

The risk of being a fallen angel and the corporate dash for cash in the midst of COVID

Viral V. Acharya¹ and Sascha Steffen²

April 21, 2020

Forthcoming in COVID Economics: A Real Time Journal

Abstract

As a response to the COVID-19 pandemic, governments globally closed down major parts of their economies potentially plunging a vast majority of their firms into a liquidity crisis. Using a novel dataset of daily credit line drawdowns at the firm-loan-level, we study in a descriptive exercise the resulting “dash for cash”³ among firms and how the stock market priced firms differentially based on liquidity. In particular, we show that the U.S. stock market rewarded firms with access to liquidity through either cash or committed lines of credit from banks. AAA-A rated firms, *i.e.*, high-quality investment-grade firms, issued bonds in public capital markets, particularly after the Federal Reserve Bank initiated its corporate bond buying program. In contrast, bond issuances of BBB-rated firms, *i.e.*, the lowest-rated investment-grade firms, remained mostly flat; instead, these firms rushed to convert their credit line commitments from banks into cash accounting for about half of all the credit line drawdowns. We document that consistent with the risk of becoming a fallen angel, this “dash for cash” has been driven by the lowest-quality BBB-rated firms. The risk of such precautionary drawdowns of credit lines remains an important consideration for stress-test based assessments of banking sector capital adequacy.

Motivation

The COVID-19 pandemic had an immediate impact on the global economy as governments have undertaken drastic lockdown steps to contain the spread of the virus. The resulting economic standstill has affected the corporate sector adversely, as firms’ cash flows in the near term are anticipated to drop as much as 100%, while other fixed costs (including paying workers, rents and servicing debt) – operating and financial leverage – remain sticky. In particular, firms in industries such as retail, hotel and travel have experienced an immediate drop in cash flows and thus have an unusual high demand for liquidity during the economic shutdown. However, other firms also appear to be scrambling for liquidity because of the high uncertainty as to when and how much economic activity might recover.

Faced with this liquidity stress, firms that have secured access to different sources of liquidity before the crisis should on average have an advantage over firms lacking in such access. To investigate this issue empirically, we first study whether the U.S. stock markets differentially rewarded firms with access to liquidity. Then, we analyze which firms have been able to raise liquidity through outside funding sources (e.g., the bond market) and which firms decided to

¹ C.V. Starr Professor of Economic, Finance Department, New York University Stern School of Business, Email: vacharya@stern.nyu.edu

² Professor of Finance, Finance Department, Frankfurt School of Finance & Management, Email: s.steffen@fs.de

³ Platt et al. used this term recently in their article in the Financial Times ([“Dash for cash: companies draw \\$124bn from credit lines”](#)) on March 25, 2020.

convert committed credit lines from banks into cash using a novel dataset of daily credit line drawdowns at the firm-loan-level. How did the initial interventions from the Federal Reserve Bank and the U.S. Treasury affect the possible “dash for cash”?

Importantly, over the last decade, the outstanding debt of particularly low investment-grade firms, *i.e.* BBB-rated firms, has quadrupled, and a case has been made that a large percentage of these firms might actually be of worse quality – similar to non-investment grade or “junk” firms (Altman, 2020). Do these lowest-quality investment-grade firms, in an attempt to avoid the “cliff risk” of a possible downgrade to junk grade status and the associated acceleration of borrowing costs, increase their cash holdings by drawing down their credit lines? Finally, we draw capital and liquidity implications of this cliff risk for exposed banks, focusing on the energy sector that has been adversely impacted by oil price crash during the pandemic.

Are firms rewarded for having more access to liquidity?

We first investigate whether firms benefit from access to liquidity during the COVID-19 crisis using stock market data. If the access to (committed) sources of liquidity helps firms weather better the unexpected shock of the crisis, then stock prices should reflect this and the stock price performance should be better of those firms that have secured ex-ante access to liquidity. We collect data for all publicly listed firms in the U.S. as of Q4: 2019 from the Capital IQ database, drop those with total assets below USD 100 million, and keep all firms that we can match to CRSP/Compustat.

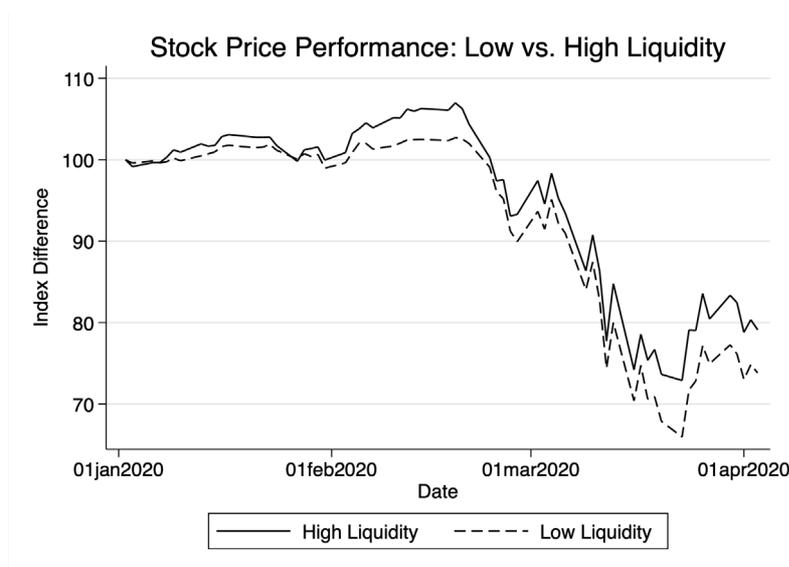
Firms have access to liquidity through two main sources (without issuing new bonds, loans or commercial paper in the spot market):

- *Unused Credit Lines*: The sum of undrawn revolvers, undrawn credit lines as backup for commercial paper, and undrawn term loans.
- *Cash and Short-Term Investments*: The sum of cash and short-term investments.

