Online Appendix:
Aggregate Risk and the Choice between Cash and Lines of Credit*

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Appendix A. Characterization of the equilibrium when $L^s < L_1^s(\theta)$

Suppose first that $q_1 > q_2$, such that the firm's budget constraint never binds in equilibrium. In this case, if $L^s < L_1^s$ we will have that $q^* = q_2 > 1$. To see why, notice that if $q < q_2$ then systematic firms would choose $x^\theta = 1$, which is not compatible with equilibrium. If $q > q_2$, then $x^\theta = 1$, generating an excess supply of cash. Thus, we must have $q^* = q_2$. Since systematic firms are indifferent between any x^θ between 0 and 1 when $q = q_2$, we can sustain an equilibrium such that:

$$\theta[x^\theta(q_2)(\rho - \rho_0) - w^{\max}] = L^s. \tag{1}$$

This is the unique equilibrium of the model. To see why, notice that for $x^\theta > x^\theta(q_2)$, cash demand would be larger than supply, and if $x^\theta < x^\theta(q_2)$, cash supply would be greater than demand and thus the cost of cash would drop to $q = 1$.

If $q_1 < q_2$, then the firm's budget constraint will bind in equilibrium, and we will have $q_1 < q^* \leq q_2$. The cost of cash q^* is such that the demand for cash exactly equals supply:

$$\theta[x^\theta(q^*)(\rho - \rho_0) - w^{\max}] = L^s. \tag{2}$$

Since $q_1 < q^*$, then $x^\theta(q^*) < 1$. Since $q^* \leq q_2$, then systematic firms would like to increase their demand for cash beyond $x^\theta(q^*)$, but they cannot afford to do so. Thus, q^* is the equilibrium cost of cash in this case.

Finally, notice that since the cost of cash cannot be greater than q_2, there is a level of liquidity supply (denoted by $L^s_{\min}$) such that for all $L^s < L^s_{\min}$, the equilibrium is $q^* = q_2$. $L^s_{\min}$ is such that the maximum level of x^θ that satisfies the budget constraint when $q = q_2$ yields a demand for cash exactly equal to $L^s_{\min}$:

$$\theta[x^\theta(q_2)(\rho - \rho_0) - w^{\max}] = L^s_{\min}. \tag{3}$$

Appendix B. Computing *Beta KMV* and *Var KMV*

To compute *Beta KMV* and *Var KMV* we make the following assumptions. First, suppose that the total value of a firm follows:

$$\frac{dV}{V} = \mu dt + \sigma_V dW \tag{4}$$

where V is the total value, μ is the expected continuously compounded return on V, σ_V is the volatility of firm value, and dW is a standard Wiener process. In addition, assume that the firm issued one discount bond maturing in T periods. Under these assumptions, the equity of the firm is a call option on the underlying value of the firm with a strike price equal to the face value of the firm's debt and a time-to-maturity of T. The value of the "call option" is:

$$E = VN(d_1) - e^{-rT}FN(d_2) \tag{5}$$

where E is the market value of a firm's equity, F is the face value of the firm's debt, r is the instantaneous risk-free rate, $N(.)$ is the cumulative standard normal distribution function, d_1 is given by

$$d_1 = \frac{ln(V/F) + (r + \frac{1}{2}\sigma_V^2)T}{\sigma_V\sqrt{T}}, \tag{6}$$

and d_2 is given by

$$d_2 = d_1 - \sigma_V\sqrt{T}$$

Given the value of equity, the underlying value of the firm, or market value of asset is:

$$V = \frac{E + e^{-rT} F N(d_2)}{N(d_1)} \tag{7}$$

Since the value of equity is a function of the value of the firm and time, using Ito's lemma we obtain:

$$\sigma_E = \frac{V}{E}\frac{\partial E}{\partial V}\sigma_V = \frac{V}{E}\frac{1}{N(d_1)}\sigma_V \tag{8}$$

To implement the model, we need to simultaneously solve equations (7) and (8). We follow Bharath and Shumway (2008), and adopt an iterative procedure as follows. First, equity volatility σ_E is estimated from historical stock returns. We use the last 12 months to do so (e.g., $T = 12$ months). We also set $r = 0.03$. To compute the face value of debt for each firm, we use the firm's total book value of short-term debt plus one-half of the book value of long-term debt. This is a known rule-of-thumb used to fit a KMV-type model to an annual horizon. Then, we propose an initial value for asset volatility, σ_V, which is computed as:

$$\sigma_V = \sigma_E \frac{E}{E + F} \tag{9}$$

We use this value of σ_V, and equation (7) to infer the market value of the firm's assets for every month. We then calculate the implied log monthly return on assets, and use that return series to generate new estimates of σ_V and μ. Finally, we iterate on σ_V until the procedure converges. Similarly to unlevering volatility using (8), asset beta is then unlevered using:

$$\beta_{Asset} = \beta_{Equity}\frac{E}{V}N(d_1) \tag{10}$$

Finally, we let $Var\ KMV = \sigma_V$, and $Beta\ KMV = \beta_{Asset}$.

Appendix C. Computing *Bank VIX*

Three distinct forecasts of daily bank return volatility are computed. The purpose is to construct a forecast of volatility on day $t + 1$ given all information up to and including day t.

First, the daily estimates of volatility are computed using the return series available for the financial sector index from Kenneth French's website. The data span July 1st 1963 through October 29th 2010.

Next, we compute a volatility forecast based on a Gaussian GARCH(1,1) model. This procedure is a fully parametric one and uses a statistical model to forecast future volatilities. The parametric approach requires the estimation of model parameters for which all data up to time t are used. In the case of value-weighted financial sector return series, at least 105 days of observations were required to obtain reliable estimates of the parameters. Hence, the first run of the model uses the sample window $[t_0, t_{105}]$ to estimate the model parameters and subsequently forecasts the volatility on day t_{106}. To obtain volatility forecasts for all dates, the procedure is repeated for each individual day on an expanding sample size basis.

Finally, we compute the average yearly value of the expected volatility series (*Bank VIX*) to match the frequency of the other data that we use.

Appendix D. Additional robustness tests

In this Section we report a battery of robustness tests that did not fit in the main body of the paper.

In Table AI, we show the results of varying the proxy for aggregate risk exposure using Sufi's sample. Panel A shows the results for *Total LC-Cash*, and Panel B shows results for *Unused LC-Cash*.

– Table AI about here –

In Table AII, we show the results of partitioning the sample according to different financial constraints criteria and beta proxies, for the entire range of beta proxies that we employ in the paper. Each panel from A to G corresponds to a different beta proxy.

– Table AII about here –

In Table AIII, we relate the cost of credit lines to different proxies for beta. Panel A examines the *All-in-Drawn Spread*, and Panel B examines the *Undrawn Fee*.

– Table AIII about here –

In Table AIV, we present results that relate bank-level credit line exposure to bank risk for high and low VIX months, using different cutoffs to classify months into high and low VIX bins. Panel A uses a 10% cutoff, and Panel B uses a 25% cutoff.

– Table AIV about here –

In Table AV, we present variations of the tests that link credit line availability to covenant violations and aggregate risk exposure. In Panel A we use Total LC-to-Assets as a dependent variable. In Panel B we use *Beta KMV* instead of VIX as an aggregate risk proxy. In Panel C we add interactions between VIX and covenant violations and in Panel D we add interactions between *Beta KMV* and covenant violations.

