

# Credit Default Swaps Around the World: Investment and Financing Effects

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## Motivation: International CDS Markets

- Credit default swaps (CDS) have significant impacts on corporate financial policies due to their feedback effects on the payoffs of stakeholders in the underlying entities:
  - (+) Hedging benefits to lenders; commitment device for borrowers
  - (-) Excess liquidation with little monitoring by “empty creditors”
  - Some empirical evidence for effects on leverage, investment, cash hoarding, bankruptcy risk, etc.
- Importantly, these effects are related to the legal and market framework in which the underlying entity operates:
  - Bankruptcy codes, contract enforcement, corporate governance mechanisms, and the relative importance of public and private markets
- Existing research focuses mainly on North American firms

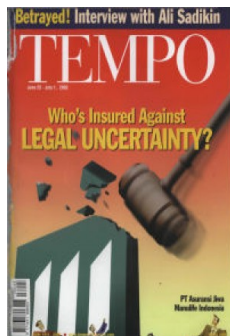
## Motivation: Significant Trigger Event Uncertainty

**Greek solution unlikely to trigger CDS** (Euromoney, Oct 06 2011)

“[...] there is a growing consensus among banks and investors that **the most likely outcomes will fail to trigger the CDS as they will be deemed voluntary. Greece has significant latitude to avoid triggering a CDS credit event**, if it so desires.”

**“Event” ends Seat Pagine CDS controversy?** (Reuters, Dec 01 2011)

“**If the Lighthouse bonds don't pay the coupon, [...] it would be a more clear-cut credit event and CDS should trigger**, said David Benton, head of the derivatives practice at Allen & Overy.”



## More recently...

### **Noble Default-Swap Verdict in Play as Test of ISDA System** (Bloomberg, Sep 05 2017)

“The CDS market has changed a lot since the global financial crisis in terms of definitions for credit events, [...] **But in certain regions, they are still not very clear cut, which leads to confusion.**”

### **How Regulators Averted a Debacle in Credit Default Swaps** (WSJ, July 08, 2018)

“Regulators are generally loath to reveal their views about whether a potential transaction is legal.”

## Local Legal Environment and CDS

- CDS contracts are standardized by ISDA:
  - Standard trigger events (such as bankruptcy, failure to pay, and restructuring)
  - Big Bang Protocol (2009), which streamlines settlement process and creates regional Determination Committees (DC)
- Despite the standardization of CDS contracts, local (legal) environment of reference entity still remains important:
  - E.g., strength of creditor protection differs across countries and affects the determination of the credit event by DC

### Are the effects of CDS introduction influenced by this uncertainty?

- Modest extension of the model of Bolton and Oehmke (2011):
  - Introduce uncertainty in whether actions taken by the reference entity will *necessarily* trigger CDS obligations
- Does variation in other parameters affect the influence of CDS on firm?
  - Global CDS data
  - Introduce “*overlap weights*,” which ensure *full distributional balancing in both firm and country-level covariates*

## Model Results

The impact of CDS contracts on a firm's **debt should be greater**

- 1 **the more creditor-friendly are the bankruptcy codes** of the country in which the firm operates
- 2 **the higher is the liquidation value** of the firm's assets
- 3 **the weaker is the contract enforceability** in the jurisdiction in which the debt is issued
- 4 **the more concentrated is the shareholder ownership** of the firm

Similar conditioning effects are hypothesized for increasing **capital investment** and the **risk borne by shareholders**

## Empirical Results

**Empirical investigation** using a sample of >56,000 firms in 50 countries during 2001–2015 shows results that are largely consistent with these main hypotheses

- ① In leverage regressions, creditor rights influence the effect of CDS
  - Results are most significant for **Restrictions on Entry** and **Secured Creditors First**
- ② In investment regressions, creditor rights influence the effect of CDS
  - ① Results are most significant for **Restrictions on Entry**
  - ② On average, share of R&D in investment declines with CDS introduction; this effect is reversed in countries with robust credit markets and strong property rights
- ③ CDS introduction is associated with an increase in residual (shareholder) risk if **Restrictions on Entry** are in place