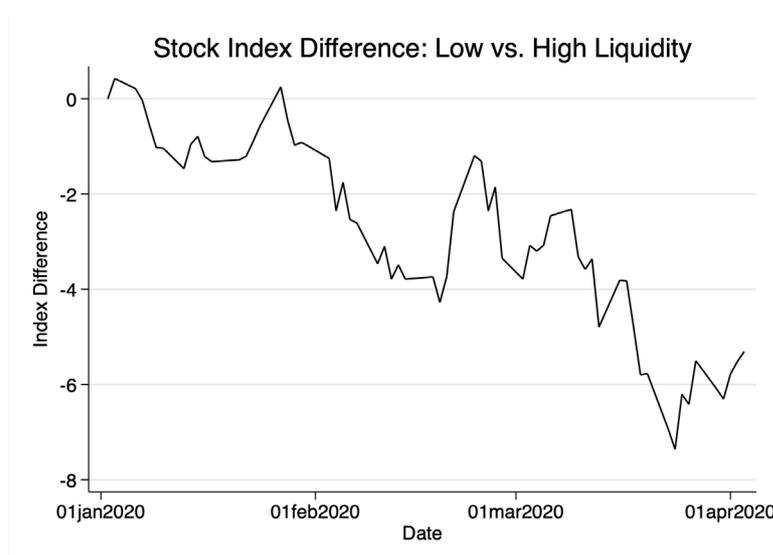
Hence, we construct a comprehensive measure of firm liquidity as:

$$Liquidity = \frac{Unused\ credit\ lines + cash\ and\ short\ term\ investments - short\ term\ debt}{Total\ assets}$$

where *Short-term debt* is the current portion of debt. Using a median split based on *Liquidity*, we classify firms as having high or low access to liquidity. We create a stock index for each subsample of firms indexed at Jan 2, 2020 using their (market-value weighted) average stock returns and plot the stock price development for both types of firms in panel A of Figure 1. We also calculate the difference of the two indices, *i.e.*, low liquidity minus high liquidity indices, and plot the difference in panel B of Figure 1.



Panel A. Stocks of firms with low vs. high liquidity



Panel B. Stock price difference

Figure 1. Stock price performance of firm with high / low access to liquidity for the period 1 Jan 2020 – 9 April 2020

The stock price performance suggests that firms have been rewarded in the stock market during the recent stress episode for having access to liquidity through cash holdings and unused credit lines. While stock prices naturally decline on average across all firms, the market value of firms with more liquidity drops significantly less so, particularly when the COVID crisis accelerated and lockdowns had to be put in place in mid-March 2020.

How do firms raise liquidity during the COVID-19 crisis?

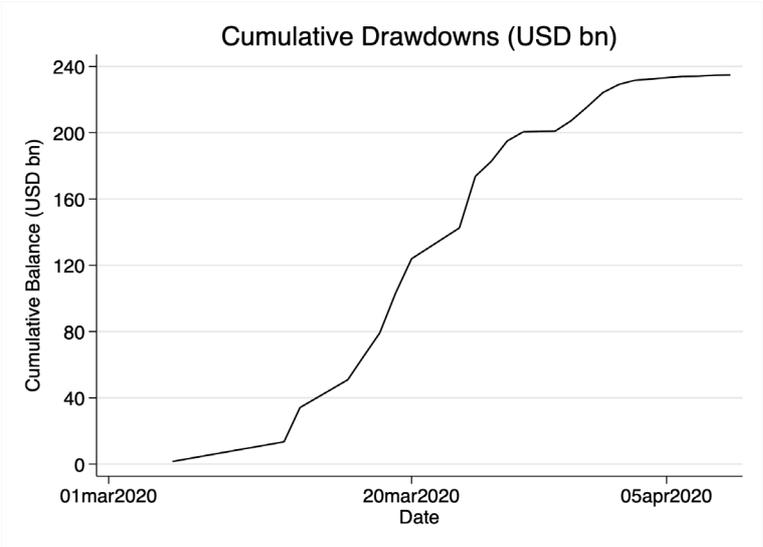
Evidence from credit lines usage

Having documented that lack of ex-ante access to liquidity has led to adverse stock market reaction for firms, we next use micro-level data to examine how this ex-ante risk might manifest during the COVID-19 crisis: Is there a dash for cash? If yes, how to firms raise cash?

Do they draw down credit lines and/or issue bonds? And, are accelerated credit line drawdowns reflected in banks' stock prices?

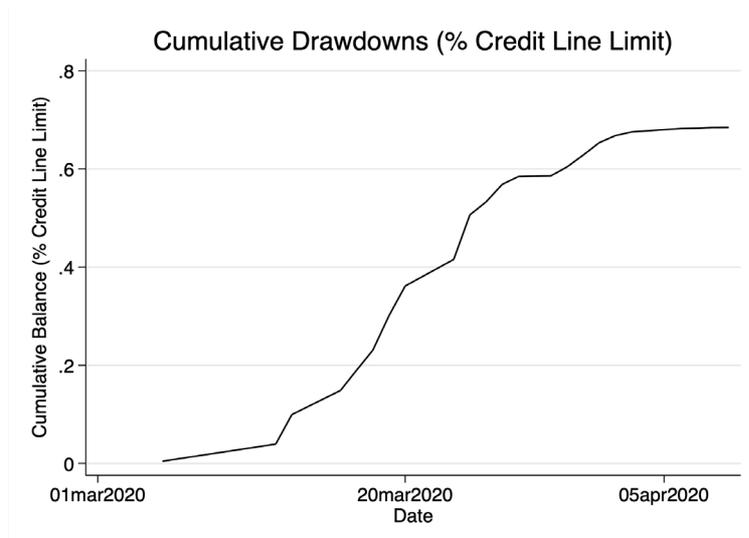
We combine several data sources that provide timely data to investigate these questions. S&P's Loan Commentary and Data (LCD) provides a novel dataset including daily updates on credit line drawdowns based on public company filings. LCD provide the drawn amount, the company rating, and the date as well as the agent bank on the original loan contract. In addition to undrawn credit line exposures at the end of 2019, Capital IQ also provides us the *Altman Z'Score* (referred henceforth simply as Z-score) as a measure of ex-ante credit risk of firms as well as other firm balance-sheet measures.⁴ We obtain bond issuance data from Dealogic.

Figure 2 shows the total cumulative drawdowns of credit lines since March 1, 2020. Panel A of Figure 2 shows the cumulative dollar amount of drawdowns and the panel B the cumulative drawdown percentage of the total credit line limit of those firms that have undertaken drawdowns during the period March 1, 2020 to April 9, 2020. As the figures reveal, credit line usage accelerated rather early during this stress period and became somewhat flat by the end of March 2020. Total drawdowns up to April 9, 2020 accumulate to more than USD 225 billion and close to 70% of the originally available credit line commitments.



Panel A. Cumulative drawdowns (in USD bn)

⁴ The *Z'Score* is calculated as described in Altman (1986).



Panel B. Drawdowns as % of credit limit

Figure 2. Cumulative drawdowns and drawdown percentage rate for the period 1 March 2020 – 9 April 2020

Figure 3 shows cumulative drawdowns of credit lines since March 1, 2020 for different rating classes, AAA-A (the high-quality investment grade), BBB (the lowest-quality investment grade), non-investment grade (NonIG) and unrated (NR) firms. The first companies to utilize their credit lines were NonIG and not-rated firms, which is reasonable given that these firms are likely to have had difficulties accessing other forms of credit once the crisis started. While the credit line usage of AAA-A rated and unrated firms is flat and does not exceed USD 20bn, NonIG and particularly BBB-rated firms have drawn down their credit lines at an accelerating rate.

