction (about 98%) of firms that reclassify (as identified by our search) in the merged sample also have a line of credit (as identified by Sufi's search). In other words, as we expect, bank lines of credit are the typical way in which firms that reclassify can meet the FASB 6 guideline, i.e., demonstrate an ability to refinance a short-term obligation on a long-term basis. In terms of the percentages (*RecA* and *RecP*) and time trends, columns (10) and (11) are similar to columns (4) and (5).

b. Explanatory variables

The decision to reclassify is arguably a financing or capital structure decision, because firms presumably weigh the costs and benefits of alternative forms of finance in choosing to roll over debt. It might also be argued that the decision represents a debt maturity structure decision as well. Accordingly, we try to explain the reclassification decisions in terms of some standard control variables that capture the costs and benefits of different types of financing.

We consider the following firm characteristics and macroeconomic variables as the determinants of reclassification decisions. Detailed definitions of these variables are

provided in Appendix A. To mitigate the impact of outliers or misrecorded data, all explanatory variables are winsorized at the 0.5% level at both tails of the distribution.

Firm size and age are standard proxies in capital structure models. We include the log of the book value of assets, $Ln(Assets)$, as a proxy for firm size, and also include the log of the firm's age plus one ($Ln(Age)$). *Sales Growth* is included to capture a firm's recent growth prospects. Various capital structure theories suggest that the use of debt is related to profitability. We use return on assets (*ROA*) as a proxy for profitability. Companies having more tangible assets are expected to support more debt as these assets can be pledged as collateral. The net PPE-to-asset ratio (*Tangibility*) is used to measure the tangibility of the firm's assets. The market-to-book ratio (*MB*) is considered to be an important variable in leverage decisions and has been used as a proxy for a firm's long-term growth potential as well as equity market conditions, and is included in our regressions as well.

We expect that companies will be more likely to issue equity rather than reclassify short-term debt when their stock performance has been good. This is consistent with both the equity market timing and adverse selection arguments, as companies' equity are less likely to be undervalued during such periods.⁹ We use the excess stock return (*Excess Stock Return*), computed as the compounded monthly stock returns in the past 12 months minus the stock market return, to measure a company's stock performance.¹⁰ We include the *current ratio* as it measures a company's liquidity status and ability to pay off short-term debt. It is also often one of the main covenants associated with bank loans, a potential violation of this covenant could thus trigger a debt reclassification decision

⁹ See among others, Baker and Wurgler (2002) and Chang, Dasgupta, and Hilary (2006).

¹⁰ The results are similar if we use the risk-adjusted return (the compounded monthly CAPM-adjusted stock returns in the past 12 months) to measure a company's stock performance.

(Gramlich, McAnally, and Thomas (2001)). We include the *Leverage Ratio* - defined as total debt (the sum of short-term and long-term debt) divided by total assets – because firms are likely to issue additional short-term debt and roll over such debt either to avoid issuing very long-term debt if they already have too much long-term debt, or to avoid covenant violation if they already have too much short-term debt. Companies with rated debt have easier access to the corporate bond market (Faulkender and Petersen (2006)). To capture a company's access to bond markets, we include a debt rating indicator variable (*Debt Rating*) that equals one if a company has a debt rating assigned by Standard & Poor's, zero otherwise. To capture business variability, we include *Earnings Volatility*, which is measured as the standard deviation of the EBIT to assets ratio in the past 5 years.

We expect macroeconomic conditions to influence debt reclassification choices because time-varying macroeconomic conditions may be associated with time-varying debt and equity market conditions as well as financing needs. We consider the following three macroeconomic variables. *Stock market return* is computed by compounding monthly returns on the CRSP value-weighted index of stocks traded on NYSE, NASDAQ, and AMEX. To the extent that the run-up in the equity market is associated with robust economic outlook and enhanced growth opportunities, firms should shorten debt maturity to take advantage of low liquidity risk and to avoid debt overhang (Myers (1977)). On the other hand, the model of Lucas and McDonald (1990) implies a positive relation between stock market return and the use of long-term debt. Their model is based on the idea that during good times (under favorable stock market conditions), adverse

selection costs (information asymmetry) will be lower.¹¹ Thus a stock price run-up (high stock return) will usually precede the issue of information disadvantaged securities, such as equity or long-term debt. We use *Post 2000* dummy to capture the possible regime shift around 2000 reported in Table 1. *Term spread* is defined as the difference between the December 10- year Treasury bond yield and the annualized December 3-month Treasury bill yield.¹² Korajczyk and Levy (2003) argue that term spread serves as a proxy for investment opportunities. A high term spread implies good economic prospects, which in turn lead to an increase in debt maturity if firms borrow long to finance long-term investments. During our sample period, the term spread is highly and negatively correlated with the credit spread – a measure of default risk. Thus, it could be argued that the term spread proxies for debt market conditions generally.¹³

4. Univariate Analysis

We present a detailed analysis of the characteristics for firms that begin reclassification and end reclassification, and compare these with those of some control groups. We believe an analysis of these descriptive statistics is quite revealing in terms of understanding the motives for debt reclassification.

[Insert Table 2 here]

¹¹ This happens because the cash flows from a company's assets in place have a publicly observable component that is related to general economic conditions and to a component that is private information to the company's insiders, as in Myers and Majluf (1984). The publicly available component is relatively more important during good times, thereby reducing the adverse selection costs of equity issuance.

¹² Treasury and corporate bond yields are retrieved from the Federal Reserve files at www.federalreserve.gov.

¹³ The tax theory developed by Brick and Ravid (1985) also suggests a positive relation between term spread and average debt maturity. In contrast, the survey by Graham and Harvey (2001) indicates that a large fraction of chief financial officers indeed prefer short-term debt "when short-term interest rates are low compared to long-term rates".

In Table 2, we examine characteristics of firms that start reclassification in any given year (i.e., they have reclassified debt in year t but not the year before) and those that stop reclassification in a given year (i.e., they have reclassified debt in year $t-1$ but not in year t). To save space, only mean values are reported. Similar inferences can be drawn for median values. We start with Panel A. For firms that start reclassification at time t , the “Yes” group consists of firms that reclassify in t but not in $t-1$, while the “No” group comprises of firms that do not have any reclassified debt either in year t or $t-1$ (as revealed by the dummy variable *RecD* which takes a value of 1 whenever a firm has reclassified debt, and zero otherwise). First, it is important to note that when firms start reclassification, 62% raise *new* short-term debt and reclassify that as long-term debt: the dummy variable *MoreRecD* takes a value of 1 if reclassified debt in period t exceeds that in period $t-1$ plus debt that would have matured at the end of that year or the year after, and zero otherwise. Thus, reclassifications have implications beyond mere accounting changes “that obscure firms’ true financial condition” (Gramlich, McAnnally, and Thomas (2001)), and are in fact an integral part of the way firms arrange new financing for growth.

In the year that they start reclassification (year t), firms have more tangible assets, slightly higher return on assets, higher cash flows, lower stock returns (both unadjusted and market-adjusted) and market-to-book ratios, much higher investment, asset growth, sales growth and especially acquisition activity, higher leverage ratios, lower cash balance and current ratio than firms that did not reclassify in any given year as well as the year before. These differences are all useful in understanding which types of firms reclassify. The higher ROA is consistent with the association of reclassifications and

bank lines of credit, and with Sufi's (2009) evidence that profitability is positively associated with the presence of lines of credit.

Capital expenditures, asset growth, acquisitions and sales growth are much higher for firms that start reclassification than those that do not. The most noticeable difference is in asset growth, mirrored in acquisition activity, which are significantly higher in the year of reclassification. It appears, therefore, that the demand for funds is driven to some extent by acquisitions that are at least partially financed by cash. This would appear consistent with the lower unadjusted and market-adjusted excess stock returns and market-to-book ratios in Panel A, which suggest that these are not periods in which stock-financed acquisitions are attractive. In fact, the lower stock returns and market-to-book ratios possibly indicate why these firms choose to rely on short-term financing rather than raise equity or long-term debt, since adverse selection costs are expected to be higher during such periods. The last row in Panel A shows that the term spread is also lower for firms that start reclassification, consistent with the notion that lower term-spreads (associated with higher default risk) reflect weakening of economy-wide fundamentals and tighter debt market conditions.

Firms that start reclassification have higher debt ratios, and lower current ratios and cash balance, than those that do not. We also examine net debt and equity issuances around reclassification. The amounts of net debt and net equity issues (ΔD and ΔE , respectively) are computed using Compustat's cash flow statement data.¹⁴ Companies are defined as issuing debt (equity) when the net debt (equity) issued divided by total

¹⁴ Net equity issues (ΔE) equal the sale of common and preferred stock minus the purchase of common and preferred stock. Net debt issues (ΔD) equal long-term debt issuance minus long-term debt reduction plus changes in current debt.

assets exceeds 3 percent.¹⁵ We also find in Table 2 that a much higher percentage of reclassifiers issue debt compared to firms that do not, reflecting that new short-term borrowing or drawdowns of lines of credit are reclassified as long-term debt. In contrast, a smaller fraction of reclassifiers issue new equity. The same patterns are observed in terms of the size of new debt and equity issuance ($\Delta D/A$ and $\Delta E/A$).

The higher leverage ratio and lower current ratio and cash balance could reflect financing policy of the recent past. When we compare the same set of firms one year before, we find that while the unadjusted stock returns of firms that would start reclassification next year are not yet as unfavorable relative to the ones that would not, most of the differences in firm-specific variables are already apparent at $t-1$. In particular, debt ratios are already higher and current ratios are lower, consistent with Gramlich, McAnnally, and Thomas (2001). The lower cash balance and current ratio could reflect Sufi's (2009) finding that firms with lines of credit hold less cash balance, but could also be due to the fact that such firms exhaust cash holdings as they expand more rapidly.

Finally, Panel A reports the change in the maturity structure of debt around the decision to start reclassification. The debt maturity information is obtained from Compustat, which reports amounts of debt maturing in one, two, three, four and five years. We treat the difference between the total long-term debt and the long-term debt maturing in two to five years as debt maturing in more than five years. Since firms do not follow a consistent policy in reporting the maturity of reclassified debt in their 10-K filings, we can only infer the average maturity of reclassified debt by observing the change in the aggregate debt maturity structure in response to reclassifications. The

¹⁵ A fixed cutoff for defining large debt/equity issues is used in many previous studies, including Hovakimian, Opler, and Titman (2001), Leary and Roberts (2005), and Chang and Dasgupta (2008). Alternative cutoffs of 1%, 5%, or 10% make little difference to the results that follow.

summary information in Panel A reveals that there is only a slight increase in debt maturing in more than five years (D^{5+}) in the year the firms start reclassification; on the other hand, there are significant increases in both debt maturing in more than one year (D^{1+}) and debt maturity in more than three years (D^{3+}). Therefore, it appears that reclassified short-term debt is classified as debt maturing in the intermediate term (2-5 years).

Moving forward to the year after reclassification, we find that the major difference is that sales and asset growth of the reclassifiers come down drastically. The year reclassification starts appears to be one in which growth rate registers a spike.

In Panel B, we consider firms that declassify (end reclassification). We have almost exactly the opposite picture to that in Panel A. Both the stock returns and the market-to-book of declassifiers are higher than those for firms that continue to reclassify their debt, suggesting that alternative financing in the form of equity is likely to be cheaper for firms that stop reclassification. However, growth rates in sales and assets are also lower – so the need for financing is lower. The fact that firms that stop reclassification have higher current ratios is consistent with the notion that these firms hold more cash as the need for funds for expansion decreases. They are also likely to add to inventory as sales growth slows. Firms that stop reclassification experience an increase in the proportion of debt maturing in more than five years. This is consistent with our earlier observation that most reclassified debt is of intermediate-term maturity.

