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Real Effects of Securitization

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Abstract

We assess the impact of securitization on corporate credit supply and real effects such as investment, sales, and employment. Exploiting the staggered entry of banks in the CLO markets, we document that firms are able to borrow larger amounts after their bank becomes securitization active. The increased use of debt financing increases investment in cash acquisitions as well as firms' asset, sales, and employment growth. Consistent with a causal effect of securitization, all effects are concentrated in the set of BB/B-rated firms, i.e., firms whose loans are purchased by CLO vehicles. Overall, our results suggest that increased loan supply through securitization can affect real firm outcomes.

Keywords: Securitization, Credit Supply, Real Effects, Collateralized loan obligations (CLOs), Institutional Investors, Syndicated loans

JEL-Classification: G21, G23, G31, G32

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1. Introduction

Debt securitization has been one of the most fundamental changes in the financing of corporations in the recent decades. According to *Asset-Backed Alert* \$155 billion corporate loans were securitized in the U.S. in 2006 alone. The market plummeted during the 2007-09 financial crisis but has been on a tear since, reaching an issue volume of \$82 billion in 2013. While there is ample research on the effect of securitization on bank behavior (increase in credit supply, reduction in screening and monitoring activities), little to nothing is known about the real effects of securitization. We try to fill this gap by examining firm-level effects of increased credit supply through securitization. In particular, we analyze the effects of securitization on capital structure, investment, sales, and employment of the borrowing firms.

We examine a sample of over 40,000 bank-firm pairs for the period from 1990 to 2007. Our empirical strategy is straightforward: Let us assume that firm A has a relationship with bank 1, firm B with bank 2, and bank 1 starts to become securitization-active in year t . We then use a difference-in-difference estimator to show that firm A is able to borrow larger amounts than firm B *after* bank 1 becomes securitization-active. We define bank securitization-activity using the measures established by Nadauld and Weisbach (2012) and Wang and Xia (2014), i.e., we classify banks as securitization active if they are active underwriters in the CDO market. As our panel is constructed at the bank-firm-level, we are able to absorb any bank-firm specific effects, i.e., we include bank $\times$ firm fixed effects. This setup is crucial as it allows us to capture changes in the likelihood that loans to a firm are sold to a CLO vehicle *within existing* bank-firm relationships. This strategy requires the assumption that firm A and firm B would have evolved similar in absence of bank 1 starting to securitize loans (parallel trend assumption). This assumption would be violated if (unobserved) loan demand drives the decision by bank 1 to become securitization-active.

The institutional set-up of the CLO market helps us to further narrow down the required assumptions for causality. In particular, CLO vehicles typically invest into non-investment-grade borrowers. We thus repeat the difference-in-difference for investment grade rated borrowers and find no significant effect for these borrowers when their relationship bank becomes securitization-active.

The economic magnitude of these effects is highly significant: Non-investment-grade firms that experience an increase in the likelihood that their loans are securitized receive about 18% more loans, which corresponds to 1.7% of total assets. Investment-grade firms do not experience an increase in loan supply if their banks become securitization active. These results suggest that securitization alleviates borrowing constraints for non-investment-grade firms.

Next, we investigate whether the increase in loan supply affects firm capital structure and real firm outcomes. We document that non-investment-grade firms whose banks start to become securitization-active experience an increase both in the change in debt scaled by lagged assets ratio (+3.2%) and in their leverage ratios (+1.7%). This indicates that securitization increases the overall supply of available debt financing, i.e., firms do not simply substitute other types of debt with bank loans when their banks become securitization-active. Furthermore, non-investment-grade firms do not use the increased debt financing to repurchase equity. Their change in assets scaled by lagged assets ratio increases by about 6%, i.e., the size of the total balance sheet increases.

We then analyze the use of debt financing for these firms. Interestingly, non-investment-grade firms whose banks become securitization active do not experience an increase in their change in working capital by lagged assets ratio or their CAPEX by lagged assets ratio. However, we observe a strong increase in investment in cash acquisitions. Non-investment-grade firms whose banks become securitization active experience an increase in

their cash acquisitions by lagged assets ratio by about 1.8%. This exactly corresponds to the increase in loan supply, indicating that firms use the additional debt financing to grow inorganically.

Finally, we analyze sales and employment. We document that non-investment-grade firms whose banks become securitization active experience both an increase in their change in sales by lagged net sales ratio (+2.6%) and their change in employment by lagged employment ratio (+4.2%). All of the real effects are concentrated in the set of non-investment grade firms, i.e., in the set of firms where we expect securitization to matter. Overall, our results in line with the hypothesis that securitization increases access to capital for speculative grade firms, which in turn leads to an increase in investment in cash acquisitions, sales, and employment.

This article relates to a number of strands of literature. Firstly, we contribute to the literature on securitization and bank loan supply. Altunbas, Gambacorta, and Marques-Ibanez (2009) and Loutskina (2011) provide evidence that an increase in bank securitization activity reduces the impact of monetary policy shocks on bank loan supply. Shivdasani and Wang (2011) document that the CDO (collateralized debt obligations) market fueled credit availability for leveraged buyouts prior to the 2007-09 financial crisis. Jimenez et al. (2011) provide evidence for spillover effects. The authors show that Spanish banks' ability to securitize *mortgage loans* affects credit supply to *non-mortgage firms*.¹ Loutskina and Strahan (2009), Mian and Sufi (2009), and Nadauld and Sherlund (2013) show that increased securitization caused the 2002 to 2005 subprime mortgage boom. While this literature provides general evidence that banks increase credit supply if they can securitize loans, our study provides firm-level evidence that securitization affects bank lending to existing borrowers (i.e., the intensive margin).

¹ See also Carbó-Valverde, Degryse, and Rodriguez-Fernandez (2012), who analyze the effect of bank liquidity generated through ABS (asset-backed securities), MBS (mortgage-backed securities), and covered bond issues on credit supply to relationship and non-relationship customers in a sample of Spanish SMEs.

Secondly, we contribute to the literature on firm-level effects of securitization. Nadauld and Weisbach (2012) document that securitization causes a reduction in the cost of capital. Wang and Xia (2014) provide evidence that securitization detrimentally affects banks' monitoring activities.² As a result, borrowers from securitization-active banks take on substantially more risk than borrowers of non-securitization-active banks. To the best of our knowledge, our paper is the first study that analyzes how corporate loan securitization affects real firm outcomes.

Thirdly, this article relates to the broader literature on real effects of credit supply. Bernanke (1983), Bernanke and Blinder (1992), Jimenez et al. (2012), Kashyap, Lamont and Stein (1994), and Kashyap and Stein (2000) analyze the credit channel of monetary policy transmission. The majority of recent papers use natural experiments to analyze the effects of bank-level shocks on credit supply and firm outcomes. Amiti and Weinstein (2011), Gan (2007), Peek and Rosengren (1997), and Peek and Rosengren (2000) exploit the bursting of the Japanese real estate bubble in the early 1990s. Albertazzi and Marchetti (2011), Almeida et al. (2012), Aiyar (2012), Chodorow-Reich (2014), De Haas and Van Horen (2012), Ivashina and Scharfstein (2010), Iyer et al. (2014), Paravisini et al (2014), and Santos (2011) analyze the effects of the 2007-09 financial crisis. Sufi (2009) studies the firm-level effects of bank loan rating introductions, Khwaja and Mian (2008) analyze bank liquidity shocks induced by unanticipated nuclear tests in Pakistan. Chava and Purnanandam (2011), and Lin and Paravisini (2013) use the 1998 Russian crisis, and the 2002 WorldCom bankruptcy, respectively. Acharya et al (2014) study firm-level effects of credit constraints induced by the European sovereign debt crisis. While the prior literature has focused on credit supply by

² The overall evidence on the effect of loan securitization on loan performance is mixed. Keys et al (2009), Keys et al (2010), Mian and Sufi (2009), Nadauld and Sherlund (2013), and Purnanandam (2011) document a detrimental effect of securitization on mortgage loan quality. Bubb and Kaufman (2014) find no causal effect of securitization on mortgage loan quality. Shivdasani and Wang (2011) and Benmelech, Dlugosz, and Ivashina (2012) provide evidence that securitized corporate loans do not perform worse than other loans, while Bord and Santos (2014) find an underperformance of loans sold to CLO vehicles relative to similar non securitized loans.

banks, we document the real effects of credit supply by non-bank lenders. This distinction is important for two reasons: First, an increased credit supply by non-bank lenders could simply induce banks to lend less, thus not having any real effects. Second, if credit supply by non-bank lenders goes into inefficient projects due to limited screening and monitoring abilities, we would expect real effects to be small at best. Our results indicate that securitization does not induce banks to lend less, but increases total borrowing by the affected firms. The additional borrowing, however, is not used to increase working capital or CAPEX, but is rather spend on inorganic growth via cash acquisitions.

The remainder of this paper proceeds as follows. Section 2 provides background information on the CDO and leveraged loan market. Further, we discuss the link between securitization, firm credit supply, and firm outcomes. We describe our data sources and the construction of our sample in Section 3 and present descriptive statistics. The effect of securitization on firm-level credit supply is presented in Section 4. Section 5 presents the effect of the likelihood that loans by a firm are securitized on firm outcomes. Section 6 concludes.

2. CDOs and Leveraged Loans: Institutional Set-up

CDOs are notes backed by a portfolio of assets, which can be further subcategorized by underlying asset type. Notes backed by corporate loans, typically loans to non-investment grade firms, are referred to as CLOs. Other types of CDOs are CBOs (CDOs backed by bonds), and structured product CDOs. In contrast to pass-through securitization, CDOs are sliced into tranches of different seniority. This enables the creation of high quality tranches with investment grade ratings out of a pool of low quality assets. These tranches can be sold to a broad range of investors like banks, insurance companies, and funds, which normally would not have invested in speculative grade assets. This implies that securitization enables

high-risk firms to make use of the larger funding capacity of investment grade markets, if their loans or bonds can be packaged in CDOs. As noted by Shivdasani and Wang (2011), CLOs were an important part of the CDO market before the 2007-09 subprime crisis and attracted similar investors as other CDO types.

CLOs require loan facilities as collateral, typically specific tranches of syndicated loans. Syndicated loan facilities can be broadly classified into three categories: (i) revolvers, i.e., lines of credit, (ii) term loan A (or amortizing term loan) tranches, and (iii) term loan B (or bullet loan) tranches. Revolvers and term loan A tranches, also referred to as pro rata tranches, are almost exclusively funded by banks (Gatev and Strahan (2009)). CLO vehicles usually invest in term loan B tranches, as these loan tranches are repaid at the end of the term. Hence, in contrast to pro rata tranches, these loans do not create reinvestment risk for the CLO vehicle.³ The majority of term B tranches are loans to non-investment grade firms, as the main advantage of structured credit is the creation of high quality tranches out of a pool of low quality assets. According to Standard & Poor's (S&P) (2006), CLO vehicles represented more than 60% of the institutional investor volume in primary markets of leveraged loans by 2006. Figure 1 shows the size of the global CDO market (including CLOs) and the volume of newly issued institutional loans from 1996 to 2007. Both series are highly correlated.