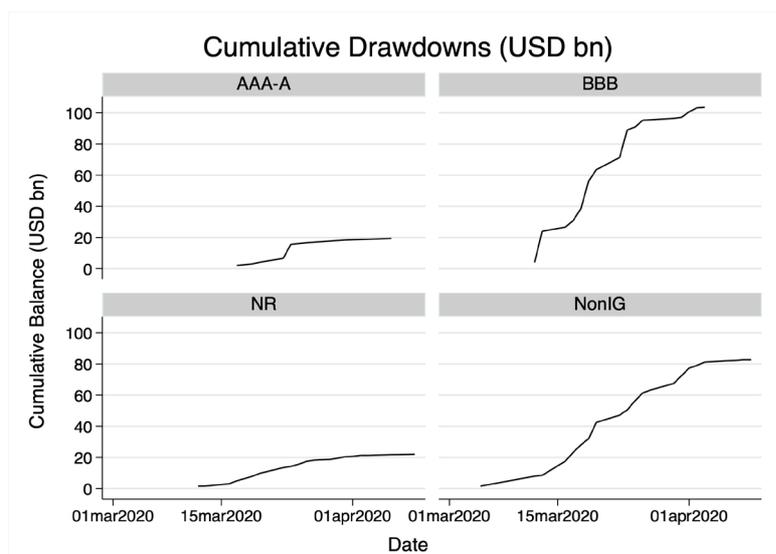
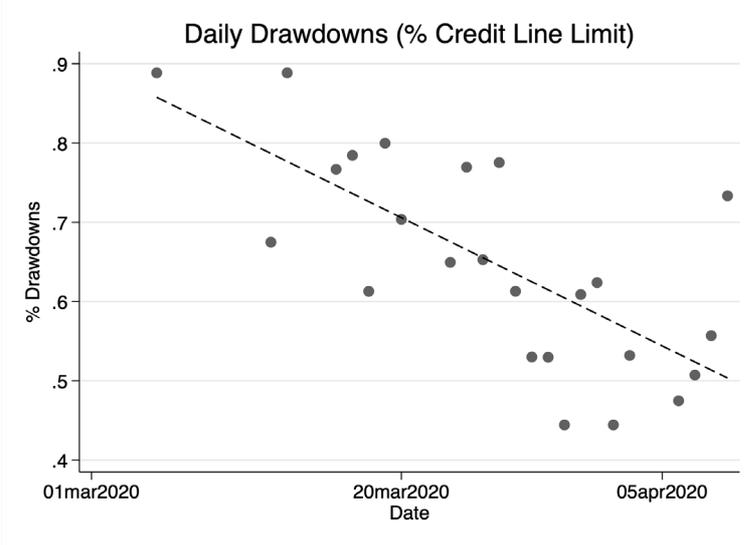


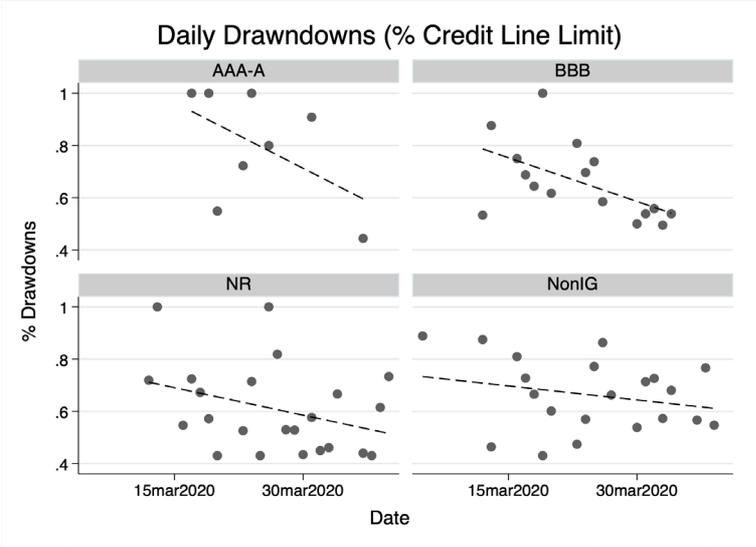
Figure 3. Cumulative drawdowns by rating class for the period 1 March 2020 – 9 April 2020

Figure 4 shows daily drawdown intensities (*i.e.*, daily borrowing amounts relative to a firm's credit line limit on this day). Panel A of Figure 4 shows percentage drawdowns for the full sample of firms, panel B for each rating category. The full sample figure shows a significant decline in drawdown intensity, a result that extends broadly to all rating categories. That is, at

the beginning of the crisis, arguably when uncertainty was at its peak, we observe a “run” on bank credit lines with firms almost fully using their credit lines. At the end of our sample period, daily credit line drawdowns are lower but still about 50% of the credit limit (conditional on firms borrowing).



Panel A. Daily drawdowns (all firms)



Panel B. Daily drawdowns (by rating category)

Figure 4. Daily percentage drawdowns by rating class for the period 1 March 2020 – 9 April 2020

How do these drawdowns compare to previous recession periods? In Acharya and Steffen (2020), we outline stress scenarios for banks with respect to expected credit line drawdowns. In one scenario, we use the end of 2008 (global financial crisis, *GFC* henceforth) drawdown rate, immediately after the failure of Lehman Brothers in September 2008. We use the *GFC* stress-scenario drawdown rates (which are based on end-of-2008 realized drawdowns) for different rating classes to calculate an expected volume of credit line drawdowns. We then compare this estimate to the actual US dollar amount of credit line drawdowns since the beginning of March 2020. Table 1 shows this comparison expressed in million USD.

	Unused Credit Lines	Expected Drawdown Rate (2008)	Expected Drawdowns	Actual Drawdowns	Difference	Actual Drawdown Rate
AAA-A	322,183	17.00%	54,771	19,372	-35,399	6.01%
BBB	449,817	23.80%	107,056	103,616	-3,441	23.04%
Non-IG	309,163	28.50%	88,111	82,345	-5,767	26.63%
Not Rated	162,725	39.20%	63,788	20,006	-43,783	12.29%
Total	1,243,888		313,727	225,338	-88,389	

Table 1: Expected versus actual drawdowns (in USD mn).