The comparisons between the two groups do not change much one year before or after, suggesting that the decision to stop reclassification – similar to the decision to start - does reflect a change in the firm's environment.

To summarize, the descriptive statistics in Tables 2 indicates that reclassifications are initiated by firms that are growing rapidly, and in particular, coincide with periods that show a spike in asset and sales growth and acquisition activity. They also coincide with periods in which firm's stock valuations are unfavorable, as reflected in the market-to-book or stock returns, and when the firms have high debt ratios. Most of the reclassified debt is stated to mature in the intermediate term, that is, between two to five years. The picture that emerges is that firms plan to roll over short-term debt on a long-term basis when they are in need of funds to sustain growth, but are unable or unwilling to issue significant amounts of equity or long-term debt.

5. The Determinants of Debt Rollover Via Reclassifications

In this section, we present regression evidence to further understand the circumstances and motives for debt rollover via debt reclassifications. We first examine the effect of standard determinants of firms' financing decisions on the reclassification decision. Next, we examine more closely how the intensity with which this method of debt rollover is used varies with firm quality.

a. The Determinants of Debt Reclassification/Rollover Decisions

We now present regression analysis to understand the determinants of reclassification/rollover decisions. In Table 3, we present results for five regressions which examine different aspects of reclassification decisions. The regressions control for 2-digit SIC industry fixed-effects, and standard errors are clustered at the level of the firm.¹⁶ The first column reports results from an OLS regression, and the dependent

¹⁶ Results that incorporate firm-fixed effects are similar and are presented in Table 4.

variable is the ratio of outstanding reclassified debt over total assets (*RecA*). The next four columns report results for logistic regressions, and the dependent variables are all indicator variables. The dependant variable in column (2) takes a value of 1 if a firm has reclassified debt in a given year, and zero otherwise (*RecD*); that in column (3) takes a value of 1 if reclassified debt that period exceeds reclassified debt last period plus short-term debt that would have been due that period and the subsequent period (that is, it represents *new* short-term debt reclassified as long-term), and zero otherwise (*MoreRecD*);¹⁷ that in column (4) takes a value of 1 if the firm starts to reclassify in a given year (that is, it had no reclassified debt in the previous year), and zero otherwise (*StartRecD*); that in column (5) takes a value of 1 if a firm ends reclassifying its debt in a given year (i.e., it had reclassified debt in the previous year but not in that year), and zero otherwise (*Enders*). To mitigate the concern of endogeneity, except for variables indicating macroeconomic conditions, all other control variables are lagged one period in regressions.

[Insert Table 3 here]

In interpreting the results from Table 3, a caveat has to be kept in mind. Although a large percentage of firms in our sample have lines of credit (more than 90% of the firms in the sample merged with Sufi's (2009) sample have lines of credit, as shown in Column (7) in Table 1), since availability of lines of credit appears necessary for reclassifications, it is possible that our regressions in Table 3 simply reflect when a firm is likely to have a line of credit (a la Sufi (2009)), instead of indicating when firms decide to roll over debt, which is our main objective. In other words, the control variables could be correlated

¹⁷ The sum of reclassified debt last period and short-term debt that would have been due that period and the subsequent period is the maximum amount that may have to be renewed. Any higher amount must be new short-term debt reclassified as long-term debt.

with persistent firm-characteristics that make some more (or less) likely to have lines of credit. However, as will be seen below, several variables we examine have different effects on the likelihood of debt reclassification and the likelihood of a line of credit being available (as in Sufi (2009)). Moreover, we explicitly control for the “line of credit” effect in results reported in Table 4 below.

The results in Table 3 are consistent with the descriptive statistics presented in Tables 2. Table 3 indicates that firms with high sales growth in the past year have more reclassified debt and are more likely to reclassify, start reclassification or raise new short-term debt that is reclassified, and are less likely to end reclassification.¹⁸ While some of the other variables in Table 3 have coefficients consistent with the control group comparisons in Table 2, they are also consistent with Sufi’s (2009) results on the determinants of lines of credit. Thus, a higher market-to-book ratio or excess stock returns have a negative effect on reclassifications, but a positive effect on the end of reclassification. Sufi (2009) finds that the market-to-book ratio has a negative effect on the likelihood of the firm having a line of credit, and interprets this as evidence consistent with the notion that firms with better growth opportunities prefer less debt.

In Table 3, we also find that profitability has a positive effect on reclassification. Earnings volatility has a negative effect on reclassifications, but a positive effect on the end of reclassifications. These results are consistent with Sufi’s (2009) finding that firms are reluctant to use lines of credit for liquidity management if cash flows or earnings are

¹⁸ Note that the regressions in Column (2)-(5) are based on fewer observations than that in Column (1). Column (2) reports the results of a logistic regression on the entire sample, which controls for 2-digit SIC industry fixed effects. All firms in certain industries either have or do not have reclassified debt throughout the entire sample period. As a result, 17 observations are automatically dropped since the reclassification dummy is perfectly correlated with their industry dummies. Column (3) contains fewer observations because of the collinearity mentioned above, the missing information for debt reclassification in the previous period, or the missing information for debt that would have matured at the end of the subsequent period. Finally, Column (4) is conditional on firms that have no reclassified debt at $t-1$, and the regression in column (5) is estimated only using firms that have reclassified debt at $t-1$.

low, since they risk defaulting on cash flow-based covenants typically associated with bank lines of credit.

Sufi (2009) finds that larger firms are more likely to have lines of credit, while firm *Age* does not have any significant effect on the likelihood of a line of credit. In contrast, we find that both variables have a significant *negative* effect on the magnitude and likelihood of reclassification as well as the likelihood of a firm ending reclassification. The fact that younger and smaller firms are more likely to *both* start and end reclassification likely reflects a life-cycle effect in the intensity with which lines of credit is used.

One variable that is especially interesting is the credit rating dummy, which takes a value of 1 if a firm has an S&P debt rating, and zero otherwise. Firms with rated debt are *less* likely to take recourse to debt reclassification, and are more likely to end reclassification. Interestingly, Sufi (2009) finds that firms with rated debt use lines of credit much more intensively (Table 2 in Sufi (2009)). Our result is consistent with the idea that long-term debt and reclassified debt are substitutes – if firms can tap the long-term debt market, they are less likely to reclassify. It is also possible that firms with rating find it easier to issue commercial paper, and therefore have less refinancing risk and need for lines of credit or debt rollover.

It is also notable that the lagged debt ratio is positively related to the probability of reclassification, and negatively related to the end of reclassification. In results not reported in a table, we find that when we further break up the debt ratio into short, intermediate (maturing in 2-5 years) and long-term (maturing in more than 5 years) debt, only the latter has a significant positive effect on the decision to start reclassification.

This suggests that debt overhang problems might be a reason for firms to seek short term debt (and reclassify).¹⁹

Firms might end reclassification due to financial covenant violation. Roberts and Sufi (2009) and Nini, Smith and Sufi (2009) show that net debt issuing activity, acquisitions and capital expenditures exhibit a sharp decline following debt covenant violations, which is consistent with the profile of firms that declassify debt in Table 2. To see if our results on the determinants of declassification are driven by covenant violations, we add a dummy variable which equals one if a firm experiences any financial covenant violation in the previous four quarters, and zero otherwise.²⁰ We find (the results are not tabulated, but available upon request) that firms with covenant violations do reclassify less and are more likely to end reclassification.²¹ However, our abovementioned results still hold.

Table 3 also shows the effect of some variables that capture overall market conditions or the level of economic activity. From Table 1, one notices that there is a sharp drop in reclassifications after the year 2000. There could be several reasons for such an effect – for example, it could represent accounting conservatism in the post-Enron period, and a reluctance to reclassify short-term debt such as commercial paper as long term. The evidence is also consistent with our finding that firms reclassify when they need funds for growth, and not in response to worsening financial conditions that

¹⁹ In contrast, it is the ratio of short-term debt to total assets that has a significant positive effect, and intermediate-term debt over assets has a negative effect, on the likelihood of the “end reclassification” decision. It appears as though firms already start to declassify some debt (which presumably causes an increase in reported short-term debt and a decrease in intermediate-term debt) before declassifying all debt.

²⁰ Covenant violation information is obtained from Amir Sufi’s website: <http://faculty.chicagobooth.edu/amir.sufi/data.htm>. Following Nini, Smith, and Sufi (2009), we consider violations of financial covenants only. We thank Amir Sufi for suggesting us to examine the covenant violation as a possible reason for reclassifications.

²¹ Firms can still roll over and reclassify short-term debt after they violate certain financial covenants but receive a waiver before the reporting date. Following Nini, Smith, and Sufi (2009), we still consider these firms to be in covenant violations.

might trigger covenant violations, given that the U.S. economy was still in the aftermath of the 2001 recession during a part of the 2001-2005 period. However, even after controlling for this time-period effect, reclassification decisions are sensitive to debt and equity market conditions. Consistent with the notion that firms are more likely to reclassify when overall equity market conditions are weak, we find that the return on the overall stock market affects the likelihood of reclassifications negatively in column (2). Moreover, the term spread affects the likelihood and size of reclassifications negatively, and the likelihood of ending reclassifications positively. The term spread is thought to be negatively associated with the likelihood of economic downturns (Estrella and Mishkin (1998)). Moreover, it is negatively correlated with the credit spread, a measure of default risk defined as the difference between the yields on the 3-month commercial paper and the 3-month treasury bills. In our sample, the correlation between the term spread and the credit spread is -0.81. Thus, a low term spread is likely to be associated with adverse conditions in public debt markets, and encourage firms to use their lines of credit to back up commercial paper issues or delay repaying maturing debt.

[Insert Table 4 here]

In Table 4, we try to separate the rollover or reclassification decision from the decision to have a line of credit, and address some additional robustness issues. The dependent variable in the regressions reported in this table is the amount of reclassified debt as a proportion of the book value of assets, *RecA*. In column (1), we report the results from a regression that incorporates firm-fixed effects. By looking at “within-firm variation”, we also address concerns that time-invariant firm characteristics which explain the propensity of firms to use lines of credit more intensively drive our results. Compared to the results in column (1) of Table 3, firm size, earnings volatility and the

current ratio are no longer significant, but the effects of other explanatory variables remain unaffected. Given that reclassified debt cannot be negative, the regression in column (2) incorporates a Tobit specification in which the dependent variable (*Rec/A*) is bounded below by zero. The results are very similar to those in column (1) of Table 3, except that the overall stock market return also becomes negatively significant.

Finally, in columns (3)-(5), we control for the “lines of credit” effect in three ways. In column (3), we report an OLS regression with a line of credit dummy; in column (4), we condition the regression on the existence of lines of credit, based on Sufi’s (2009) sample, and in column (5), we report the results from a Heckman selection model in which the availability of credit lines is endogenized using the same control variables as in Sufi (2009).²² The qualitative nature of the results remains unchanged. In column (3), the line of credit dummy has a significant positive sign, as expected. Overall, results in columns (3)-(5) suggest that our control variables do capture variations in the amount of debt that remains reclassified. This is not surprising since reclassifications represent a specific *use* of lines of credit – namely, the roll-over of either existing short term debt, or new debt.

In the next sections, we further explore the extent to which reclassifications represent substitutions between debts of different maturities.

b. Is reclassified debt a substitute for conventional forms of debt?

Debt reclassifications could simply represent a situation in which firms are in greater need for external funds in general, or debt financing in particular. Alternatively,

²² More specifically, we fit the regression model with selection using Heckman's two-step consistent estimator. Column (5) of Table 4 reports the second-step estimates of the regression equation with *RecA* being the dependent variable. The first-step probit estimates of the selection equation, which concerns the determinants of lines of credit, is reported in Appendix B.

reclassifications could be symptomatic of situations where firms find it difficult or are unwilling to raise conventional short and long-term debt, and choose this alternative type of rollover finance. For example, when firms reclassify some short-term debt, it is unclear whether they also increase the amount of conventional short-term debt at the same time. A similar question arises with respect to long-term debt.

