

Bank Loan Announcement Effects— Evidence from a Comprehensive 8-K Sample

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Introduction

How does the equity market react to the announcement of new bank loans? There have been many debates in the literature. However, these prior studies were all based on a limited number of observations. We on the other hand, present our studies using a comprehensive sample of bank loan announcements by matching all new loan facilities from the Thomson Reuters LPC Dealscan database with all 3.2 million 8-K filings downloaded from EDGAR from 1994 to 2018, out of which we found 11,595 8-K announcements of bank loans. We find significant positive loan announcement effects, which is consistent with the view that of Billett, Flannery and Garfinkel (JF 1995) in that bank loans matter and its announcement can elicit positive response on borrower stock in the equity market. Therefore, our results challenge the findings of Maskara and Mullineaux (JFE 2011) and also that of Fields et al (JMCB 2006), which indicated that announcement effect of bank loans on borrower stocks disappeared as of late. In addition, we investigate the determinants of the loan announcement effects. Specifically, we find that bank loans with lower loan spreads than its peers with similar default risk have larger announcement returns. Furthermore, we also find that, although information leakage (in terms of the run-up of borrowers' stock price prior to announcements) was quite significant in earlier sample periods, in recent periods there is much less information leakage prior to 8-K announcements of bank loans, and at least in this aspect the Dodd-Frank Act can be deemed as quite effective.

Bank Loan Announcement Events

> 11,595 bank loan announcement events from 1994-2018, obtained by analyzing a comprehensive sample of SEC filings from EDGAR.

> EDGAR filings are matched with Dealscan, sample size is orders of magnitude larger than existing studies on similar topic, which was previously done by hand-collecting data rather than from a comprehensive procedure.

> Note: the 8-K announcement dates (i.e., event date) which we have compiled, turn out to be usually different from loan activation dates on Dealscan (Figure 2)

Loan Announcement Effects

In summary, to verify whether positive bank loan announcement returns still exist in our large sample, we adopt the event study methodology by calculating the cumulative abnormal returns (CARs). We find that significant and positive CARs do exist, even in recent time, contrary to studies that utilizes hand-collected data which conclude that these effects are absent. Table 1 shows the [-2,+2], [-3,+3] and [-5,+5] trading day window CARs based on the FF5 model and DGTW model for the full sample period and the three subsample periods (before August 23, 2004; between August 23, 2004 to July 21, 2010; post July 21, 2010). Figure 1 plots the CARs based on FF5 model during the [-15,+15] window around the event date of bank loan announcements, indicating there is a positive and significant announcement effect, although it also alludes to information leakage prior to the announcement date, which will be investigated in detail later.

	Nobs	$CAR_{FF5}[-2,+2]$	$CAR_{DGTW}[-2,+2]$	$CAR_{FF5}[-3,+3]$	$CAR_{DGTW}[-3,+3]$	$CAR_{FF5}[-5,+5]$	$CAR_{DGTW}[-5,+5]$
Full Sample	11,595	0.34% (4.47)	0.30% (4.05)	0.37% (4.39)	0.35% (4.19)	0.37% (4.00)	0.33% (3.27)
Before Aug 23, 2004	849	1.13% (2.65)	0.81% (2.05)	0.69% (1.47)	0.33% (0.78)	0.56% (1.13)	-0.06% (-0.13)
From Aug 23, 2004 to Jul 21, 2010	4,374	0.42% (3.73)	0.36% (2.73)	0.57% (4.39)	0.44% (2.97)	0.73% (4.56)	0.57% (3.07)
Post Jul 21, 2010	6,372	0.17% (1.77)	0.20% (2.25)	0.19% (1.74)	0.29% (2.97)	0.10% (0.93)	0.22% (1.89)

Table 1: Main Results. This table reports CARs based on the FF5 model (CAR_{FF5}) and DGTW model (CAR_{DGTW}) during the [-2,+2], [-3,+3] and [-5,+5] trading day window around the 8-K loan announcement date. Corresponding *t*-statistics are reported in parentheses with boldface indicating statistical significance at equal to or less than the 10% levels.