As we observed earlier in Figure 2, U.S. firms have drawn down USD 225bn from outstanding credit lines between March 1 and April 9. Out of this aggregate amount, the lion's share of USD185bn (*i.e.*, more than 80%) was drawn by BBB and NonIG-rated firms. Interestingly, and comparing COVID-19 drawdowns to those observed during the GFC, we find that the credit line usage of BBB (about 23%) and Non-IG (about 27%) rated firms is similar to the GFC. However, and in contrast, AAA-A rated and unrated firms draw down much less, only about one-third of what we would have expected based on previous crisis episodes.⁵ In other words, banks' loan portfolios have expanded by USD 185bn in borderline investment-grade and non-investment-grade debt since the beginning of March 2020.

To get a better understanding of the risks associated with the credit line usage, we use the Z-Score as a firm-specific measure of credit risk that allows us to compare the risk of default of firms within and across rating classes when they draw down credit lines. In other words, we want to study the relation between firm-specific credit-line usage and firm-specific default risk across rating categories on a specific day and over time within a rating class.

Figure 5 plots for each rating group on a given day the average across firms of credit-line drawdown intensities (left-hand scale) together with their Z-Score (right-hand scale).⁶ Somewhat surprisingly, unrated firms appear to be less risky than both BBB- and NonIG-rated firms. In all rating categories, firms that drew down credit lines early had lower Z-Scores, *i.e.*, higher default risk. The average quality of borrowers improves over time, possibly because the riskiest firms have already used their outstanding credit lines. Importantly, those firms that continue to use their credit lines towards the end of the sample period, appear to be, on average, riskier, when high-quality firms might have been able to issue bonds in public capital markets, an issue we investigate next.

⁵ AAA-A rated firms might use other forms of credit (e.g., bond issuances) to raise cash. Unrated firms, however, have limited external finance options. Either they have sufficient cash on balance sheet to decide not to use their liquidity insurance, or they raise cash through loan issuances in the loan market, or they rely on trade credit. This remains an open area for further inquiry. As such, working-capital related loan issuances have been muted since March 2020.

⁶ We use a smoothing function to plot the Z-Score estimates. As only few AAA-A rated firms draw down their credit lines, we cannot compute these estimates for the AAA-A rating category.

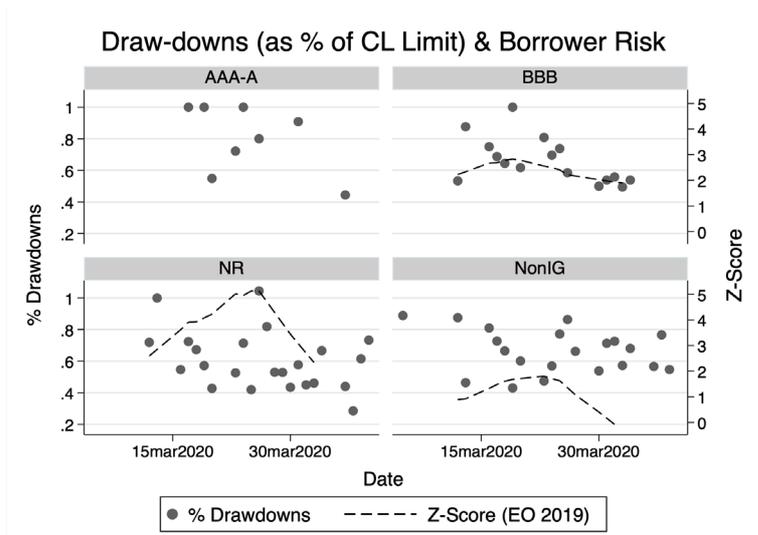


Figure 5. Drawdowns and borrower risk by rating class for the period 1 March 2020 – 9 April 2020

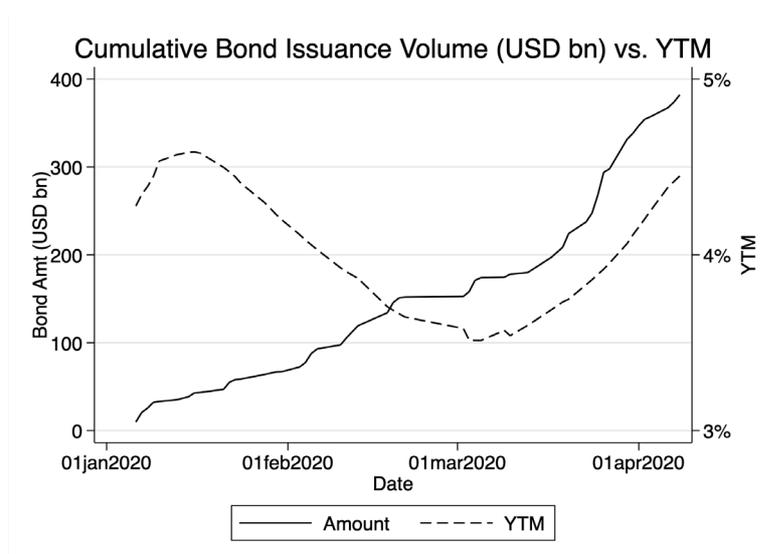
Who issues bonds?

An alternative way for firms with a credit rating to raise cash is to access the bond market. We obtain corporate bond issuance data for U.S. firms from Dealogic and plot in Figure 6 the cumulative bond issuance volume (solid line, left-hand axis) and each day's average yield to maturity of newly issued bonds (dotted line, right-hand axis) since January 1st, 2020 for the full sample in panel A and for different rating classes in panel B (note that all bond issuers are rated, *i.e.*, there is no “unrated” category).

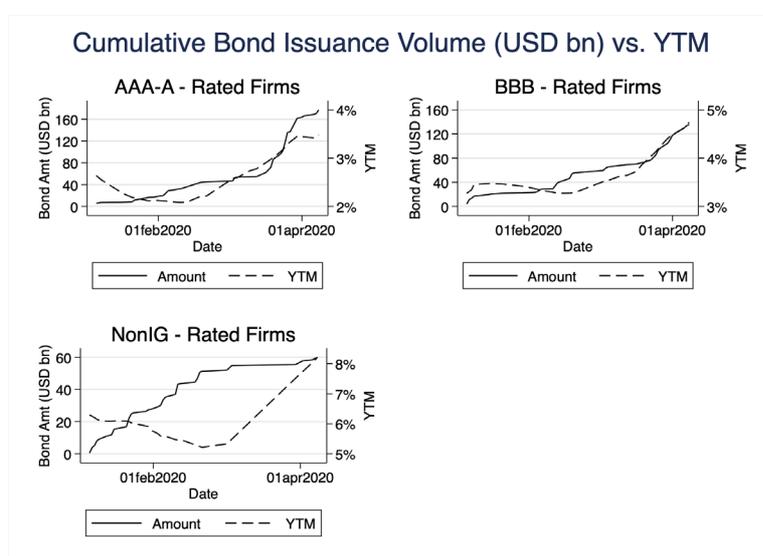
In total, U.S. non-financial firms issued about USD 150bn until mid-February. From then, issuance volume was muted until mid-March as spreads in the investment-grade and high-yield market were elevated. Since mid-March, however, issuance volume increased within from USD 180bn to close to USD 400bn.⁷