[Figure 1 here]

Firms can benefit from securitization in two ways. Firstly, non-investment grade firms can attract investors that normally invest only in high quality securities if the loans are packaged in CLOs, overcoming credit constraints. Further, firms' credit supply is less sensitive to bank-level funding constraints, if the bank can sell loans to CLO vehicles immediately after origination. The banks' role hereby changes from liquidity providers to

³ Other investors in term loan B tranches are institutional investors like prime funds, hedge funds, and insurance companies. Similar to CLO vehicles these investors also try to avoid reinvestment risk.

pure intermediaries between borrowers and capital markets. These channels predict that an increased likelihood that loans by a firm will be securitized increases the firms' access to credit. Secondly, as documented by Nadalund and Weisbach (2012), securitization can have direct effects on firms' borrowing costs. Banks that know at the time of loan origination that the demand for securities that can be sold to CLO vehicles is high, have an incentive to offer lower rates to borrowers than they otherwise would, given the borrowers risk. Nadalund and Weisbach (2012) provide evidence that subsequently securitized loan facilities carry a 17 basis point lower spread than similar non-securitized loan facilities.

3. Data

A. Sample Selection

We start with all Compustat firm-years. We restrict the sample to the period from 1990 to 2007 and exclude financial firms and utilities. We further match Compustat to Dealscan and exclude all firms-years where a firm has not received any single syndicated loan over the past 5 years.⁴ These firms do not obtain debt financing via loans; hence will not be affected by loan securitization. Note that excluding firm-years without an active lending relationship is *not* equivalent to excluding all firm-years in which the firm does not obtain loans, as we identify lending in the syndicated loan market via a rolling 5-year look-back window.

We use Dealscan to construct a relationship measure at the bank-firm-year level. We define firm i as being in a relationship with bank j at time t if firm i has obtained at least one syndicated loan (as either lead arranger or participant) over the prior 5 years from bank j . The rolling window approach is used to avoid a mechanical relationship between firm age and number of bank relationships. A 5-year look-back window is standard in the lending

⁴ We use Michael Robert's Dealscan-Compustat Linking Database to merge Dealscan with Compustat (see Chava and Roberts (2008)).

relationship literature (Bharath et al. (2007); Bharath et al. (2011); Ivashina and Kovner (2011)).

We next construct two separate panels: one panel at the firm-year level and one panel at the firm-*bank*-year level. That is, for the firm-bank-year panel, each firm-year can be included multiple times if the firm has more than one active bank relationship in the respective year. For the firm-year panel, each firm-year is included only once and all bank-level variables are aggregates over all active relationship banks. Both definitions have distinct advantages and disadvantages, which will be discussed in more detail when we explain the empirical framework and the identifying assumptions.

We next construct our measure for the likelihood that loans by a firm will be securitized. Nadauld and Weisbach (2012), Shivdasani and Wang (2011), and Wang and Xia (2014) argue that the more CDOs a bank underwrites, the better access it has to CDO managers and hence the more capable it is of distributing loans to the CLO vehicles established by these managers. Hence, we first identify CDO underwriting activity at the bank-year level. We obtain all CDO issues for the period from 1990 to 2007 from Dealogic. Using this information, we build league tables containing the annual CDO underwriting amount for each bank in each year.⁵ We merge this bank-level information with our firm-bank years. If a bank does not underwrite any CDOs in a year, the CDO underwriting amount is set to zero. At the firm-bank-year level, we define our measure for the likelihood that loans by a firm will be securitized, *Securitization Active (0/1)*, as a dummy variable that equals one if the banks' CDO underwriting amount is non-zero in the respective year, and zero otherwise.⁶ At the firm-year level, *Securitization Active (0/1)*, is a dummy variable that equals

⁵ Appendix B exemplarily shows an excerpt of the 2005 league table. We equally split the deal volume in case of multiple underwriters. All underwriters are aggregated under the ultimate parent name.

⁶ Our results remain qualitatively unchanged if we use a continuous measure of securitization likelihood, i.e., $\ln(1 + \text{CDO Underwriting Volume})$.

one if the *majority* of relationship banks are securitization active in the respective year, according to the definition above, and zero otherwise.

B. Summary Statistics

Table I reports summary statistics for our sample. Note that CLO vehicles (almost) exclusively purchase loans by non-investment grade firms. Hence, we expect that any effect of securitization on debt usage and investment is concentrated among BB (including BB+, BB, and BB-) and B (including B+, B, and B-) rated firms.⁷ We do not expect to find an effect for investment-grade firms and hence report all results separately for non-investment-grade firms and investment-grade firms.

Panel A.1, presents information on the securitization likelihood measure at the firm-bank-year level. The relationship bank is active in the CDO market in 27% (34%) of cases for non-investment-grade (investment-grade) firms. The descriptive statistics at the firm-year level are very similar (Panel A.2). The majority of banks that a firm deals with are securitization active in 22% (33%) of cases for non-investment-grade (investment-grade) firms.

[Table I here]

Panel B presents information on the term loan volumes received by firms. On average, non-investment-grade (investment-grade) firms receive \$7.5 (\$4.3) million *per bank per year* (Panel B.1). Aggregated at the firm-year level, non-investment-grade (investment-grade) firms receive \$117 million (\$100 million) per year, which corresponds to 7.3% (1.4%) of total assets (Panel B.2).

Panel C presents general firm characteristics at the firm-year level. The firms in our sample are relatively large. The mean/median book value of assets is \$2,862/\$516 million for

⁷ We exclude firm-years with an S&P rating below B- (less than 0.1% of the sample).

non-investment-grade and \$14,055/\$2,258 million for investment-grade firms. The average leverage ratio of non-investment-grade (investment-grade) firms is 44% (29%). The median non-investment-grade (investment-grade) firm has dealt with 10 (16) banks in the last 5 years.⁸ Note that all variables are winsorized at the 1% and 99% levels to remove outliers (except for dummy and log variables). Further, note that the number of observations in the following regressions is slightly lower than in the full sample presented in Table I as we include lagged control variables in the regressions.

4. Securitization and Firm Credit Supply

A. Empirical Framework

The theoretical framework hypothesizes that non-investment grade firms can attract investors that normally invest only in high quality securities if loans are securitized. As a result, firms are able to raise additional debt financing and increase investment. In our empirical analysis, we seek to identify the causal impact of loan securitization on bank loan supply and real outcomes.

We start by describing the ideal experimental environment. Ideally, firms and banks match randomly and banks randomly start to securitize loans. If this were the case a basic linear regression of bank securitization activity on loans received by firms would estimate a causal effect. However, in our empirical setting, neither bank-firm matching nor bank securitization activity are random. Perhaps most worrisome, firms may *choose* to pair with (switch to) a securitization active bank, e.g., because of an unobservable change in loan demand.⁹ That is, a simple regression of bank securitization activity on loans received by

⁸ Note that we do not restrict the bank sample to lead arrangers but include all syndicate participants to capture the entire loan supply from each bank.

⁹ See Gopalan, Udell, and Yerramilli (2011) on the effect of firm switching behavior on credit supply.

firms could capture general loan demand effects and not (only) loan supply effects induced by an increase in loan securitization likelihood.

There are several elements of the identification strategy that mitigate omitted variable concerns. Firstly, and probably most importantly, we exploit the staggered entry of banks in the securitization market (as illustrated by Figure 2) using a quasi difference-in-differences specification:

$$\ln(1 + \text{Loan Amount}_{ij,t}) = \alpha_t \times \text{SIC}_i + \alpha_{ij} + \beta \times \text{Securitization Active}_{j,t} + \gamma'X_{i,t-1} + \varepsilon_{ij,t}.$$

$\text{Loan Amount}_{ij,t}$ is the loan amount in \$million that firm i receives from bank j in fiscal year t . The specification allows us to include firm x bank fixed effects, α_{ij} , as well as SIC code x time fixed effects, $\alpha_t \times \text{SIC}_i$, and a comprehensive set of control variables, X .

By including firm x bank fixed effects we solely exploit the variation in loan supply within bank-firm pairs. That is, β represents the effect of loan supply of a given firm whose relationship bank becomes securitization active relative to the loan supply by the same bank to the same firm in the period where the bank is not securitization active. The fixed effects specification removes all firm-specific and bank-specific time-invariant omitted variables. In particular, we control for the endogenous decision by firms to switch banks by focusing on the variation in loan supply within *existing* lending relationships.

By including SIC code x time fixed effects, we control for industry-wide loan demand shifts over time. Therefore, β represents the change in loan supply for a given firm i whose bank becomes securitization active in year t , relative to the average change of all firms in the same one-digit industry in the same year. Finally, we include a comprehensive set of control variables to capture any firm-specific time-variant changes in the demand for debt financing. In particular, we include the market-to-book ratio, asset tangibility, firm size, firm cash flow, and firm profitability.

[Figure 2 and Figure 3 here]

The difference-in-differences specification relies on the assumption that, in absence of treatment, firms that have a relationship with a securitization active bank would have evolved in a similar manner than firms that have a relationship with a bank that is not securitization active. Figure 3 provides a distribution of firm credit ratings for banks that are securitization active and those that are not. It is comforting to see that the distribution of firm credit ratings is similar, suggesting there are no major differences between the types of firms (investment-grade, non-investment-grade) that securitization active and securitization inactive banks cater to. As we will elaborate in more detail below, we also do not find any evidence for a significant difference in pre-event trends in the loan amount being granted by banks that are securitization active versus those banks that are not.

Furthermore, we exploit cross-sectional differences in firms whose relationship banks become securitization active. As noted before, CLO vehicles almost exclusively purchase loan tranches by non-investment-grade firms. Hence, we test if the effect of loan securitization on loan supply is concentrated in the set of non-investment-grade firms, i.e., investment-grade firms should not exhibit a significant increase in loan supply even if their banks become securitization active.

B. Baseline Results

This section investigates whether an increase in the likelihood that loans by a firm will be securitized has an effect on the firms' access to credit. In particular we use the empirical setup described in Section 4.A and analyze, at the firm-bank-level, whether firms receive larger loan volumes if the relationship bank starts actively underwriting CDOs. We focus on term loans received by firms, i.e., exclude lines of credit, for two reasons: (i) Lines of credit are almost never bought by CLO vehicles as this would pose a significant reinvestment risk, (ii) we use loan origination data obtained from Dealscan to measure the loan volume that firm

i obtains from bank j in fiscal year t . While term loans are always fully drawn down at origination, i.e., the origination volume is equal to the loan volume that the firm receives, lines of credit can be either drawn or left undrawn. Hence, using credit line commitments as of origination would significantly overstate the cash inflow at the firm-level. For example, Mian and Santos (2012) show that, on average, less than 55% of a revolving facility is actually drawn down *until maturity* (on average 5 years).

[Table II here]

The results reported in Table II indicate that an increased likelihood that loans by a firm can be sold to a CLO vehicle subsequently to origination significantly increases the loan volume that a firm receives. The effect is economically large: An increase in the relationship banks' securitization activity increases the loan volume that the firm receives from this bank by about 14% for non-investment grade firms (column 1). Consistent with CLO vehicles almost exclusively purchasing loan facilities of non-investment grade borrowers, we find that the effect of securitization on loan supply to investment-grade borrowers (column 2) is economically small (+3%). The difference between both groups is highly statistically significant. We find similar results when scaling the loan amount by total assets (Table II, columns 3-4). An increase in securitization likelihood increases the loan volume by 0.1% of total assets. This effect appears economically small; however, note that this is the increase in loan supply *per bank per year*. We analyze the effect on total loan supply, i.e., the sum across all banks, in the following section.¹⁰

One potential concern is that bank securitization activity could be correlated with unobservable time-variant bank characteristics that also affect lending to risky firms. For

¹⁰ One can further dissect the total loan amount into bank-funded and institutional tranches. Consistent with the notion that in particular bullet term loan tranches can be sold to CLO vehicles, the effect of securitization on loans obtained by non-investment grade borrowers is economically larger for term B tranches compared to (mostly) bank-funded amortizing term A tranches with the difference being highly statistically significant (untabulated).

example, a change in management may affect both risk-taking and the decision to actively underwrite CDOs. To alleviate this concern, we test if there is a discontinuity at the investment grade threshold. If our proxy for bank securitization activity captures a general decrease in bank risk aversion, we would expect that the effect of bank securitization activity on lending is strictly increasing in borrower risk. If, however, $Securitization_{j,t}$ captures an increase in the likelihood that a borrowers' loans will be securitized, we would expect to predominantly find an effect for non-investment grade firms. That is, the effect of securitization on loan supply should ideally be zero for firms just above the investment grade threshold and positive for firms just below the threshold. Due to the low number of observations within each rating notch, we perform this analysis at the rating letter level, i.e., we run separate regressions for AAA-AA, A, BBB, and BB-B rated firms. The results are presented in Figure 4. The results indicate that the effect of securitization is not monotonically increasing in borrower risk. The effect is small for all rating classes except for BB to B rated firms.

