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Discussion of

“Term Structure of Credit Default Swap Spreads and Cross-Section of
Stock Returns”

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Summary

The paper:

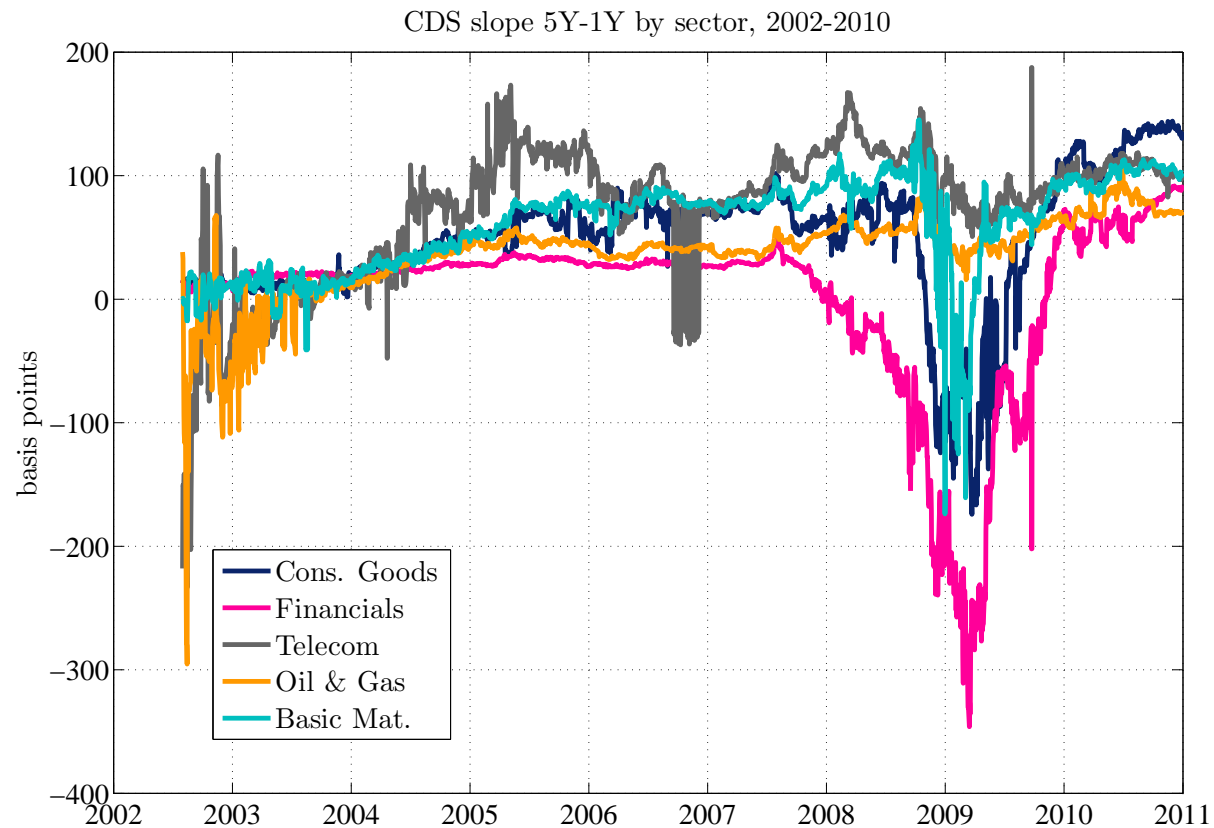
- Link cash equity with credit derivatives
- Slope of CDS curve (5Y-1Y) predicts subsequent stock returns at diff. horizons up to 6 months
- **Low** CDS slope \implies **positive** α
- Two components:
 1. Expectation hypothesis
 2. Slow information diffusion, i.e. **information flow from CDS to equity**

My discussion:

- What does the slope of CDS curve tell us?
- Measurement issues and robustness

CDS slope 5Y-1Y by sector

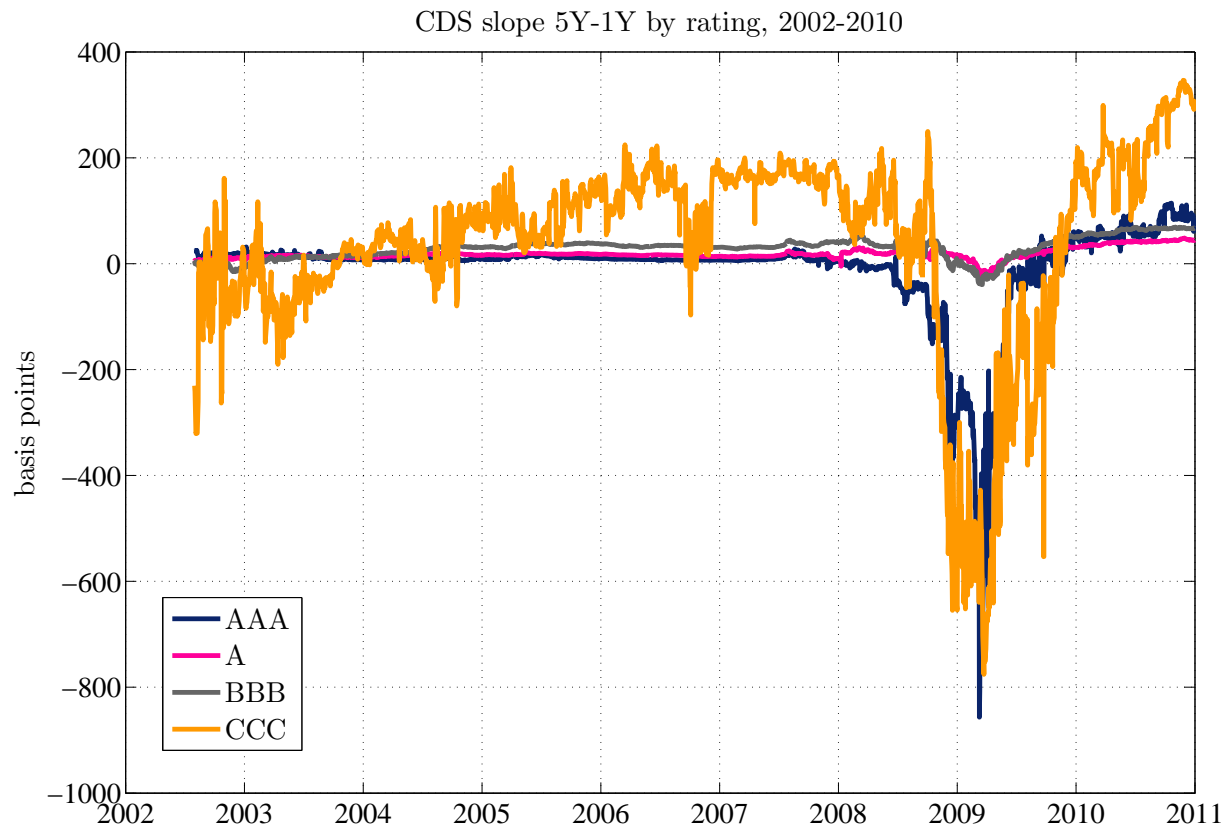
Large cross-sectional variation in slope across sectors & high/low vol regimes