The data suggest that NonIG-rated or “junk” firms have lost access to public debt market since the beginning of March 2020; between March 4 and March 30, there has been no single NonIG bond issue. Cumulative bond issuance volume of BBB-rated firms was flat from middle of February until the end of March 2020, *i.e.*, they hardly issued any new bonds during this time period. The surge in bond issuances that started after March 15, 2020 was driven almost exclusively by AAA-A rated firms. Evidently, firms that issued bonds during the COVID-crisis could only do so at substantially higher yields compared to the period before middle of February (as the dotted line suggests).

⁷ We exclude the bond issuance of about USD 20bn on April 2, 2020 by T-Mobile to finance the Sprint merger.



Panel A. Full Sample



Panel B. Bond issuances by rating class

Figure 6. Cumulative bond issuances by U.S. non-financial firms for the period 1 March 2020 – 9 April 2020

To reconcile the evidence from the loan and the bond market, observe that AAA-A rated firms do not need to utilize their liquidity insurance as they can access public bond markets. Only few (likely high-quality) BBB-rated firms issued public bonds until end of March 2020 consistent with the surge in credit line usage over this period. It appears that NonIG-rated firms have not been able to access public capital markets and therefore had to draw down their credit lines. Similarly, unrated firms cannot access bond markets and need to rely on bank finance. This is consistent with the evidence we showed in Figures 3 and 4 that both NonIG-rated and unrated groups of firms used their credit lines early on in the crisis.

The impact of the U.S. fiscal and monetary policy measures on corporate debt market

To address the unfolding crisis in the economy and associated stress in the financial markets, the Federal Reserve Bank (Fed) and the U.S. Treasury reacted introducing a series of measures.

The Fed introduced a set of measures to address the economic fallout from the Corona virus. After having reduced the fed fund rate close to zero and reinstating its Treasury and agency MBS quantitative easing program, the Fed introduced a series of programs, among those: I announced the Commercial Paper Funding Facility (CPFF), the Primary Dealer Credit Facility (PDCF) and the Money Market Mutual Fund Facility (MMFF) on March 15. On March 17, it announced a USD 5tn repurchase program. The Fed introduced two facilities to support credit to large firms, the Primary Market Corporate Credit Facility (PMCCF) and the Secondary Market Corporate Credit Facility (SMCCF), through which the Fed can purchase investment-grade rated corporate bonds. This program was announced on March 23. On March 25, the Senate voted for a USD 2tn fiscal package (that was approved by the House on March 27).

While the Fed targeted short-term funding markets with its earlier initiatives, the corporate bond buying program that was announced on March 23, 2020 likely affects long-term corporate funding options. This should be particularly valuable for BBB and NonIG-rated firms that have – up to this point – been constrained to borrow in public capital markets as documented above. To assess this empirically, we study the effect of the announcement of the corporate bond buying program on stock and loan market returns. A lacking access to liquidity was an important driver of firms’ stock price decline at the beginning of the stress period, alleviating funding problems might help reversing this trend. Moreover, the secondary loan market is an important indicator for funding stress in corporate debt markets (Saunders et al., 2020).⁸

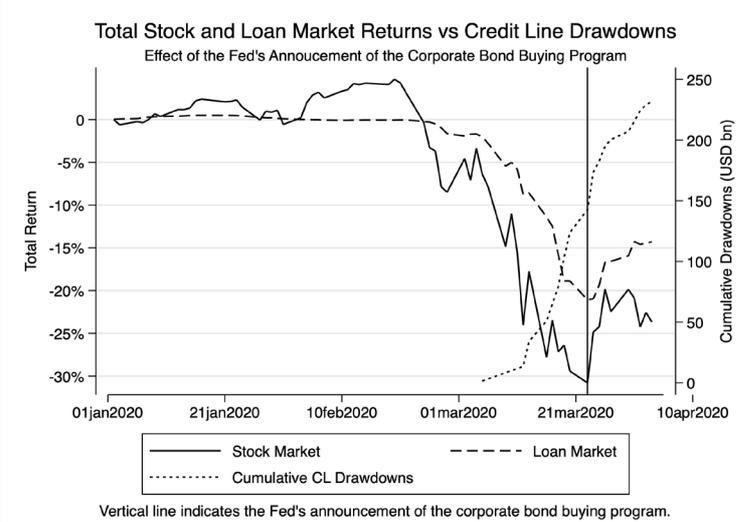


Figure 7. Total stock and loan market return vs. credit line drawdowns

We plot stock and loan market returns in Figure 7. Also loan market returns fell about 20% since the beginning of January 2020 indicating the lack of supply of credit to firms. Both stocks and loans increased significantly after the announcement of the corporate bond buying program on 23 March 2020. Stock (loan) market returns increased by about 10pp (5pp) after the announcement suggesting that the program might have to some degree reduced liquidity problems for U.S. non-financial firms.

⁸ To investigate loan market returns, we use an index of about 1,500 loans issued by U.S. non-financial firms that are traded in the secondary loan market with a market value of about USD 1.5 trillion as of 2 Jan 2020.

When we add the cumulative credit line drawdowns since the beginning of March 2020 to the figure, we observe that – if anything – credit line drawdowns even accelerated after the announcement of the bond buying program. This is puzzling as – in contrast to an increase in stock and loan returns – this implies that funding problems of some firms persisted even after the Fed’s announcements to buy investment-grade-rated corporate bonds.

Investigating corporate bond issuances around this announcement might help us understand this. Figure 8 focuses on the 13 March 2020 to 30 March 2020 to investigate the effects of the announcement of the corporate bond buying program on bond issuances of U.S. non-financial firms, overall as well as by rating category. It seems that the impact on corporate debt markets is asymmetric. While NonIG firms are still not able to borrow in public bond markets, only AAA-A rated firms benefit from the Fed interventions in the corporate sector with a surge in issuance volumes from USD 40bn to USD 80bn within a few days. The dollar volume of cumulative bond issues of BBB-rated firms is muted relative to AAA-A rated firms and amounts to about USD 10bn in the same period. About 75% of all bonds during this period have been issued by AAA-A-rated forms. In other words, most of BBB-rated firms, therefore, continued to rely on banks, which is consistent with an additional demand for loans and drawdown of committed credit lines in the corporate loan market.