[Figure 4 here]

We next examine the dynamics of the relation between securitization and loan supply. That is, we include a series of dummy variables in the standard regression to trace out the year-by-year effects of bank securitization activity on the logarithm of the loan amount:

$$\ln(1 + \text{Loan Amount}_{ij,t}) = \alpha_t \times \text{SIC}_i + \alpha_{ij} + \beta_1 \times \text{Sec}_{j,t}^{-3} + \beta_2 \times \text{Sec}_{j,t}^{-2} + \dots + \beta_5 \times \text{Sec}_{j,t}^{+5} + \gamma'X_{i,t-1} + \varepsilon_{ij,t}.$$

$\text{Sec}_{j,t}^{-k}$ ($\text{Sec}_{j,t}^{+k}$) equals one for banks in the k th year before (after) the start of bank securitization activity and zero otherwise. We exclude the first year before a bank first becomes securitization active, thus estimating the dynamic effect of securitization on loan supply relative to the first year before the firm's relationship bank becomes securitization

active.¹¹ Figure 5 plots the results and the 99% confidence intervals, which are adjusted for firm-level clustering.

[Figure 5 here]

Figure 5 illustrates that there is no significantly different pre-trend for investment grade and non-investment grade loan supply in the years before the start of bank securitization activity. Following the start of bank securitization activity, loan supply to investment grade firms remains almost flat, while loan supply to non-investment grade firms increases significantly.

C. Total Loan Supply Across All Banks

The results so far indicate that firms receive more loans from a bank if the bank becomes securitization active. However, the firms in our sample have multiple simultaneous lending relationships. One potential concern is that firms obtain more/larger loans from banks that become securitization active but simultaneously reduce the loan supply from other banks (e.g., because the bank that can securitize the loans can offer better loan price terms). In this section, we therefore analyze the total loan supply at the firm-year level.

The key challenge for an analysis at the firm level is that we have to control for any changes in the composition of lending relationships of the firms. In particular, as discussed in Section 4.A, firms may switch to banks that are already securitization active. We address these issues by including a comprehensive set of additional controls. Firstly, we control for the number of active bank lending relationships that the firm has in each year to capture changes in loan supply that solely stem from the inception of new lending relationships. Secondly, we include an integer that is increased by one in each year that the firm switches

¹¹ Note that we exclude lending relationships in which the bank is always securitization-active as $\text{Sec}_{j,t}^{-k}$ ($\text{Sec}_{j,t}^{+k}$) cannot be defined.

lenders. In a firm-fixed effects regression, this variable captures any changes in loan supply that stem from changes in the composition of lending relationships that do not affect the total number of banks (i.e., cases where firms start a new lending relationship and simultaneously end an existing one). Thirdly, we include a squared term for the number of banks to capture any non-linear effects (the first additional lending relationship may have a different effect than the tenth).

Table III reports the results of firm-fixed effects regressions analyzing the effect of securitization likelihood on total loan supply. At the firm-year level, *Securitization Active (0/1)*, is a dummy variable that equals one if the *majority* of relationship banks are securitization active in the respective year and zero otherwise.

[Table III here]

The firm-year level analysis confirms the analysis at the firm-bank-year level. An increase in securitization likelihood positively affects the total firm loan supply. The effect is also economically significant. Firms obtain 18% more loans after the majority of banks are securitization active, which corresponds to 1.7% of total assets.

5. Real Effects of Securitization

A. The Impact of Securitization on Capital Structure

In this section, we explore the effect of the increased credit availability through securitization on firms' capital structure. We analyze all real outcomes at the firm-year level, as firm outcomes do not vary across lending relationships in a given year. However, the results at the firm-bank-year level are very similar (see Appendix C).

[Table IV here]

Table IV, Panel B documents that non-investment grade firms experience an increase in their leverage ratio (+1.7%) and their change in total debt by lagged assets ratio (+3.2%) once the majority of their banks become securitization active. This indicates that firms do not simply use the new loans to repay existing debt or obtain less debt via other sources once loan supply increases. That is, loan securitization has an actual effect on the overall availability of debt financing. Investment-grade firms also experience an increase in their change in total debt by lagged assets ratio, however, similar to the general loan supply effect, the increase is significantly larger for non-investment grade firms.

The results reported in Table IV, Panel A, document that the change in total assets by lagged assets ratio increase by 6%, for non-investment-grade firms whose banks become securitization active. This indicates that firms do not simply use the increased loan supply to repurchase equity. Again, this effect is significantly smaller for investment-grade firms (+2.6%) with the difference between both groups being highly statistically significant.

Interestingly, we find that the change in equity by lagged assets ratio increases by 1.8% for non-investment-grade firms if their banks become securitization active. However, we do not find evidence for a significant difference in the change in equity between non-investment-grade versus investment-grade firms.

B. The Impact of Securitization on Investment

In this section, we explore the effect of the increased credit availability through securitization on firm investment behavior. In principle, firms can use the additional borrowing for three purposes: first, firms could increase working capital. For example, a removal of borrowing constraints might induce a firm to hold more liquidity or extend the terms of trade payables to its customers (trade credit). Second, firms could increase capital expenditure (CAPEX). Investments that were impossible to conduct under borrowing constraint, or not profitable

with higher cost of debt might become profitable with more and cheaper borrowing available to the firm. Third, firms may use the additional borrowing to grow inorganically via acquisitions.

The results reported in Table V indicate that the change in working capital by lagged assets ratio does not increase significantly for non-investment-grade firms whose banks become securitization active. Thus, we conclude that the management of (short-term) liquidity is not affected by the additional borrowing available due to securitization.

Interestingly, we only observe a very small increase in CAPEX scaled by lagged assets increases (+0.4%) for non-investment-grade firms whose banks become securitization active. However, this increase is not statistically different from the effect of securitization on CAPEX for investment-grade firms. We thus conclude that organic growth via capital expenditure is hardly affected by securitization.

[Table V here]

Finally, Table V column 5 indicates a strong effect on investment in cash acquisitions. An increase in the likelihood that loans will be securitized increases investment in cash acquisitions scaled by lagged total assets by 1.8% for non-investment-grade firms. Cash acquisitions do not increase significantly for investment-grade firms whose banks become securitization active, and the difference between non-investment and investment-grade firms is highly statistically significant. Interestingly, the cash acquisition effect is similar in terms of magnitude to the overall increases in loan supply for non-investment grade firms (+1.7% of total assets). This suggests – together with the evidence that working capital and other investments are not affected – that close to 100% of the additional loans are invested in cash acquisitions. That is, firms use the additional debt financing through securitization to grow inorganically

C. The Impact of Securitization on Asset, Sales, and Employment Growth

Finally, we explore the effect of the increased credit availability through securitization on sales and employment. The results reported in Table VI, column 1, indicates that the change in net sales by lagged net sales ratio increases by 2.6% for non-investment-grade firms whose banks become securitization active. Investment-grade firms do not experience a change in sales if their banks become securitization active. The difference between both groups is highly statistically significant.

The employment effects are reported in Table VI, columns 3 and 4. An increase in the likelihood that loans will be securitized increases the change employment by lagged employment ratio by 4.2% for non-investment-grade firms. The comparable figure for investment-grade firms is -0.1% and the difference between both groups is highly statistically significant.

[Table VI here]

Overall, our results indicate that securitization alleviates credit supply frictions at the firm level and in turn affects real outcomes. These effects are concentrated among the set of speculative-grade firms, i.e., firms whose loans are likely to be bought by CLO vehicles. Investment grade firms do not experience a significant change in loan supply if their banks become securitization active and also real outcomes are not affected.

6. Conclusion

This paper provides evidence that an increase in the likelihood that loans by a firm will be sold to CLO vehicles increases a firms' credit supply. Further, firms maintain higher leverage ratios after the relationship bank becomes securitization active. Consistent with a causal effect of securitization, the increase in credit supply and debt usage is concentrated

among BB to B rated firms, i.e., firms whose loans are likely purchased by CLO vehicles. These results are consistent with the view that non-investment grade firms benefit from credit supply by investors that normally invest only in high quality securities through packaging loans in CLOs.

We do not find any evidence for either an increase in working capital or an organic growth via higher capital expenditure due to securitization. However, in response to the rise in credit supply firms significantly grow inorganically by increasing cash acquisitions. We further document that the increased credit supply through securitization positively affects sales, asset, and employment growth.

References

- Acharya, Viral V., Tim Eisert, Christian Eunger, Christian Hirsch, 2014, Real Effects of the Sovereign Debt Crisis in Europe: Evidence from Syndicated Loans, Working Paper.
- Aiyar, Shekhar, 2012, From Financial Crisis to Great Recession: The Role of Globalized Banks, *American Economic Review* 102, 225–230.
- Albertazzi, Ugo, and Domenico Marchetti, 2011, Credit Crunch, Flight to Quality and Evergreening, Working Paper.
- Almeida, Heitor, Murillo Campello, Bruno Laranjeira, and Scott Weisbenner, 2012, Corporate Debt Maturity and the Real Effects of the 2007 Credit Crisis, *Critical Finance Review* 1, 3–58.
- Altunbas, Yener, Leonardo Gambacorta, and David Marques-Ibanez, 2009, Securitisation and the bank lending channel, *European Economic Review* 53, 996–1009.
- Amiti, Mary, and David Weinstein, 2011, Exports and Financial Shocks, *Quarterly Journal of Economics* 126, 1841–1877.
- Benmelech, Efraim, Jennifer Dlugosz, and Victoria Ivashina, 2012, Securitization without adverse selection: The case of CLOs, *Journal of Financial Economics* 106, 91–113.
- Bernanke, Ben S., 1983, Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression, *American Economic Review* 73, 257–276.
- Bernanke, Ben S., and Alan S. Blinder, 1992, The Federal Funds Rate and the Channels of Monetary Transmission, *American Economic Review* 82, 901–921.
- Bharath, Sreedhar, Sandeep Dahiya, Anthony Saunders, and Anand Srinivasan, 2007, So what do I get? The bank’s view of lending relationships, *Journal of Financial Economics* 85, 368–419.
- Bharath, Sreedhar, Sandeep Dahiya, Anthony Saunders, and Anand Srinivasan, 2011, Lending Relationships and Loan Contract Terms, *Review of Financial Studies* 24, 1141–1203.
- Bharath, Sreedhar, and Tyler Shumway, 2008, Forecasting Default with the Merton Distance to Default Model, *Review of Financial Studies* 21, 1339–1369.
- Bord, Vitaly M. and João A. C. Santos, 2014, Does securitization of corporate loans lead to riskier lending? Working Paper.
- Bubb, Ryan, and Alex Kaufman, 2014, Securitization and moral hazard: Evidence from credit score cutoff rules, *Journal of Monetary Economics* 63, 1–18.
- Carbó-Valverde Santiago, Hans Degryse, and Francisco Rodriguez-Fernandez, 2012, Lending relationships and credit rationing: The impact of securitization, Working Paper.