– Table AV about here –

Table AI: Variations of Table V - The Choice Between Cash and Credit Lines - Varying Betas (Sufi's Sample)

This table reports regressions of a measure of line of credit usage in corporate liquidity policy on asset (unlevered) beta and controls. *Beta KMV (Industry)* is the value-weighted average (3-digit SIC) industry *Beta KMV*. All other variables are described in Table 1. In columns (1) to (7), beta measures are instrumented with their first two lags. In column (8), we use an industry beta rather than the firm-level instrumented beta in the regression. Robust t-statistics presented in parenthesis.

Panel A - *Total LC-to-Cash*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Beta Asset	-0.265***							
	(-3.330)							
Beta Cash		-0.238***						
		(-5.327)						
Beta Bank			-0.619***					
			(-2.866)					
Beta Tail				-0.285**				
				(-2.326)				
Beta Equity					-0.253***			
					(-3.650)			
Beta Gap						-0.012		
						(-1.318)		
Beta Cash Flow							-0.010	
							(-0.830)	
Beta KMV (Industry)								-0.096***
								(-3.616)
Profitability	-0.134**	0.100***	0.048	0.229**	-0.037	0.061*	0.056	0.108***
	(-2.094)	(2.762)	(0.845)	(2.489)	(-0.609)	(1.760)	(1.282)	(2.843)
Tangibility	-0.079	-0.030	-0.026	0.037	-0.081	0.088	0.126	0.098
	(-0.651)	(-0.433)	(-0.273)	(0.343)	(-0.829)	(1.183)	(1.500)	(1.117)
Size	0.109***	0.048***	0.077***	0.032*	0.076***	0.047***	0.049***	0.037***
	(7.573)	(5.025)	(4.474)	(1.882)	(5.051)	(4.852)	(4.489)	(3.242)
Networth	-0.090	-0.057	-0.127*	-0.159	-0.098	-0.076*	-0.036	-0.103**
	(-1.157)	(-1.356)	(-1.912)	(-1.430)	(-1.534)	(-1.814)	(-0.699)	(-2.378)
Q	-0.015*	-0.031***	-0.031***	-0.033***	-0.030***	-0.038***	-0.045***	-0.035***
	(-1.957)	(-7.147)	(-3.938)	(-2.731)	(-3.907)	(-8.880)	(-9.443)	(-8.413)
IndSalesVol	1.299	0.452	0.370	0.245	-0.449	1.471**	1.495**	1.790**
	(1.375)	(0.845)	(0.467)	(0.318)	(-0.569)	(2.541)	(2.277)	(2.373)
ProfitVol	1.033*	-0.252	0.236	-0.241	0.002	-0.655***	-0.470*	-0.381*
	(1.922)	(-1.224)	(0.604)	(-0.821)	(0.005)	(-3.131)	(-1.911)	(-1.734)
Age	-0.040	-0.041**	-0.080**	-0.077**	-0.076**	-0.032	-0.036	-0.030
	(-1.006)	(-1.961)	(-2.344)	(-2.363)	(-2.394)	(-1.450)	(-1.299)	(-1.156)
Constant		0.680***				0.371***	0.333***	0.565***
		(6.857)				(4.093)	(3.144)	(5.174)
Industry Fixed-effect	Yes	No	Yes	Yes	Yes	No	Yes	No
Year Fixed-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
First-stage F-stat p-value	0.001	0.001	0.011	0.000	0.000	0.000	0.000	
Hansen J-stat p-value	0.063	0.041	0.043	0.086	0.202	0.023	0.191	
Observations	434	1,866	1,322	866	1,044	1,659	1,110	1,241
R^2	0.651	0.400	0.416	0.366	0.440	0.364	0.349	0.383

* significant at 10%; ** significant at 5%; *** significant at 1%.

Panel B: Unused LC-to-Cash

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Beta Asset	-0.286***							
	(-3.436)							
Beta Cash		-0.191***						
		(-4.499)						
Beta Bank			-0.458**					
			(-2.517)					
Beta Tail				-0.260**				
				(-2.053)				
Beta Equity					-0.200***			
					(-3.202)			
Beta Gap						-0.009		
						(-0.968)		
Beta Cash Flow							-0.010	
							(-0.834)	
Beta KMV (Industry)								-0.073***
								(-2.854)
Profitability	-0.120*	0.077**	0.037	0.251**	-0.039	0.047	0.040	0.081**
	(-1.894)	(2.446)	(0.765)	(2.536)	(-0.741)	(1.515)	(1.030)	(2.358)
Tangibility	-0.089	-0.048	-0.039	0.006	-0.092	0.043	0.056	0.040
	(-0.753)	(-0.719)	(-0.454)	(0.059)	(-0.998)	(0.596)	(0.726)	(0.483)
Size	0.109***	0.053***	0.078***	0.047***	0.077***	0.051***	0.053***	0.041***
	(7.632)	(5.977)	(5.346)	(2.626)	(5.876)	(5.775)	(5.413)	(4.007)
Networth	-0.089	-0.020	-0.084	-0.064	-0.043	-0.039	0.004	-0.083**
	(-1.124)	(-0.518)	(-1.472)	(-0.588)	(-0.752)	(-1.034)	(0.079)	(-2.130)
Q	-0.012	-0.024***	-0.026***	-0.028**	-0.024***	-0.030***	-0.035***	-0.029***
	(-1.463)	(-6.090)	(-3.899)	(-2.213)	(-3.408)	(-7.458)	(-8.009)	(-7.450)
IndSalesVol	1.603	0.484	0.374	0.115	-0.351	1.103*	0.968	1.652**
	(1.504)	(0.891)	(0.461)	(0.138)	(-0.431)	(1.933)	(1.493)	(2.160)
ProfitVol	1.072*	-0.274	0.068	-0.160	-0.093	-0.617***	-0.399*	-0.373*
	(1.873)	(-1.393)	(0.207)	(-0.548)	(-0.341)	(-3.124)	(-1.721)	(-1.769)
Age	-0.058	-0.021	-0.057*	-0.059*	-0.041	-0.010	0.007	-0.008
	(-1.433)	(-1.038)	(-1.818)	(-1.819)	(-1.347)	(-0.481)	(0.255)	(-0.320)
Constant		0.487***				0.252***	0.166*	0.402***
		(5.254)				(2.979)	(1.710)	(3.977)
Industry Fixed-effect	Yes	No	Yes	Yes	Yes	No	Yes	No
Year Fixed-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
First-stage F-stat p-value	0.000529	0	0.0113	0	1.36e-05	0	0	
Hansen J-stat p-value	0.0938	0.432	0.00828	0.170	0.121	0.0438	0.0538	
Observations	434	1,864	1,320	864	1,042	1,657	1,108	1,241
R^2	0.632	0.365	0.388	0.310	0.397	0.336	0.317	0.352

* significant at 10%; ** significant at 5%; *** significant at 1%.