While some of the results reported in Table 3 support the notion that reclassifications are more likely when conventional long-term and short-term debt issuance is less attractive, we now provide additional evidence. In the first two columns of Table 5, we report Logit regressions on the choice between long-term debt and reclassified debt. The third column presents Logit results for the choice between short-term debt and reclassified debt. In column (1), the dependent variable takes a value of 1 if the amount of long-term debt issue from firms' cash flow statement (which includes the change in reclassified debt) less the change in reclassified debt exceeds 3% of the book value of assets, and zero if reclassified debt exceeds 3% of book value of assets (cases in which both of these exceed 3% of book value of assets are dropped). In column (2), the dependent variable takes a value of 1 if the change in debt maturing in more than five years (very long-term debt) based on firms' balance sheet data exceeds 3% of book value of assets,²³ and zero if reclassified debt exceeds 3% of book value (again, cases in which both of these exceed 3% of book value of assets are dropped). In column (3), the dependent variable takes a value of 1 if debt in current liability less the current portion of long-term debt exceeds 3% of book value of assets, and zero if reclassified debt exceeds 3% of book value (cases in which both of these exceed 3% of book value of assets are

²³ We add back the debt amount that would have matured in 6 years as of a year ago, since it could be argued that this is a mechanical reduction in debt maturing in more than 5 years. However, our results are not affected by this adjustment.

dropped). In these regressions, our interest is to examine the determinants of the choice between conventional short-or long-term debt issuance and debt reclassification (in excess of 3% of book value of assets). Our results are very similar if we examine the determinants of the choice between conventional debt issuance and *new* (i.e., additional) debt reclassifications.

[Insert Table 5 here]

The Logit regressions in columns (1) and (2) of Table 5 suggest that reclassifying firms choose this form of financing as a substitute for longer term debt. Firms prefer to reclassify debt over issuing new long term debt or very long-term debt when they are more profitable, when equity market conditions are less favorable, when they are more leveraged, when earnings volatility is lower, and when they do not have rated debt. They are less likely to choose debt reclassification over issuance of long-term debt in the post-2000 period, and when the term spread indicated favorable economic outlook and debt market conditions. The results in column (3) are remarkably similar. The only exception is that in the post-2000 period, firms seem to have moved away from short-term debt and favor reclassified debt. It is also interesting to note that lower term spread – indicating unfavorable economic outlook – encourages reclassifications at the expense of both short and long-term debt. It appears that the firms take advantage of the revolving facilities when default risk is high in the economy.

As a robustness check for our Logit results, we estimate a multinomial Logit model in which the decisions to issue the three types of debt are modeled simultaneously. The dependent variable, y , takes a value of one if a firm issue short-term debt in a given year (greater than 3% of the book value of assets), a value of two if the firm reclassify short-term debt as long-term (reclassified debt greater than 3% of the book value of

assets), and a value of three if the firm issues conventional long-term debt (greater than 3% of total assets). We choose debt reclassification ($y = 2$) as the base category. The results are reported in columns (4) and (5). They are generally consistent with those reported in the first three columns of Table 5.

To summarize, in this section, we find evidence consistent with the idea that firms substitute reclassified debt for short and long-term debt: the choice between reclassified debt and these two alternative types of debt financing is affected by firm and market characteristics in a very similar way as the likelihood of debt reclassification itself. In other words, debt reclassification is *relatively more favored* over the alternatives under certain conditions. In Section 5-d, we further show that when firms reclassify debt, they in fact issue less long-term debt.

c. Debt reclassifications and credit quality

Our results in Table 3 and 4 indicate that smaller and younger firms are more likely to reclassify, and reclassify larger amounts (as a proportion of total assets) of short-term debt as long-term. We also noted that firms without credit ratings are more likely to reclassify. These results provide an interesting contrast with the characteristics of firms that have commercial paper (CP) programs studied by Kahl, Shivdasani and Wang (2008). Kahl, Shivdasani and Wang (2008) argue that commercial paper issued under CP programs is often backed by lines of credit and is typically rolled over, so that long-term projects can be financed without having to issue riskier long-term debt. They find that CP programs are exclusive to a relatively small number of large well-established firms.

[Insert Table 6 here]

In this section, we explore further the relationship between firm creditworthiness and the likelihood of debt reclassification. We use firms' historical S&P long-term domestic issuer credit rating as a proxy for credit quality. In Table 6 we partition firm-years into different groups according to credit ratings. Firms with rating equal to or below B+ are grouped as low-rated firms. Firms rated between BB- and BBB+ are considered as intermediate-rated firms. Firms with rating between A- and AAA are defined as high-rated firms. 7,204 firms-years with no credit ratings are labeled as "unrated firms". Column (2) of Table 6 shows that high-rated firms are more likely to have commercial paper ratings, suggesting that they have better access to commercial paper markets. Columns (6) and (7) indicate that intermediate-rated firms are more likely to reclassify and high-rated firm reclassify less than other firms.

After merging our sample with Sufi's (2009) *full* sample which contains information on the availability of lines of credit for each firm, in column (8) of Table 6, we find that almost all high- and intermediate-rated firms have lines of credit. However, for firms in the full sample that are also in Sufi's (2009) *random* sample (which contains detailed information of lines of credit), the size of lines of credit, as a percentage of total assets, is the largest for intermediate-rated firms (21.5%). Intermediate-rated firms also utilize lines of credit more intensively than high-rated firms (used lines/total lines is 24.1% for intermediate-rated firms versus 9.5% for high-rated firms). This implies that although both high- and median-credit quality firms have access to long-term debt markets, lines of credit are more important in liquidity management for the latter. Firms with low ratings are less likely to have lines of credit (column 8) and the size of their lines is smaller (column 11), although the utilization of the line is high (column 10). This suggests that low-rated firms also rely more on bank loans when lines are available, but

their access to lines of credit is limited, possibly because of higher default risk. Unrated firms, which are younger, slightly less profitable and have higher growth potentials than rated firms (columns 3-5), are similar to the low-rated firms in terms of access to credit lines; however, they use these lines more intensively than unrated firms.

[Insert Table 7 here]

In Table 7, we formally test the relation between debt ratings and debt rollover via reclassifications. *No Rating* takes a value of one if a firm does not have an S&P long-term domestic issuer credit rating, and zero otherwise. *High Rating* takes a value of one if the firm has rating above or equal to A-, and zero otherwise. *Low Rating* takes a value of one if the firm has rating below or equal to B+, and zero otherwise. To avoid multicollinearity, we do not include a dummy variable for intermediate-rated firms (BBB or BB), which serve as a benchmark in regressions when we interpret the coefficients of debt rating dummies defined above. Our results in Table 7 show that compared with intermediate-rated companies, both high- and low-rated firms are less likely to start reclassification and reclassify less. The unrated firms have more reclassified debt as a proportion of assets than all other firms (despite lower access to credit lines) and are more likely to reclassify or start reclassification or reclassify new debt than low- and high-rated firms (but less likely than the intermediate-rated firms).

Overall, these results suggest that the very high-rated firms, possibly because of their superior CP ratings, routinely roll over commercial paper on a short-term basis and do not need to reclassify their short-term debt. Indeed, for these firms, reclassifications may send a wrong signal to the market, such as difficulty in passing market scrutiny and a need to draw down credit lines, which are normally not intensively used. The low-rated firms are possibly limited by their access to lines of credit and also do not have the need

to reclassify due to poor growth options. Debt rollover via reclassifications are very commonly used among the intermediate-rated and unrated firms (collectively accounting for more than 77% of our sample), who have better growth options than the low-rated firms but are more constrained than the high-rated firms. A combination of poor equity and long-term debt market conditions and investment needs may cause these firms to increase short-term borrowing. However, too much short-term debt may raise concerns about their ability to refinance. By reclassifying the debt, these firms may be able to signal their ability and intent to roll over the short-term debt.²⁴

6. The Real Impact of Debt Reclassifications

a. The impact of debt reclassification on investment and growth

The descriptive statistics of Tables 2 and our previous empirical analysis suggest that the start of reclassifications coincide with periods of especially high investment activity and asset growth. Since other evidence in Table 2 suggests that during these periods, firms also face frictions in financial markets, it is of interest to know whether reclassifying firms are, in the end, able to invest at higher levels.²⁵ To properly address this question, one needs to take into account the simultaneity of the investment and reclassification decisions.

We estimate four sets of simultaneous equations using the three-stage least squares method of estimation. In each of these pairs of simultaneous equations, the

²⁴ In results not reported in a table, we find that while the results of Table 3 hold for each credit quality group separately, the effects of sales growth and stock market conditions on debt reclassification decisions mainly come from unrated and intermediate ratings firms.

²⁵ As we noted above, when firms reclassify debt, they are in fact often using lines of credit to support additional financing. For Sufi's (2009) smaller "random sample" for which there is more detailed data on lines of credit, we find a one-to-one relation between the draw-down of lines and increases in reclassification for 50% of the sample firm years. Firms are also likely to use the credit lines to back up commercial paper programs and reduce refinancing risk, as we noted above. Thus, reclassifications are associated with the use of lines of credit to secure additional financing.

amount of debt reclassified is treated as one of the endogenous variables, and the other endogenous variable is, alternatively, sales growth, asset growth, total investment (cash flows from investing activities) deflated by total assets ($Investment/A$), or the change in net working capital over assets ($\Delta Working Capital/A$). In the equations in which we model the determinants of these four “growth/investment variables”, to identify the system, we include the lagged value of the dependent variable, firms’ R&D over sales ($R\&D/Sales$), a dummy variable to indicate whether R&D is missing ($R\&D Dummy$), Altman's (1968) unleveraged $Z score$, the dividend to assets ratio ($Dividend/A$), the economy-wide corporate profit growth, and the GDP growth, which are deemed to be determinants of corporate investment or growth. We also include the same set of the control variables in the debt reclassification equation except the overall stock market returns, the term spread, the post-2000 dummy, the current ratio, and debt ratings from the set of explanatory variables as they are more related to financing decisions than to growth or investment.

[Insert Table 8 here]

Appendix C reports OLS results on the effect of debt reclassifications on the growth variables. The amount reclassified has a significant positive effect on each of these four growth/investment variables. R&D over Sales, the R&D dummy, GDP growth and corporate profit growth all have significant effects. More importantly, Table 8 reports the three-stage least square results for equations concerning the impact of debt reclassification on the growth variables. The results for debt reclassification equation are reported in Appendix D. The results suggest a bi-directional causality: all the growth variables cause firms to reclassify larger amounts, and larger amounts of reclassification cause higher growth.

We also employ the single-firm, four-way matching methodology, which is based on industry, size, market-to-book ratio and past sale growth, as an auxiliary test on the real impact of debt reclassification.²⁶ Results (untabulated but available upon request) show that on average, reclassifying firms have 5.4% higher sales growth, 6.4% higher asset growth, and 4.2% higher investment-to-assets ratio, and 1.2% higher working capital investment than their non-reclassifying counterparts. The differences are all significant at the 1% level.

b. Debt reclassifications and financial constraints

Our previous results suggest that adverse equity and debt market conditions, combined with a need for growth, are important for the reclassification/rollover decision. In other words, reclassifications occur in an environment in which firms need funds for growth but are likely to face financial constraints. In this section, we provide evidence consistent with the view that firms face *temporary* financial constraints when they reclassify debt. If financial constraints are expected to be temporary, i.e., the constraints are likely to be more binding at present than in the future, then we expect firms to allocate more internal funds to investment today, and save less in the form of cash holdings for future investment. In other words, the cash-flow sensitivity of investment should increase, and the cash-flow sensitivity of cash holdings should decrease, when firms reclassify debt.