## Take-away

- Absent the legal uncertainty of CDS trigger events, well-functioning global credit derivatives contracts help firms overcome local institutional heritage, such as poor contract enforceability and underdeveloped private credit markets:
  - I.e., one could view CDS as a contract-level liberalization mechanism for firms to escape from local institutional heritage
- However, the significant legal uncertainty surrounding the interpretation of underlying trigger events sheds light on the incomplete nature of the standardized credit derivatives in global financial markets

## Related Literature

- Real effects of CDS
  - higher leverage ratios and longer debt maturity (Saretto and Tookes, 2013); lower credit spreads if they are safer and informationally more transparent (Ashcraft and Santos, 2009); lower credit ratings and higher bankruptcy risk (Subrahmanyam et al., 2014); higher cash holdings, especially for no-dividend firms (Subrahmanyam et al., 2017)
- Large, established literature on corporate risk management using other types of derivatives
- Other CDS studies
  - Monitoring intensity by lenders and risk sharing (Morrison, 2005, Parlour and Winton, 2013); Empty creditor problem (Hu and Black, 2008a,b, Bolton and Oehmke, 2011); Investors incentives to hold synthetic debt (Oehmke and Zawadowski, 2015, Campello and Matta, 2013); Sovereign risk (Acharya et al., 2014, Lee et al. 2016)

## Model Setup

- Start with the two-period binomial tree of Bolton and Oehmke (2011), with the addition of uncertainty in triggering CDS payment
- Key model parameters (country characteristics) defined by  $0 < \lambda, q, \gamma < 1$ 
  - Cash flow verifiability ( $\lambda$ ): Poor contract enforceability implies low  $\lambda$
  - Creditors' bargaining power without CDS ( $q$ ): Powerful shareholders with concentrated ownership implies low  $q$
  - Trigger event uncertainty ( $\gamma$ ): A creditor-friendly local bankruptcy code implies less uncertainty in the recognition of the CDS trigger event
    - In our model,  $\gamma$  determines the expected (gross) CDS payoff
    - Less legal uncertainty implies higher  $\gamma$

## Model Intuition: No CDS

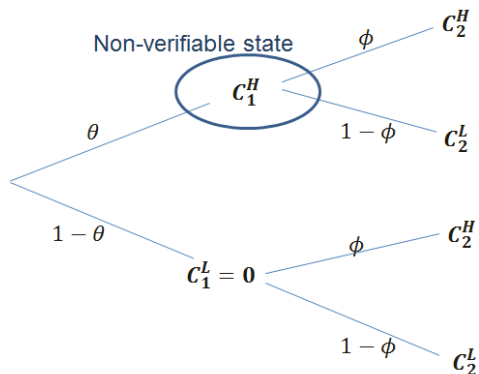
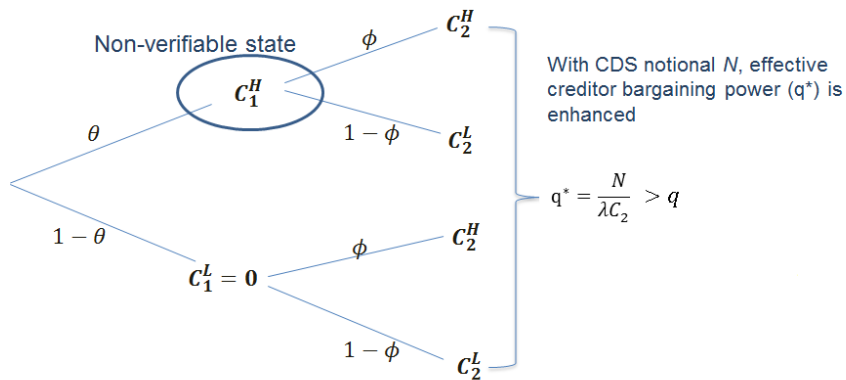
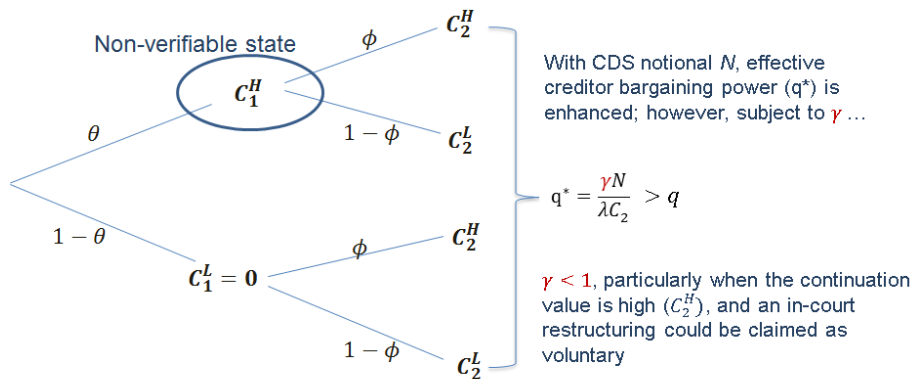


