“The Debt-Equity Spread”

Hui Chen, Nicholas Chen, Jun Li

Discussion by:

Nancy R. Xu

Boston College

CICF, Virtual

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What does this paper do?

- **Propose the Debt-Equity Spread (DES) measure, which can be interpreted as the difference between bond and equity investors' perception of credit risk**
  - $\Rightarrow$ Sign: > 0 (< 0), equity investors are more (less) optimistic about firms' fundamentals than the bond investors
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  - $\Rightarrow$ Measurement of equity-market-implied credit spread: CreditGrades
- **Predictability & economic interpretations of DES**
  - $\Rightarrow$ Low-High DES: Positive stock premium, negative bond premium
  - $\Rightarrow$ Consistent with mispricing interpretation (Higher DES: more negative long-term growth forecast revisions; higher limits to arbitrage; insiders more likely to sell their stocks)

Credit risk perceived in actual bond vs. equity markets

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- The authors propose a measure to capture the wedge between actual and equity-market-implied credit risk perception / credit spread:

$$\underbrace{\text{Debt-Equity Spread}}_{:DES} = \underbrace{\text{actual credit spread}}_{:CS^D} - \underbrace{\text{equity-implied credit spread}}_{:CD^E}$$

  $\Rightarrow$ CS^D: actual bond yield - Treasury yield
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    - ...Builds on Black and Scholes (1973) and Merton (1974) – Intuition: both equity and debt can be viewed as options on the value of a firm's assets, implying that equity option pricing techniques can be adapted for use in assessing credit
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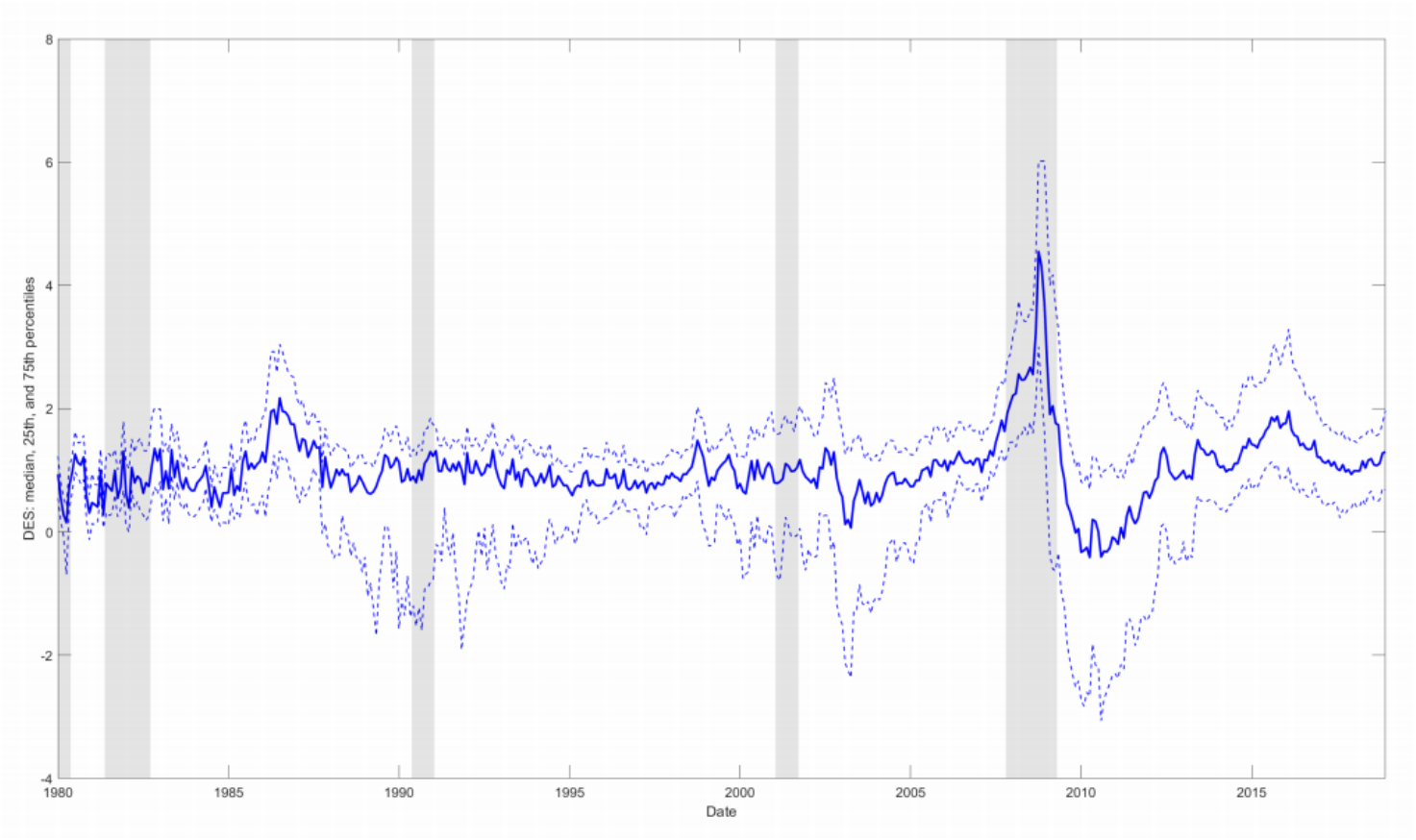
- Advantage: Utilize information from a very broad and liquid market; Allow for flexible dimensions (firm, bond, maturity – which I will elaborate more later)