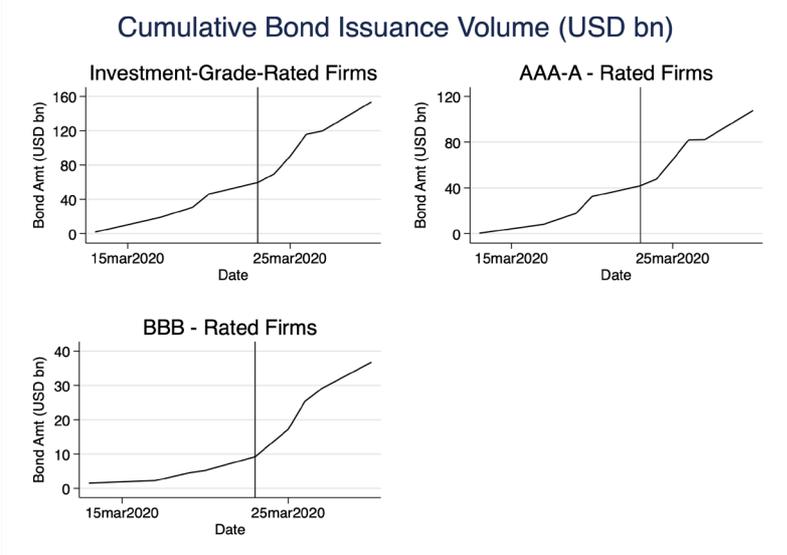


Figure 8. Cumulative bond issuances by U.S. non-financial firms for the period 13 March 2020 – 30 March 2020

“Cliff risk” of BBB-rated firms and the dash for cash

Since the 2008 to 2009 global financial crisis, the volume of BBB-rated debt has more than quadrupled.⁹ Within this rating class, credit geared towards riskier customers with high leverage, raising concerns as to whether its rating meaningfully reflect the risk of the company and about possible future downgrades to non-investment grade status. Altman (2020) estimates that about 34 % of BBB-rated firms can be classified as NonIG firms based on their Z-Score.

Rating agencies usually hesitate to downgrade a firm into non-investment-grade territory as such a downgrade might have severe consequences. E.g. many institutional investors are

⁹ During the 2015 to 2019 period alone, U.S. firms issued about USD 4.5 trillion in corporate bonds. BBB-rated firms alone issued USD 1.4 trillion, *i.e.*, about 31% of the overall corporate bond volume.

limited to holding investment-grade-rated debt and would be forced to sell. Moreover, the initial corporate bond buying program announced on 23 March 2020 included only the purchases of investment-grade corporate debt. Also, borrowing costs in the loan market might increase in addition to higher collateral requirements or an increase in covenant strictness. Taken together, BBB-rated firms likely face a steep reduction in the access to credit and a steep increase in their funding costs after a downgrade.

A deep and prolonged recession because of the economic lockdown might result in the downgrade of some these BBB-rated firms and stock market prices might already reflect the risk of being a “fallen angel”. In Figure 9, we plot the stock price of U.S. non-financial firms by rating class. AAA-A rated companies perform much better compared to lower-rated firms. These firms have healthier balance sheets and better access to credit markets in case of liquidity needs (as shown also above). Interestingly, BBB and NonIG-rated firms perform very similar as markets appear to be worried about the sustainability of the leverage of BBB-rated firms.

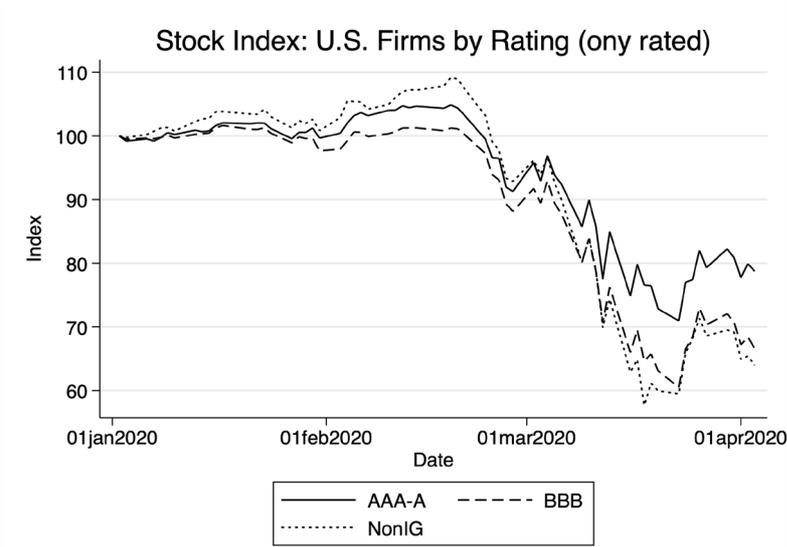


Figure 9. Stock price performance by rating class

We test this more formally and investigate the stock price performance of firms at the investment-grade boundary, *i.e.*, we compare BBB to BB-rated firms. We use the *Z-Score* as a continuous measure to match firms from both rating classes that have very similar *Z-Scores* (and therefore similar default risk) but one firm is investment-grade and the other firm is non-investment grade rated. We then simply compare their cumulative stock returns during the March 1, 2020 – March 23, 2020 period.

	Sample	Treated BBB	Controls BB	Difference	S.E.	T-stat
Stock return	Unmatched	-0.49	-0.612	0.13	0.032	3.79
	Matched Sample (<i>Z-Score</i>)	-0.49	-0.54	0.05	0.047	1.11

Table 2: Matched sample of BBB and BB-rated firms

Note: The results are based on a propensity score matched sample. We calculate the propensity score using a logit model where the dependent variable is an indicator that is one if the firm has a BBB-rating and zero if it has a BB-rating. The regressor is the *Z-Score*.

Simply comparing all firms from both rating classes (without matching) shows that BB-rated firms perform worse. The average stock price drops about 61% during this period compared with a 49% drop of BBB-rated firms. However, comparing the return of those firms with similar Z-Score shows that the stock performance of both group firms is not significantly different from each other. The average stock market decline of the matched control (*i.e.*, BB-rated) firms is about 54% and thus similar to the performance of BBB-rated firms.

That is, the stock market performance suggests that BBB-rated firms are probably of worse quality than their credit rating suggests. These firms, therefore, might face a downgrade if the crisis deepens. It is thus an interesting question to ask whether they increase borrowing by drawing down their credit lines to avoid a downgrade and the associated steep increase in borrowing costs if a downgrade materializes.