[Insert Table 9 here]

²⁶ This matching procedure is based on Barber and Lyon (1997) and Lyon, Barber and Tsai (1999). Specifically, in order to find each reclassifying firm's closest match we first limit the sample of potential matches to those firms who do not reclassify short-term debt in a particular year. All firms in the same industry as the reclassifying firm based on the 2-digit SIC industry classification are found. We require at least five potential matches for each reclassifying firm, otherwise it is omitted from the sample. The absolute difference between the size, market-to-book ratio and sales growth of the sample firm and those of the potential matches is then standardized by each variable's sample standard deviation. Matches are chosen for each reclassifying firm by minimizing the sum of the standardized differences in size, market-to-book ratio and sale growth for firms in the same industry.

Table 9 presents the results. The cash flow identity includes different uses of cash – investment, addition to net working capital, addition to cash holdings, dividend payout and reduction in debt and equity issuance.²⁷ Treating cash flows as exogenous, we examine how the other components of the cash flow identity respond to a dollar change in cash flows. We estimate separate regressions in which each of the other components of the cash flow identity is a dependent variable, and the cash-flows-to-assets ratio (*Cash Flow/A*), the market-to-book ratio, log of assets ($\ln(A)$) and the amount reclassified (*RecA*) plus its interaction with cash flow are the independent variables. All flow variables are scaled by beginning-of-period total assets. The regressions incorporate firm-fixed effects. The dependent variables in column (1)-(4) represent different uses of cash – investment (*Investment/A*), addition to non-cash working capital (Δ *Working Capital/A*), dividend payout (*Dividend/A*), and addition to cash holdings (Δ *Cash/A*). The dependent variables in the last three columns are the total debt issuance (Δ *D/A*), equity issuance (Δ *E/A*) and the additional debt issuance defined as total debt issuance (Δ *D*) net of newly reclassified debt, deflated by total assets. Regressions are run separately for each of these uses and sources of cash on the same set of explanatory variables.

The coefficients on *RecA* suggest that the amount reclassified itself has a significant positive impact on investment, a negative effect on dividend payouts, and a negative effect on additional debt issues (excluding reclassified debt). These results confirm that reclassifications are done to fund capital expenditures at times when firms are unable to issue more conventional types of debt. Importantly, the coefficients on the interaction term, $RecA \times Cash\ Flow/A$, suggests that the cash flow sensitivity of

²⁷ We use the cash flow identity proposed by Shyam-Sunder and Myers (1999): Investment + Dividend Payout+ Addition to Cash Holdings+ Change in Non-Cash Net Working Capital – Net Debt Issuance – Net equity Issuance = Operating cash Flow.

investment increases and that of cash holdings decreases as more debt is reclassified, consistent with the idea that financial constraints tighten when firms reclassify debt.

7. Robustness Checks on a Random Sample of Compustat Firms

Our results so far are based on firms in the S&P 1500. Since a typical firm in the S&P 1500 is likely to be larger and financially healthier than a typical firm in Compustat, it is worthwhile to examine whether the results established so far extend to firms in Compustat. We therefore randomly select 500 firms from Compustat over the period 1993 – 2005 and collect information regarding debt reclassification.²⁸ Not surprisingly, in untabulated results, we find they are on average smaller and less profitable than S&P 1500 firms. Their market-to-book ratio, asset growth, and sales growth are higher, which indicates they have more growth opportunities than S&P 1500 firms. The firms in the random sample have fewer tangible assets, lower leverage ratio, and more short-term debt. They also hold more cash, issue more equity, and are less likely to have S&P ratings. These suggest that a typical Compustat firm has less access to the debt market and is more equity-dependent than a typical S&P 1500 firm.

In results unreported in a table, we find that the time trends in the percentage of firms that reclassify, the fraction of reclassified debt to total debt and total assets are very similar to those reported in Table 1. However, the average percentage of firms that reclassify during the 1993-2005 period is 22.7% compared to 33% in Table 1, and the fraction of firms that have access to a line of credit is 83.3 % compared to 91.1% in Table 1. Thus, it appears that the average firm in Compustat – possibly because it is less

²⁸ Because some firms in this random sample do not have annual reports available on the Edgar or have missing values for the independent variables shown in Table 3, we end up with 400 firms (2,274 firm-year observations).

profitable and has higher risk of covenant violation – has less access to credit lines and is less likely to reclassify than the average firm in the S&P 1500. However, we also find that when the average Compustat firm does reclassify, it reclassifies larger amounts. The fraction of reclassified debt to total assets is 15.1% compared to 12.8% in Table 1, and the percentage of reclassified debt to total debt is 43.7% compared to 39.6% in Table 1.

[Insert Table 10 here]

In Table 10, in an exercise similar to that reported in Table 3, we compare characteristics of firms in the random sample that start reclassification (Panel A) in any given year and those that stop reclassification (Panel B) in a given year to their respective control groups. The results are similar to those reported in Table 3, although the differences with the control groups are slightly less significant. When they start reclassification, firms in the random sample are more profitable (as measured by ROA and cash flows), expand rapidly (as measured by capital expenditure and acquisitions, asset growth and sales growth), but face unfavorable market conditions (as measured by stock returns, market-to-book ratios, and the term spread), and have limited internal capital (as measured by cash holdings and the current ratio) than firms that did not reclassify in any given year as well as the year before. Firms are more likely to end reclassification when they are less profitable, when their liquid reserves pick up, and when their market conditions improve.²⁹

We also re-run all the regressions reported in Table 3 - 9 with the random sample. The results reveal (not reported but available upon request) that most of our results still hold. We find that the statistical significance of size and tangibility increase for debt

²⁹ To save space, in Table 10, we report results on a smaller number of firm characteristics than in Table 3. However, results overall are very similar to those in Table 3.

reclassification decisions and that of sales growth and stock market conditions decrease.³⁰

A possible reason for these results is that the random sample is more likely to contain financially less healthy and even more financially distressed companies than our main sample. Access to lines of credit could be more sensitive to a change in profitability, and some debt reclassification could be driven by debt repayment difficulties rather than the need to grow.

8. Conclusion

In this paper, we study debt reclassifications to understand when firms choose to roll over short-term debt on a long-term basis. In our hand-collected data sample which contains 15,000 firm-years over the period 1993-2005, on average, 33% of the firms reclassify existing or new short-term debt as long-term debt. Among the firms that reclassify short-term debt, the percentage of reclassified debt to total debt over our sample period is 40%.

Taken together, our results suggest the rollovers occur when firms have a need for funds and they want to reduce refinancing risk. This suggests that the following situations will lead to more rollovers. First, when firms pursue growth, they are likely to run out of internal funds, and inability to refinance is also going to be very costly. Second, firms will want to roll over debt when equity market conditions are not favorable for equity issuance. Third, they will want to roll over debt when debt market conditions are not favorable for more short or long-term debt issuance, either because credit markets are tight, or because of debt overhang problems.

³⁰ For example, in the Logit regression of the debt reclassification decision (*RecD*), the *z*-statistics of $\ln(\text{Asset})$ is 4.75 compared to 1.09 in Table 3; the *z*-statistics of tangibility is 3.98 compared to 1.91 in Table 3; the *z*-statistics of sales growth is 1.99 compared to 4.97 in Table 3, and the *z*-statistics of excess stock return is -1.64 compared to -7.16 in Table 3.

Since most of the reclassified debt is considered intermediate term debt, it might be asked why firms prefer to use the revolving facilities and reclassify, rather than directly borrow intermediate term debt from banks. One possible reason is that the adverse market conditions might be considered temporary: firms might prefer the flexibility of being able to go back to the equity or longer-term debt markets when conditions improve, and not be locked into possibly more expensive credit.³¹ Indeed, we find that firms' investment-cash flow sensitivities increase, but their cash holding-cash flow sensitivities decrease, when they reclassify short term debt. These results are consistent with the idea that firms reclassify and plan to roll over short-term debt when financial constraints tighten relative to expected future financial constraints.

We also find evidence that access to lines of credit and the ability to roll over short-term debt allows firms to overcome the temporary financial constraints when their growth needs require more financing. We estimate a simultaneous equations model that treats both reclassifications and investment (alternatively, sales growth, asset growth and or change in working capital) as endogenous variables. Our three-stage least square estimates reveal that there is a bi-directional causality with respect to each of these variables: the amount reclassified positively affects each of these variables, and higher levels of these variables in turn cause firms to reclassify higher amounts of short-term debt.

³¹ Recall that firms' liquidity ratios are typically lower and leverage ratios are higher when they reclassify. This may imply that they have to borrow at somewhat unfavorable terms.

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Table 1: Distribution of debt reclassifications 1993-2005

The full sample contains all non-financial and non-utility US-based firms from Compustat that belong to the S&P 500, S&P MidCap 400, or S&P SmallCap 600 groups from 1993 through 2005. Debt reclassifications are collected from Edgar 10-K SEC filings. Panel A presents the distribution of debt reclassification for the full sample. Panel B reports the distribution of debt reclassification for firms that exist in both the full sample and Sufi's (2009) sample. Firms that are in Sufi's (2009) sample have information on lines of credit from 1996 through 2003. *RecA* is the reclassified debt over total assets. *RecP* is the reclassified debt over total debt. The average *RecA* and *RecP* (column 4, 5, 10, and 11) are computed conditional on firms reclassifying short-term debt as long-term.

Year	Panel A: Full sample				Panel B: Firms that exist in both the full sample and Sufi's (2009) sample					
	Number of firms	Percentage of firms that reclassify (<i>RecA</i> > 0)	Average reclassified debt/Assets (<i>RecA</i>)	Average reclassified debt /Total debt (<i>RecP</i>)	Number of firms	Percentage of firms having lines of credit	Percentage of firms that reclassify (<i>RecA</i> > 0)	Percentage of reclassifiers having lines of credit	Average reclassified debt/Assets (<i>RecA</i>)	Average reclassified debt/Total debt (<i>RecP</i>)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1993	783	31.0%	10.2%	33.0%	-	-	-	-	-	-
1994	936	31.4%	12.3%	38.3%	-	-	-	-	-	-
1995	1143	34.9%	13.9%	38.8%	-	-	-	-	-	-
1996	1221	35.5%	14.3%	40.7%	959	90.1%	35.8%	97.7%	13.9%	41.0%
1997	1257	37.5%	16.2%	44.4%	1026	91.6%	37.7%	98.2%	15.6%	45.3%
1998	1285	38.6%	16.1%	42.3%	1089	90.9%	39.1%	98.4%	15.9%	43.1%
1999	1235	40.1%	15.4%	42.6%	1106	92.2%	40.6%	98.4%	15.2%	42.9%
2000	1205	40.2%	14.1%	43.9%	1092	91.2%	40.8%	98.2%	14.1%	45.0%
2001	1195	33.1%	11.8%	41.3%	1089	91.3%	33.6%	98.6%	11.6%	41.8%
2002	1209	29.2%	9.2%	35.7%	1087	90.5%	28.5%	99.0%	9.2%	36.8%
2003	1181	24.7%	7.5%	32.2%	1067	90.4%	24.6%	99.6%	7.0%	31.9%
2004	1112	23.7%	8.4%	33.8%	-	-	-	-	-	-
2005	1028	25.0%	9.0%	35.2%	-	-	-	-	-	-
Total	14790	33.0%	12.8%	39.6%	8515	91.1%	35.1%	98.5%	13.3%	41.6%