Main findings from this paper

- **How does the DES look like?**
  (1) **Across time: on average > 0; spikes (1987, 2008, 2012, 2016); can go below 0; time-varying DES dispersion across firms**



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	L(ow)	2	3	4	H(igh)
Ivol	1.684	1.340	1.313	1.396	1.613
Mlev	0.476	0.271	0.251	0.268	0.333
FP	−7.599	−8.043	−8.102	−8.066	−7.915
Size	3.573	9.117	7.405	4.430	2.063
BM	0.755	0.595	0.561	0.581	0.653
Mom	0.051	0.098	0.115	0.118	0.104
GP	0.212	0.273	0.293	0.287	0.258
AG	0.046	0.065	0.065	0.062	0.060
Illiq	0.002	0.001	0.001	0.002	0.004
Dvol	6.549	12.996	11.037	7.090	3.208
DTC	4.088	3.320	3.446	3.937	5.000
SAF	29.057	28.318	28.168	28.389	29.704
FDisp	0.004	0.002	0.002	0.002	0.003
MispScore	49.361	44.972	44.068	45.426	48.720

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- **Predictability evidence**
  (3) **Low-High DES: Positive stock premium (7.72% ann.), negative bond premium (-5.06% ann.)**
  ▫ robustness: CAPM, FF3F, Carhart4, FF5F, Stambaugh-Yuan, Hou-Xue-Zhang for abnormal returns
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- **Economic interpretation**
  (4) **Evidence consistent with the mispricing interpretation. Higher DES =**
  ▫ more negative long-term growth forecast revisions;
  ▫▫ higher limits to arbitrage (small, illiquid, low dollar volume, more days to cover, higher equity lending fee, greater forecast dispersion);
  ▫ ▫ ▫ corporation behaviors: insiders more likely to sell their stocks

Very nice paper!

- Clear, polished writing; strong evidence
- Fills a much-needed knowledge gap in understanding how and why bond and equity investors price same underlying risk differently, and can relate to various literature beyond empirical asset pricing (i.e., including asset pricing equilibrium models, stock-bond comovement puzzle, micro structure, etc.)

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- *Incoming:* **Two extending thoughts** **(+ a finite number of small "quibbles" ☺)**
  1. Is it really not a risk-based story? (links to stock-bond comovement puzzle)
  2. Who is driving the results, CS^D, CD^E? (links to maturity-based literatures)

Reconcile with the stock-bond comovement puzzle?