Chava, Sudheer, and Amiyatosh Purnanandam, 2011, The Effect of Banking Crisis on Bank-Dependent Borrowers, *Journal of Financial Economics* 99, 116–135.

Chava, Sudheer, and Michael R. Roberts, 2008, How Does Financing Impact Investment? The Role of Debt Covenants, *Journal of Finance* 63, 2085–2121.

Chodorow-Reich, Gabriel, 2014, The Employment Effects of Credit Market Disruptions: Firm-Level Evidence From the 2008–9 Financial Crisis, *Quarterly Journal of Economics* 129, 1–59.

De Haas, Ralph, and Neeltje Van Horen, 2012, International Shock Transmission after the Lehman Brothers Collapse: Evidence from Syndicated Lending, *American Economic Review* 102, 231–237.

Gan, Jie, 2007, The Real Effects of Asset Market Bubbles: Loan- and Firm-Level Evidence of a Lending Channel, *Review of Financial Studies* 20, 1941–1973.

Gatev, Evan, and Philip E. Strahan, 2009, Liquidity risk and syndicate structure, *Journal of Financial Economics* 93, 490–504.

Gopalan, Radhakrishnan, Gregory F. Udell, and Vijay Yerramilli, 2011, Why Do Firms Form New Banking Relationships? *Journal of Financial and Quantitative Analysis* 46, 1335–1365.

Ivashina, Victoria, and Anna Kovner, 2011, The Private Equity Advantage: Leveraged Buyout Firms and Relationship Banking, *Review of Financial Studies* 24, 2462–2498.

Ivashina, Victoria, and David Scharfstein, 2010, Bank Lending during the Financial Crisis of 2008, *Journal of Financial Economics* 97, 319–338.

Iyer, Rajkamal, José-Luis Peydró, Samuel da-Rocha-Lopes, and Antoinette Schoar, 2014, Interbank Liquidity Crunch and the Firm Credit Crunch: Evidence from the 2007-2009 Crisis, *Review of Financial Studies* 27, 347–372.

Jiménez Gabriel, Atif Mian, José-Luis Peydró, and Jesús Saurina, 2011, Local versus Aggregate Lending Channels: The Effects of Securitization on Corporate Credit Supply, Working Paper.

Jiménez, Gabriel, Steven Ongena, José-Luis Peydró, and Jesús Saurina, 2012, Credit Supply and Monetary Policy: Identifying the Bank Balance-Sheet Channel with Loan Applications, *American Economic Review* 102, 2301–2326.

Kashyap, Anil K., and Jeremy C. Stein, 2000, What do One Million Observations on Banks Have to Say About the Transmission of Monetary Policy, *American Economic Review* 90, 407–428.

Kashyap, Anil K., Owen A. Lamont, and Jeremy C. Stein, 1994, Credit Conditions and the Cyclical Behavior of Inventories, *Quarterly Journal of Economics* 109, 565–592.

Keys, Benjamin J., Tanmoy Mukherjee, Amit Seru, and Vikrant Vig, 2009, Financial regulation and securitization: Evidence from subprime loans, *Journal of Monetary Economics* 56, 700–720.

Keys, Benjamin J., Tanmoy Mukherjee, Amit Seru, and Vikrant Vig, 2010, Did securitization lead to lax screening? Evidence from subprime loans, *Quarterly Journal of Economics* 125, 307–362.

Khwaja, Asim Ijaz, and Atif Mian, 2008, Tracing the Impact of Bank Liquidity Shocks: Evidence from an Emerging Market, *American Economic Review* 98, 1413–1442.

Lin, Huidan, and Daniel Paravisini, 2013, The Effect of Financing Constraints on Risk, *Review of Finance* 17, 229–259.

Loutskina, Elena and Philip E. Strahan, 2009, Securitization and the declining impact of bank finance on loan supply: Evidence from mortgage originations, *Journal of Finance* 64, 861–889.

Loutskina, Elena, 2011, The role of securitization in bank liquidity and funding management, *Journal of Financial Economics* 100, 663–684.

Merton, Robert C., 1974, On the pricing of corporate debt: The risk structure of interest rates, *Journal of Finance* 46, 879–903.

Mian, Atif R., and João A. C. Santos (2012). Liquidity Risk, Maturity Management and the Business Cycle, Working Paper.

Mian, Atif and Amir Sufi, 2009, The consequences of mortgage credit expansion: Evidence from the U.S. mortgage default crisis, *Quarterly Journal of Economics* 124, 1449–1496.

Nadauld, Taylor D., and Shane M. Sherlund, 2013, The impact of securitization on the expansion of subprime credit, *Journal of Financial Economics* 107, 454–476.

Nadauld, Taylor D., and Michael S. Weisbach, 2012, Did securitization affect the cost of corporate debt? *Journal of Financial Economics* 105, 332–352.

Paravisini, Daniel, Veronica Rappoport, Philipp Schnabl, and Daniel Wolfenzon, 2014, Dissecting the effect of Credit Supply on Trade: Evidence from Matched Credit-Export Data, *Review of Economic Studies*, forthcoming.

Peek, Joe, and Eric Rosengren, 1997, The International Transmission of Financial Shocks, *American Economic Review* 87, 495–505.

Peek, Joe, and Eric Rosengren, 2000, Collateral Damage: Effects of the Japanese Bank Crisis on Real Activity in the United States, *American Economic Review* 90, 30–45.

Purnanandam, Amiyatosh K., 2011, Originate-to-Distribute Model and the Sub-Prime Mortgage Crisis, *Review of Financial Studies* 24, 1881–1915.

Santos, João, 2011, Bank Corporate Loan Pricing Following the Subprime Crisis, *Review of Financial Studies* 24, 1916–1943.

Shivdasani, Anil, and Yihui Wang, 2011, Did Structured Credit Fuel the LBO Boom? *Journal of Finance* 66, 1291–1328.

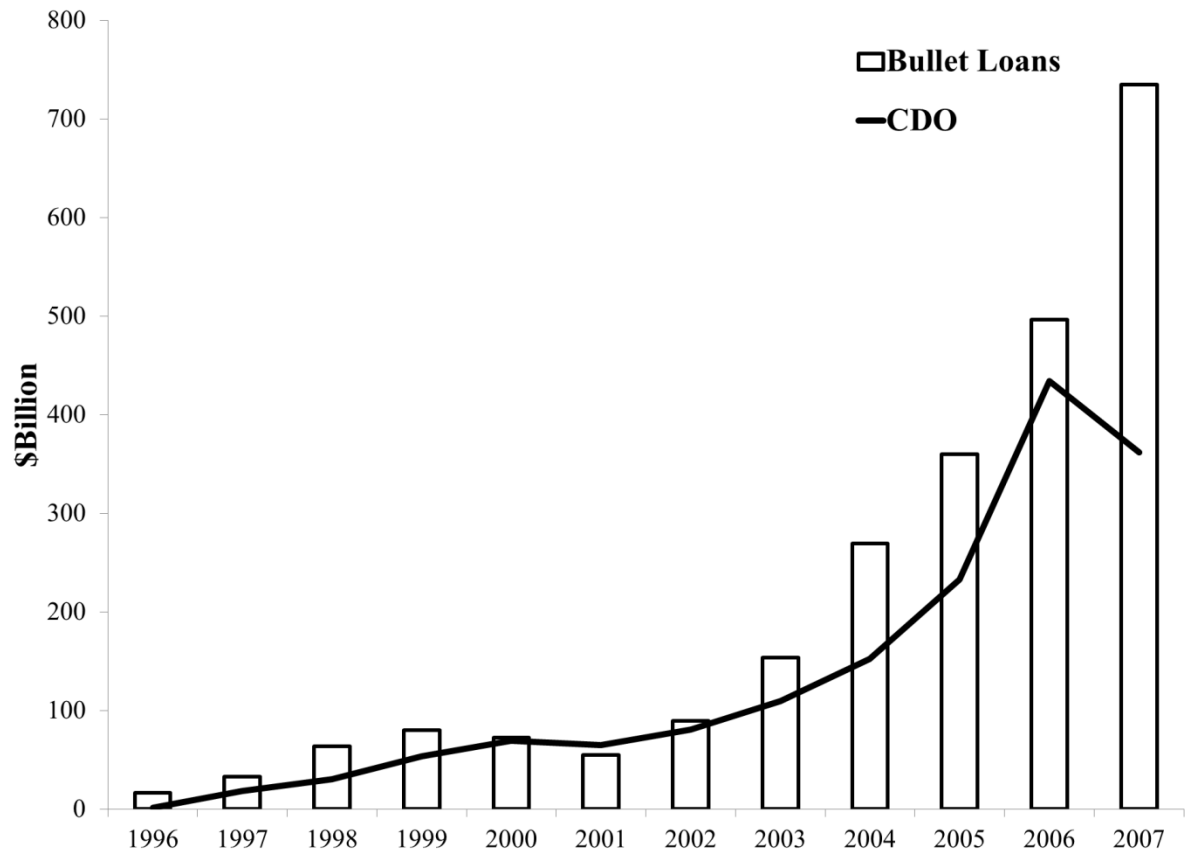
Sufi, Amir, 2009, The Real Effects of Debt Certification: Evidence from the Introduction of Bank Loan Ratings, *Review of Financial Studies* 22, 1659–1691.

Standard & Poor's (S&P), 2006, A guide to the loan market (New York, NY).

Wang, Yihui, and Han Xia, 2014, Do Lenders Still Monitor When They Can Securitise Loans? *Review of Financial Studies* 27, 2354–2391.

Figure 1
The Size of the Global Structured Credit and Institutional Loan Market

This figure shows the volume of bullet loan tranches (Term Loans B – H) issued from 1996 to 2007. Further depicted is the total issuance amount of CDOs (including CLOs).



Source: Dealogic DCM Analytics and LPC's Dealscan.

Figure 2
Staggered Entry of Banks in the Securitization Market

This figure shows the number of banks that become securitization active in each year. The start of the securitization activity is defined as the first year in which a bank is an active CDO underwriter.

