The Removal of Credit Ratings From Capital Regulation: Implications for Systemic Risk

Kathleen Weiss Hanley[1] and Stanislava Nikolova[2]

[1]University of Maryland
[2]University of Nebraska-Lincoln

CSRA
12/12/2013

Insurance Company Designation as Non-Bank SIFI

The Council has considered the potential effects on other large financial firms of Prudential's asset fire sales based on the size, leverage, asset composition, and liquidity of Prudential's assets. A forced liquidation of a significant portion of Prudential's assets, possibly including separate account assets, could cause significant disruptions to key markets including *corporate debt and asset-backed securities markets*, particularly during a period of overall stress in the financial services industry and in a weak macroeconomic environment when liquidity dries up and price swings can be magnified. (emphasis added)

-Basis for the Financial Stability Oversight Council's Final Determination Regarding Prudential Financial, Inc.

Motivation

- Massive downgrades of RMBS and CMBS and subsequent impairment of the carrying value of assets for insurers
  - In 2009 alone, almost 30% of RMBS par value held by insurers was downgraded from IG to non-IG
  - In 2008 and 2009, insurers wrote-down $30b in asset value and saved $4.8b in regulatory capital
  - By 2012, the cumulative difference between write-downs and capital saved narrowed to $10b
- In response, NAIC removed credit ratings from statutory capital and accounting treatment rules for RMBS (2009) and CMBS (2010) only
- Examine effect of regulatory change on one of three transmission channels of systemic risk considered by the FSOC
  - *Disruptions caused by the liquidation of a nonbank financial company's assets*
- Experience of NAIC can inform regulators who must remove NRSRO ratings from regulation under Dodd-Frank because of "systemic importance"

Regulatory Change

Capital charges under credit ratings

- One capital charge per security based only on credit rating

SVO_{CR}	S&P Rating Level	Life RBC Charge	P&C RBC Charge
1	A- and above	0.4%	0.3%
2	BBB+, BBB, BBB-	1.3%	1.0%
3	BB+, BB, BB-	4.6%	2.0%
4	B+, B, B-	10.0%	4.5%
5	CCC+, CCC, CCC-	23.0%	10.0%
6	CC, C, D	30.0%	30.0%

- Regulatory change to valuation-based capital charges
  - Six different capital charges (SVO_V) for each security each based on book carrying value
  - Impaired assets have lower capital charges
  - Depending on carrying value, different insurers holding the same security may have different capital charges

Comparison of SVO_{CR} and SVO_V

- SVO_V is lower than SVO_{CR}: capital savings
- SVO_{CR} is lower than SVO_V: capital increase

		SVO_V						Total
SVO_{CR}	Ratings	1	2	3	4	5	6	SVO_{CR}
1	A- and above	17,192	1,463	585	350	125	151	19,866
2	BBB+, BBB, BBB-	1,403	217	135	147	42	66	2,010
3	BB+, BB, BB-	1,188	126	148	164	103	38	1,767
4	B+, B, B-	1,485	118	162	226	130	71	2,192
5	CCC+, CCC, CCC-	4,263	300	554	876	499	525	7,017
6	CC, C, D	587	17	17	28	20	162	831
	Total SVO_V	26,118	2,241	1,601	1,791	919	1,013	33,683

Probability of Selling Downgraded Securities (2009-2012)

Variables	All Fixed Income	Corporate Debt Only	RMBS and CMBS only
ΔRBC Ratio$_t$	-0.078***	-0.029	-0.065***
	(-4.37)	(-0.76)	(-2.85)
LnRBC Ratio	0.059	0.165*	0.025
	(1.25)	(1.78)	(0.42)
LnTA	-0.062***	-0.072***	-0.060***
	(-4.71)	(-3.12)	(-3.50)
PC	-0.217***	-0.430***	-0.090
	(-3.23)	(-3.45)	(-1.10)
% Risky Assets	-1.865*	-3.079**	-1.456
	(-1.70)	(-2.15)	(-1.04)
LnMaturity	-0.540***	0.067	-0.265***
	(-15.67)	(1.23)	(-3.48)
LnIssue Size	0.528***	0.762***	0.395***
	(23.00)	(6.11)	(16.94)
Constant	-1.430*	-17.974***	-1.031*
	(-1.65)	(-14.51)	(-1.78)
Observations	9,133	2,085	6,252
Pseudo R^2	0.533	0.469	0.226