- "Long high DES + short low DES" portfolio generates positive bond returns

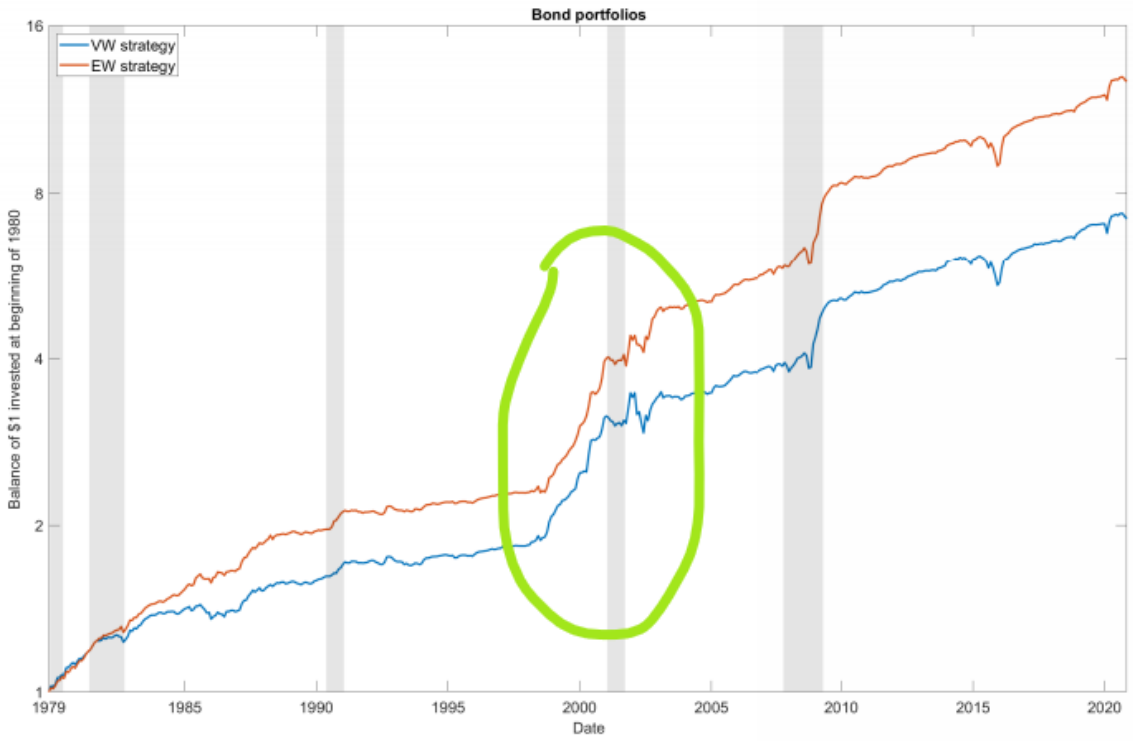

Figure 3: **Cumulative returns of DES long-short portfolios**
This figure plots the time series of the balance of $1 invested in the long-short DES portfolio at the beginning of 1980 for both the value-weighted (VW) scheme and equally-weighted (EW) scheme. The top panel is for the stock portfolios and the bottom panel is for the bond portfolios. The gray bars represent NBER recessions.

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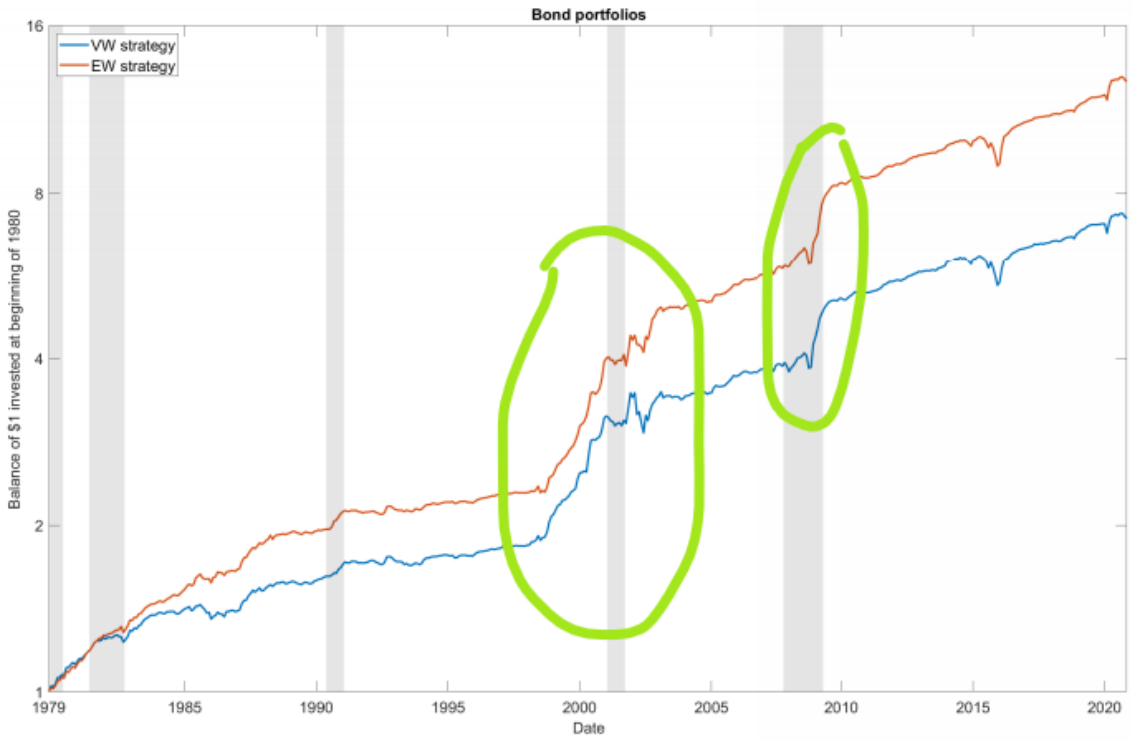