Table AII: Variations of Table VI - Sorting on proxies for financing constraints and beta

This table reports regressions of a measure of line of credit usage in corporate liquidity policy on different proxies for asset beta and controls. The dependent variable is *LC-to-Cash*, defined in Table 1. All beta and variance measures are instrumented with their first two lags. In column (1) we use a sample of small firms (those with Assets in the 30th percentile and lower). In column (2) we use a sample of large firms (those with Assets in the 70th percentile and higher). In column (3) we use a sample of firms with low payouts (those with payout in the 30th percentile and lower). In column (4) we use a sample of firms with high payouts (those with payout in the 70th percentile and higher). In column (5) we use a sample of firms that have neither a bond, nor a commercial paper rating. In column (6) we use a sample of firms that have both bond and commercial paper ratings. In column (7) we use a sample of firms with beta greater than one. In column (8) we use a sample of firms with beta lower than one. All other variables are described in Table 1. Robust t-statistics presented in parenthesis.

Panel A - Beta Asset

	(1) Small firms	(2) Large firms	(3) Low payout firms	(4) High payout firms	(5) Non-rated firms	(6) Rated firms	(7) High beta firms	(8) Low beta firms
Beta Asset	0.034	-0.078	-0.215***	-0.042	-0.044	0.014	-0.431***	-0.003
	(0.715)	(-1.136)	(-4.393)	(-0.671)	(-1.075)	(0.108)	(-5.377)	(-0.017)
Asset Variance	-2.936	-6.279	0.030	-4.504	-2.630	-12.198	4.933*	-8.199***
	(-1.456)	(-1.483)	(0.013)	(-1.517)	(-1.550)	(-1.115)	(1.775)	(-4.064)
Profitability	-0.029	0.134	0.124	-0.057	-0.089	0.127	-0.107	-0.003
	(-0.402)	(0.930)	(1.423)	(-0.540)	(-1.570)	(0.470)	(-1.373)	(-0.023)
Tangibility	0.012	-0.026	-0.122**	0.013	-0.063	-0.092	0.005	-0.046
	(0.245)	(-0.487)	(-2.366)	(0.241)	(-1.289)	(-1.026)	(0.107)	(-0.941)
Size	0.011	-0.001	0.054***	0.029***	0.029***	0.020	0.022***	0.035***
	(0.726)	(-0.049)	(4.833)	(3.320)	(2.849)	(0.848)	(2.643)	(2.674)
Networth	-0.090**	-0.107**	-0.074**	-0.142***	-0.110***	-0.155*	-0.076**	-0.159***
	(-2.335)	(-2.063)	(-2.028)	(-3.272)	(-3.731)	(-1.672)	(-2.221)	(-4.024)
Q	-0.019**	-0.066***	-0.021**	-0.053***	-0.026***	-0.059***	-0.039***	-0.055***
	(-2.381)	(-6.223)	(-2.345)	(-5.899)	(-4.906)	(-3.058)	(-5.334)	(-5.496)
IndSalesVol	0.069	-0.362	-0.735	-0.282	-0.117	-0.331	-0.010	-0.420
	(0.131)	(-0.819)	(-1.501)	(-0.675)	(-0.282)	(-0.533)	(-0.025)	(-1.113)
ProfitVol	-0.014	-0.120	-0.158	-0.336	0.206	-0.391	-0.064	-0.155
	(-0.097)	(-0.379)	(-0.618)	(-1.239)	(1.325)	(-0.635)	(-0.279)	(-0.590)
Age	-0.001	-0.028	-0.039**	-0.006	-0.026	-0.027	-0.039**	-0.037**
	(-0.028)	(-1.498)	(-2.089)	(-0.334)	(-1.448)	(-0.835)	(-2.148)	(-2.263)
Constant	0.217	0.795***	0.409***	0.359*	0.226*		1.015***	0.479**
	(1.626)	(3.391)	(2.724)	(1.693)	(1.822)		(5.649)	(2.238)
Industry Fixed-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
First-stage F-stat p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hansen J-stat p-value	0.439	0.055	0.608	0.053	0.635	0.145	0.029	0.008
Observations	779	6,630	2,993	4,900	1,959	3,176	3,269	6,267
R^2	0.134	0.137	0.269	0.186	0.206	0.148	0.258	0.174

* significant at 10%; ** significant at 5%; *** significant at 1%.

Panel B - Beta Cash

	(1) Small firms	(2) Large firms	(3) Low payout firms	(4) High payout firms	(5) Non-rated firms	(6) Rated firms	(7) High Beta firms	(8) Low Beta firms
Beta Cash	-0.210*	-0.006	-0.218***	0.085	-0.080	0.165	-0.440***	0.115
	(-1.864)	(-0.086)	(-3.245)	(1.117)	(-1.464)	(1.176)	(-3.333)	(0.628)
Asset Variance	1.894	-1.616*	1.067	-1.933**	0.053	-4.241*	2.889*	-0.531*
	(1.344)	(-1.717)	(1.319)	(-2.126)	(0.080)	(-1.925)	(1.943)	(-1.801)
Profitability	0.079	0.179*	0.200***	-0.011	0.028	0.050	0.078	0.063
	(1.269)	(1.650)	(3.821)	(-0.186)	(0.721)	(0.190)	(1.569)	(1.044)
Tangibility	-0.020	-0.012	-0.016	0.028	0.012	0.001	-0.015	0.015
	(-0.545)	(-0.283)	(-0.546)	(0.797)	(0.426)	(0.006)	(-0.512)	(0.524)
Size	0.109***	0.005	0.080***	0.032***	0.062***	0.004	0.054***	0.043***
	(4.461)	(0.431)	(6.721)	(3.114)	(5.809)	(0.186)	(5.484)	(3.647)
Networth	-0.087***	-0.186***	-0.087***	-0.199***	-0.133***	-0.280***	-0.125***	-0.201***
	(-3.144)	(-4.648)	(-3.646)	(-6.785)	(-6.682)	(-3.461)	(-6.283)	(-6.826)
Q	-0.010	-0.075***	-0.026***	-0.061***	-0.047***	-0.055***	-0.044***	-0.060***
	(-0.819)	(-9.902)	(-3.390)	(-10.399)	(-9.121)	(-3.170)	(-7.444)	(-13.593)
IndSalesVol	0.056	-0.200	-0.248	-0.668***	-0.236	-0.024	-0.488**	-0.212
	(0.184)	(-0.603)	(-0.972)	(-2.648)	(-1.199)	(-0.042)	(-2.232)	(-0.988)
ProfitVol	-0.225	0.410*	-0.091	0.213	0.092	0.449	-0.030	0.091
	(-1.071)	(1.827)	(-0.690)	(1.315)	(0.827)	(0.625)	(-0.205)	(0.674)
Age	-0.006	-0.042***	-0.038***	-0.051***	-0.052***	-0.058**	-0.045***	-0.061***
	(-0.374)	(-3.043)	(-3.623)	(-4.553)	(-5.326)	(-2.052)	(-4.481)	(-6.453)
Constant	-0.144	1.034***	0.233	0.783***			0.715***	0.551***
	(-0.479)	(6.995)	(1.271)	(5.246)			(5.407)	(5.673)
Industry Fixed-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
First-stage F-stat p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hansen J-stat p-value	0.255	0.004	0.177	0.008	0.171	0.431	0.019	0.669
Observations	7,230	11,053	12,912	12,319	19,355	3,854	13,425	17,284
R^2	0.109	0.143	0.190	0.171	0.142	0.146	0.195	0.159

* significant at 10%; ** significant at 5%; *** significant at 1%.

