Heterogeneity in Credit Default Swaps Coverage

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Introduction

The total long-term liabilities combined for S&P 500 companies has increased three-fold from $1.7 trillion to $5.3 trillion in the past 18 years. The CDS market however has not followed the same pattern. Furthermore, 30% of the S&P 500 companies have never had CDS despite having long term debt.

Research Question

On an average, only 60% of the S&P 500 companies have credit default swap (CDS) contracts issued on their debt. Why?

We study the market for corporate CDS and show that the demand for CDS is causally related to the structure of bond ownership.

Theoretical Motivation

The main determining factor for a buyer to choose CDS is the perception of their exposure to the risk of the reference entity. We argue that the bond ownership structure of a company may explain the observed heterogeneity. We measure bond ownership structure along two dimensions:

- Breadth: Number of institutional investors holding the underlying bond
- Depth: Concentration of ownership measured using Herfindahl index

We formulate two rival hypothesis explaining the demand for CDS.

- **Limited diversification hypothesis**:
  - Highly concentrated less fragmented ownership spurs CDS demand due to limited diversification of risk
  - On the contrary if the ownership is atomistic and numerosity is high, the bond is widely spread with low concentration reducing the demand for CDS
- **Managerial influence hypothesis**:
  - Concentrated ownership can have more leverage on managers to control owners risk and thus do not have the need to buy insurance like CDS
  - On the other hand if the ownership is atomistic and each institution holds a small fraction, the individual owners are too small to influence the governance of the bond issuing firm. This causes an increase in demand for CDS

Main Results

The table represents result of set of probit regressions for quarterly panel data of S&P 500 companies during the years 2006-2008 and first two quarters of 2017.

- Primary predictor variables: Breadth and Depth
- Dependent variable: CDS (1 for companies having CDS, 0 otherwise)
- Significance at 10%,5% and 1% level is denoted by *, ** and *** respectively.

Table 1: Impact of Bond Ownership on CDS coverage

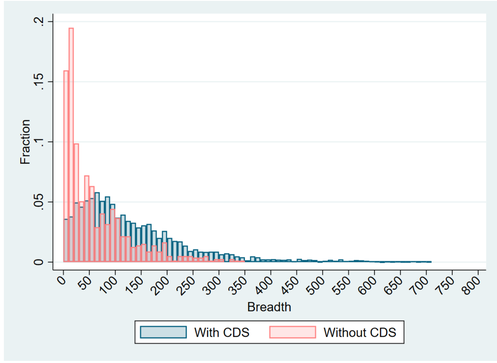
	(1) CDS	(2) CDS	(3) CDS	(4) CDS	(5) CDS
Breadth	0.008***	0.008***	0.009***	0.008***	0.008***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Depth	-0.749***	-0.952***	-0.522***	-0.844***	-0.706***
	(0.168)	(0.175)	(0.167)	(0.164)	(0.169)
			(0.020)		(0.021)
Firm Controls	NO	YES	YES	YES	YES
Constant	-0.940***	0.184	0.940***	-0.882***	-0.401
	(0.288)	(0.244)	(0.124)	(0.279)	(0.316)
Time FE	YES	YES	YES	YES	YES
Wald chi2	595.8	564.8	608.5	660.7	607.4
PseudoR^2	0.257	0.258	0.250	0.264	0.258

These results confirm the managerial influence hypothesis, i.e. the probability of having CDS is positively correlated to the breadth and negatively to the depth.

Further Findings

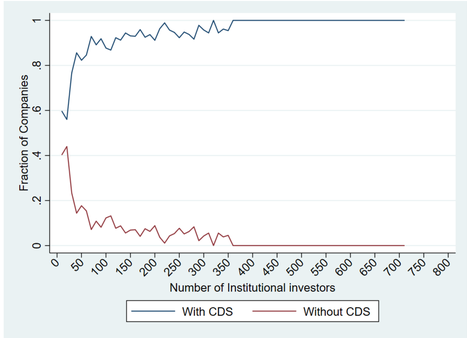
The below figure plots the histogram of companies with and without CDS as a function of breadth. We see a coordination vs diversification flip at breadth of 60 where the fraction of companies having CDS becomes more than the fraction of companies without CDS.

Figure 1: Histogram of CDS on breadth



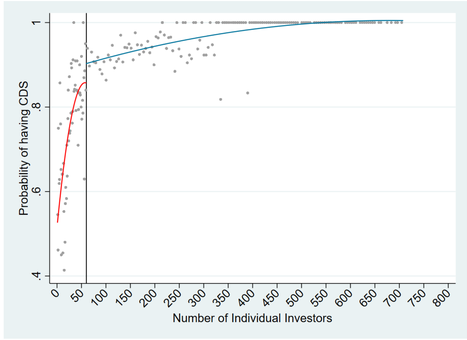
The plot shows the fraction of companies with CDS over the total companies by bins (10 investors per bin) of breadth. We observe that beyond a breadth of 400, all the companies in the sample have CDS.

Figure 2: Fraction of Companies by Breadth



This is the regression discontinuity plot (RDD) for a breadth of 60. The solid line represents the global polynomial fit of CDS on breadth, dots represent the local sample means of CDS at intervals of breadth.

Figure 3: Regression Discontinuity Design plot at breadth of 60



Conclusion

Our empirical results support the managerial influence hypothesis.

- We find significant results suggesting that high breadth and low depth initiate the need for CDS.
- Highly concentrated bond ownership reduces the need for CDS by providing the investors with the ability to exercise control over the company.
- We identify a discontinuity at breadth of 60. Thus as the number of institutional investors increases beyond 60, the ownership gets small, coordination with the company's management becomes difficult and demand for CDS rises.