We analyze the cross-section of credit lines drawdowns during the March 1 to March 23, 2020 period and ask whether firms that are more likely to be downgraded to a NonIG category use their credit lines more compared to other firms. For each firm, we construct a measure of total drawdowns as the natural logarithm of total drawdowns during this period ($\text{Log}(\text{Total Drawdown})$). This is our dependent variable.

Our explanatory variables include indicator variables for each rating class and their interaction with two different (continuous) measures of credit quality, (1) the *Z-Score* and (2) the *Debt/EBITDA* ratio. BBB-rated firms with a higher (lower) *Z-Score* (*Debt/EBITDA* ratio) have lower default risk. We include them individually in models shown in columns (1) and (2) of Table 3. In column (1), we add the *Z-Score* as control variables in addition to industry fixed effects. We do not add other balance sheet characteristics as the *Z-Score* is constructed from these measures. In column (2), we use firm characteristics that might affect drawdown behavior such as $\text{Log}(\text{Assets})$, *Debt/EBITDA*, *return on assets (ROA)* and *Liquidity* (as defined above) in addition to industry fixed effects.

As expected, using the full sample of firms, those BBB-rated firms that have a higher likelihood to be downgraded – as measured by a lower *Z-Score* or a higher *Debt/EBITDA* ratio – use their credit lines more compared to safer firms. Our results in column (2) also show that lower quality NonIG-rated firms draw down more consistent with our earlier result that absolute drawdowns of NonIG firms were similar to those of BBB-rated firms. The coefficients of BBB and NonIG-rated firms interacted with their *Debt/EBITDA* ratio are not significantly different.

We then perform a matched sample exercise and focus exclusively on BBB and BB-rated firms. We match these firms in two different ways using (1) Altman's *Z-Score* and (2) using a set of firm characteristics ($\text{Log}(\text{Assets})$, *Debt/EBITDA*, *return on assets (ROA)* and *Liquidity* in addition to industry fixed effects). That is, we focus on a set of firms that are most similar in terms of their characteristics (such as default risk) and only differ as one firm is investment-grade rated and the other firm is non-investment-grade rated.

The results are reported in columns (3) to (6) and we always compare differences in credit line drawdowns in the matched sample to the unmatched sample. Consistent with a “dash for cash” of firms that are at risk of being a fallen angel, we find that BBB-rated firms draw down significantly more than comparable, BB-rated firms.

Using the matched sample based on different balance sheet characteristics is likely the most conservative approach and produces economically somewhat smaller results, which are still

statistically highly significant. The coefficient suggests that matched BBB-rated firms draw down, on average, about USD 2.66 billion more from their credit line compared to similar BB-rated firms during our sample period.

	Full Sample		Log (Total Drawdowns) Cliff (BBB vs BB rated firms)			
	(1)	(2)	Unmatched (3)	PS-Matched (Z-Score) (4)	Unmatched (5)	PS-Matched (Controls) (6)
AAA-A x Z-Score	-0.2655 (-.25)					
BBB x Z-Score	-0.5701 (-3.06)					
NonIG x Z-Score	0.0385 (.79)					
AAA-A x Debt/EBITDA		-0.207 (.31)				
BBB x Debt/EBITDA		0.023 (3.8)				
NonIG x Debt/EBITDA		0.051 (1.72)				
AAA-A	3.007 (.5)	0.068 (.07)				
BBB	3.044 (5.55)	0.258 (1.61)	1.174 (4.51)	1.392 (3.31)	1.193 (4.85)	0.9768 (2.12)
NonIG	-1.416 (-4.78)	-0.156 (.85)				
Controls		Log(Assets), Debt/EBITDA, ROA, Liquidity				
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
N	129	139	59	59	63	63
R ²	48.62%	83.51%	26.33%		27.83%	
Treated				27		29
Control				32		34

Table 3: Cliff risk and credit line drawdowns

Note: The results in columns (4) and (6) are based on a propensity score matched sample. We calculate the propensity score using logit models where the dependent variable is an indicator that is one if the firm has a BBB-rating and zero if it has a BB-rating. The regressor is the Z-Score for the Z-Score matched sample (column (4)) and the set of controls used in column (2), *i.e.*, *Log(Assets)*, *Debt/EBITDA*, *ROA*, *Liquidity*, for the control matched sample analysis shown in column (6). We also include industry fixed effects in both logit models. T-statistics are in parentheses.

Not all fallen angels are the same

Some firms have already been downgraded to non-investment-grade by credit rating agencies at the end of March 2020 (so-called “fallen angels”). Based on our earlier analysis of the stock price response of BBB vs. BB-rated firms, we would expect to observe a significantly worse performance of fallen angels relative to other BBB-rated firms during our sample period. Figure 10 compares the stock market performance of these fallen angels with other BBB-rated firms since January 1, 2020.¹⁰ Consistent with our previous discussion, fallen

¹⁰ The fallen angels that are stock exchange listed and thus included in our dataset are Apache Corporation (APA), Continental Resources (CLR), Delta Airlines (DAL), Ford (F), Macy’s (M), Occidental Petroleum (OXY) and Patterson Energy (PTEN).

angels perform significantly worse, particularly since the begin of the COVID-19 crisis, where stock prices dropped by about 40% relative to their 1 January 2020 values and did not recover.