Panel C - Beta Bank

	(1) Small firms	(2) Large firms	(3) Low payout firms	(4) High payout firms	(5) Non-rated firms	(6) Rated firms	(7) High Beta firms	(8) Low Beta firms
Beta Bank	-0.243	-0.354***	-0.599***	-0.169	-0.328**	0.034	-1.980**	-0.648*
	(-0.760)	(-3.436)	(-2.750)	(-1.452)	(-2.073)	(0.134)	(-2.217)	(-1.897)
Asset Variance	2.813	1.724	8.301*	-0.464	3.519	-11.935	25.221*	-3.835***
	(0.458)	(0.637)	(1.870)	(-0.181)	(1.108)	(-1.499)	(1.854)	(-4.047)
Profitability	0.103	0.275**	0.348***	0.011	0.110*	0.008	0.216	0.162**
	(0.835)	(2.554)	(3.460)	(0.172)	(1.730)	(0.035)	(1.357)	(2.332)
Tangibility	-0.027	-0.029	-0.021	0.031	-0.002	0.021	-0.113	-0.018
	(-0.601)	(-0.697)	(-0.680)	(0.922)	(-0.058)	(0.263)	(-1.254)	(-0.664)
Size	0.087***	0.016	0.088***	0.048***	0.071***	0.008	0.062***	0.071***
	(3.047)	(1.466)	(5.082)	(5.984)	(5.184)	(0.400)	(2.835)	(4.595)
Networth	-0.094***	-0.146***	-0.073**	-0.150***	-0.111***	-0.257***	-0.052	-0.110***
	(-3.239)	(-3.760)	(-2.398)	(-5.572)	(-5.283)	(-3.104)	(-1.097)	(-3.394)
Q	-0.023**	-0.077***	-0.039***	-0.054***	-0.047***	-0.054***	-0.025*	-0.053***
	(-2.573)	(-9.818)	(-6.731)	(-11.173)	(-13.622)	(-3.132)	(-1.944)	(-12.078)
IndSalesVol	0.214	-0.115	0.086	-0.512**	-0.027	0.164	-0.121	-0.127
	(0.794)	(-0.354)	(0.350)	(-2.091)	(-0.144)	(0.320)	(-0.251)	(-0.673)
ProfitVol	-0.148	0.146	-0.307*	0.079	-0.045	0.287	-0.313	0.005
	(-0.490)	(0.667)	(-1.655)	(0.463)	(-0.296)	(0.456)	(-1.113)	(0.036)
Age	-0.017	-0.034**	-0.027**	-0.049***	-0.050***	-0.055**	-0.039*	-0.054***
	(-1.112)	(-2.447)	(-2.217)	(-4.528)	(-5.333)	(-2.036)	(-1.890)	(-6.120)
Constant	0.125	0.710***	0.063	0.465***	0.290**		1.406***	0.543***
	(0.633)	(4.848)	(0.305)	(3.390)	(2.134)		(3.575)	(5.732)
Industry Fixed-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
First-stage F-stat p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.032
Hansen J-stat p-value	0.688	0.201	0.0429	0.355	0.760	0.401	0.295	0.789
Observations	8,483	12,565	14,945	14,173	22,600	4,338	5,994	29,431
R^2	0.103	0.149	0.177	0.169	0.135	0.167	0.164	0.165

* significant at 10%; ** significant at 5%; *** significant at 1%.

Panel D - Equity Beta

	(1) Small firms	(2) Large firms	(3) Low payout firms	(4) High payout firms	(5) Non-rated firms	(6) Rated firms	(7) High Beta firms	(8) Low Beta firms
Equity Beta	-0.137	0.006	-0.118***	0.057	-0.013	0.065	-0.167**	0.082
	(-1.365)	(0.124)	(-2.665)	(1.226)	(-0.343)	(0.783)	(-2.467)	(0.678)
Asset Variance	2.995	-7.103***	-0.088	-6.188***	-2.772*	-12.553*	-0.575	-2.417
	(0.775)	(-2.969)	(-0.051)	(-3.049)	(-1.752)	(-1.917)	(-0.288)	(-1.515)
Profitability	0.083	0.155	0.172***	-0.046	-0.002	0.078	0.013	0.014
	(1.122)	(1.581)	(3.384)	(-0.772)	(-0.054)	(0.328)	(0.330)	(0.218)
Tangibility	-0.011	-0.003	-0.009	0.037	0.017	0.010	0.010	0.012
	(-0.337)	(-0.067)	(-0.355)	(1.155)	(0.670)	(0.125)	(0.414)	(0.445)
Size	0.097***	0.004	0.067***	0.031***	0.047***	0.010	0.033***	0.039***
	(3.753)	(0.431)	(6.674)	(4.169)	(5.224)	(0.507)	(7.673)	(3.651)
Networth	-0.094***	-0.185***	-0.136***	-0.168***	-0.134***	-0.239***	-0.182***	-0.214***
	(-4.175)	(-4.891)	(-7.009)	(-6.621)	(-7.926)	(-3.205)	(-5.580)	(-4.415)
Q	-0.015	-0.066***	-0.036***	-0.052***	-0.048***	-0.053***	-0.057***	-0.054***
	(-1.372)	(-9.140)	(-7.234)	(-11.024)	(-13.896)	(-3.119)	(-15.210)	(-9.046)
IndSalesVol	0.162	-0.149	0.013	-0.588**	-0.056	0.090	-0.092	-0.222
	(0.565)	(-0.472)	(0.056)	(-2.466)	(-0.306)	(0.171)	(-0.491)	(-1.081)
ProfitVol	-0.115	0.362*	-0.001	0.190	0.204**	0.137	0.154	0.227*
	(-0.570)	(1.696)	(-0.007)	(1.243)	(2.071)	(0.224)	(1.488)	(1.717)
Age	-0.013	-0.039***	-0.041***	-0.049***	-0.056***	-0.046*	-0.058***	-0.059***
	(-0.776)	(-3.014)	(-4.154)	(-4.555)	(-6.332)	(-1.727)	(-5.956)	(-6.270)
Constant	0.082	0.815***	0.410***	0.546***	0.505***		0.911***	0.477***
	(0.429)	(5.835)	(3.408)	(4.396)	(5.568)		(7.393)	(5.216)
Industry Fixed-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
First-stage F-stat p-value	0	0	0	0	0	0	0	4.92e-06
Hansen J-stat p-value	0.908	0.00131	0.323	0.0156	0.256	0.323	0.0256	0.348
Observations	8,436	12,578	14,908	14,162	22,548	4,344	17,833	17,539
R^2	0.102	0.150	0.180	0.171	0.136	0.165	0.188	0.156

* significant at 10%; ** significant at 5%; *** significant at 1%.