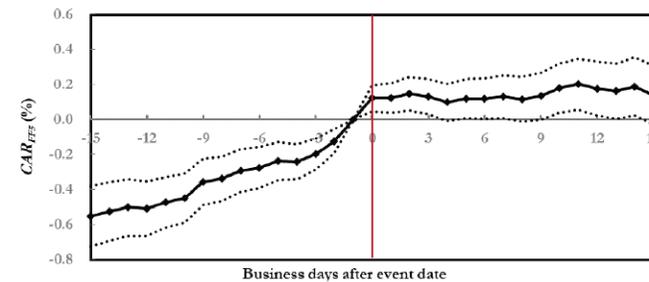


Figure 1: CARs in the [-15, 15] Window around Bank Loan Announcements, in the years 1994 to 2018.

Single Sort

Table 2 reports CARs across loan and borrower characteristics quintiles and the corresponding high minus low value. Panel A indicates that CARs for small firms are stronger than those for large firms. Panel B shows that CARs for large loans (measured in terms of loan-to-asset ratio) are stronger than those for small ones. Panel C indicates that CARs for loans with low abnormal spread are stronger than those of high abnormal spread.

	Nobs	Borrower Firm's Market Equity					
		1=Low	2	3	4	5=High	High-Low
Full Sample	11,595	0.99% (2.91)	0.45% (2.95)	0.12% (0.88)	0.22% (1.98)	0.11% (1.13)	-0.88% (-2.52)
Before Aug 23, 2004	849	0.79% (2.54)	0.38% (2.13)	0.11% (0.70)	0.41% (3.45)	0.11% (0.95)	-0.68% (-2.12)
From Aug 23, 2004 to Jul 21, 2010	4,374	1.39% (0.75)	1.49% (1.69)	1.10% (1.24)	-0.55% (-0.87)	0.81% (0.83)	-1.38% (-0.72)
Post Jul 21, 2010	6,372	-0.01% (-0.01)	0.33% (0.38)	1.36% (1.26)	0.38% (0.67)	-0.34% (-0.49)	-0.33% (-0.22)

	Nobs	Loan-to-Asset Ratio					
		1=Low	2	3	4	5=High	High-Low
Full Sample	11,595	0.05% (0.34)	0.09% (0.59)	0.13% (0.89)	0.28% (1.53)	1.39% (4.96)	1.33% (4.25)
Before Aug 23, 2004	849	0.18% (1.14)	0.21% (1.17)	0.06% (0.37)	0.29% (1.37)	1.15% (5.24)	0.97% (3.67)
From Aug 23, 2004 to Jul 21, 2010	4,374	-0.24% (-0.27)	-0.99% (-1.31)	0.92% (1.19)	0.90% (0.96)	2.94% (1.79)	3.18% (1.70)
Post Jul 21, 2010	6,372	0.51% (1.85)	0.54% (2.05)	0.26% (1.07)	0.47% (1.53)	1.16% (3.19)	0.65% (1.44)

	Nobs	Abnormal Spread					
		1=Low	2	3	4	5=High	High-Low
Full Sample	11,595	0.51% (3.67)	0.68% (3.76)	0.54% (2.21)	0.28% (1.58)	-0.07% (-0.27)	-0.58% (-1.95)
Before Aug 23, 2004	849	0.44% (2.88)	0.57% (3.76)	0.37% (2.33)	0.32% (1.64)	0.00% (0.01)	-0.44% (-1.31)
From Aug 23, 2004 to Jul 21, 2010	4,374	0.23% (0.38)	3.27% (1.72)	1.84% (2.00)	1.64% (1.73)	-0.69% (-0.47)	-0.92% (-0.57)
Post Jul 21, 2010	6,372	-0.56% (-0.77)	2.14% (2.55)	1.63% (1.47)	1.21% (1.12)	-0.96% (-0.66)	-0.40% (-0.24)