Table 2: Summary statistics, 1993 – 2005

The full sample contains all non-financial and non-utility US-based firms from Compustat that belong to the S&P 500, S&P MidCap 400, or S&P SmallCap 600 groups from 1993 through 2005. Debt reclassifications are collected from Edgar 10-K SEC filings. Panel A compares the average values of firm-specific variables between firms that start reclassification at time t and those who do not. Firms that start reclassification (the “Yes” groups) are those who reclassify at t but not at $t - 1$. The “No” groups contain firms that do not reclassify debt at t or $t - 1$. Panel B compares the average values of firm-specific variables between firms that end reclassification at time t and those who do not. Firms that end reclassification (the “Yes” groups) are those who reclassify at $t - 1$ but stop reclassification at t . The “No” groups include firms that reclassify debt at t and $t - 1$. *RecD* is a dummy variable which takes a value of 1 if a firm reclassifies short-term debt as long-term, and zero otherwise. *MoreRecD* takes a value of 1 if reclassified debt in period t exceeds that in period $t-1$ plus debt that would have matured at the end of that year and the year after, and zero otherwise. *RecA* is the reclassified debt scaled by total assets. $\ln(\text{Assets})$ is the natural log of total assets. *Tangibility* is the net PPE over total assets. *ROA* is the operating income before depreciation and amortization over total assets. *Cash Flow/A* is internal cash flows divided by total assets. *MB* is the market-to-book ratio, which is measured as the total assets less the book value of equity plus the market value of equity divided by total assets. *Stock Return* is the annual stock return computed by compounding monthly returns over the past 12 months. *Excess Stock Return* is Stock Return minus the stock market return. *Capital Expenditure /A* is the capital expenditure to assets ratio. *Acquisition/A* is the acquisitions to assets ratio. *Asset Growth* is the change in total assets scaled by the lagged assets. *Sales Growth* is the change in net sales scaled by the lagged net sales. *Cash/A* is the cash to assets ratio. *Current Ratio* is current assets divided by current liabilities. *Non-cash Working Capital/A* the difference between non-cash current assets and non-current-debt current liabilities scaled by total assets. *Leverage* is total debt (the sum of short-term and long-term debt) divided by total assets. *Net debt issues* ($\Delta D /A$) equals long-term debt issuance minus long-term debt reduction plus the change in short-term debt, scaled by total assets. *Net equity issue* ($\Delta E /A$) equals the sale of common and preferred stock minus the purchase of common and preferred stock, scaled by total assets. Firms are defined to issue debt or equity if the amount of issuance exceeds 3% of total assets. Firms who have a debt rating assigned by Standard & Poor’s are defined to have debt rated. *Dividends/A* is the cash dividends to assets ratio. D^{1+}/D is the proportion of debt that is due in more than one year. D^{3+}/D is the proportion of debt that is due in more than three years. D^{5+}/D the proportion of debt that is due in more than five years. *Debt Rating* is a dummy variable that takes a value of 1 if a firm has long-term debt rated by Standard & Poor’s. *Term spread* is the difference between the December 10- year Treasury bond yield and the annualized December 3-month Treasury bill yield (times 100). *, **, and *** represent that the difference in the value of the “Yes” groups and the “No” groups at time t is statistically significant at 10%, 5%, and 1% level, respectively.

	Panel A: Start reclassification at t or not						Panel B: End reclassification at t or not							
	No $t - 1$	Yes	No	Yes			No	Yes	No	Yes			No	Yes
<i>RecD</i>	0	0	0	1	-	0.08	0.69	1	1	1	0	-	0.81	0.29
<i>MoreRecD</i>	0	0	0	0.62	-	0.05	0.23	0.36	0.27	0.27	0	-	0.21	0.15
<i>RecA</i>	0	0	0	0.11	-	0.01	0.08	0.14	0.09	0.13	0	-	0.11	0.02
$\ln(\text{Assets})$	6.63	6.66	6.72	6.86	**	6.82	6.93	7.11	6.92	7.19	6.96	***	7.25	7.04
<i>Tangibility</i>	0.28	0.35	0.28	0.35	***	0.27	0.34	0.38	0.35	0.38	0.34	***	0.37	0.33

<i>ROA</i>	0.13	0.16	0.13	0.15	***	0.13	0.14	0.15	0.14	0.15	0.14	*	0.15	0.14
<i>Cash Flow/A</i>	0.13	0.14	0.12	0.14	***	0.12	0.13	0.13	0.12	0.12	0.12		0.12	0.13
<i>MB</i>	2.41	1.94	2.37	1.80	***	2.33	1.76	1.69	1.71	1.66	1.77	***	1.66	1.78
<i>Stock Return</i>	0.26	0.25	0.23	0.16	***	0.22	0.15	0.16	0.15	0.14	0.21	***	0.16	0.19
<i>Excess Stock Return</i>	0.14	0.11	0.11	0.02	***	0.09	0.02	0.02	0.07	0.02	0.12	***	0.05	0.09
<i>Capital Expenditure/A</i>	0.08	0.09	0.07	0.10	***	0.07	0.08	0.09	0.08	0.09	0.07	***	0.08	0.07
<i>Acquisition/A</i>	0.03	0.05	0.03	0.11	***	0.04	0.04	0.06	0.05	0.05	0.03	***	0.04	0.05
<i>Asset Growth</i>	0.21	0.20	0.17	0.32	***	0.17	0.12	0.20	0.15	0.14	0.10	***	0.11	0.14
<i>Sales Growth</i>	0.19	0.20	0.16	0.21	***	0.16	0.16	0.17	0.13	0.14	0.10	***	0.11	0.10
<i>Cash/A</i>	0.19	0.08	0.18	0.05	***	0.18	0.06	0.04	0.05	0.04	0.08	***	0.04	0.09
<i>Current Ratio</i>	2.82	2.03	2.77	1.87	***	2.71	1.96	1.81	1.88	1.80	1.93	***	1.79	1.99
<i>Non-cash Working Capital/A</i>	0.13	0.14	0.12	0.14	***	0.12	0.14	0.15	0.15	0.14	0.13		0.14	0.13
<i>ΔCash/A</i>	0.07	0.03	0.05	-0.02	***	0.04	0.01	0.00	0.01	0.01	0.04	***	0.01	0.02
<i>ΔWorking Capital/A</i>	0.01	0.02	0.01	0.04	***	0.01	0.02	0.02	0.02	0.01	0.00	***	0.01	0.01
<i>Leverage</i>	0.18	0.23	0.18	0.28	***	0.19	0.27	0.31	0.29	0.31	0.25	***	0.31	0.25
<i>ΔD /A</i>	0.02	0.02	0.02	0.11	***	0.03	0.03	0.05	0.03	0.03	-0.01	***	0.02	0.03
<i>ΔE /A</i>	0.07	0.05	0.03	0.00	***	0.02	0.01	0.01	0.02	0.00	0.02	***	0.00	0.01
Fraction of firms issuing debt	0.21	0.26	0.21	0.56	***	0.24	0.35	0.44	0.35	0.38	0.23	***	0.34	0.27
Fraction of firms issuing equity	0.18	0.14	0.16	0.11	***	0.14	0.11	0.10	0.12	0.08	0.15	***	0.08	0.10
Fraction of firm having debt rated	0.48	0.52	0.49	0.54	***	0.50	0.56	0.61	0.58	0.63	0.61		0.64	0.61
<i>Dividends/A</i>	0.01	0.01	0.01	0.01		0.01	0.01	0.01	0.01	0.01	0.01	***	0.01	0.01
<i>D¹⁺/D</i>	0.73	0.76	0.73	0.88	***	0.75	0.88	0.91	0.88	0.91	0.79	***	0.89	0.81
<i>D³⁺/D</i>	0.53	0.55	0.53	0.66	***	0.54	0.65	0.64	0.60	0.64	0.60	***	0.64	0.62
<i>D⁵⁺/D</i>	0.37	0.40	0.37	0.39		0.37	0.38	0.36	0.38	0.36	0.43	***	0.37	0.43
<i>Term Spread</i>	1.88	1.83	1.73	1.61	***	1.50	1.37	1.65	1.74	1.54	1.80	***	1.48	1.72

Table 3: Determinants of debt reclassification 1993-2005

RecA is the ratio of the outstanding reclassified debt over total assets. *RecD* takes a value of 1 if the firm reclassifies debt in a given period, and 0 otherwise. *MoreRecD* takes a value of 1 if the firm reclassify more than short-term debt that is immediately due, and 0 otherwise. *StartRecD* (*EndRecD*) is equal to 1 if a firm starts (stops) reclassifying its short-term debt in a given year, and 0 otherwise. All firm-specific variables are lagged one period and defined in Appendix A. 2-digit SIC industry dummies and constant terms are included but not reported. *t*-statistics and *z*-statistics in parentheses are calculated from the Huber/White/sandwich heteroskedastic consistent errors, which are corrected for correlation across observations for a given firm. Coefficients that are significant at 10%, 5%, and 1% are marked with *, **, *** in superscripts, respectively.

Dependent Variables:	OLS		Logit regressions		
	(1)	(2)	(3)	(4)	(5)
	<i>RecA</i>	<i>RecD</i>	<i>MoreRecD</i>	<i>StartRecD</i>	<i>EndRecD</i>
<i>Ln(Assets)</i>	-0.002** (-1.97)	0.048 (1.24)	-0.119*** (-3.18)	-0.148*** (-3.69)	-0.134*** (-2.87)
<i>Ln(Age)</i>	-0.011*** (-5.02)	-0.241*** (-3.65)	-0.295*** (-4.49)	-0.175** (-2.42)	0.002 (0.03)
<i>Sales Growth</i>	0.005*** (3.37)	0.252*** (4.90)	0.180*** (3.78)	0.159*** (2.80)	-0.435** (-2.15)
<i>ROA</i>	0.048*** (5.93)	2.601*** (5.52)	3.527*** (7.34)	2.941*** (6.26)	-1.150 (-1.29)
<i>Tangibility</i>	0.022** (2.28)	0.415 (1.61)	0.246 (0.97)	0.241 (0.84)	-0.294 (-0.96)
<i>MB</i>	-0.002*** (-4.38)	-0.275*** (-6.50)	-0.221*** (-5.18)	-0.197*** (-4.79)	0.057 (0.88)
<i>Excess Stock Return</i>	-0.007*** (-6.27)	-0.256*** (-6.71)	-0.388*** (-5.86)	-0.279*** (-3.74)	0.170** (2.51)
<i>Current Ratio</i>	-0.001*** (-3.55)	-0.188*** (-5.83)	-0.105*** (-3.47)	-0.216*** (-5.29)	-0.074 (-1.28)
<i>Leverage</i>	0.137*** (13.71)	3.141*** (12.51)	0.279 (1.18)	0.947*** (3.51)	-1.099*** (-3.37)
<i>Earnings Volatility</i>	-0.038*** (-3.20)	-4.260*** (-3.81)	-3.278*** (-3.26)	-2.604** (-2.31)	2.658* (1.74)
<i>Debt Rating</i>	-0.018*** (-4.76)	-0.317*** (-3.06)	0.078 (0.69)	0.059 (0.52)	0.245** (2.20)
<i>Stock Market Return</i>	-0.002 (-0.70)	-0.391*** (-3.86)	0.138 (0.73)	-0.218 (-1.02)	-0.033 (-0.15)
<i>Post 2000</i>	-0.012*** (-5.86)	-0.284*** (-4.15)	-0.466*** (-4.68)	-0.182* (-1.76)	0.603*** (5.66)
<i>Term Spread</i>	-0.008*** (-9.14)	-0.151*** (-6.60)	-0.231*** (-5.93)	-0.087* (-1.91)	0.079 (1.62)
Observations	14790	14773	11783	9128	4630
R ² /Pseudo R ²	0.15	0.17	0.10	0.09	0.05

Table 4: Determinants of the size of debt reclassification - Robustness checks

The dependent variable is the ratio of reclassified debt over total assets (*RecA*). Column (1) and (2) incorporate firm-fixed effects and a Tobit specification, respectively. Column (3) controls for a lines-of-credit dummy. Column (4) conditions on the existence of lines of credit. Column (5) reports the results from a Heckman selection model which endogenizes the availability of lines of credit. All firm-specific variables are lagged one period and defined in Appendix A. 2-digit SIC industry dummies and constant terms are included but not reported. *t*-statistics in parentheses are calculated from the heteroskedastic consistent errors, which are corrected for firm-level clustering. Coefficients that are significant at 10%, 5%, and 1% are marked with *, **, *** in superscripts, respectively.