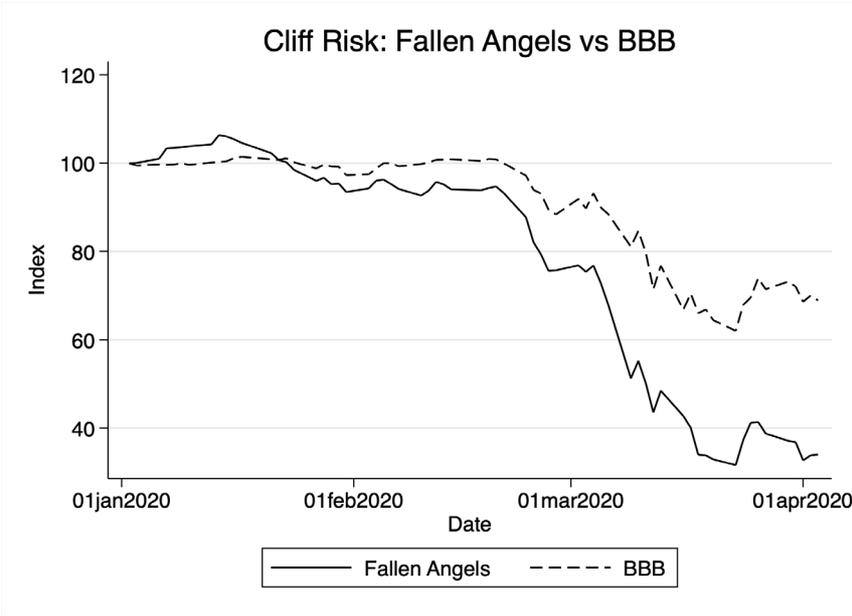


Figure 10. Stock prices: Fallen Angels vs. BBB-rated firms

In a final step, we focus on the 6 publicly listed fallen angels in our sample and investigate their stock market performance before they were downgraded. We plot their stock prices since 1 January 2020 in Figure 11. We observe that firms from the oil & gas industry experience a sharp drop in their share price on March 9, 2020, when the oil price dropped by more than 20% on a single day. In an environment, in which global demand for oil was already weak – also as a consequence of the COVID-19 pandemic – both Saudi Arabia and Russia, the two world’s largest oil producers, decided to increase their oil output considerably when both countries could not enter into an agreement with OPEC on possible production cuts. The share price of the other firms declined more gradually by about 50% before they were eventually downgraded.¹¹

The downgrade to the status of a non-investment-grade rated company does not only have an impact on the firms themselves but also on the banks that provide loans to these firms (in the form of both credit lines and term loans). The fallen angels from the oil & gas sector alone have an outstanding loan volume of more than USD 34 billion, out of which about USD 15 billion is held by US banks alone (see Table 4).

¹¹ Interestingly, the fallen angels from the energy sector (in contrast to the firms from the other sectors) did not draw down their credit line before they were downgraded. A possible reason might be a contractual mechanism specific to loans issued by firm in the energy sector. So-called “borrowing base” conditions require banks to regularly assess the present value of future cash flows of these firms. If the present value falls too much, lenders can reduce the committed credit line. If borrowers have already used their credit line beyond this point, lenders can either demand repayment or request additional collateral.

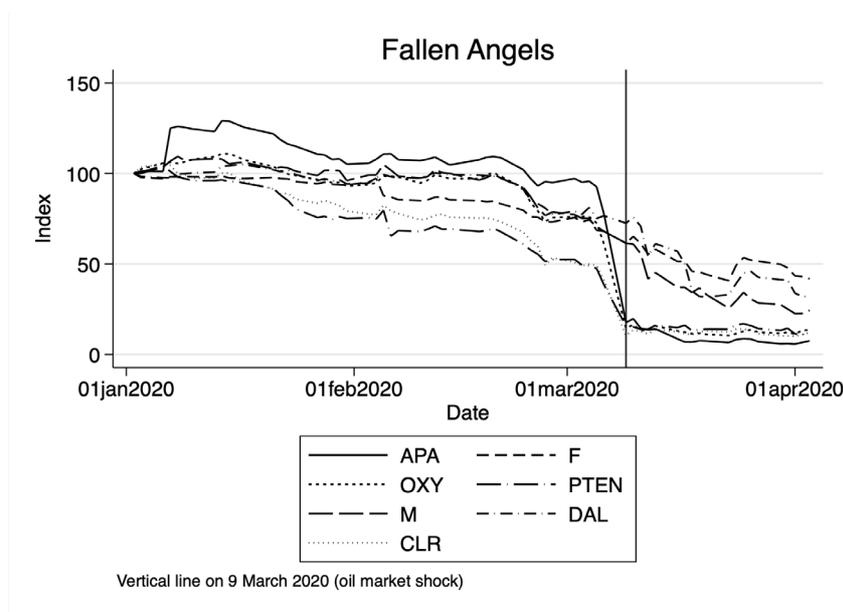


Figure 11. Stock prices of fallen angels

For some banks, this exposure alone is substantial relative to their Tier 1 capital. In other words, the increasing speed of credit line drawdowns, particularly of riskier firms, that we have observed since beginning of March 2020, also impacts the balance sheet of lenders with likely spillovers into the real economy.

Bank	Exposure Fallen	
	Angel	% of Tier 1
PNC Bank	2,663	7.34%
US Bancorp	2,838	6.80%
Comerica Inc	288	4.16%
Zions Bancorp	176	2.81%
Citi	2,920	1.87%
Truist Financial	721	1.77%
BofA	2,809	1.49%
Wells Fargo & Co	1,547	0.97%
JP Morgan	1,184	0.55%
Total	15,147	3.08%

Table 4: US banks' exposure to fallen (energy) angels

Conclusion

The lockdown as a response to the COVID-19 pandemic caused a high demand for liquidity for firms affected by the crisis. Using a novel dataset of daily credit line drawdowns at the firm-loan-level, we provide evidence consistent a “cash for cash” of BBB-rated firms, particularly those that might be more similar in terms of credit quality to non-investment-grade rated firms. The announcement of an investment-grade corporate bond buying program by the Federal Reserve did not alleviate this cliff risk of being downgraded and these firms continue to convert committed credit lines into cash.

This “dash for cash” also impacts the balance sheets of banks when commitments turn into loans as banks have to fund these exposures with equity. Worse, banks usually hold additional term loan exposure to the same firms, *i.e.*, they accumulate a concentrated exposure to firms

at the risk of being downgraded. Even though banks are better capitalized compared to 2007 and before the global financial crisis, the accelerated drawdowns of credit lines and provision for possible future credit losses for on-balance sheet exposures might bring them closer to the regulatory minimum capital requirement, which not only endangers their financial stability but can constrain future intermediation with likely spillovers into the real economy.¹²

Regulators should therefore insist that banks do everything possible to conserve capital. Requiring them to withhold dividend payments or stop repurchasing shares can only be the minimum response at the beginning of a crisis, which the International Monetary Fund describes as possibly the “worst economic downturn since the Great Depression” and an unprecedented challenge for the global economy. In an Op-Ed in the *Financial Times*, the president of the Federal Reserve Bank of Minneapolis, Neel Kashkari, recently requested that banks raise USD 200bn now, which compares to the amount raised privately by the U.S. banks following the stress tests of 2009. As it seems within reasonable chance that this crisis will eventually dwarf what we observed in the 2008 to 2009 global financial crisis, it might be desirable to have an immediate regulatory prescription to banks to raise an even larger amount to build resilience in their balance-sheets and lend well to the real economy in the phase of economic recovery.

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¹² Some large U.S. banks have already reported a significant increase in quarterly provisions for credit losses compared to previous quarters. E.g. JP Morgan increased its provisions from USD 1.5bn in Q4:2010 to USD 8.5bn for the first quarter of 2020.