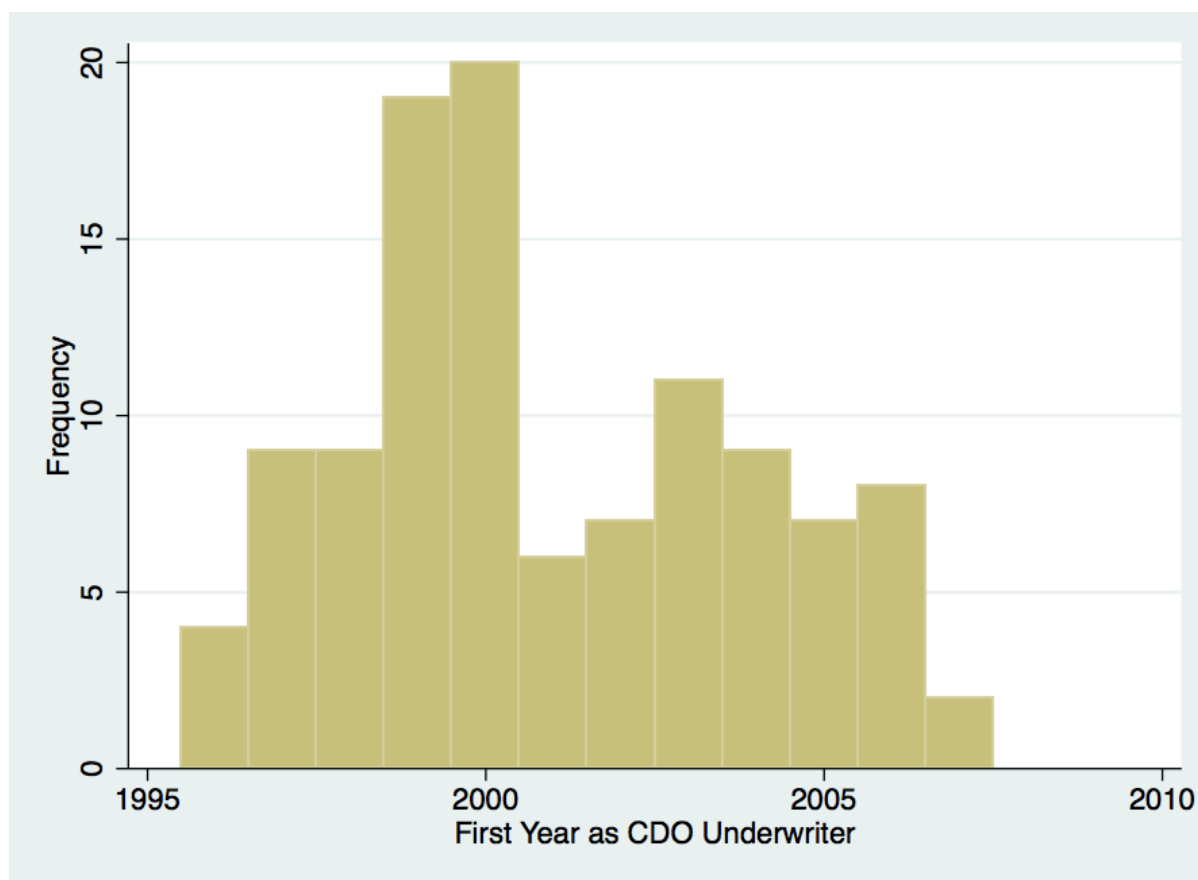


Figure 3
Firm Credit Rating Distribution

This figure shows the distribution of credit ratings across firms. The sample is split into firm-years in which the relationship bank is an active underwriter of securitized assets and firm-years in which the relationship bank is not active the securitization market.

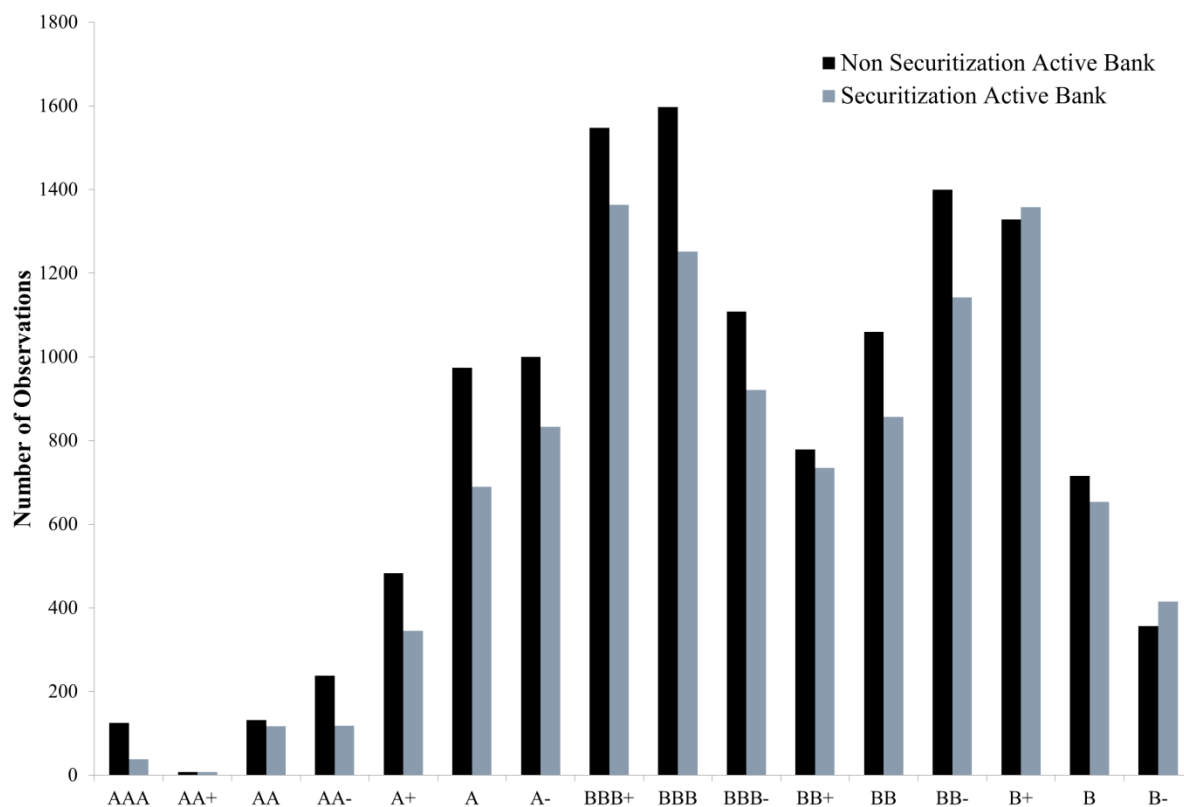


Figure 4
The Impact of Securitization on Loan Supply – Effect by Rating Letter

Each bar in the figure represents the estimated impact of bank securitization activity on firm loan supply. Specifically, we report the estimates of β from 4 separate regressions of the following form:

$$\ln(1 + \text{Loan Amount})_{ij,t} = \alpha_{ij} + \alpha_{\text{SIC1},t} + \beta \text{Securitization}_{j,t} + \gamma'X_{i,t-1} + \varepsilon_{ij,t}.$$

$\text{Securitization}_{j,t}$ is a dummy variable that equals one if bank j is securitization-active in year t and zero otherwise. We control for bank x firm fixed effects (α_{ij}) and 1-digit SIC code x year fixed effects ($\alpha_{\text{SIC1},t}$). X are control variables to control for heterogeneity in firm characteristics (cf. Table II). We run separate regressions for firms with different credit ratings (AAA-AA, A, BBB, and BB-B).

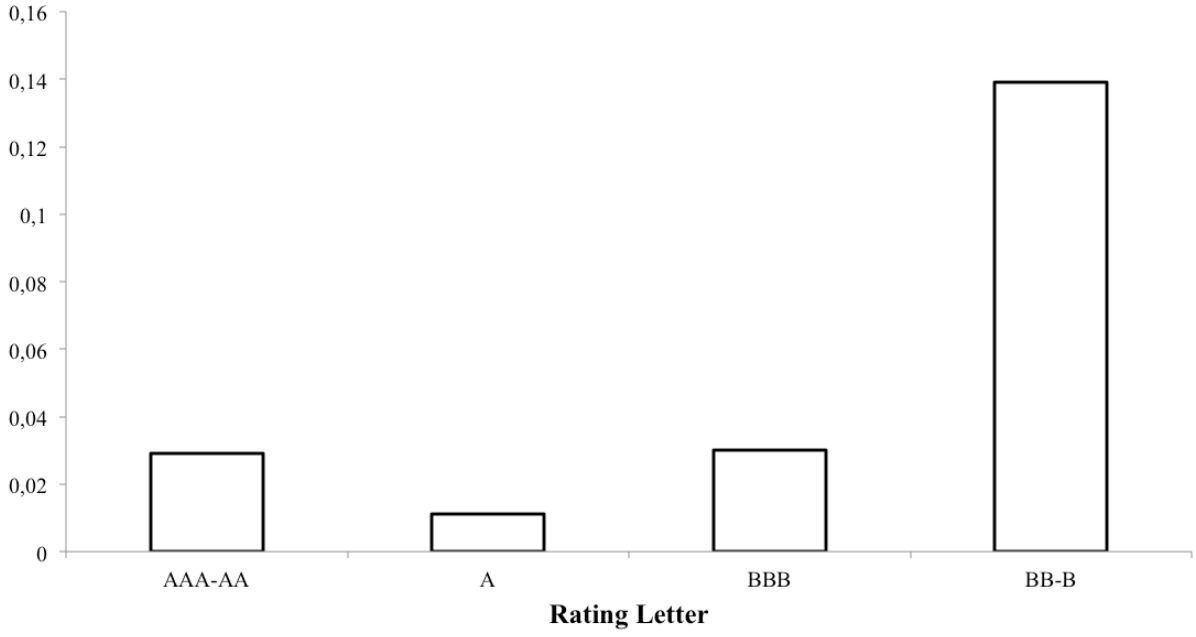


Figure 5
The Dynamic Impact of Securitization on Loan Supply

This figure plots the impact of bank securitization activity on total firm loan supply. We consider a 9-year window, spanning from 4 years before until 5 years after the start of bank securitization activity. The dashed lines represent 99% confidence intervals, adjusted for firm-level clustering. Specifically, we report estimated coefficients from the following regression:

$$\ln(1 + \text{Loan Amount})_{ij,t} = \alpha_{ij} + \alpha_{\text{SIC1},t} + \beta_1 \text{Sec}_{j,t}^{-3} + \beta_2 \text{Sec}_{j,t}^{-2} + \dots + \beta_5 \text{Sec}_{j,t}^{+5} + \gamma' X_{i,t-1} + \varepsilon_{ij,t}.$$

$\text{Sec}_{j,t}^{-k}$ ($\text{Sec}_{j,t}^{+k}$) equals one for banks in the k th year before (after) the start of bank securitization activity and zero otherwise. We exclude the first year before a bank first becomes securitization-active, thus estimating the dynamic effect of securitization on loan supply relative to the first year before the firm's relationship bank becomes securitization-active. We control for bank x firm fixed effects (α_{ij}) and 1-digit SIC code x year fixed effects ($\alpha_{\text{SIC1},t}$). X are control variables to control for heterogeneity in firm characteristics (cf. Table II). We run separate regressions for sub-investment grade and investment grade firms. Lending relationships in which the bank is always securitization-active are excluded.