Dependent Variable: <i>RecA</i>	(1) Firm fixed effects	(2) Tobit	(3) OLS	(4) OLS conditional on having lines of credit	(5) Heckman
<i>Lines of Credit</i>			0.015*** (4.39)		
<i>Ln(Assets)</i>	0.001 (0.76)	-0.003 (-1.60)	-0.002* (-1.65)	-0.003* (-1.80)	-0.003*** (-2.72)
<i>Ln(Age)</i>	-0.013*** (-2.70)	-0.027*** (-8.41)	-0.012*** (-4.30)	-0.013*** (-4.19)	-0.014*** (-7.71)
<i>Sales Growth</i>	0.003** (2.39)	0.022*** (6.12)	0.004** (2.54)	0.007*** (2.82)	0.007*** (3.42)
<i>ROA</i>	0.026*** (4.12)	0.279*** (11.27)	0.044*** (4.40)	0.073*** (5.43)	0.046*** (3.36)
<i>Tangibility</i>	0.046*** (4.15)	0.035*** (2.70)	0.023* (1.90)	0.022* (1.72)	0.019*** (2.58)
<i>MB</i>	-0.001*** (-2.72)	-0.023*** (-11.07)	-0.002*** (-3.49)	-0.003*** (-4.21)	-0.002** (-2.25)
<i>Excess Stock Return</i>	-0.005*** (-5.32)	-0.026*** (-7.64)	-0.008*** (-5.78)	-0.009*** (-5.66)	-0.009*** (-5.50)
<i>Current Ratio</i>	0.000 (-0.32)	-0.016*** (-9.37)	-0.001 (-1.43)	-0.001 (-0.98)	0.000 (0.02)
<i>Leverage</i>	0.051*** (6.36)	0.361*** (27.68)	0.163*** (11.87)	0.172*** (11.53)	0.155*** (18.16)
<i>Earnings Volatility</i>	0.002 (0.21)	-0.281*** (-8.31)	-0.032** (-2.14)	-0.053** (-2.14)	-0.036** (-2.26)
<i>Debt Rating</i>	-0.025*** (-7.09)	-0.041*** (-7.88)	-0.020*** (-4.04)	-0.022*** (-4.09)	-0.022*** (-7.35)
<i>Stock Market Return</i>	-0.005 (-1.49)	-0.027** (-2.33)	0.000 (-0.13)	0.000 (0.01)	-0.001 (-0.15)
<i>Post 2000</i>	-0.010*** (-4.34)	-0.034*** (-6.75)	-0.012*** (-3.63)	-0.013*** (-3.59)	-0.012** (-2.42)
<i>Term Spread</i>	-0.008*** (-11.00)	-0.020*** (-8.54)	-0.008*** (-5.42)	-0.008*** (-5.23)	-0.009*** (-3.78)
Observations	14790	14790	8515	7753	8121
R ² /Pseudo R ²	0.44	0.38	0.18	0.18	-

Table 5: Substitution between reclassified debt and other debt

Columns (1)-(3) report estimates for three Logistic regressions concerning the choices between reclassification and conventional forms of debt. Columns (4) and (5) estimate a maximum likelihood multinomial (polytomous) logistic model in which the decisions to issue short-term debt, reclassify short-term debt, or issue long-term debt are modeled simultaneously. All firm-specific variables are lagged one period and defined in Appendix A. 2-digit SIC industry dummies and constant terms are included but not reported. *t*-statistics in parentheses are calculated from the heteroskedastic consistent errors, which are corrected for firm-level clustering. Coefficients that are significant at 10%, 5%, and 1% are marked with *, **, *** in superscripts, respectively.

Dependent Variables:	Logit			M-Logit	
	(1) Additional long-term debt issue (1) vs. reclassification (0)	(2) Very long-term debt issue (1) vs. reclassification (0)	(3) Short-term debt issue (1) vs. reclassification (0)	(4) Short-term debt issue (y=1)	(5) Additional Long-term Debt issue (y=3)
<i>Ln(Assets)</i>	0.130*** (2.72)	0.244*** (3.96)	0.139** (2.25)	0.210*** (3.20)	0.111** (2.26)
<i>Ln(Age)</i>	0.035 (0.47)	0.084 (0.88)	0.513*** (4.75)	0.460*** (4.19)	-0.018 (-0.22)
<i>Sales Growth</i>	-0.015 (-0.24)	-0.072 (-0.63)	-0.218* (-1.66)	-0.152 (-1.38)	-0.037 (-0.56)
<i>ROA</i>	-2.946*** (-6.02)	-3.408*** (-5.04)	-2.185** (-2.27)	-2.827*** (-4.28)	-3.347*** (-6.18)
<i>Tangibility</i>	0.267 (0.90)	-0.173 (-0.47)	-1.003** (-2.24)	-0.971** (-2.15)	0.233 (0.72)
<i>MB</i>	0.355*** (6.87)	0.410*** (5.87)	0.302*** (3.49)	0.341*** (5.29)	0.349*** (6.18)
<i>Excess Stock Return</i>	0.111** (2.06)	0.243*** (3.33)	0.072 (1.11)	0.063 (0.84)	0.135** (2.40)
<i>Current Ratio</i>	0.032 (0.89)	-0.016 (-0.34)	-0.404*** (-4.85)	-0.340*** (-4.53)	0.061* (1.71)
<i>Leverage</i>	-2.473*** (-7.96)	-2.451*** (-6.42)	-3.202*** (-7.24)	-2.828*** (-6.77)	-2.656*** (-7.78)
<i>Earnings Volatility</i>	2.521* (1.71)	3.707*** (3.44)	3.124** (2.10)	3.002** (2.07)	2.016 (1.44)
<i>Debt Rating</i>	0.393*** (3.31)	0.462*** (3.10)	0.094 (0.60)	0.061 (0.36)	0.433*** (3.37)
<i>Stock Market Return</i>	0.713*** (3.93)	1.594*** (6.86)	0.147 (0.84)	0.348* (1.77)	0.863*** (4.34)
<i>Post 2000</i>	0.463*** (4.68)	0.528*** (4.47)	-0.528*** (-4.55)	-0.528*** (-4.04)	0.518*** (4.85)
<i>Term Spread</i>	0.119*** (2.92)	0.194*** (3.99)	0.170*** (4.29)	0.208*** (4.35)	0.150*** (3.41)
Observations	4908	3311	5228	5393	5393
Pseudo R ²	0.12	0.15	0.19	0.15	0.15

Table 6: Debt reclassification, lines of credit, and credit ratings

The full sample contains all non-financial and non-utility US-based firms from Compustat that belong to S&P 500, S&P MidCap 400, or S&P SmallCap 600 groups from 1993 through 2005. Firms' historical S&P long-term domestic issuer credit rating and commercial paper rating (historical S&P short-term domestic issuer credit rating) are obtained from Compustat. Firms with ratings between A- and AAA are high-rated firms. Firms with rating between BB- and BBB+ firms are considered as intermediate-rated firms. Firms with rating equal to or below B+ are grouped as low-rated firms. Information on the availability of lines of credit from 1996 through 2003 is obtained from Sufi's (2009) *full* sample. The detailed information concerning lines of credit (Utilization and Total lines/Assets) is obtained from Sufi's (2009) *random* sample. Utilization of credit lines is the amount of used lines over total lines of credit. Mean values of *Age*, *ROA*, and *Sales Growth* are reported in columns (3)-(5).

		Full sample (1993-2005)							Firms that exist in both our full sample and Sufi's (2009) <i>full</i> sample (1996 – 2003)	Firms that exist in both our full sample and Sufi's (2009) <i>random</i> sample (1996 – 2003)		
	Ratings	Number of firm- years (1)	Percentage of firms having commercial paper ratings (2)	<i>Age</i> (3)	<i>ROA</i> (4)	<i>Sales growth</i> (5)	Percentage of firms that reclassify (<i>RecD</i> = 1) (6)	Average debt/assets (<i>RecA</i>) (7)	Percentage of firms having credit lines (8)	Number of firm- years (9)	Utilization of credit lines (used lines/total lines) (10)	Total lines /Assets (11)
High-rated firms	[A-, AAA]	2,166	79.9%	39.7	0.18	0.08	32.7%	8.3%	98.3%	39	9.5%	17.7%
Intermediate-rated firms	[BB-, BBB+]	4,290	20.7%	28.5	0.14	0.13	42.7%	12.1%	96.7%	199	24.1%	21.5%
Low-rated firms	≤B+	1,130	0.4%	21.6	0.08	0.19	26.0%	14.5%	89.8%	53	31.9%	18.4%
Unrated firms	-	7,204	1.3%	17.9	0.14	0.26	28.4%	15.9%	77.3%	344	23.7%	20.4
All firms		14,790	18.4%	24.4	0.14	0.19	33.0%	13.3%	81.5%	635	23.5%	20.4%

Table 7: Debt reclassification and credit ratings

Variables are defined in Table 3 and Appendix A. *No Rating* equals 1 if a firm does not have long-term debt rating, and 0 otherwise. *High Rating* equals 1 if a firm rated A or above, and 0 otherwise. *Low Rating* equals 1 if a firm is rated B or below, and 0 otherwise. 2-digit SIC industry dummies and constant terms are included but not reported. $t(z)$ -statistics in parentheses are calculated from the heteroskedastic consistent errors, which are corrected for firm-level clustering. Coefficients that are significant at 10%, 5%, and 1% are marked with *, **, *** in superscripts, respectively.

Dependent Variables:	OLS	Logit regressions			
	(1)	(2)	(3)	(4)	(5)
	<i>RecA</i>	<i>RecD</i>	<i>MoreRecD</i>	<i>StartRecD</i>	<i>EndRecD</i>
<i>Ln(Assets)</i>	-0.002** (-2.11)	0.031 (0.76)	-0.105*** (-2.62)	-0.143*** (-3.33)	-0.118** (-2.39)
<i>Ln(Age)</i>	-0.011*** (-4.84)	-0.233*** (-3.53)	-0.268*** (-4.11)	-0.161** (-2.21)	-0.005 (-0.07)
<i>Sales Growth</i>	0.005*** (3.33)	0.249*** (4.88)	0.180*** (3.80)	0.156*** (2.74)	-0.444** (-2.16)
<i>ROA</i>	0.047*** (5.82)	2.441*** (5.23)	3.533*** (7.29)	2.872*** (6.14)	-1.027 (-1.13)
<i>Tangibility</i>	0.021** (2.27)	0.408 (1.59)	0.269 (1.07)	0.258 (0.89)	-0.278 (-0.91)
<i>MB</i>	-0.002*** (-4.23)	-0.261*** (-6.31)	-0.203*** (-4.86)	-0.183*** (-4.52)	0.052 (0.80)
<i>Excess Stock Return</i>	-0.007*** (-6.11)	-0.248*** (-6.45)	-0.378*** (-5.66)	-0.272*** (-3.61)	0.163** (2.42)
<i>Current Ratio</i>	-0.001*** (-3.40)	-0.185*** (-5.77)	-0.105*** (-3.47)	-0.216*** (-5.26)	-0.073 (-1.28)
<i>Leverage</i>	0.138*** (13.65)	3.233*** (12.62)	0.165 (0.69)	0.941*** (3.38)	-1.159*** (-3.49)
<i>Earnings Volatility</i>	-0.038*** (-3.22)	-4.193*** (-3.77)	-3.275*** (-3.25)	-2.555** (-2.27)	2.660* (1.78)
<i>No Rating</i>	0.013*** (3.04)	0.156 (1.41)	-0.240** (-2.00)	-0.205* (-1.68)	-0.179 (-1.52)
<i>High Rating</i>	-0.009** (-2.45)	-0.201 (-1.44)	-0.502*** (-3.23)	-0.356** (-2.31)	0.053 (0.35)
<i>Low Rating</i>	-0.017*** (-3.23)	-0.656*** (-4.21)	-0.416*** (-2.59)	-0.407** (-2.53)	0.340* (1.78)
<i>Stock Market Return</i>	-0.002 (-0.66)	-0.385*** (-3.78)	0.143 (0.76)	-0.219 (-1.03)	-0.041 (-0.19)
<i>Post 2000</i>	-0.013*** (-5.94)	-0.295*** (-4.22)	-0.511*** (-5.10)	-0.219** (-2.07)	0.597*** (5.58)
<i>Term Spread</i>	-0.008*** (-9.00)	-0.150*** (-6.51)	-0.221*** (-5.68)	-0.081* (-1.76)	0.082* (1.67)
Observations	14790	14773	11783	9128	4630
R ² /Pseudo R ²	0.15	0.17	0.10	0.09	0.05