Table 2: Single Sort Results. This table reports CARs across loan and borrower characteristics quintiles and corresponding high minus low value. CARs are based on the FF5 model (CAR_{FF5}) and DGTW model (CAR_{DGTW}) during the [-3,+3] window around the 8-K loan announcement dates. Panel A displays the CARs across Market Equity quintiles measured as the natural logarithm of borrower's market capitalization in the month prior to the event date. Panel B displays the CARs across Loan-to-Asset Ratio quintiles measured as $\ln(1 + \text{Loan Amount} / \text{borrower's total asset in the most recent fiscal year end before the event})$. Panel C displays the CARs across Abnormal Spread quintiles, which is a relative measure of a particular loan's spread in comparison with the spread of facilities of peer firms that borrow at around the same time, with the same loan type and similar bankruptcy probability based on Merton (1974). The sample period for the full sample is from January 1, 1994 to December 31, 2018. Three subsamples are also reported. Corresponding *t*-statistics are reported in parentheses with boldface indicating statistical significance at equal to or less than the 10% levels.

Double Sort

Table 3 reports CARs across double sorting groups based on, (i) firm size, and (ii) loan characteristics (Loan-to-asset Ratio, or, Abnormal Spread). We find that positive and statistically significant abnormal returns can still exist for loan announcements of larger firms, in scenarios when the loan-to-asset ratio is high or the abnormal spread is low.

	Nobs	Borrower Firm's Market Equity and Loan-to-Asset Ratio					
		Small		Large		High-Low	
Full Sample	11,595	0.05% (0.23)	0.04% (0.19)	1.76% (5.25)	0.03% (0.28)	0.13% (1.13)	0.32% (2.54)
Before Aug 23, 2004	849	0.32% (1.25)	-0.09% (-0.34)	1.42% (5.22)	0.06% (0.47)	0.23% (1.75)	0.36% (2.47)
From Aug 23, 2004 to Jul 21, 2010	4,374	-0.02% (-0.01)	0.73% (0.68)	2.99% (1.49)	-0.82% (-1.21)	-0.36% (-0.64)	1.65% (2.05)
Post Jul 21, 2010	6,372	-0.25% (-0.21)	-0.73% (-0.66)	1.80% (1.42)	-0.24% (-0.32)	0.19% (0.30)	1.39% (1.61)

	Nobs	Borrower Firm's Market Equity and Abnormal Spread					
		Small		Large		High-Low	
Full Sample	11,595	1.09% (4.37)	0.86% (2.59)	-0.09% (-0.28)	0.27% (2.29)	0.16% (1.39)	0.13% (0.89)
Before Aug 23, 2004	849	0.76% (3.36)	0.62% (2.46)	-0.05% (-0.15)	0.32% (2.36)	0.20% (1.65)	0.27% (1.64)
From Aug 23, 2004 to Jul 21, 2010	4,374	5.43% (2.92)	1.93% (1.80)	-1.06% (-0.62)	-0.08% (-0.16)	0.59% (0.86)	1.24% (1.32)
Post Jul 21, 2010	6,372	2.61% (1.83)	1.03% (0.80)	-1.74% (-1.88)	-0.71% (-1.08)	0.45% (0.80)	2.16% (2.05)

Table 3: Double Sort Results. This table reports CARs across double sorting groups based on loan and borrower characteristics. CARs are based on FF5 model (CAR_{FF5}) and DGTW model (CAR_{DGTW}) during the [-3,+3] window around the 8-K loan announcement dates. In Panel A, we first equally divide events into two Market Equity groups measured as the natural logarithm of borrower's market capitalization in the month prior to the event date. Then, we equally divide the events in each Market Equity group into three Loan-to-Asset Ratio groups measured as the natural logarithm $\ln(1 + \text{Loan Amount} / \text{borrower's total asset in the most recent fiscal year end before the event})$. In Panel B, we first equally divide the events into two Market Equity groups in the same way as Panel A. Then, we equally divide the events in each Market Equity group into three groups based on the Abnormal Spread measure, which is a relative measure of a particular loan's spread in comparison with the spread of facilities of peer firms that borrow at around the same time, with the same loan type and similar bankruptcy probability based on Merton (1974). The sample period for the full sample is from January 1, 1994 to December 31, 2018. Three subsamples are also reported. Corresponding *t*-statistics are reported in parentheses with boldface indicating statistical significance at equal to or less than the 10% levels.