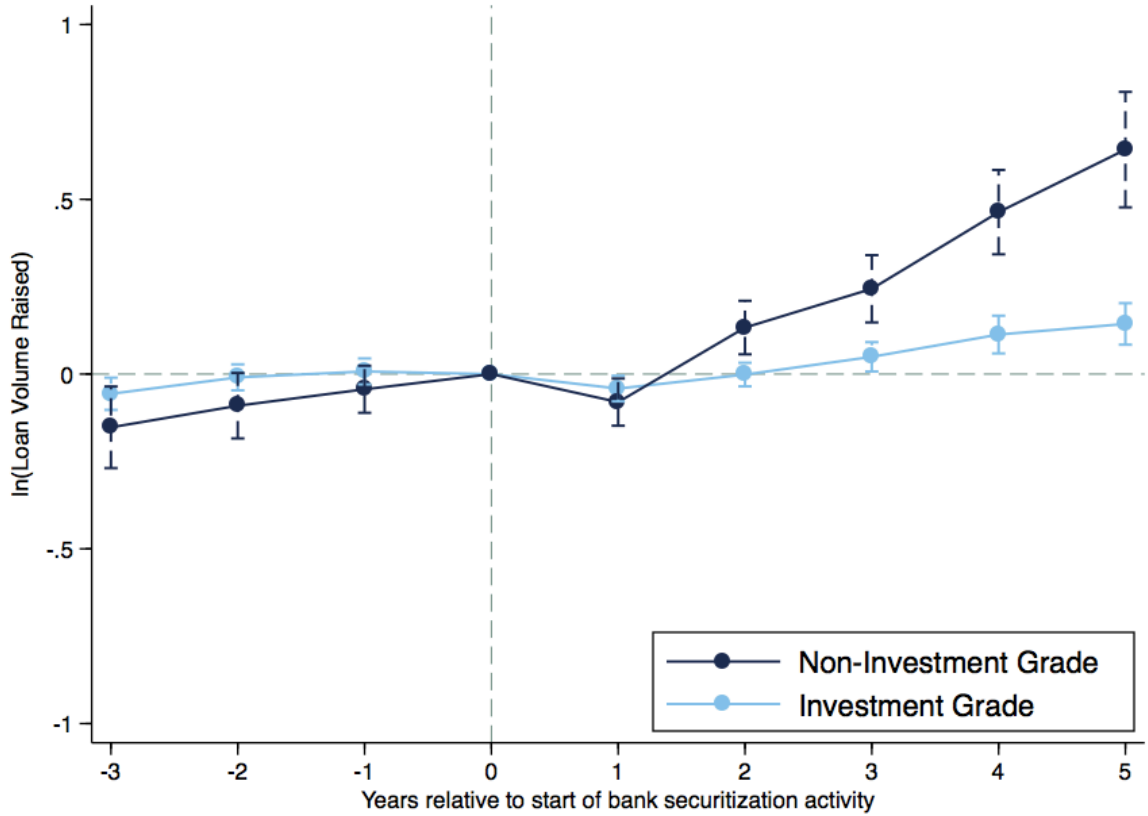


Table I
Descriptive Statistics

This table reports summary statistics for the key variables in our sample. All variables are defined in Appendix A.

	Sub-Investment Grade Firms						Investment Grade Firms					
	N	Mean	Percentile Distribution				N	Mean	Percentile Distribution			
			Std. Dev.	P25	Median	P75			Std. Dev.	P25	Median	P75
Panel A.1: Securitization Measure (Bank-Firm-Year Level)												
Securitization Active (0/1) _{ij,t}	125,445	0.270	0.444	0.000	0.000	1.000	134,191	0.341	0.474	0.000	0.000	1.000
Panel A.2: Securitization Measure (Firm-Year Level)												
Securitization Active (0/1) _{i,t}	10,929	0.220	0.414	0.000	0.000	0.000	8,435	0.330	0.470	0.000	0.000	1.000
Panel B.1: Loan Volume (Bank-Firm-Year Level)												
Loan Amount _{ij,t}	125,445	7.504	42.485	0.000	0.000	0.000	134,191	4.320	70.879	0.000	0.000	0.000
Loan Amount _{ij,t} /Total Assets _{i,t-1} (*100)	125,445	0.369	1.114	0.000	0.000	0.000	134,191	0.049	0.348	0.000	0.000	0.000
Panel B.2: Loan Volume (Firm-Year Level)												
Loan Amount _{i,t}	10,929	117.242	533.852	0.000	0.000	0.000	8,435	100.077	854.860	0.000	0.000	0.000
Loan Amount _{i,t} /Total Assets _{i,t-1} (*100)	10,375	7.282	18.129	0.000	0.000	0.000	8,155	1.442	7.359	0.000	0.000	0.000

(continued on next page)

Table I - continued
Descriptive Statistics

	Sub-Investment Grade Firms						Investment Grade Firms					
	N	Mean	Percentile Distribution				N	Mean	Percentile Distribution			
			Std. Dev.	P25	Median	P75			Std. Dev.	P25	Median	P75
Panel C: Firm Characteristics (Firm-Year Level)												
#Banks _{i,t}	10,929	14.67	14.98	5.00	10.00	19.00	8,435	19.05	13.87	9.00	16.00	25.00
Total Assets _{i,t}	10,371	2,862.13	8,759.62	516.305	1,017.40	2,257.16	8,246	14,055.0	27,923.9	2,258.50	4,960.49	13,624.3
Leverage _{i,t}	10,322	0.446	0.234	0.286	0.419	0.575	8,238	0.287	0.150	0.186	0.274	0.368
MTB _{i,t}	8,856	1.520	0.759	1.069	1.301	1.710	7,805	1.822	0.944	1.229	1.539	2.061
Tangibility _{i,t}	10,313	0.358	0.239	0.154	0.318	0.530	8,226	0.355	0.220	0.180	0.308	0.513
Profitability _{i,t}	10,318	0.118	0.074	0.075	0.114	0.157	8,204	0.150	0.065	0.105	0.143	0.186
Cash Flow _{i,t}	9,973	0.067	0.099	0.026	0.070	0.116	7,988	0.110	0.069	0.070	0.106	0.147
ΔAssets/Total Assets _{i,t-1}	10,013	0.189	0.430	-0.036	0.057	0.240	8,027	0.127	0.286	-0.004	0.065	0.165
ΔDebt/Total Assets _{i,t-1}	9,959	0.084	0.242	-0.037	0.009	0.116	8,013	0.039	0.145	-0.026	0.004	0.062
ΔEquity/Total Assets _{i,t-1}	9,959	0.109	0.268	-0.028	0.051	0.170	8,013	0.088	0.189	0.004	0.057	0.128
ΔWorking Capital/Total Assets _{i,t-1}	9,467	0.021	0.118	-0.034	0.008	0.061	7,519	0.012	0.080	-0.024	0.007	0.044
CAPEX _{i,t} /Total Assets _{i,t-1}	9,866	0.077	0.082	0.025	0.047	0.093	7,915	0.070	0.058	0.032	0.054	0.088
Cash Acq _{i,t} /Total Assets _{i,t-1}	9,479	0.066	0.153	0.000	0.000	0.037	7,249	0.043	0.102	0.000	0.004	0.034
ΔSales/Net Sales _{i,t-1}	9,968	0.172	0.328	-0.009	0.090	0.262	8,023	0.111	0.219	0.007	0.078	0.166
ΔEmployment/Employment _{i,t-1}	9,412	0.097	0.299	-0.056	0.025	0.153	7,683	0.053	0.205	-0.036	0.018	0.093

Table II
The Impact of Loan Securitization on Loan Supply

This table presents information on the amount of loans received by firms in millions of dollars. The sample is constructed at the bank-firm-year-level. *Loan Amount* is the sum of all term loans that firm i received from bank j in fiscal year t . *Securitization Active* is a dummy variable that equals one if bank j is an active CDO underwriter in year t and zero otherwise. The regressions include bank x firm and industry (one-digit SIC) x year fixed effects as well as other controls ($Size_{i,t-1}$, $Profitability_{i,t-1}$, $Tangibility_{i,t-1}$, $MTB_{i,t-1}$, $Cash\ Flow_{i,t}$). Variables are defined in Appendix A. We report t-values based on standard errors clustered at the firm-level in parentheses. ***, **, * denote significance at the 1, 5 and 10 % level, respectively.

Sample	Sub-Inv. Grade Firms (1)	Inv. Grade Firms (2)	(1)-(2)	Sub-Inv. Grade Firms (3)	Inv. Grade Firms (4)	(3)-(4)
Variable	$\ln(1+Loan\ Amount)_{ij,t}$	$\ln(1+Loan\ Amount)_{ij,t}$	(Diff.)	$\frac{Loan\ Amount_{ij,t}}{Total\ Assets_{i,t-1}}$	$\frac{Loan\ Amount_{ij,t}}{Total\ Assets_{i,t-1}}$	(Diff.)
Securitization Active (0/1) $_{ii,t}$	0.1389*** (6.87)	0.0282*** (3.43)	0.1106*** (5.08)	0.0009*** (5.72)	0.0001* (1.73)	0.0008*** (5.25)
Other Controls	Yes	Yes		Yes	Yes	
Bank x Firm FE	Yes	Yes		Yes	Yes	
Industry x Year FE	Yes	Yes		Yes	Yes	
Observations	96,318	120,273		96,318	120,273	
# Firms	1,292	800		1,292	800	
# Bank-Firm Pairs	22,167	20,312		22,167	20,312	
Adjusted R ²	0.0894	0.0356		0.102	0.0420	

Table III
The Impact of Loan Securitization on Loan Supply – Firm-Year Level Evidence

This table presents information on the amount of loans received by firms in millions of dollars. The sample is constructed at the firm-year-level. *Loan Amount* is the sum of all term loans that firm *i* received in fiscal year *t*. *Securitization Active* is a dummy variable that equals one if the majority of banks that firm *i* has an active lending relationship with are active CDO underwriters in year *t* and zero otherwise. *#Banks* is the number of active bank lending relationships of firm *i* in year *t*. *Switch* is an integer, which is increased by one in each year *t* in which firm *i* forms a new lending relationship. The regressions include firm and industry (one-digit SIC) x year fixed effects as well as other controls (*Size_{i,t-1}*, *Leverage_{i,t-1}*, *Profitability_{i,t-1}*, *Tangibility_{i,t-1}*, *MTB_{i,t-1}*, *Cash Flow_{i,t}*). Variables are defined in Appendix A. We report t-values based on standard errors clustered at the firm-level in parentheses. ***, **, * denote significance at the 1, 5 and 10 % level, respectively.

Sample	Sub-Inv. Grade Firms	Inv. Grade Firms		Sub-Inv. Grade Firms	Inv. Grade Firms	
	(1)	(2)	(1)-(2)	(3)	(4)	(3)-(4)
Variable	$\ln(1+\text{Loan Amount})_{i,t}$	$\ln(1+\text{Loan Amount})_{i,t}$	(Diff.)	$\frac{\text{Loan Amount}_{i,t}}{\text{Total Assets}_{i,t-1}}$	$\frac{\text{Loan Amount}_{i,t}}{\text{Total Assets}_{i,t-1}}$	(Diff.)
Securitization Active (0/1) _{i,t}	0.180** (1.96)	-0.008 (-0.12)	0.187* (1.79)	0.017*** (2.70)	0.003 (1.01)	0.014** (2.23)
#Banks _{i,t}	0.051*** (6.47)	0.032*** (3.75)		0.006*** (8.65)	0.001*** (3.62)	
#Banks ² _{i,t}	-0.000** (-2.22)	-0.000 (-0.19)		-0.000*** (-4.73)	-0.000 (-0.38)	
Switch _{i,t}	0.609*** (11.48)	0.103*** (3.31)		0.023*** (5.87)	0.000 (0.11)	
Other Controls	Yes	Yes		Yes	Yes	
Firm FE	Yes	Yes		Yes	Yes	
Industry x Year FE	Yes	Yes		Yes	Yes	
Observations	8,209	7,483		8,209	7,483	
Adjusted R ²	0.089	0.039		0.092	0.044	

Table IV
The Impact of Loan Securitization on Capital Structure

This table presents coefficient estimates from regressions relating capital structure to bank securitization activity. The sample is constructed at the firm-year-level. The dependent variables are $\Delta \text{Assets} / \text{Total Assets}_{i,t-1}$, $\Delta \text{Equity} / \text{Total Assets}_{i,t-1}$, $\Delta \text{Debt} / \text{Total Assets}_{i,t-1}$ and $\text{Leverage}_{i,t}$. $\Delta \text{Assets} / \text{Total Assets}_{i,t-1}$ is the change in total assets scaled by lagged assets. $\Delta \text{Equity} / \text{Total Assets}_{i,t-1}$ is the change in total equity scaled by lagged assets. $\Delta \text{Debt} / \text{Total Assets}_{i,t-1}$ is the change in total debt scaled by lagged total assets. Leverage is total debt scaled by total assets. *Securitization Active* is a dummy variable that equals one if the majority of banks that firm i has an active lending relationship with are active CDO underwriters in year t and zero otherwise. *#Banks* is the number of active bank lending relationships of firm i in year t . *Switch* is an integer, which is increased by one in each year t in which firm i forms a new lending relationship. The regressions include firm and industry (one-digit SIC) x year fixed effects as well as other controls ($\text{Size}_{i,t-1}$, $\text{Leverage}_{i,t-1}$ (columns (1) to (4)), $\text{Profitability}_{i,t-1}$, $\text{Tangibility}_{i,t-1}$, $\text{MTB}_{i,t-1}$, $\text{Cash Flow}_{i,t}$). Variables are defined in Appendix A. We report t-values based on standard errors clustered at the firm-level in parentheses. ***, **, * denote significance at the 1, 5 and 10 % level, respectively.