Source: Markit

CDS slope 5Y-1Y by credit quality

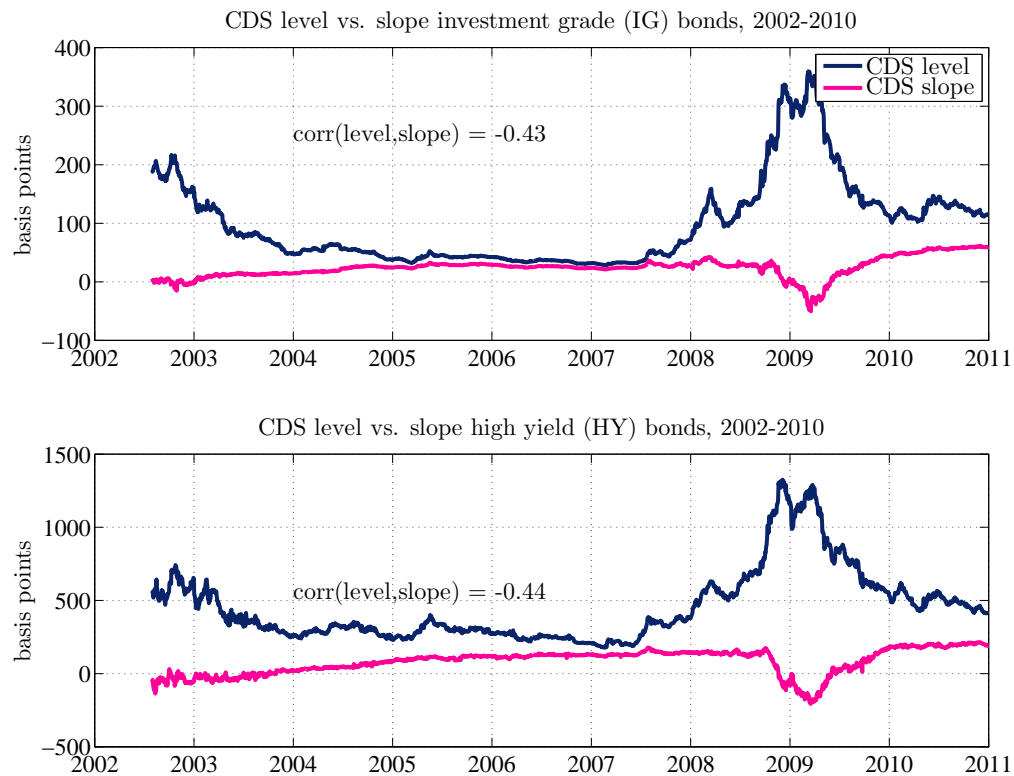
Large differences in vol across credit quality & slope close to nonstationary



Source: Markit

CDS level vs. slope

Slope and level of the CDS are strongly related, **non-linearity**



Source: Markit

What is in the CDS slope?

- ★ Difficult to decompose the curve into term structure of default risk and risk premia esp. for high quality firms → slope does not neutralize the impact of level [slope and level strongly negatively related]
- ★ Expectation hypothesis → changes in default probabilities, [reasonable to assume, but need to check explicitly on CDS portfolios using forwards]

★ Write slope as:

$$\text{slope}_t^{5Y-1Y} = \gamma_0 + \gamma_1 \text{CDS}_t^{1Y} + \gamma_2 \left(\text{CDS}_t^{1Y} \right)^2 + \varepsilon_t \quad (1)$$

- ★ Slope has a zone of inaction when the CDS curve close to unconditional levels, negative if the near term default prob is high

What is in the CDS slope? (Cont'd)

Estimate Eq. (1) on sample 2001-2010 for sectors:

Sector	$adj.R^2$	γ_0	γ_1	γ_2
Telecoms	0.41	0.95	-0.14	-0.01
Financials	0.90	0.31	0.01	-0.03
Utilities	0.55	0.65	-0.14	-0.01
Technology	0.54	1.07	-0.26	0.01
Consumer Goods	0.47	0.39	0.18	-0.04
Consumer Services	0.17	0.53	0.16	-0.02
Oil & Gas	0.44	0.46	-0.03	-0.04
Industrials	0.10	0.60	-0.10	0.00
Basic materials	0.21	0.72	-0.10	-0.01
Investment Grade	0.45	0.27	0.06	-0.06
High Yield	0.44	1.38	-0.12	-0.01

Source: Markit

- ★ 5Y CDS slope is well explained by the CDS level and tracks **large changes** in the term structure default probability **→ near term financial distress**
- ★ Period 2001-2003 provides additional identification [post dot-com bubble de-leveraging of telecoms and technology]