Panel E - Beta Gap

	(1) Small firms	(2) Large firms	(3) Low payout firms	(4) High payout firms	(5) Non-rated firms	(6) Rated firms	(7) High Beta firms	(8) Low Beta firms
Beta Gap	-0.006	-0.005	-0.004	-0.007	-0.009**	-0.006	-0.023***	0.018***
	(-1.342)	(-0.795)	(-1.154)	(-1.521)	(-2.512)	(-0.456)	(-3.221)	(2.648)
Profitability	0.073***	0.345***	0.209***	0.071	0.090***	-0.065	0.121***	0.114***
	(2.870)	(3.855)	(7.636)	(1.577)	(3.699)	(-0.285)	(3.579)	(3.612)
Tangibility	-0.022	-0.013	0.000	0.014	-0.000	0.012	-0.006	-0.015
	(-0.843)	(-0.328)	(0.014)	(0.447)	(-0.013)	(0.138)	(-0.178)	(-0.634)
Size	0.063***	0.005	0.052***	0.044***	0.051***	-0.013	0.040***	0.053***
	(10.153)	(0.525)	(15.759)	(10.716)	(15.021)	(-0.561)	(10.616)	(15.957)
Networth	-0.107***	-0.140***	-0.118***	-0.129***	-0.113***	-0.149*	-0.124***	-0.125***
	(-6.932)	(-3.966)	(-7.715)	(-5.606)	(-8.106)	(-1.753)	(-6.914)	(-7.234)
Q	-0.030***	-0.084***	-0.047***	-0.057***	-0.050***	-0.063***	-0.052***	-0.055***
	(-12.064)	(-13.771)	(-18.018)	(-15.315)	(-22.386)	(-4.381)	(-16.254)	(-20.128)
IndSalesVol	0.280	-0.315	0.106	-0.699***	-0.155	-0.098	-0.326	-0.342*
	(1.117)	(-0.906)	(0.496)	(-2.748)	(-0.834)	(-0.161)	(-1.048)	(-1.782)
ProfitVol	-0.151*	-0.289	-0.336***	-0.225*	-0.121*	-0.473	-0.369***	-0.108
	(-1.845)	(-1.570)	(-4.237)	(-1.884)	(-1.688)	(-1.027)	(-3.920)	(-1.210)
Age	-0.016	-0.021*	-0.030***	-0.037***	-0.048***	0.001	-0.037***	-0.051***
	(-1.634)	(-1.752)	(-3.808)	(-3.833)	(-6.775)	(0.027)	(-4.154)	(-6.632)
Constant	0.139***	0.806***	0.350***	0.493***	0.398***		0.457***	0.521***
	(3.068)	(9.401)	(9.683)	(11.084)	(11.950)		(9.939)	(14.698)
Industry Fixed-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
First-stage F-stat p-value	0	0	0	0	0	0	0	0
Hansen J-stat p-value	0.842	0.508	0.247	0.267	0.588	0.816	0.966	0.350
Observations	10,900	11,701	18,025	13,394	25,666	3,479	14,405	23,080
R^2	0.090	0.118	0.165	0.145	0.119	0.118	0.167	0.156

* significant at 10%; ** significant at 5%; *** significant at 1%.

Panel F - Beta Cash Flow

	(1) Small firms	(2) Large firms	(3) Low payout firms	(4) High payout firms	(5) Non-rated firms	(6) Rated firms	(7) High Beta firms	(8) Low Beta firms
Beta Cash Flow	-0.011**	-0.012**	-0.009**	-0.008*	-0.007**	-0.003	-0.021***	0.003
	(-2.522)	(-1.967)	(-2.325)	(-1.786)	(-2.137)	(-0.248)	(-2.951)	(0.519)
Profitability	0.073***	0.346***	0.208***	0.073	0.092***	-0.067	0.143***	0.122***
	(2.902)	(3.872)	(7.620)	(1.624)	(3.790)	(-0.293)	(4.325)	(3.697)
Tangibility	-0.020	-0.011	0.001	0.016	0.003	0.011	0.016	-0.034
	(-0.777)	(-0.292)	(0.063)	(0.500)	(0.148)	(0.132)	(0.523)	(-1.366)
Size	0.063***	0.006	0.052***	0.044***	0.051***	-0.013	0.038***	0.055***
	(10.175)	(0.596)	(15.881)	(10.709)	(14.977)	(-0.558)	(10.191)	(15.974)
Networth	-0.106***	-0.142***	-0.118***	-0.129***	-0.114***	-0.148*	-0.120***	-0.131***
	(-6.894)	(-4.033)	(-7.727)	(-5.620)	(-8.162)	(-1.750)	(-6.678)	(-7.436)
Q	-0.030***	-0.084***	-0.047***	-0.057***	-0.050***	-0.062***	-0.056***	-0.052***
	(-12.052)	(-13.871)	(-18.004)	(-15.434)	(-22.428)	(-4.419)	(-17.823)	(-18.378)
IndSalesVol	0.274	-0.330	0.102	-0.715***	-0.149	-0.081	0.269	-0.461**
	(1.089)	(-0.950)	(0.480)	(-2.815)	(-0.802)	(-0.134)	(0.936)	(-2.419)
ProfitVol	-0.145*	-0.265	-0.328***	-0.229*	-0.124*	-0.490	-0.364***	-0.071
	(-1.770)	(-1.436)	(-4.147)	(-1.921)	(-1.725)	(-1.049)	(-3.909)	(-0.760)
Age	-0.016	-0.022*	-0.029***	-0.037***	-0.048***	0.001	-0.036***	-0.050***
	(-1.572)	(-1.808)	(-3.788)	(-3.848)	(-6.748)	(0.020)	(-4.007)	(-6.291)
Constant	0.136***	0.799***	0.346***	0.493***	0.396***		0.428***	0.498***
	(2.980)	(9.322)	(9.590)	(11.083)	(11.877)		(8.852)	(13.829)
Industry Fixed-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prob ¿ F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hansen	0.168	0.487	0.117	0.148	0.0119	0.408	0.0258	0.948
Observations	10,900	11,701	18,025	13,394	25,666	3,479	15,122	22,363
R^2	0.091	0.118	0.166	0.146	0.119	0.118	0.167	0.155

* significant at 10%; ** significant at 5%; *** significant at 1%.

Panel G - Industry Betas

	(1) Small firms	(2) Large firms	(3) Low payout firms	(4) High payout firms	(5) Non-rated firms	(6) Rated firms	(7) High Beta firms	(8) Low Beta firms
Beta KMV (Industry)	-0.022**	-0.021*	-0.022***	-0.025***	-0.025***	0.008	-0.032***	0.003
	(-2.466)	(-1.695)	(-2.831)	(-2.612)	(-3.736)	(0.340)	(-3.197)	(0.175)
Profitability	0.033	0.381***	0.150***	0.052	0.055**	0.444*	0.078**	0.113***
	(1.186)	(4.039)	(4.960)	(1.066)	(2.042)	(1.673)	(2.542)	(2.924)
Tangibility	0.034	-0.009	0.048**	0.059*	0.076***	0.006	0.089***	0.017
	(1.301)	(-0.204)	(1.978)	(1.797)	(3.316)	(0.063)	(3.636)	(0.625)
Size	0.062***	-0.007	0.045***	0.034***	0.042***	-0.003	0.038***	0.039***
	(8.538)	(-0.621)	(11.787)	(7.247)	(10.674)	(-0.119)	(10.528)	(9.576)
Networth	-0.097***	-0.116***	-0.112***	-0.111***	-0.112***	-0.096	-0.107***	-0.117***
	(-5.535)	(-2.882)	(-6.356)	(-4.527)	(-6.850)	(-1.059)	(-6.234)	(-5.396)
Q	-0.028***	-0.079***	-0.043***	-0.055***	-0.047***	-0.067***	-0.052***	-0.051***
	(-10.002)	(-11.982)	(-14.320)	(-13.828)	(-18.058)	(-4.271)	(-18.150)	(-14.339)
IndSalesVol	0.332	0.321	0.149	0.079	0.208	0.503	0.251	0.006
	(1.286)	(0.964)	(0.738)	(0.294)	(1.130)	(0.756)	(1.347)	(0.031)
ProfitVol	-0.047	-0.029	-0.175**	-0.120	0.002	0.239	-0.186**	0.040
	(-0.499)	(-0.146)	(-2.040)	(-0.915)	(0.025)	(0.471)	(-2.209)	(0.370)
Age	-0.015	-0.041***	-0.036***	-0.051***	-0.051***	-0.042	-0.047***	-0.055***
	(-1.377)	(-3.015)	(-4.253)	(-4.824)	(-6.382)	(-1.567)	(-5.677)	(-6.066)
Constant	0.147***	0.747***	0.333***	0.438***	0.355***	0.647***	0.399***	0.410***
	(3.190)	(8.633)	(9.333)	(9.707)	(10.377)	(2.877)	(11.196)	(10.499)
Industry Fixed-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,245	9,029	13,742	10,074	19,329	2,858	14,310	14,111
R^2	0.108	0.144	0.173	0.169	0.144	0.154	0.165	0.167