Panel A

Sample	Sub-Inv. Grade Firms	Inv. Grade Firms		Sub-Inv. Grade Firms	Inv. Grade Firms	
	(1)	(2)	(1)-(2)	(3)	(4)	(3)-(4)
Variable	$\Delta \text{Assets} / \text{Total Assets}_{i,t-1}$	$\Delta \text{Assets} / \text{Total Assets}_{i,t-1}$	(Diff.)	$\Delta \text{Equity} / \text{Total Assets}_{i,t-1}$	$\Delta \text{Equity} / \text{Total Assets}_{i,t-1}$	(Diff.)
Securitization Active (0/1) _{i,t}	0.060*** (4.38)	0.026** (2.45)	0.033** (2.06)	0.018** (2.17)	0.010 (1.44)	0.008 (0.86)
#Banks _{i,t}	0.013*** (7.97)	0.006*** (4.72)		0.006*** (6.73)	0.003*** (3.23)	
#Banks ² _{i,t}	-0.000*** (-5.24)	-0.000** (-2.39)		-0.000*** (-5.00)	-0.000* (-1.81)	
Switch _{i,t}	0.020** (2.10)	0.002 (0.45)		0.008 (1.53)	0.000 (0.13)	
Other Controls	Yes	Yes		Yes	Yes	
Firm FE	Yes	Yes		Yes	Yes	
Industry x Year FE	Yes	Yes		Yes	Yes	
Observations	8,207	7,483		8,202	7,481	
Adjusted R ²	0.394	0.225		0.378	0.248	

(continued on next page)

Table IV - continued
The Impact of Loan Securitization on Capital Structure

Panel B

Sample	<u>Sub-Inv. Grade Firms</u>	<u>Inv. Grade Firms</u>		<u>Sub-Inv. Grade Firms</u>	<u>Inv. Grade Firms</u>	
	(5)	(6)	(5)-(6)	(7)	(8)	(7)-(8)
Variable	$\Delta \text{Debt} /$ Total Assets _{i,t-1}	$\Delta \text{Debt} /$ Total Assets _{i,t-1}	(Diff.)	Leverage _{i,t}	Leverage _{i,t}	(Diff.)
Securitization Active (0/1) _{i,t}	0.032*** (4.21)	0.015*** (2.77)	0.017* (1.92)	0.017** (2.51)	0.008 (1.61)	0.009 (1.12)
#Banks _{i,t}	0.007*** (7.09)	0.003*** (4.15)		0.002*** (3.54)	0.002*** (3.97)	
#Banks ² _{i,t}	-0.000*** (-4.75)	-0.000** (-2.04)		-0.000* (-1.96)	-0.000 (-1.07)	
Switch _{i,t}	0.016*** (2.76)	-0.000 (-0.02)		-0.004 (-0.82)	0.004 (1.43)	
Other Controls	Yes	Yes		Yes	Yes	
Firm FE	Yes	Yes		Yes	Yes	
Industry x Year FE	Yes	Yes		Yes	Yes	
Observations	8,202	7,481		8,206	7,485	
Adjusted R ²	0.209	0.117		0.150	0.132	

Table V
The Impact of Loan Securitization on Investment

This table presents coefficient estimates from regressions relating investment to bank securitization activity. The sample is constructed at the firm-year-level. The dependent variables are $\Delta Working\ Capital/Total\ Assets_{i,t-1}$, $CAPEX_{i,t}/Total\ Assets_{i,t-1}$, and $Cash\ Acq_{i,t}/Total\ Assets_{i,t-1}$. $\Delta Working\ Capital/Total\ Assets_{i,t-1}$ is the change in net working capital scaled by lagged total assets. $CAPEX_{i,t}/Total\ Assets_{i,t-1}$ is defined as capital expenditures scaled by lagged PPE. $Cash\ Acq_{i,t}/Total\ Assets_{i,t-1}$ is defined as cash acquisitions scaled by lagged total assets. *Securitization Active* is a dummy variable that equals one if the majority of banks that firm *i* has an active lending relationship with are active CDO underwriters in year *t* and zero otherwise. *#Banks* is the number of active bank lending relationships of firm *i* in year *t*. *Switch* is an integer, which is increased by one in each year *t* in which firm *i* forms a new lending relationship. The regressions include firm and industry (one-digit SIC) x year fixed effects as well as other controls (*Size*_{*i,t-1*}, *Leverage*_{*i,t-1*}, *Profitability*_{*i,t-1*}, *Tangibility*_{*i,t-1*}, *MTB*_{*i,t-1*}, *Cash Flow*_{*i,t*}). Variables are defined in Appendix A. We report t-values based on standard errors clustered at the firm-level in parentheses. ***, **, * denote significance at the 1, 5 and 10 % level, respectively.

Sample	Sub-Inv. Grade Firms	Inv. Grade Firms		Sub-Inv. Grade Firms	Inv. Grade Firms		Sub-Inv. Grade Firms	Inv. Grade Firms	
	(1)	(2)	(1)-(2)	(3)	(4)	(3)-(4)	(5)	(6)	(6)-(5)
Variable	$\Delta Working$ Capital/ Total Assets _{<i>i,t-1</i>}	$\Delta Working$ Capital/ Total Assets _{<i>i,t-1</i>}	(Diff.)	$CAPEX_{i,t}/$ Total Assets _{<i>i,t-1</i>}	$CAPEX_{i,t}/$ Total Assets _{<i>i,t-1</i>}	(Diff.)	$Cash\ Acq_{i,t}/$ Total Assets _{<i>i,t-1</i>}	$Cash\ Acq_{i,t}/$ Total Assets _{<i>i,t-1</i>}	(Diff.)
Securitization Active (0/1) _{<i>i,t</i>}	0.003 (0.87)	0.001 (0.33)	0.002 (0.51)	0.004* (1.70)	0.000 (0.22)	0.003 (1.37)	0.018*** (3.21)	0.005 (1.27)	0.012* (1.93)
#Banks _{<i>i,t</i>}	0.001*** (2.63)	0.000 (1.36)		0.001*** (3.44)	0.000 (1.01)		0.004*** (7.30)	0.003*** (5.17)	
#Banks ² _{<i>i,t</i>}	-0.000 (-0.93)	-0.000 (-0.92)		-0.000*** (-2.83)	-0.000 (-0.65)		-0.000*** (-4.75)	-0.000** (-2.38)	
Switch _{<i>i,t</i>}	0.003 (1.49)	0.001 (0.43)		0.001 (0.61)	0.001 (1.27)		0.008** (2.26)	-0.001 (-0.34)	
Other Controls	Yes	Yes		Yes	Yes		Yes	Yes	
Firm FE	Yes	Yes		Yes	Yes		Yes	Yes	
Industry x Year FE	Yes	Yes		Yes	Yes		Yes	Yes	
Observations	7,814	7,055		8,103	7,398		7,751	6,779	
Adjusted R ²	0.151	0.058		0.294	0.306		0.184	0.083	

Table VI
The Impact of Loan Securitization on Sales and Employment Growth

This table presents coefficient estimates from regressions relating sales and employment growth to bank securitization activity. The sample is constructed at the firm-year-level. The dependent variables are $\Delta Sales/Net Sales_{i,t-1}$ and $\Delta Employment/Employment_{i,t-1}$. $\Delta Sales/Net Sales_{i,t-1}$ is the change in total net sales scaled by lagged net sales. $\Delta Employment/Employment_{i,t-1}$ is the change in employment scaled by lagged employment. *Securitization Active* is a dummy variable that equals one if the majority of banks that firm *i* has an active lending relationship with are active CDO underwriters in year *t* and zero otherwise. *#Banks* is the number of active bank lending relationships of firm *i* in year *t*. *Switch* is an integer, which is increased by one in each year *t* in which firm *i* forms a new lending relationship. The regressions include firm and industry (one-digit SIC) x year fixed effects as well as other controls (*Size*_{*i,t-1*}, *Leverage*_{*i,t-1*}, *Profitability*_{*i,t-1*}, *Tangibility*_{*i,t-1*}, *MTB*_{*i,t-1*}, *Cash Flow*_{*i,t*}). Variables are defined in Appendix A. We report t-values based on standard errors clustered at the firm-level in parentheses. ***, **, * denote significance at the 1, 5 and 10 % level, respectively.

Sample	Sub-Inv. Grade Firms	Inv. Grade Firms		Sub-Inv. Grade Firms	Inv. Grade Firms	
	(1)	(2)	(1)-(2)	(3)	(4)	(3)-(4)
Variable	$\Delta Sales/$ Net Sales _{<i>i,t-1</i>}	$\Delta Sales/$ Net Sales _{<i>i,t-1</i>}	(Diff.)	$\Delta Employment/$ Employment _{<i>i,t-1</i>}	$\Delta Employment/$ Employment _{<i>i,t-1</i>}	(Diff.)
Securitization Active (0/1) _{<i>i,t</i>}	0.026** (2.48)	-0.000 (-0.02)	0.026** (2.18)	0.042*** (4.20)	-0.001 (-0.17)	0.043*** (3.61)
#Banks _{<i>i,t</i>}	0.004*** (4.30)	0.002* (1.71)		0.007*** (6.89)	0.003*** (3.37)	
#Banks ² _{<i>i,t</i>}	-0.000*** (-2.68)	-0.000 (-0.15)		-0.000*** (-4.45)	-0.000 (-1.31)	
Switch _{<i>i,t</i>}	0.001 (0.16)	-0.006 (-1.42)		0.008 (1.05)	-0.003 (-0.84)	
Other Controls	Yes	Yes		Yes	Yes	
Firm FE	Yes	Yes		Yes	Yes	
Industry x Year FE	Yes	Yes		Yes	Yes	
Observations	8,195	7,483		7,955	7,240	
Adjusted R ²	0.284	0.265		0.228	0.147	

Appendix A

Explanation of Variables

Variable	Source	Description
Securitization Active	Dealogic	<i>Bank-Firm-Year Level Definition:</i> A dummy variable that equals one if bank j is an active CDO underwriter in year t and zero otherwise. Banks are classified as active CDO underwriter if the total deal volume, which the bank underwrites in a year, is above zero. <i>Firm-Year Level Definition:</i> A dummy variable that equals one if the majority of banks that firm i has an active lending relationship with are active CDO underwriters in year t and zero otherwise. Banks are classified as active CDO underwriter if the total deal volume, which the bank underwrites in a year, is above zero.
#Banks	Dealscan/Compustat	Number of active bank lending relationships of firm i in year t .
Switch	Dealscan/Compustat	An integer, which is increased by one in each year t in which firm i forms a new lending relationship.
Loan Amount	Dealscan	<i>Bank-Firm Level Definition:</i> The total term loan volume that firm i receives from bank j in fiscal year t . <i>Firm Level Definition:</i> The total term loan volume that firm i receives in fiscal year t .
Bank Tranches	Dealscan	Indicates bank loan tranches, i.e., amortizing term loan tranches.
Institutional Tranches	Dealscan	Indicates institutional loan tranches, i.e., bullet term loan tranches (Term Loan B – Term Loan H).
Size	Compustat	$\ln(\text{Total Assets in \$mio, adjusted for inflation in year 2004 dollars})$.
Leverage	Compustat	Ratio of book value of total debt to the book value of assets.
Tangibility	Compustat	Ratio of property, plant, and equipment to total assets.
Profitability	Compustat	Ratio of EBITDA to total assets.
MTB	Compustat	Ratio of (book value of assets – book value of equity + market value of equity) to book value of assets.
Cash Flow	Compustat	Income before extraordinary items plus depreciation and amortization scaled by lagged total assets.
Δ Debt	Compustat	Change in total debt.
Δ Equity	Compustat	Change in total book equity.
Δ Assets	Compustat	Change in total assets.
Δ Working Capital	Compustat	Change in net working capital.
CAPEX	Compustat	Capital expenditures.
Cash Acq	Compustat	Investment in cash acquisitions.
Δ Sales Growth	Compustat	Change in net sales.
Δ Employment Growth	Compustat	Change in employment.