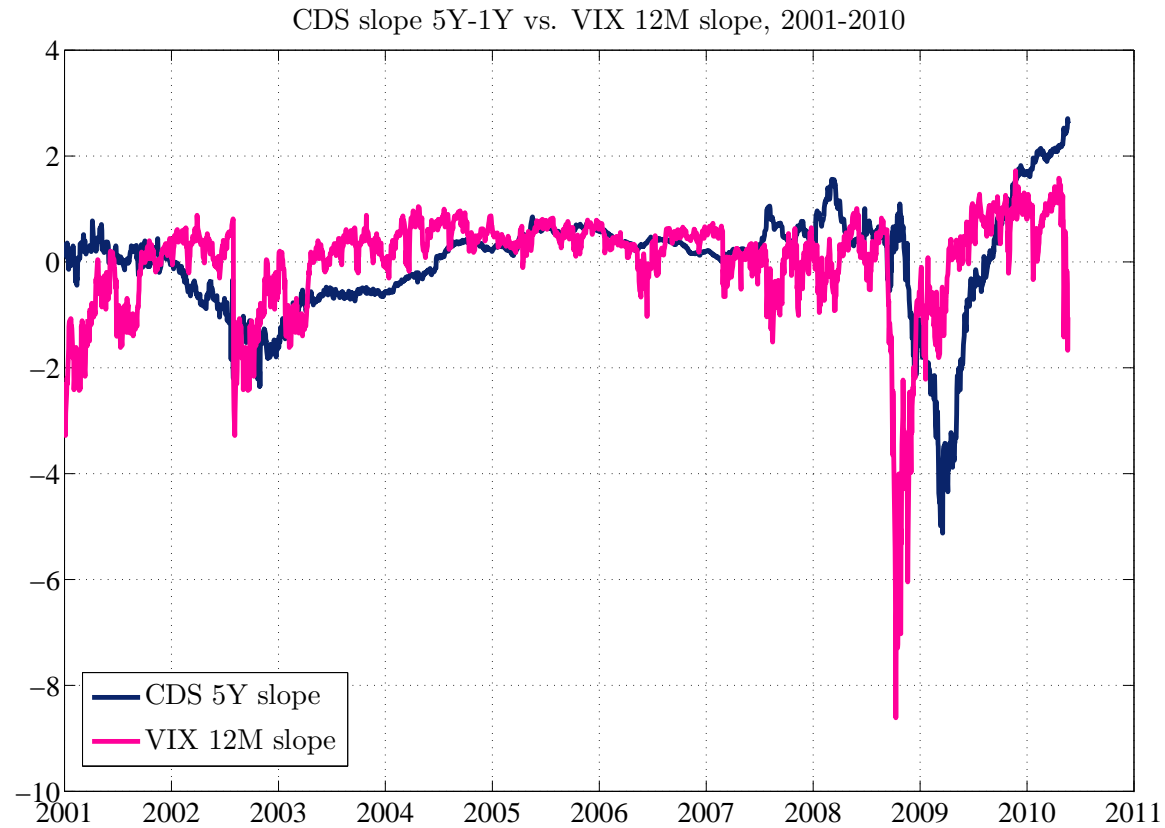
CDS slope Technology 2001-2010



Source: Markit

CDS slope vs. VIX slope

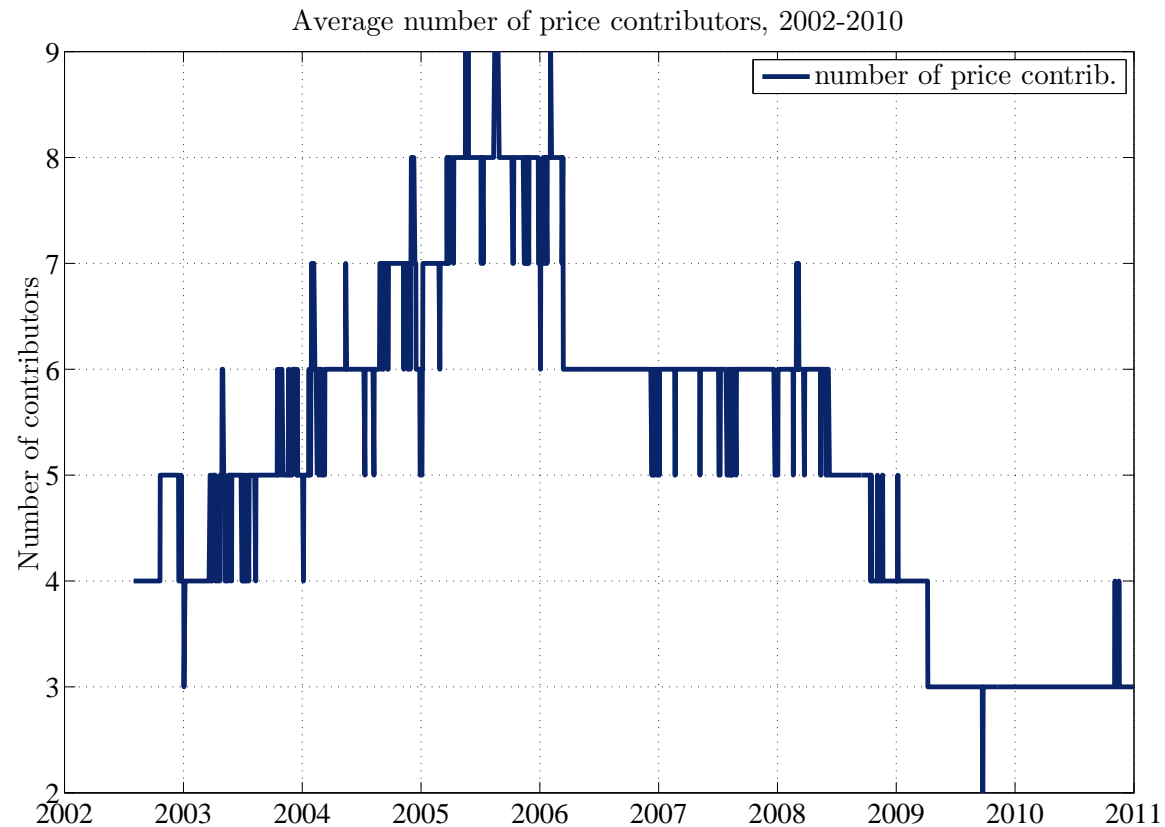
VIX slope (12m-1m) captures large moves in the CDS slope



Source: Markit

Number of CDS price contributors over time

CDS liquidity and information aggregation varies over time and in the cross-section



Source: Markit

When is CDS more informative than equity?

- ★ Short sale ban, e.g. Ni and Pan (2011)
- ★ Corporate CDS more informative when in CDS index (CDS indices start in November 2003 in the US) [consider CDS and equity of index members only?], see also CDX and iTraxx index construction rules, e.g. liquidity poll
- ★ Daily data of equity and CDS spreads, information shares to determine the information flow?

Exchange-traded cash instruments vs. OTC derivatives

- Corporate CDS market has developed in the last decade:
 - Documentation [credit event triggers, deliverables, CDS auction mechanism], in the US: **Modified Restructuring** until April 2009 and **No Restructuring** afterward
 - CDS indices [liquidity along the curve, before 5Y]
 - Market participants [from small number of brokers toward mainstream]
 - Market structure [from OTC to exchange traded]

- Development of CDS market changed the link equity-CDS over time

⇒ Need a careful look at equity-CDS in higher frequency in subsamples (by year?)

Some more robustness checks

- Robustness checks on the CDS side:
 - Pre-crisis period August 2002–August 2007? [e.g. spreads on financials]