* significant at 10%; ** significant at 5%; *** significant at 1%.

Table AIII: Variations of Table VII - Aggregate risk exposure and the cost of credit lines

This table reports regressions of line of credit spreads and fees on systematic risk exposure and controls. *LIBOR* is the level of the LIBOR (in percentage) in the quarter in which a deal was initiated, for each firm. *New LC* is the total size of deals initiated in a firm-year, scaled by assets. All other variables are described in Table 1. All proxies for beta are instrumented with their first two lags. Robust z-statistics presented in parenthesis.

Panel A - All-in drawn spread

	(1)	(2)	(3)	(4)	(5)	(6)
Beta Asset	0.064					
	(0.710)					
Beta Cash		0.144***				
		(3.121)				
Beta Bank			-0.014			
			(-0.044)			
Beta Equity				0.285***		
				(3.980)		
Beta Cash Flow					-0.011	
					(-1.203)	
Beta KMV (Industry)						0.055***
						(3.832)
Libor	-0.060*	-0.012	-0.001	-0.029	-0.028	-0.003
	(-1.681)	(-0.614)	(-0.023)	(-1.224)	(-1.288)	(-0.126)
New LC	-0.198***	-0.251***	-0.245***	-0.220***	-0.236***	-0.253***
	(-5.671)	(-3.802)	(-3.393)	(-2.816)	(-3.844)	(-3.830)
Profitability	-1.808***	-1.912***	-1.915***	-1.692***	-1.847***	-1.849***
	(-6.259)	(-15.472)	(-11.796)	(-10.786)	(-14.408)	(-14.874)
Tangibility	0.173**	0.170***	0.127*	0.143**	0.142***	0.166***
	(1.971)	(3.612)	(1.883)	(2.445)	(2.606)	(3.556)
Size	-0.384***	-0.378***	-0.364***	-0.382***	-0.369***	-0.377***
	(-24.566)	(-59.121)	(-32.364)	(-46.023)	(-52.748)	(-57.769)
Networth	-1.294***	-1.135***	-1.182***	-1.117***	-1.108***	-1.132***
	(-14.199)	(-24.254)	(-17.811)	(-19.411)	(-22.252)	(-23.772)
Q	-0.179***	-0.127***	-0.140***	-0.154***	-0.123***	-0.119***
	(-6.602)	(-12.795)	(-8.260)	(-11.156)	(-12.134)	(-11.921)
IndSalesVol	0.331	0.059	0.228	0.096	0.291	0.037
	(0.445)	(0.183)	(0.491)	(0.206)	(0.613)	(0.113)
ProfitVol	2.543***	1.516***	2.623***	1.491***	1.773***	1.702***
	(4.148)	(6.085)	(5.952)	(4.074)	(6.784)	(7.026)
Constant	4.747***	5.085***	4.806***	4.783***	4.970***	5.091***
	(16.041)	(44.888)	(22.149)	(21.244)	(36.975)	(68.693)
First-stage F-stat p-value	0.000	0.000	0.001	0.000	0.000	
Hansen J-stat p-value	0.0750	0.253	0.143	0.0716	0.349	
Observations	2,448	8,981	6,783	7,386	7,438	8,527
R^2	0.578	0.542	0.551	0.547	0.561	0.538

* significant at 10%; ** significant at 5%; *** significant at 1%.

Panel B - Undrawn Fee

	(1)	(2)	(3)	(4)	(5)	(6)
Beta Asset	0.014					
	(0.848)					
Beta Cash		0.015*				
		(1.674)				
Beta Bank			0.099			
			(1.417)			
Beta Equity				0.079***		
				(5.060)		
Beta Cash Flow					-0.003	
					(-1.541)	
Beta KMV (Industry)						0.010***
						(3.491)
Libor	-0.002	0.003	0.003	-0.002	0.002	0.003
	(-0.270)	(0.884)	(0.526)	(-0.349)	(0.439)	(0.730)
New LC	-0.026***	-0.024***	-0.022***	-0.013**	-0.023***	-0.023***
	(-11.256)	(-4.191)	(-5.477)	(-2.550)	(-3.765)	(-5.905)
Profitability	-0.227***	-0.174***	-0.105***	-0.095***	-0.157***	-0.185***
	(-3.240)	(-7.325)	(-3.194)	(-2.919)	(-6.300)	(-7.824)
Tangibility	0.037**	0.050***	0.033**	0.034***	0.032***	0.058***
	(2.069)	(5.143)	(2.322)	(2.680)	(2.788)	(5.936)
Size	-0.063***	-0.045***	-0.047***	-0.048***	-0.043***	-0.044***
	(-19.358)	(-30.805)	(-21.042)	(-27.348)	(-27.042)	(-30.337)
Networth	-0.247***	-0.174***	-0.191***	-0.174***	-0.169***	-0.174***
	(-13.408)	(-19.701)	(-14.691)	(-15.162)	(-17.401)	(-19.442)
Q	-0.038***	-0.025***	-0.033***	-0.032***	-0.024***	-0.023***
	(-6.278)	(-12.424)	(-10.616)	(-12.036)	(-11.971)	(-11.760)
IndSalesVol	0.007	-0.165**	-0.081	-0.060	-0.110	-0.153**
	(0.047)	(-2.496)	(-0.847)	(-0.619)	(-1.163)	(-2.222)
ProfitVol	0.306**	0.166***	0.167*	0.022	0.174***	0.160***
	(2.518)	(3.470)	(1.765)	(0.296)	(3.357)	(3.435)
Constant	0.782***	0.707***	0.694***	0.626***	0.682***	0.711***
	(15.007)	(33.081)	(18.656)	(15.905)	(24.990)	(47.146)
First-stage F-stat p-value	0.000	0.000	0.005	0.000	0.000	
Hansen J-stat p-value	0.435	0.436	0.675	0.902	0.859	
Observations	2,252	7,820	5,979	6,490	6,465	7,411
R^2	0.524	0.361	0.390	0.385	0.372	0.352

* significant at 10%; ** significant at 5%; *** significant at 1%.