Table 8: Real impact of debt reclassification – Simultaneous equations

Four sets of simultaneous equations are estimated using the three-stage least squares method of estimation. In each of these pairs of simultaneous equations, the amount of reclassified debt (*RecA*) is treated as one of the endogenous variables, and the other endogenous variable is, alternatively, either sales growth, or asset growth, or investment over assets, or change in working capital over assets. All variables are defined in Appendix A. 2-digit SIC industry dummies and constant terms are included but not reported. *t*(*z*)-statistics in parentheses are calculated from the heteroskedastic consistent errors, which are corrected for firm-level clustering. Coefficients that are significant at 10%, 5%, and 1% are marked with *, **, *** in superscripts, respectively.

Dependent Variables:	(1) <i>Sales Growth</i>	(2) <i>Asset Growth</i>	(3) <i>Investment/A</i>	(4) Δ <i>Working Capital/A</i>
<i>RecA</i>	2.008*** (5.47)	1.803*** (5.28)	0.726*** (4.67)	0.309*** (4.10)
<i>Lagged dependent variable</i>	0.088*** (13.64)	0.045*** (7.35)	0.043*** (5.94)	0.084*** (11.12)
<i>Ln(Assets)</i>	-0.001 (-0.30)	-0.014*** (-4.07)	-0.011*** (-6.64)	-0.005*** (-7.16)
<i>Ln(Age)</i>	-0.034*** (-4.51)	-0.019*** (-2.67)	-0.017*** (-5.03)	-0.003* (-1.82)
<i>Sales Growth</i>			0.009*** (2.94)	0.001 (0.70)
<i>ROA</i>	-0.436*** (-9.12)	0.097** (2.19)	0.208*** (10.56)	0.027*** (2.70)
<i>Tangibility</i>	-0.026 (-0.95)	-0.050* (-1.84)	0.093*** (7.44)	-0.028*** (-4.94)
<i>MB</i>	0.042*** (18.32)	0.073*** (32.25)	0.023*** (22.07)	0.003*** (6.11)
<i>Excess Stock Return</i>	0.106*** (16.46)	0.167*** (26.37)	0.042*** (14.44)	0.006*** (4.85)
<i>Leverage</i>	-0.201*** (-3.89)	-0.353*** (-7.27)	-0.182*** (-8.21)	-0.062*** (-5.89)
<i>Earnings Volatility</i>	0.219*** (4.39)	0.255*** (5.27)	0.110*** (4.79)	-0.026*** (-2.60)
<i>R&D/Sales</i>	0.193*** (29.91)	-0.015*** (-2.87)	0.000 (-0.19)	-0.001 (-0.96)
<i>R&D Dummy</i>	0.040*** (3.58)	0.052*** (5.30)	0.021*** (5.00)	0.005** (2.24)
<i>Z Score</i>	0.025*** (8.12)	0.003 (1.02)	-0.003** (-2.35)	-0.001 (-1.37)
<i>Dividend/Assets</i>	0.050 (0.39)	-0.305*** (-2.80)	-0.095** (-2.10)	-0.006 (-0.22)
<i>GDP Growth</i>	0.361 (0.85)	-0.071 (-0.19)	-0.054 (-0.33)	0.088 (1.00)
<i>Corporate Profit Growth</i>	0.002*** (5.61)	0.000 (-1.03)	-0.000** (-2.23)	0.000*** (3.77)
Observations	14619	14627	14606	14592
R ²	0.13	0.19	0.18	0.05

Table 9: Debt reclassification and cash flow sensitivities - Estimated with firm fixed effects

The full sample contains all non-financial and non-utility US-based firms from Compustat that belong to S&P 500, S&P MidCap 400, or S&P SmallCap 600 groups from 1993 through 2005. Debt reclassifications are collected from Edgar 10-K SEC filings. The dependent variables in the first four columns represent different uses of cash – investment, addition to non-cash working capital, dividend payout, and addition to cash holdings. The dependent variables in the last three columns are total debt issuance, equity issuance, and additional debt issuance (net of newly reclassified debt). Regressions are run separately for each use and source of cash. *Additional debt issue* is the amount of total debt issue from firms' cash flow statement (which includes change in reclassified debt) less change in reclassified debt. Regressions are estimated with firm and year fixed effects. Constant terms are included in all regressions but not reported. *t*-statistics in parentheses are calculated from the Huber/White/sandwich heteroskedastic consistent errors. Coefficients that are significant at 10%, 5%, and 1% are marked with *, **, *** in superscripts, respectively.

Dependent Variables:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	<i>Investment/A</i>	Δ <i>Working Capital/A</i>	<i>Dividend/A</i>	Δ <i>Cash/A</i>	Δ <i>D/A</i>	Δ <i>E/A</i>	<i>Additional debt issue/A</i>
<i>MB</i>	0.025*** (5.54)	0.003*** (2.88)	0.000*** (4.94)	0.007*** (2.74)	0.011*** (4.31)	0.025*** (4.56)	0.007*** (3.89)
<i>Cash Flow/A</i>	0.422*** (6.57)	0.209*** (8.35)	0.008*** (6.02)	0.210*** (3.35)	0.049* (1.66)	-0.217* (-1.71)	0.007 (0.31)
<i>Ln(Assets)</i>	-0.098*** (-12.99)	-0.009*** (-3.17)	0.000 (-1.24)	-0.057*** (-8.11)	-0.039*** (-8.01)	-0.127*** (-10.09)	-0.030*** (-6.64)
<i>RecA</i>	0.364*** (5.59)	0.035 (0.88)	-0.005* (-1.72)	0.050 (1.19)	0.423*** (6.64)	-0.011 (-0.18)	-0.212*** (-4.31)
<i>RecA</i> × <i>Cash Flow/A</i>	1.124** (2.54)	0.269 (1.00)	0.021 (1.17)	-0.855*** (-3.61)	1.287*** (2.94)	-0.477 (-1.40)	0.247 (0.89)
Observations	14723	14719	14721	14719	14718	14721	13747
Adj. R ²	0.27	0.19	0.68	0.06	0.12	0.21	0.04

Table 10: Summary statistics of the random sample (mean values), 1993 – 2005

The sample contains 500 firms randomly selected from Compustat over the period 1993 – 2005. Variables are defined in Table 2 and Appendix A. Panel A compares the average values of firm-specific variables between firms that start reclassification at time t and those who do not. Panel B compares the average values of firm-specific variables between firms that end reclassification at time t and those who do not. *, **, and *** represent that the difference in the value of the “Yes” groups and the “No” groups at time t is statistically significant at 10%, 5%, and 1% level, respectively.

	Panel A: Start reclassification at t or not						Panel B: End reclassification at t or not							
	No	Yes	No	Yes		No	Yes	No	Yes	No	Yes			
	$t - 1$		t			$t + 1$		$t - 1$		t		$t + 1$		
<i>RecD</i>	0	0	0	1	-	0.05	0.63	1	1	1	0	-	0.80	0.22
<i>MoreRecD</i>	0	0	0	0.57	-	0.03	0.16	0.32	0.29	0.27	0	-	0.22	0.09
<i>RecA</i>	0	0	0	0.12	-	0.01	0.08	0.16	0.11	0.15	0	-	0.12	0.02
<i>Ln(Assets)</i>	4.56	5.67	4.60	5.82	***	4.69	5.88	6.14	5.96	6.23	5.97	**	6.33	6.08
<i>Tangibility</i>	0.23	0.35	0.22	0.36	***	0.22	0.35	0.40	0.34	0.40	0.33	**	0.40	0.34
<i>ROA</i>	-0.02	0.12	-0.03	0.11	***	-0.03	0.08	0.12	0.11	0.12	0.09	**	0.12	0.10
<i>Cash Flow/A</i>	-0.01	0.08	0.00	0.12	***	0.00	0.07	0.12	0.10	0.11	0.07	**	0.11	0.09
<i>MB</i>	2.53	2.04	2.42	1.71	**	2.38	1.70	1.49	1.69	1.42	1.58		1.43	1.60
<i>Stock Return</i>	0.19	0.16	0.19	0.05		0.20	0.10	0.14	0.14	0.14	0.16		0.19	0.08
<i>Capital Expenditure/A</i>	0.08	0.13	0.06	0.13	***	0.06	0.09	0.12	0.10	0.11	0.07		0.10	0.06
<i>Acquisition/A</i>	0.03	0.05	0.03	0.09	***	0.03	0.04	0.07	0.06	0.06	0.04		0.05	0.04
<i>Asset Growth</i>	0.36	0.31	0.18	0.31		0.19	0.17	0.22	0.17	0.15	0.14		0.11	0.05
<i>Sales Growth</i>	0.36	0.36	0.27	0.34		0.22	0.15	0.28	0.19	0.18	0.15	***	0.16	0.06
<i>Cash/A</i>	0.27	0.12	0.27	0.07	***	0.27	0.09	0.04	0.06	0.04	0.09		0.05	0.11
<i>Current Ratio</i>	3.72	2.05	3.56	1.92	***	3.48	1.99	2.44	1.92	2.42	1.79		2.28	1.83
<i>Non-cash Working Capital/A</i>	0.13	0.12	0.11	0.13		0.10	0.13	0.17	0.17	0.17	0.14	***	0.15	0.11
Δ <i>Cash/A</i>	0.16	0.09	0.06	-0.03	**	0.06	0.04	0.00	0.00	0.00	0.06	***	0.01	0.02
Δ <i>Working Capital/A</i>	0.02	0.00	0.01	0.03		0.01	0.01	0.03	0.02	0.02	-0.01	**	0.00	-0.01
<i>Leverage</i>	0.16	0.22	0.16	0.30	***	0.16	0.30	0.35	0.33	0.35	0.30		0.34	0.29
Δ <i>D/A</i>	0.02	0.00	0.02	0.12	***	0.03	0.03	0.07	0.05	0.05	0.02		0.04	-0.01
Δ <i>E/A</i>	0.31	0.19	0.16	0.01	**	0.15	0.02	0.04	0.02	0.02	0.04	***	0.02	0.02
Fraction of firms issuing debt	0.20	0.29	0.20	0.64	***	0.21	0.36	0.50	0.51	0.45	0.30	***	0.39	0.19
Fraction of firms issuing equity	0.30	0.24	0.26	0.11	***	0.24	0.16	0.21	0.14	0.17	0.20		0.16	0.16
Fraction of firm having debt rated	0.15	0.32	0.16	0.32	***	0.16	0.30	0.39	0.40	0.41	0.40		0.43	0.42
<i>Term Spread</i>	1.76	1.53	1.67	1.45	**	1.50	1.46	1.61	1.59	1.57	1.62		1.47	1.73

