

Sovereign Default and Credit Default Swaps: The Role of Dealers' Liquidity Provision

Chaumont, Gordon, Sultanum and Tobin (2020)

Discussion by Juliana Salomao (UMN)

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This Paper

Goal:

- ▶ How do CDS and bond markets evolve with the economy?
- ▶ How is default risk is allocated across market participants?
- ▶ How does this markets shape default and debt decisions?

How they do it?

- ▶ Use DTCC data on positions to get new facts
- ▶ Build a model of sovereign default with bonds and CDS
- ▶ Sovereign Bonds and CDS are traded at OTC market and subject to search frictions

Empirical Results

- ▶ Large dealers on average hold negative (sell) positions on CDS
- ▶ Large dealers sell more protection when default risk increases

Figure 1: Correlation between Yield and Dealer Position

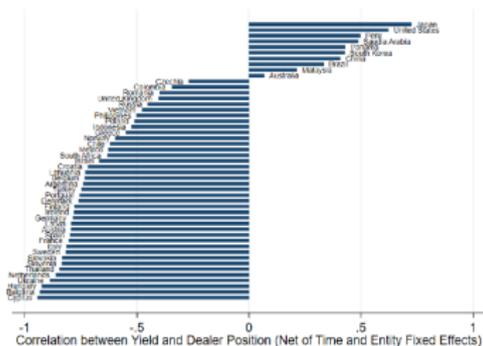
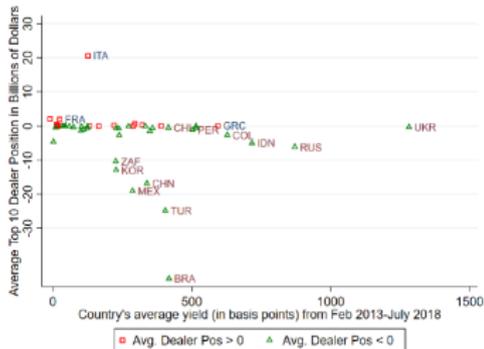


Figure 2: Average Yields versus Average Dealer Position by Country



Model Results: Standard sovereign default model + OTC

OTC model block:

- ▶ investors and dealers
- ▶ search frictions: entry costs + matching technology
- ▶ sequential matching problem: first bond then CDS
- ▶ limit in the investor short position on the bond

Results:

- ▶ yields/default probabilities increase, dealers tend to sell protection (why?)
- ▶ relaxing short selling constraint increases bond prices
- ▶ banning naked CDS has no impact in debt pricing (dealers are the only ones holding bonds)
- ▶ Ban on CDS decreases bond prices

Comments

1. Flush out model mechanism
2. Is the impact the model find quantitative relevant?
3. Is it really the CDS or is it the short selling constraint?
4. Is the asset allocation generated by the model reasonable?

Comments 1: What is the model Mechanism?

My guess:

- ▶ CDS is equal to artificially shorting the bond
- ▶ investors really want to short bond and hit the constraint
- ▶ CDS allows them to circumvent the constraint
- ▶ They pay large fees, there are more dealers
- ▶ More dealers increase bond prices
- ▶ negative correlation is mechanical: higher risk, want to short more, same constraint, more CDS

Question:

- ▶ Does the sequential OTC market does not matter at all?

Comments 2: Is the impact the model find quantitative relevant?

Table 5: Model comparison

Statistic	Data	Liquid	Liq. pol., OTC	Benchmark	Short Bonds	No CDS	No Naked CDS
Bond spread mean (%)	8.150	7.604	9.937	9.785	9.884	9.788	9.783
Bond spread std. (%)	4.430	3.349	3.463	3.426	3.495	3.423	3.428
Debt service to output ratio (%)	5.530	5.558	5.558	5.360	5.388	5.371	5.373
Bid-ask spread for bonds mean (%)	0.120	-	0.094	0.087	0.046	0.091	0.091
Bid-ask spread for bonds std. (%)	0.037	-	0.375	0.162	0.094	0.165	0.165
Bid-ask spread for CDS mean (%)	0.107	-	0.054	0.053	0.063	-	0.028
Bid-ask spread for CDS std. (%)	0.061	-	0.028	0.028	0.126	-	0.009
CDS-bond basis deviation mean (%)	-	-	0.148	0.140	0.109	-	0.049
CDS-bond basis deviation std. (%)	-	-	0.379	0.171	0.220	-	0.014
Agg. dealer bond position / GDP (%)	-	-	5.258	5.051	6.576	5.048	5.061
Agg. dealer CDS position / GDP (%)	-0.050	-	-0.180	-0.171	-0.132	-	0.034
Std. of agg. dealer CDS position / GDP (%)	0.050	-	0.234	0.234	0.200	-	0.080
Default probability (%) (full sample)	-	1.177	1.177	1.142	1.168	1.145	1.144
Reg. constant of agg dealer CDS / mean GDP * 1000 on spreads (b.p.)	3.993	-	4.836	4.838	4.192	-	1.866
Reg. coef. of agg dealer CDS / mean GDP * 1000 on spreads (b.p.)	-0.009	-	-0.007	-0.007	-0.006	-	-0.002
Reg. coef. of Δ agg dealer CDS / mean GDP on Δ spreads (b.p.)	-0.000	-	-0.006	-0.006	-0.005	-	-0.001
Corr. of Δ spreads and Δ agg. dealer CDS / mean GDP	-0.200	-	-0.963	-0.956	-0.939	-	-0.374
Corr. of YTM spreads and bond bid-ask spreads	0.688	-	0.116	0.277	0.176	0.293	0.294
Reg. coef. of YTM on bid-ask bond spreads	0.011	-	0.013	0.013	0.005	0.014	0.014

Comments 3: Is it really the CDS or is it the Short Selling Constraint?

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Reg. coef. of Δ agg dealer CDS / mean GDP on Δ spreads (b.p.)	-0.000	-	-0.006	-0.006	-0.005	-	-0.001
Corr. of Δ spreads and Δ agg. dealer CDS / mean GDP	-0.200	-	-0.963	-0.956	-0.939	-	-0.374
Corr. of YTM spreads and bond bid-ask spreads	0.688	-	0.116	0.277	0.176	0.293	0.294
Reg. coef. of YTM on bid-ask bond spreads	0.011	-	0.013	0.013	0.005	0.014	0.014

Comments 4: Is the asset allocation generated by the model reasonable?

- ▶ Naked Ban has no bite because:
 - ▶ Investors hold only short bond and CDS
 - ▶ Long bond is held by dealer
- ▶ Looking at the data: is this a reasonable result?

Conclusion

Nice project. But still very preliminary

- ▶ Authors need to fully pin down the mechanism and explain it
- ▶ Make sure it is quantitatively relevant