Table AIV: Variation of Table X - Aggregate Risk and Banks' Liquidity Constraints

This table reports regressions of bank stock return volatility on bank exposure to undrawn corporate credit lines, and other bank-level and macroeconomic variables. The variable definitions follow Gatev, Schuermann, and Strahan (2009). The dependent variable is the annualized monthly average of bank squared returns. $Commitments_{t-1}$ is the lagged ratio of undrawn credit lines for each bank, divided by the sum of undrawn credit lines plus other loans. Retail loan commitments are excluded from both the numerator and denominator. $Deposit\ Base_{t-1}$ is the lagged ratio of transaction deposits to total deposits.Paper-Bill spread is the spread on 3-month commercial paper rates over treasuries.High (Low)-VIX months are those with the 10% highest (lowest) values of VIX in the sample. T-statistics are reported in parenthesis. Standard errors are clustered by bank.

Panel A - cutoff of 10%

	Dependent variable: *Annualized monthly average of bank squared returns*							
	High VIX periods				Low VIX periods			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$Commitments_{t-1}$	0.559***	0.552**	0.549**	0.781**	-0.091	0.033	-0.117	0.109
	(2.728)	(2.238)	(2.198)	(2.199)	(-0.361)	(0.118)	(-0.404)	(0.241)
$Commitments_{t-1}$ ×				-1.606				-1.129
$Deposit\ base_{t-1}$				(-1.015)				(-0.814)
$Deposit\ base_{t-1}$				-0.328				0.045
				(-0.684)				(0.098)
$Log(VIX)_{t-1}$		1.486***	1.483***	1.447***		0.922***	0.907***	0.943***
		(12.403)	(12.342)	(12.149)		(3.207)	(3.142)	(3.286)
Paper bill spread		-0.249**	-0.245**	-0.171		-0.141	-0.190	-0.078
		(-2.224)	(-2.183)	(-1.597)		(-0.740)	(-1.002)	(-0.404)
Yield on 3-month T-bill		0.125***	0.126***	0.127***		-0.090***	-0.079***	-0.090***
		(7.970)	(7.761)	(7.848)		(-3.892)	(-3.283)	(-3.888)
Log of assets		-0.032	-0.028	-0.028		-0.068*	-0.072*	-0.083**
		(-1.121)	(-0.909)	(-0.967)		(-1.949)	(-1.973)	(-2.263)
$(Cash + securities)/assets$			0.030	0.049			0.451	0.449
			(0.144)	(0.246)			(1.385)	(1.381)
$Equity/assets$			0.308	0.199			-0.293	-0.371
			(0.807)	(0.492)			(-0.839)	(-0.981)
Constant	-1.247***	-6.327***	-6.419***	-6.245***	-1.578***	-2.287**	-2.296**	-2.209**
	(-20.656)	(-11.798)	(-9.950)	(-9.938)	(-22.007)	(-2.472)	(-2.270)	(-2.228)
Observations	862	862	862	862	728	728	728	728
R^2	0.033	0.280	0.281	0.299	0.001	0.077	0.098	0.105

* significant at 10%; ** significant at 5%; *** significant at 1%.

Panel B - Cutoff of 25%

	Dependent variable: *Annualized monthly average of bank squared returns*							
	High VIX periods				Low VIX periods			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$Commitments_{t-1}$	0.373	0.440*	0.444*	0.838**	-0.089	0.044	-0.059	0.025
	(1.619)	(1.658)	(1.661)	(2.094)	(-0.466)	(0.224)	(-0.266)	(0.063)
$Commitments_{t-1} \times$				-2.418				-0.425
$Deposit\ base_{t-1}$				(-1.422)				(-0.343)
$Deposit\ base_{t-1}$				-0.024				0.218
				(-0.049)				(0.577)
$Log(VIX)_{t-1}$		0.574***	0.582***	0.603***		0.506***	0.514***	0.495***
		(6.411)	(6.600)	(6.853)		(3.038)	(3.247)	(3.314)
Paper bill spread		0.237***	0.231***	0.204***		-0.239***	-0.218***	-0.223***
		(4.244)	(4.021)	(3.444)		(-2.967)	(-2.775)	(-2.868)
Yield on 3-month T-bill		0.041***	0.044***	0.056***		-0.031*	-0.024	-0.022
		(3.759)	(3.530)	(3.980)		(-1.893)	(-1.451)	(-1.341)
Log of assets		-0.034	-0.031	-0.034		-0.067***	-0.069***	-0.067**
		(-1.218)	(-1.086)	(-1.255)		(-3.002)	(-2.864)	(-2.514)
$(Cash + securities)/assets$			0.013	0.026			0.288	0.271
			(0.057)	(0.122)			(1.099)	(1.024)
$Equity/assets$			0.392	0.365			-0.585	-0.548
			(1.056)	(1.067)			(-1.381)	(-1.434)
Constant	-1.191***	-2.898***	-3.017***	-3.078***	-1.552***	-1.579***	-1.626***	-1.655***
	(-21.243)	(-5.338)	(-5.038)	(-5.546)	(-27.410)	(-2.816)	(-2.861)	(-2.850)
Observations	1,945	1,945	1,945	1,945	2,031	2,031	1,973	1,973
R^2	0.013	0.114	0.116	0.129	0.001	0.062	0.077	0.078

* significant at 10%; ** significant at 5%; *** significant at 1%.

Table AVI: Variations of Table XII - Credit line revocations and aggregate risk

This table reports regressions of total credit line on covenant violations, firm characteristics and VIX. The sample is restricted to firm-years in which a credit line was presented in year t-1. The dependent variable is *Total LC-to-Assets*, the ratio of total credit lines to lagged assets. All regressions include firm fixed effects. The variables are described in Table 1, Panel B (Sufi's sample). The data required to compute maturing credit lines and credit line initiations is drawn from LPC-Deal Scan, described in Table 1, Panel A

Panel A - Total LC-to-Assets

	Dependent Variables: *Total LC-to-Assets*				
	(1)	(2)	(3)	(4)	(5)
$Covenant\ Violation_{t-1}$	-0.040**	-0.040**	-0.124	-0.037**	-0.051**
	(-2.278)	(-2.024)	(-0.700)	(-2.138)	(-2.037)
$EBITDA_{t-1}/Assets_{t-1}$	0.157***	0.157**	0.155**	0.099*	0.100*
	(2.897)	(2.472)	(2.446)	(1.924)	(1.948)
$Debt_{t-1}/Assets_{t-1}$	0.017	0.017	0.016	-0.038	-0.045
	(0.106)	(0.091)	(0.090)	(-0.228)	(-0.270)
$Networth_{t-1}/Assets_{t-1}$	0.006	0.005	0.006	-0.110	-0.115
	(0.044)	(0.036)	(0.041)	(-1.104)	(-1.139)
Q_{t-1}	0.017**	0.017**	0.017**	0.012	0.012
	(2.233)	(1.988)	(1.983)	(1.530)	(1.538)
$Size_{t-1}$	-0.158***	-0.158***	-0.157***	-0.125***	-0.125***
	(-4.550)	(-3.902)	(-3.905)	(-3.588)	(-3.595)
Vix_{t-1}		-0.000	-0.000		
		(-0.038)	(-0.159)		
$VIX_{t-1} * Covenant\ Violation_{t-1}$			0.003		
			(0.489)		
$Beta\ KMV_{t-1}$				-0.002	-0.004
				(-0.308)	(-0.557)
$Beta\ KMV_{t-1} * Covenant\ Violation_{t-1}$					0.017
					(1.167)
Constant	1.050***	1.050***	1.054***	0.967***	0.973***
	(6.401)	(5.804)	(5.824)	(5.532)	(5.558)
Year Fixed-effect	Yes	No	No	Yes	Yes
Firm Fixed-effect	Yes	Yes	Yes	Yes	Yes
Observations	1,206	1,206	1,206	1,010	1,010
R-squared	0.183	0.647	0.647	0.155	0.157

* significant at 10%; ** significant at 5%; *** significant at 1%.