Appendix A: Definitions of key variables in Tables 3-10

Variables	Definitions
<i>Age</i>	The number of years since the firm entered Compustat.
<i>Ln (Assets)</i>	The natural log of total assets.
<i>Asset Growth</i>	The change in total assets scaled by the lagged assets.
<i>Additional debt issue</i>	Long-term debt issue-long - term debt reduction + Δ Short-term debt - Δ reclassified debt
<i>Cash Flow/A</i>	Internal cash flows divided by total assets.
<i>Corporate Profit Growth</i>	The change in the aggregate annual corporate post-tax profits for non-financial firms scaled by the lagged aggregate non-financial firms' annual corporate post-tax profits. (Source: U.S. Department of Commerce, Bureau of Economic Analysis).
<i>Current Ratio</i>	Current assets/current liabilities.
$\Delta D / A$	(Long-term debt issuance - long-term debt reduction + Δ Short-term debt)/total assets
D^+ / D	The proportion of debt that is due in more than i year ($i = 1, 3, \text{ or } 5$).
<i>Debt Rating</i>	1 if the firm has a debt rating assigned by Standard & Poor's, 0 otherwise.
<i>Dividends/A</i>	The cash dividends to assets ratio.
$\Delta E / A$	(Sale of common and preferred stock - the purchase of common and preferred stock)/total assets.
<i>Earnings Volatility</i>	The standard deviation of the earnings before interest and taxes (EBIT) to assets ratio in the past 5 years.
<i>EndRecD</i>	1 if a firm ends reclassifying its debt in a given year (i.e., conditional on having reclassified debt in the previous year, it has no reclassified debt in that year), and 0 otherwise.
<i>Excess Stock Return</i>	Compounding monthly returns over the past 12 months minus stock market return.
<i>GDP Growth</i>	The change in real GDP scaled by lagged real GDP (Source: U.S. Department of Commerce, Bureau of Economic Analysis.)
<i>Investment/A</i>	Cash flows from investing activities/total assets
<i>Leverage</i>	(Short-term debt + long-term debt)/total assets
<i>MB</i>	(Total assets + market value of equity - book value of equity) / total assets
<i>MoreRecD</i>	1 if reclassified debt in period t exceeds that in period $t-1$ plus debt that would have matured at the end of that year or the year after, and zero otherwise.
<i>Non-cash Working Capital/A</i>	(Non-cash current assets - Non-current-debt current liabilities)/ total assets.
<i>R&D / Sales</i>	Research and development expenses scaled by total sales.
<i>R&D Dummy</i>	Dummy variable: 1 if research and development expense is missing, 0 otherwise.
<i>RecA</i>	The reclassified debt scaled by total assets.
<i>RecD</i>	1 if a firm reclassifies short-term debt as long-term, and zero otherwise.
<i>ROA</i>	Ratio of operating income before depreciation and amortization over total assets.
<i>Sales Growth</i>	The change in net sales scaled by the lagged net sales.
<i>Short-term debt issue</i>	(Debt in current liability - the current portion of long-term debt)/total assets.
<i>StartRecD</i>	1 if a firm start to reclassify its short-term debt in a given year, and 0 otherwise.
<i>Stock market return</i>	Computed by compounding monthly returns on the CRSP value-weighted index of stocks traded on NYSE, NASDAQ, and AMEX.
<i>Tangibility</i>	Net PPE-to-assets ratio
<i>Term spread</i>	(10- year Treasury bond yield- 3-month Treasury bill yield) $\times 100$
<i>Un-leveraged Z-Score</i>	$(3.3 \times \text{pretax income} + \text{sales} + 1.4 \times \text{retained earnings} + 1.2 \times (\text{current assets} - \text{current liabilities})) / \text{total assets}$.

Appendix B: Selection equation of Column (5) Table 4 – Determinants of lines of credit

The full sample contains all non-financial and non-utility US-based firms from Compustat that belong to S&P 500, S&P MidCap 400, or S&P SmallCap 600 groups from 1993 through 2005. Debt reclassifications are collected from Edgar 10-K SEC filings. The dependent variable of the selection equation is the dummy variable which equals 1 if a firm has lines of credit, zero otherwise, based on Sufi's (2009) sample. The explanatory variables in selection equation, which predict the availability of lines of credit, are the same set of variables as in Table 3 of Sufi (2009), including ROA, Tangibility, Ln(Assets), Net worth to assets ratio, industry sales volatility, earnings volatility, Traded over the counter dummy, $\ln(\text{Age})$, and year and industry dummies. Industry sales volatility is constructed as follows. Using the entire set of firms with data available in the Compustat quarterly industrial files, for every firm-year, we calculate the standard deviation of the quarterly differences in sales, scaled by average assets over the year. We then obtain the median across all 3-digit SIC industries, for every given year. This variable is then appended to each firm-year observation with the same 3-digit SIC code. This measure is similar to the earnings variance measure used in MacKie-Mason (1990). z -statistics are in parentheses. Coefficients that are significant at 10%, 5%, and 1% are marked with *, **, *** in superscripts, respectively.

	<i>Heckman Selection Equation</i>
<i>Ln(Assets)</i>	0.071*** (3.60)
<i>Ln(Age)</i>	-0.054 (-1.29)
<i>ROA</i>	1.512*** (8.49)
<i>Tangibility</i>	0.853*** (4.55)
<i>MB</i>	-0.056*** (-6.06)
<i>Earnings Volatility</i>	-0.544*** (-2.72)
<i>Net Worth/Assets</i>	-2.469*** (-16.67)
<i>Industry Sale Volatility</i>	0.486 (0.32)
<i>Traded over the counter</i>	-0.219 (-0.99)

Appendix C: Real impact of debt reclassification - OLS regressions

The table reports the results concerning the impact of debt reclassification on four investment/growth variables. All variables are defined in Table 3 and Appendix A. 2-digit SIC industry dummies and constant terms are included but not reported. *t*-statistics in parentheses are calculated from the heteroskedastic consistent errors, which are corrected for firm-level clustering. Coefficients that are significant at 10%, 5%, and 1% are marked with *, **, *** in superscripts, respectively.

Dependent Variables:	(1)	(2)	(3)	(4)
	<i>Sales Growth</i>	<i>Asset Growth</i>	<i>Investment/A</i>	Δ <i>Working Capital/A</i>
<i>RecA</i>	0.428*** (7.94)	0.962*** (11.10)	0.448*** (13.78)	0.129*** (9.92)
Lagged dependent variable	0.090*** (3.17)	0.056*** (3.07)	0.054*** (3.57)	0.087*** (3.52)
<i>Ln(Assets)</i>	-0.009** (-2.58)	-0.020*** (-5.23)	-0.013*** (-7.44)	-0.006*** (-9.74)
<i>Ln(Age)</i>	-0.055*** (-6.61)	-0.030*** (-4.22)	-0.020*** (-5.87)	-0.005*** (-3.90)
<i>Sales Growth</i>			0.009 (1.22)	0.002 (0.87)
<i>ROA</i>	-0.350*** (-3.42)	0.094 (0.75)	0.244*** (4.04)	0.035** (2.36)
<i>Tangibility</i>	0.021 (0.77)	-0.015 (-0.46)	0.099*** (6.38)	-0.022*** (-4.63)
<i>MB</i>	0.039*** (7.01)	0.071*** (6.10)	0.022*** (6.84)	0.002** (2.49)
<i>Excess Stock Return</i>	0.095*** (15.05)	0.161*** (9.94)	0.041*** (7.52)	0.005** (2.53)
<i>Leverage</i>	0.008 (0.21)	-0.238*** (-7.73)	-0.148*** (-9.71)	-0.038*** (-6.02)
<i>Earnings Volatility</i>	0.162 (1.22)	0.214** (1.98)	0.092* (1.82)	-0.033* (-1.87)
<i>R&D/Sales</i>	0.198*** (4.10)	-0.029*** (-2.71)	-0.005 (-1.20)	-0.002 (-1.30)
<i>R&D Dummy</i>	0.036*** (3.82)	0.029*** (3.02)	0.007 (1.41)	0.003 (1.16)
<i>Z Score</i>	0.026** (2.31)	0.004 (0.76)	-0.006* (-1.90)	-0.001 (-0.90)
<i>Dividend/Assets</i>	0.112 (0.51)	-0.286 (-1.53)	-0.081 (-1.12)	0.007 (0.22)
<i>GDP Growth</i>	1.804*** (5.83)	0.905*** (2.87)	0.334** (2.27)	0.262*** (4.20)
<i>Corporate Profit Growth</i>	0.002*** (7.89)	0.000 (1.57)	0.000 (0.72)	0.000*** (5.48)
Observations	14619	14627	14606	14592
Adj. R ²	0.21	0.21	0.18	0.07

Appendix D: Simultaneous equations – *RecA* regressions of Table 7

This table reports the results for debt reclassification equation in four sets of simultaneous equations using the three-stage least squares method of estimation. The dependent variable, *RecA*, is the ratio of the outstanding reclassified debt over total assets. Other variables are defined in Table 3 and Appendix A. 2-digit SIC industry dummies and constant terms are included but not reported. *t*-statistics in parentheses are calculated from the heteroskedastic consistent errors, which are corrected for firm-level clustering. Coefficients that are significant at 10%, 5%, and 1% are marked with *, **, *** in superscripts, respectively.

	(1)	(2)	(3)	(4)
Dependent Variable:	<i>RecA</i>			
Endogeneous variables:	<i>Sales Growth</i>	<i>Asset Growth</i>	<i>Investment /A</i>	Δ <i>Working Capital /A</i>
Endogeneous variable	0.015*** (2.72)	0.121*** (7.66)	0.345*** (7.55)	0.172** (2.47)
<i>Ln(Assets)</i>	-0.002*** (-3.04)	0.000 (-0.32)	0.002* (1.89)	-0.001 (-1.39)
<i>Ln(Age)</i>	-0.010*** (-8.50)	-0.005*** (-3.49)	-0.001 (-0.51)	-0.010*** (-7.21)
<i>Sales Growth</i>			-0.001 (-0.69)	0.004*** (3.38)
<i>ROA</i>	0.057*** (8.35)	0.016** (2.05)	-0.031** (-2.49)	0.040*** (5.86)
<i>Tangibility</i>	0.020*** (4.03)	0.024*** (4.63)	-0.019** (-2.49)	0.024*** (4.50)
<i>MB</i>	-0.003*** (-5.12)	-0.010*** (-8.44)	-0.010*** (-8.45)	-0.002*** (-5.35)
<i>Excess Stock Return</i>	-0.008*** (-6.52)	-0.026*** (-9.25)	-0.020*** (-9.15)	-0.007*** (-6.49)
<i>Leverage</i>	0.137*** (28.55)	0.147*** (26.76)	0.160*** (23.79)	0.138*** (26.97)
<i>Earnings Volatility</i>	-0.035*** (-3.88)	-0.063*** (-6.12)	-0.073*** (-6.42)	-0.030*** (-3.25)
<i>Current Ratio</i>	-0.001*** (-4.34)	-0.001*** (-3.84)	-0.001*** (-3.59)	-0.002*** (-4.37)
<i>Debt Rating</i>	-0.016*** (-8.49)	-0.013*** (-7.00)	-0.013*** (-7.01)	-0.016*** (-7.93)
<i>Stock Market Return</i>	0.006 (1.56)	0.001 (0.23)	-0.001 (-0.14)	-0.001 (-0.14)
<i>Post 2000</i>	-0.014*** (-7.87)	-0.009*** (-5.41)	-0.009*** (-5.23)	-0.014*** (-6.57)
<i>Term Spread</i>	-0.007*** (-8.30)	-0.006*** (-7.71)	-0.006*** (-7.08)	-0.007*** (-8.00)
Observations	14619	14627	14606	14592