Figure: Bolton and Oehmke (2011) Binomial Tree

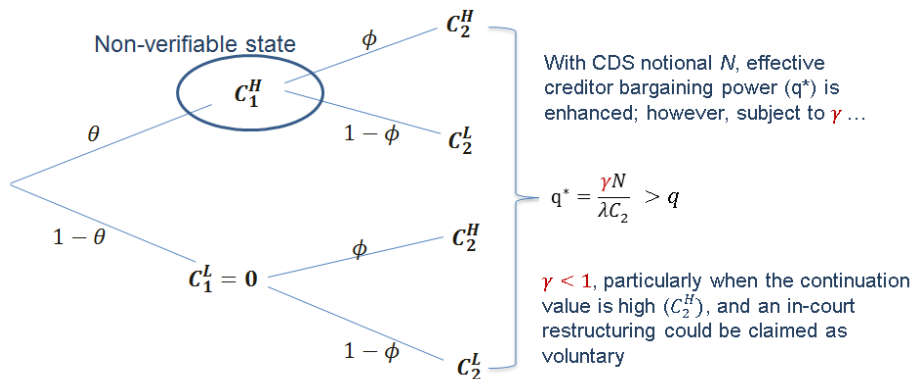
## Model Intuition: With CDS



## Model Intuition: With Trigger Uncertainty



## Model Intuition



As  $\gamma$  increases, debt price improves as shareholders *ex ante* commit more to creditors with CDS, particularly in the high continuation value state where empty creditor problem (i.e., unnecessarily excess liquidation) is a relatively smaller concern.

## Comparative Statics: Trigger Event Uncertainty

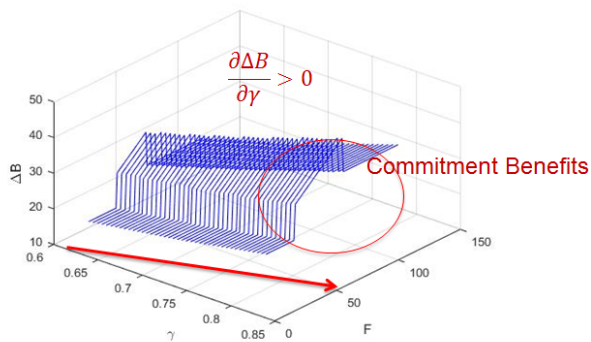
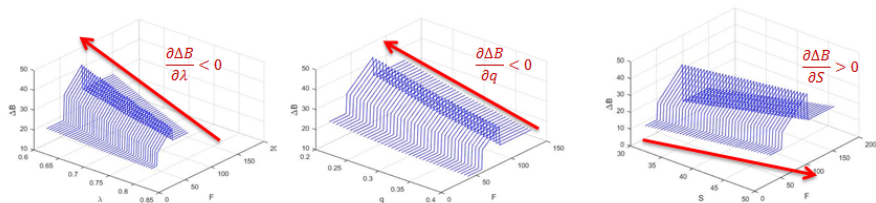


Figure: Debt price enhancement  $\Delta B = B_{CDS} - B$  when  $\gamma$  increases



## Comparative Statics: Other Country Characteristics



**Figure:** Debt price enhancement  $\Delta B = B_{CDS} - B$  when  $\lambda$ ,  $q$ , and the liquidation value  $S$  change