Appendix B
2005 CDO Issuances League Table (Excerpt)

Rank	Bookrunner	Issue Volume (\$million)
1.	Merrill Lynch	30,082.9
2.	Citigroup	20,171.9
3.	Wachovia	19,437.9
4.	Goldman Sachs	15,104.8
5.	Bear Stearns	12,734.6
6.	Credit Suisse	11,767.7
7.	JP Morgan Chase	11,190.3
8.	Barclays	10,367.7
9.	Deutsche Bank	10,200.2
10.	Bank of America	9,891.0
11.	Morgan Stanley	9,645.3
12.	Lehman Brothers	7,922.6
13.	Unicredit	6,970.0
14.	UBS	6,807.0
...	...	...
50.	Standard Chartered Bank	81.0
51.	NIB Capital	55.8
52.	Taipei Fubon Commercial Bank	25.1

Source: All CDO issuances in 2005 according to Dealogic DCM Analytics aggregated at the bookrunner parent level.

Appendix C: Real Effects on Bank-Firm-Year Level

Table C.I
The Impact of Loan Securitization on Capital Structure

This table presents coefficient estimates from regressions relating capital structure to bank securitization activity. The sample is constructed at the bank-firm-year-level. The dependent variables are $\Delta Assets/Total Assets_{i,t-1}$, $\Delta Equity/Total Assets_{i,t-1}$, $\Delta Debt/Total Assets_{i,t-1}$, and $Leverage_{i,t}$. $\Delta Assets/Total Assets_{i,t-1}$ is the change in total assets scaled by lagged assets. $\Delta Equity/Total Assets_{i,t-1}$ is the change in total equity scaled by lagged assets. $\Delta Debt/Total Assets_{i,t-1}$ is the change in total debt scaled by lagged total assets. $Leverage$ is total debt scaled by total assets. *Securitization Active* is a dummy variable that equals one if bank j is an active CDO underwriter in year t and zero otherwise. The regressions include bank x firm and industry (one-digit SIC) x year fixed effects as well as other controls ($Size_{i,t-1}$, $Profitability_{i,t-1}$, $Tangibility_{i,t-1}$, $MTB_{i,t-1}$, $Cash Flow_{i,t}$). Variables are defined in Appendix A. We report t-values based on standard errors clustered at the firm-level in parentheses. ***, **, * denote significance at the 1, 5 and 10 % level, respectively.

Panel A

Sample	Sub-Inv. Grade Firms	Inv. Grade Firms		Sub-Inv. Grade Firms	Inv. Grade Firms	
	(1)	(2)	(1)-(2)	(3)	(4)	(3)-(4)
Variable	$\Delta Assets/$ Total Assets _{i,t-1}	$\Delta Assets/$ Total Assets _{i,t-1}	(Diff.)	$\Delta Equity/$ Total Assets _{i,t-1}	$\Delta Equity/$ Total Assets _{i,t-1}	(Diff.)
Securitization Active (0/1) _{it}	0.020*** (4.50)	0.005* (1.77)	0.0152*** (2.95)	0.005* (1.90)	0.003* (1.67)	0.0021 (0.71)
Other Controls	Yes	Yes		Yes	Yes	
Bank x Firm FE	Yes	Yes		Yes	Yes	
Industry x Year FE	Yes	Yes		Yes	Yes	
Observations	96,048	120,182		95,995	120,168	
# Firms	1,291	800		1,290	800	
# Bank-Firm Pairs	22,129	20,307		22,122	20,307	
Adjusted R ²	0.337	0.242		0.329	0.257	

(continued on next page)

Table C.I - continued
The Impact of Loan Securitization on Capital Structure

Panel B

Sample	Sub-Inv. Grade Firms	Inv. Grade Firms		Sub-Inv. Grade Firms	Inv. Grade Firms	
	(1)	(2)	(1)-(2)	(3)	(4)	(3)-(4)
Variable	$\Delta \text{Debt} /$ Total Assets _{i,t-1}	$\Delta \text{Debt} /$ Total Assets _{i,t-1}	(Diff.)	Leverage _{i,t}	Leverage _{i,t}	(Diff.)
Securitization Active (0/1) _{ii,t}	0.012*** (3.97)	0.002 (1.20)	0.0103*** (3.11)	0.002 (0.89)	0.001 (0.75)	0.0011 (0.48)
Other Controls	Yes	Yes		Yes	Yes	
Bank x Firm FE	Yes	Yes		Yes	Yes	
Industry x Year FE	Yes	Yes		Yes	Yes	
Observations	95,995	120,168		96,076	120,216	
# Firms	1,290	800		1,291	800	
# Bank-Firm Pairs	22,122	20,307		22,126	20,307	
Adjusted R ²	0.311	0.216		0.158	0.125	

Table C.II
The Impact of Loan Securitization on Investment

This table presents coefficient estimates from regressions relating investment to bank securitization activity. The sample is constructed at the bank-firm-year-level. The dependent variables are $\Delta Working Capital / Total Assets_{i,t-1}$, $CAPEX_{i,t} / Total Assets_{i,t-1}$, and $Cash Acq_{i,t} / Total Assets_{i,t-1}$. $\Delta Working Capital / Total Assets_{i,t-1}$ is the change in net working capital scaled by lagged total assets. $CAPEX_{i,t} / Total Assets_{i,t-1}$ is defined as capital expenditures scaled by lagged PPE. $Cash Acq_{i,t} / Total Assets_{i,t-1}$ is defined as cash acquisitions scaled by lagged total assets. *Securitization Active* is a dummy variable that equals one if bank j is an active CDO underwriter in year t and zero otherwise. The regressions include bank x firm and industry (one-digit SIC) x year fixed effects as well as other controls ($Size_{i,t-1}$, $Leverage_{i,t-1}$, $Profitability_{i,t-1}$, $Tangibility_{i,t-1}$, $MTB_{i,t-1}$, $Cash Flow_{i,t}$). Variables are defined in Appendix A. We report t-values based on standard errors clustered at the firm-level in parentheses. ***, **, * denote significance at the 1, 5 and 10 % level, respectively.

Sample	Sub-Inv. Grade Firms	Inv. Grade Firms		Sub-Inv. Grade Firms	Inv. Grade Firms		Sub-Inv. Grade Firms	Inv. Grade Firms	
	(1)	(2)	(1)-(2)	(3)	(4)	(3)-(4)	(5)	(6)	(6)-(5)
Variable	$\Delta Working$ Capital/ Total Assets _{i,t-1}	$\Delta Working$ Capital/ Total Assets _{i,t-1}	(Diff.)	$CAPEX_{i,t}/$ Total Assets _{i,t-1}	$CAPEX_{i,t}/$ Total Assets _{i,t-1}	(Diff.)	$Cash Acq_{i,t}/$ Total Assets _{i,t-1}	$Cash Acq_{i,t}/$ Total Assets _{i,t-1}	(Diff.)
Securitization Active (0/1) _{ijt}	0.002 (1.45)	0.001 (0.82)	0.0013 (0.86)	0.001 (1.10)	-0.000 (-0.48)	0.0008 (1.18)	0.007*** (3.25)	0.000 (0.12)	0.0066*** (2.76)
Other Controls	Yes	Yes		Yes	Yes		Yes	Yes	
Bank x Firm FE	Yes	Yes		Yes	Yes		Yes	Yes	
Industry x Year FE	Yes	Yes		Yes	Yes		Yes	Yes	
Observations	90,519	111,482		95,029	118,554		89,843	105,597	
# Firms	1,236	766		1,284	796		1,277	782	
# Bank-Firm Pairs	21,002	19,080		21,992	20,134		21,637	19,270	
Adjusted R ²	0.156	0.0815		0.342	0.373		0.300	0.160	

Table C.III
The Impact of Loan Securitization on Sales and Employment Growth

This table presents coefficient estimates from regressions relating sales and employment growth to bank securitization activity. The sample is constructed at the bank-firm-year-level. The dependent variables are $\Delta Sales/Net Sales_{i,t-1}$ and $\Delta Employment/Employment_{i,t-1}$. $\Delta Employment/Employment_{i,t-1}$ is the change in employment scaled by lagged employment. *Securitization Active* is a dummy variable that equals one if bank j is an active CDO underwriter in year t and zero otherwise. The regressions include bank $\times$ firm and industry (one-digit SIC) $\times$ year fixed effects as well as other controls (*Leverage* _{$i,t-1$} , *Profitability* _{$i,t-1$} , *Tangibility* _{$i,t-1$} , *MTB* _{$i,t-1$} , *Cash Flow* _{i,t} and *Size* _{$i,t-1$} (columns (3) to (6))). Variables are defined in Appendix A. We report t-values based on standard errors clustered at the firm-level in parentheses. ***, **, * denote significance at the 1, 5 and 10 % level, respectively.

Sample	Sub-Inv. Grade Firms	Inv. Grade Firms		Sub-Inv. Grade Firms	Inv. Grade Firms	
	(1)	(2)	(1)-(2)	(3)	(4)	(3)-(4)
Variable	$\Delta Sales/$ Net Sales _{$i,t-1$}	$\Delta Sales/$ Net Sales _{$i,t-1$}	(Diff.)	$\Delta Employment/$ Employment _{$i,t-1$}	$\Delta Employment/$ Employment _{$i,t-1$}	(Diff.)
Securitization Active (0/1) _{ij,t}	0.012*** (3.56)	0.003* (1.75)	0.0092** (2.47)	0.006* (1.77)	-0.002 (-0.93)	0.0079** (1.99)
Other Controls	Yes	Yes		Yes	Yes	
Bank $\times$ Firm FE	Yes	Yes		Yes	Yes	
Industry $\times$ Year FE	Yes	Yes		Yes	Yes	
Observations	96,057	120,182		93,892	116,823	
# Firms	1,287	800		1,272	787	
# Bank-Firm Pairs	22,124	20,307		21,940	20,050	
Adjusted R ²	0.333	0.306		0.318	0.207	