Probability of Gains Trading Corporate Bonds (Life Only)

Variables	2004-2012	2009-2012
UG Rank	-0.184***	-0.255***
	(-8.20)	(-8.12)
Crisis	-0.117***	
	(-2.68)	
UG Rank x Crisis	0.337***	
	(12.44)	
ΔRBC Ratio$_t$	0.029**	0.014
	(2.05)	(0.97)
ΔRBC Ratio$_t$ x UG Rank	-0.059***	-0.036*
	(-2.64)	(-1.76)
ABS Exposure	0.960***	1.626***
	(4.75)	(3.93)
Low RBC Ratio	0.039	0.049
	(1.47)	(0.94)
% Risky Assets	0.210*	0.275
Constant	-0.980***	-0.573**
	(-5.81)	(-2.14)
Observations	4,874,905	1,771,241
Pseudo R^2	0.0502	0.0594

Probability of External Financing (2005-2012)

Variables	Life	P&C
Crisis	-0.012	-0.088*
	(-0.17)	(-1.93)
Reg Change	-0.229***	0.071
	(-3.00)	(1.57)
ΔRBC Ratio$_t$	-0.110***	-0.016
	(-2.81)	(-0.41)
LnRBC Ratio	-0.116***	-0.142***
	(-3.29)	(-8.47)
IndNegNI	0.582***	0.376***
	(11.35)	(11.27)
Ind%Annty	0.177**	
	(2.55)	
Constant	-2.517***	-1.226***
	(-8.86)	(-5.51)
Observations	7,699	20,791
Pseudo R^2	0.105	0.0672

Proportion of Purchases That Are Non-IG

Variables	RMBS 2005-2012	RMBS 2009-2012	CMBS 2005-2012	CMBS 2010-2012	Corporate Bonds 2005-2012	Corporate Bonds 2010-2012
Reg change (RMBS)	0.152***				0.483***	
	(4.52)				(2.92)	
Reg change (CMBS)			0.009**			
			(2.07)			
ΔRBC Ratio$_t$		0.404***		0.015*		-0.078
		(3.13)		(1.76)		(-1.14)
LnTA	0.111**	0.270**	0.007**	0.016**	0.304	0.342
	(2.16)	(2.10)	(2.52)	(2.58)	(1.51)	(1.56)
LowRBC	0.060	0.249*	0.001	0.001	0.274*	0.456*
	(1.05)	(1.66)	(0.16)	(0.11)	(1.80)	(1.77)
ROE	-0.000***	-0.000**	-0.000***	-0.000**	0.000***	0.000***
	(-5.73)	(-1.98)	(-2.80)	(-2.26)	(3.09)	(2.81)
LnCapitalSurplus	-0.042	-0.116	-0.003	-0.012*	0.202	0.227
	(-0.66)	(-0.73)	(-1.27)	(-1.88)	(0.83)	(0.86)
PC	-0.051	-0.002	0.000	-0.003	-1.353***	-1.410***
	(-1.29)	(-0.02)	(-0.11)	(-0.72)	(-4.23)	(-3.57)
Constant	-1.509***	-2.306***	-0.066***	-0.062**	-7.838***	-8.482***
	(-4.24)	(-2.89)	(-3.72)	(-2.27)	(-7.93)	(-6.34)
Observations	17,293	6,285	17,293	6,285	17,293	6,285
Adjusted R^2	0.018	0.036	0.002	0.009	0.052	0.053

Conclusion

- Although the regulatory change saved insurers required capital, it was accompanied by much larger write-downs in the asset values of RMBS and CMBS
- Insurance companies change investment and financing behavior when capital adequacy assessment is no longer based on credit ratings
  - Less likely to sell distressed RMBS and CMBS
  - Reduction in gains trading
  - Lowers need for external financing
- By reducing stress on the asset liquidation channel, removal of credit ratings may alleviate systemic risk
- However, widespread adoption could increase propensity for yield chasing which may counteract some of the effect