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  - **(1) a strong price of risk shock to the financial market (Laarits, 2019)**
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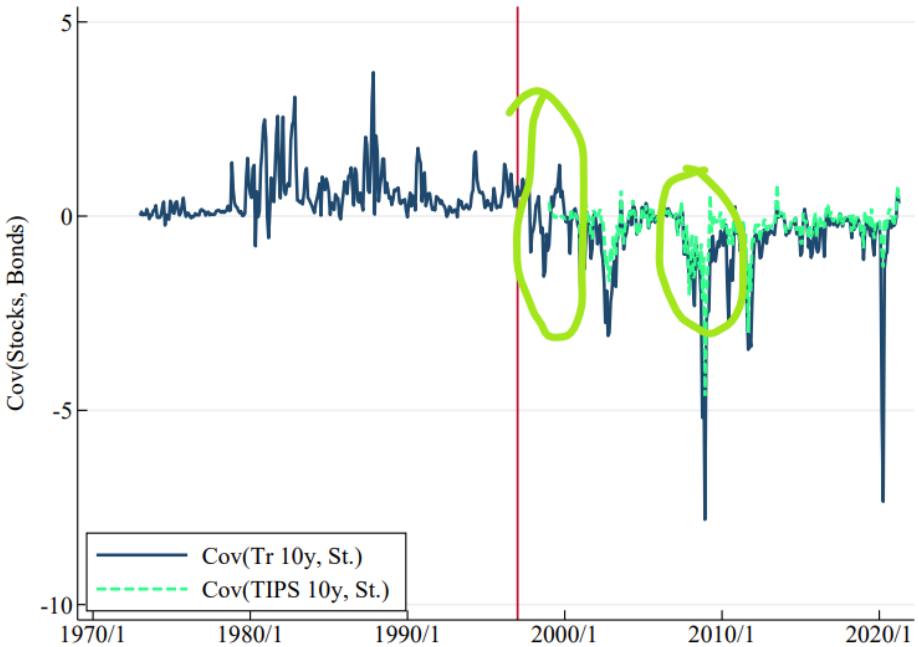

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  High DES, bond investors are less optimistic about firm fundamentals than equity investors;
  When a positive price of risk shock arrives to the economy, bond investors demand a higher compensation then usual
  ...resulting in the sharp increase in the DES premium as in Figure 3

- Suggestion: Try to understand this sharp increase (which companies, which maturities, does it really not coincide with major price of risk shocks that people document in the risk aversion or VIX literature?)

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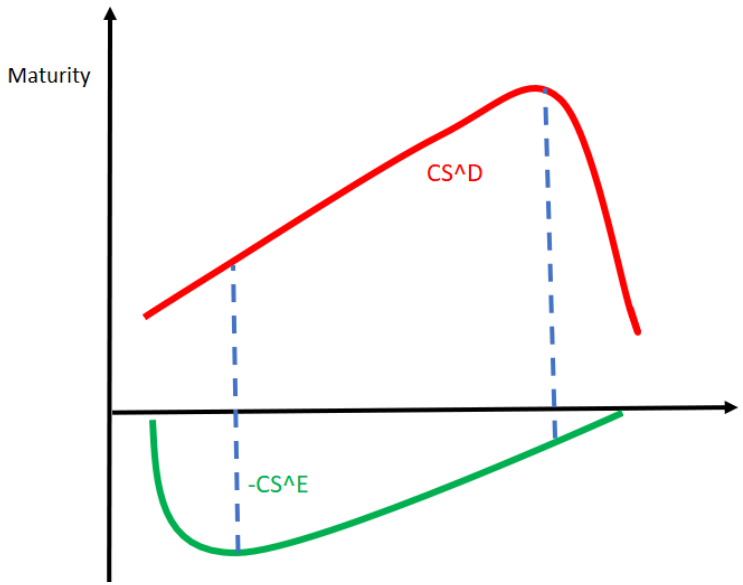