Panel B - Using Beta instead of VIX

	Dependent Variables:					
	Revocation Total		*Revocation Dummy Total*	*Revocation Unused*		*Revocation Dummy Unused*
	(1)	(2)	(3)	(4)	(5)	(6)
Covenant Violation$_{t-1}$	0.039*	0.036*	0.205***	0.001	0.005	0.106*
	(1.813)	(1.683)	(2.963)	(0.061)	(0.276)	(1.725)
Beta KMV$_{t-1}$	-0.007	-0.006	0.005	-0.006	-0.003	-0.036
	(-1.164)	(-0.971)	(0.239)	(-0.986)	(-0.442)	(-1.617)
$EBITDA_{t-1}/Assets_{t-2}$	0.048	-0.008	0.066	-0.084	-0.069	-0.201
	(0.561)	(-0.111)	(0.292)	(-1.117)	(-0.822)	(-0.847)
$Debt_{t-1}/Assets_{t-1}$	0.343**	0.222	0.374	-0.022	-0.130	-0.212
	(2.461)	(1.380)	(0.965)	(-0.174)	(-0.919)	(-0.461)
$Networth_{t-1}/Assets_{t-1}$	0.125	0.130	-0.043	-0.023	-0.015	-0.159
	(1.041)	(0.918)	(-0.127)	(-0.190)	(-0.100)	(-0.398)
Q_{t-1}	-0.019***	-0.013**	-0.028	-0.011*	-0.012*	0.015
	(-2.773)	(-2.114)	(-1.365)	(-1.730)	(-1.891)	(0.579)
$Size_{t-1}$	-0.075***	-0.044*	-0.134*	0.010	-0.000	-0.117*
	(-2.945)	(-1.672)	(-1.667)	(0.514)	(-0.002)	(-1.775)
Constant	-0.051***	-0.040***	0.288***	-0.047***	-0.038***	0.408***
	(-6.178)	(-4.761)	(10.969)	(-5.927)	(-4.826)	(14.003)
Observations	756	608	608	756	608	608
R^2	0.039	0.026	0.038	0.008	0.012	0.022

* significant at 10%; ** significant at 5%; *** significant at 1%.

Panel C - Adding VIX interactions

	Dependent Variables:					
	Revocation Total		*Revocation Dummy Total*	*Revocation Unused*		*Revocation Dummy Unused*
	(1)	(2)	(3)	(4)	(5)	(6)
$Covenant\ Violation_{t-1}$	-0.068	0.142	0.716	-0.044	0.168	0.520
	(-0.431)	(0.784)	(1.253)	(-0.333)	(1.209)	(0.859)
VIX_{t-1}	0.001	0.001	0.009*	0.001	0.000	0.000
	(0.477)	(0.598)	(1.698)	(0.350)	(0.116)	(0.048)
$VIX_{t-1} * Coven.\ Violations_{t-1}$	0.004	-0.004	-0.020	0.002	-0.006	-0.016
	(0.728)	(-0.581)	(-0.933)	(0.408)	(-1.128)	(-0.719)
$EBITDA_{t-1}/Assets_{t-2}$	0.093	0.050	0.074	-0.022	-0.005	-0.153
	(1.217)	(0.686)	(0.384)	(-0.319)	(-0.071)	(-0.762)
$Debt_{t-1}/Assets_{t-1}$	0.339***	0.251**	0.546	0.049	-0.033	0.060
	(3.203)	(2.204)	(1.642)	(0.485)	(-0.299)	(0.143)
$Networth_{t-1}/Assets_{t-1}$	0.082	0.069	0.059	-0.029	-0.047	-0.084
	(0.847)	(0.633)	(0.224)	(-0.274)	(-0.395)	(-0.256)
Q_{t-1}	-0.015**	-0.010	-0.041**	-0.004	-0.007	-0.003
	(-2.242)	(-1.545)	(-2.018)	(-0.729)	(-1.049)	(-0.113)
$Size_{t-1}$	-0.086***	-0.057**	-0.105	-0.001	-0.009	-0.078
	(-3.830)	(-2.336)	(-1.462)	(-0.035)	(-0.468)	(-1.359)
Constant	-0.084	-0.084	0.089	-0.068*	-0.049	0.369***
	(-1.598)	(-1.365)	(0.704)	(-1.682)	(-1.021)	(2.765)
Observations	877	700	700	877	700	700
R^2	0.039	0.026	0.043	0.005	0.004	0.011

* significant at 10%; ** significant at 5%; *** significant at 1%.

Panel D - Adding Beta interactions

	Dependent Variables:					
	Revocation Total		*Revocation Dummy Total*	*Revocation Unused*		*Revocation Dummy Unused*
	(1)	(2)	(3)	(4)	(5)	(6)
Covenant Violation$_{t-1}$	0.053**	0.045**	0.298***	0.005	0.005	0.101
	(2.267)	(2.035)	(3.535)	(0.292)	(0.267)	(1.345)
Beta KMV$_{t-1}$	-0.005	-0.005	0.022	-0.005	-0.003	-0.037
	(-0.673)	(-0.608)	(0.947)	(-0.736)	(-0.376)	(-1.599)
Beta KMV$_{t-1}$ $*$ *Coven. Violation*$_{t-1}$	-0.018	-0.011	-0.116*	-0.005	0.001	0.006
	(-0.961)	(-0.569)	(-1.918)	(-0.300)	(0.058)	(0.089)
$EBITDA_{t-1}/Assets_{t-2}$	0.045	-0.010	0.045	-0.085	-0.068	-0.200
	(0.523)	(-0.135)	(0.197)	(-1.123)	(-0.818)	(-0.836)
$Debt_{t-1}/Assets_{t-1}$	0.349**	0.224	0.397	-0.020	-0.130	-0.214
	(2.522)	(1.398)	(1.027)	(-0.160)	(-0.921)	(-0.463)
$Networth_{t-1}/Assets_{t-1}$	0.126	0.129	-0.059	-0.023	-0.014	-0.158
	(1.054)	(0.901)	(-0.173)	(-0.186)	(-0.099)	(-0.396)
Q_{t-1}	-0.020***	-0.014**	-0.033	-0.011*	-0.012*	0.015
	(-2.813)	(-2.119)	(-1.466)	(-1.734)	(-1.864)	(0.603)
$Size_{t-1}$	-0.075***	-0.044*	-0.137*	0.010	-0.000	-0.117*
	(-2.964)	(-1.689)	(-1.711)	(0.510)	(-0.001)	(-1.775)
Constant	-0.053***	-0.041***	0.273***	-0.048***	-0.038***	0.409***
	(-5.903)	(-4.398)	(10.341)	(-5.496)	(-4.255)	(13.989)
Observations	756	608	608	756	608	608
R^2	0.040	0.027	0.044	0.009	0.012	0.022

* significant at 10%; ** significant at 5%; *** significant at 1%.