Information leakage

To examine if there is any informational leakage (whether the stock price of borrowers started to move prior to the Form 8-K announcement of new bank loans) in context of the evolution of disclosure requirements and the regulatory environment, we plot the CARs for pre loan activation period and post loan activation period in Figure 3. Panel A displays the CARs for full sample from January 1, 1994 to December 31, 2018. Panel B-D display the CARs in three subsamples, respectively. We find that, although information leakage was quite significant in earlier sample periods, in recent periods, especially after the Dodd-Frank Act (2010), there is much less information leakage that can in part be attributed to more stringent regulations.

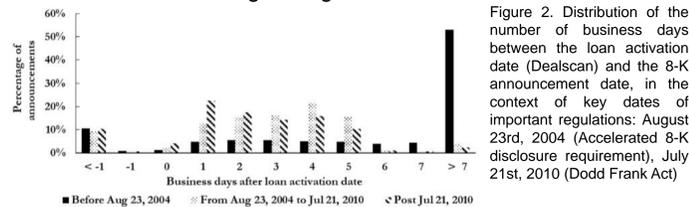


Figure 2: Distribution of the number of business days between the loan activation date (Dealscan) and the 8-K announcement date, in the context of key dates of important regulations: August 23rd, 2004 (Accelerated 8-K disclosure requirement), July 21st, 2010 (Dodd Frank Act)

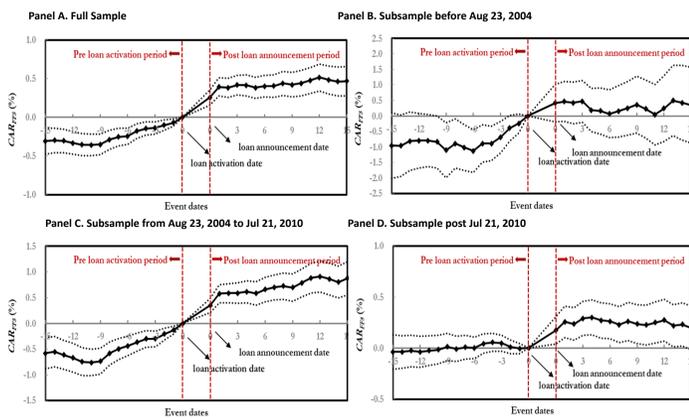


Figure 3: CARs around Loan Activation Dates and Bank Loan Announcements

Conclusion

Using a comprehensive sample of 8-K filings, we aim to settle the debate on whether the equity market react to the announcement of bank loans by publicly traded companies. Several recent papers state that bank loan relationships matter less than what was documented in previous literature. However, these studies never utilized a sample of more than 1000 loan facilities. In contrast, we identified 11,595 new bank loan announcements. We find that there is positive and significant market reaction in the borrower stock to the announcement of new bank loans, even in recent times, and even in larger firms (with large loan size or low abnormal spread) contrary to the claim that only the smallest firms have announcement effects. Furthermore, we also find that borrowers who had a better deal from the bank (lower loan spread relative to the loan spreads of peer firms with similar default risk in the same month) have larger positive returns in the equity market (and vice versa). Finally, we document that, although information leakage (in terms of the run-up of borrowers' stock price prior to announcements) was quite significant in earlier sample periods, in recent periods there is much less information leakage prior to 8-K announcements of bank loans that can in part be attributed to more stringent regulations, and at least in this aspect the Dodd-Frank Act can be deemed as quite effective.