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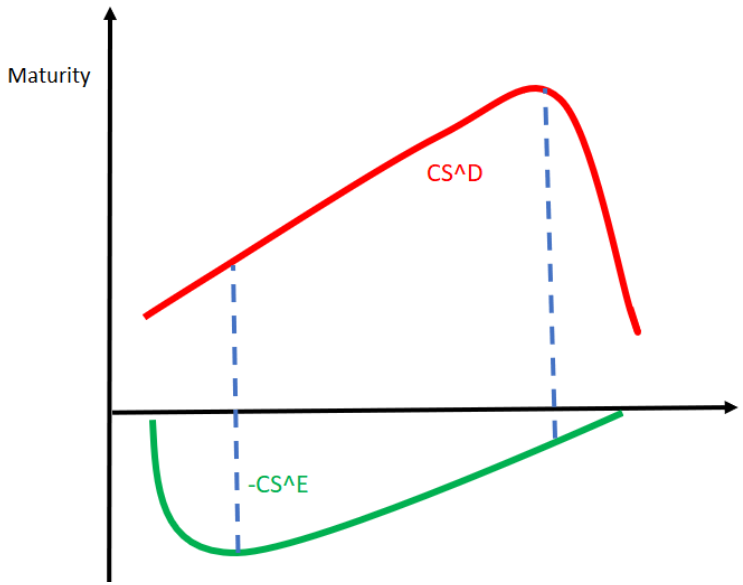

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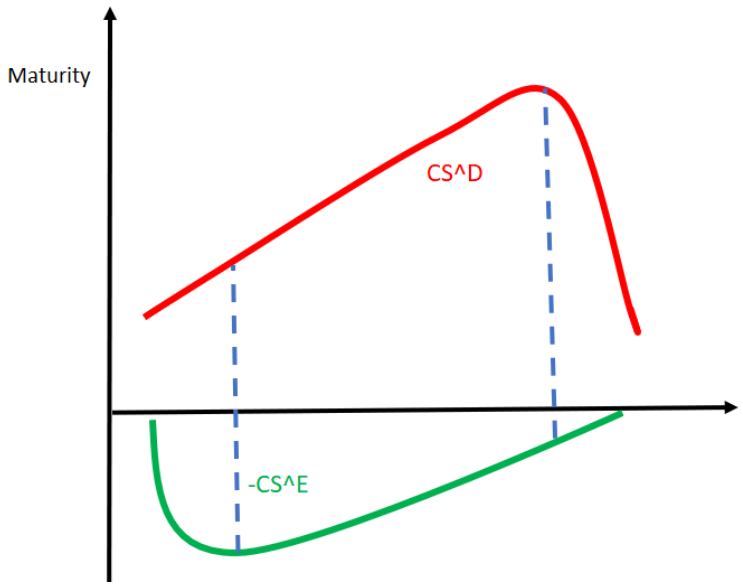

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□ **(3) to consider: maturity-weighted sorting**

Minor comments

1. Figure 2: it looks like that it does not finish in December 2020 (as I would expect an uptick in DES in 2020). Please check.
2. Figure 1: the scale of x-axis seems very large, compared to Figure 2.
3. Page 21: missing a period mark after “for the DES premium”
4. Section 2.1: explain the model in a more high-level way so that the first-time reader won’t feel it is such a tall “wall”: what’s the difference compared to Black-Cox, what’s the advantage (see some of my readings in the first slide).

Conclusion

- **The paper is insightful, empirically convincing, and easy to follow. Highly recommend!**
- **My comments:**
  1. Is it really not a risk-based story? The authors should address the well-aligned timing with stylized facts in the stock-bond comovement puzzle.
  2. Who is driving the results, CS^D, CD^E? I strongly agree with authors' current approach; to make it clearer (especially given the multiple dimensions, firm, bond, maturity), it would be great to discuss more on maturity, because I think it will splay to your advantage in terms of links to existing literature (i.e., we know very well by now equity premium tends to be downward sloping etc)

Thank You!

nancy.xu@bc.edu