 - Split investment grade vs. high yield [different investor base & pricing]
 - Endogeneity in sample selection? The corporate CDS coverage tripled during 2002-2010. Why some companies had CDS traded earlier than others? [leverage & credit quality]
 - Measure slope of the credit curve from cash bonds on longer sample? [sector/maturity indices]

Some recent literature

- Equity-credit risk premia: Berg and Kaserer (2008) [market Sharpe ratio & credit risk premia], Friewald, Wagner, and Zechner (2011) [single-factor in credit risk premia]
- Timing of information flows equity-credit: Bai and Wu (2010) [dominant portion of information about credit risk is discovered from equity]
Carr and Wu (2011) [information flow between equity puts and CDS both ways], Hilscher, Pollet, and Wilson (2011) [equity returns lead CDS returns, daily & weekly, 2001-2007],
- High frequency information flows: Acharya and Johnson (2007) [insider trading–price discovery in CDS], Ni and Pan (2011) [short sale ban], Kapadia and Pu (2011) [equity-credit market integration, limits to arbitrage]

Recap

1. **Econ:** Locate precisely and discuss the link between CDS slope and future realized equity returns \longrightarrow expected vs. unexpected equity returns, stages of the credit cycle
2. **Stats:** Show that the relationship is strong \longrightarrow subsamples, double sorting, account for liquidity, daily data

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