## Testable Implications

**Hypothesis 1:** The impact of CDS contracts on a firm's **debt is greater**

- 1 the more creditor-friendly are the bankruptcy codes of the country in which the firm operates  $\left(\frac{\partial \Delta B}{\partial \gamma} \geq 0\right)$
- 2 the higher is the liquidation value of the firm's assets  $\left(\frac{\partial \Delta B}{\partial S} > 0\right)$
- 3 the weaker is the contract enforceability in the jurisdiction in which the debt is issued  $\left(\frac{\partial \Delta B}{\partial \lambda} < 0\right)$
- 4 the more concentrated is the shareholder ownership of the firm  $\left(\frac{\partial \Delta B}{\partial q} < 0\right)$

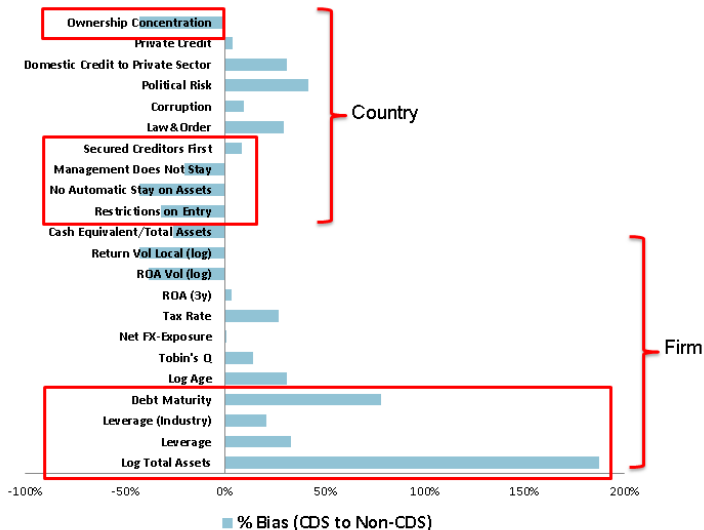
**Hypothesis 2:** The impact of CDS on a firm's **capital investment is greater** under the same four conditions

**Hypothesis 3:** The risk borne by shareholders increases after CDS introduction under three of the conditions above (and not for the second condition on the liquidation value)

## Data and Sample

- Data
  - Pricing data from Markit for CDS, DataStream for equities
  - Accounting data from WorldScope: Exclude financial firms in SIC 60-69
  - Country characteristics (creditor rights, property rights, ownership concentration) from assorted sources: BIS, World Bank, etc.
- Sample of 56,000+ firms from 50 countries
- Time Period from 2001 to 2015

## Bias in Firm and Country Characteristics



## Identification Strategy: Overlap Weights

- Li, Morgan and Zaslavsky (JASA 2018)
- Weight each firm by probability that it is assigned to the other group (i.e., treated ( $Z = 1$ ) and control groups ( $Z = 0$ ))

- 

$$\omega_{it}(x) = \begin{cases} p_{it}(x) & \text{for } Z_{it} = 0 \\ 1 - p_{it}(x) & \text{for } Z_{it} = 1, \end{cases}$$

where  $p_{it}(x) = Pr(Z_{it} = 1 | X_{ikt} = x)$

- Firms with characteristics  $x$  that make them unlikely to have CDS introductions are observed **too few times** in the treated sample
  - These firms are “upweighted”
- Conversely, firms with characteristics  $x$  that make them very likely to have CDS introductions are observed **too many times** in the treated sample
  - These firms are “downweighted”

## Advantages

- Uses every observation in sample that has some probability of being assigned to other group
- Minimum variance of treatment estimate among all balancing methods
- Exact balance in covariates
- By focusing on firms that could have CDS introduced or not, this is where policy might matter the most

## Perfect Covariate Balancing: Leverage Example

	CDS	No CDS
High Leverage	50	10
Low Leverage	10	30

Table: Original Sample

$$\Pr(CDS|HighLev) = 50/60 = 0.83$$

$$\Pr(CDS|LowLev) = 10/40 = 0.25$$

	CDS	No CDS
High Leverage	$50 \times (1-0.83) = 8.3$	$10 \times 0.83 = 8.3$
Low Leverage	$10 \times (1-0.25) = 7.5$	$30 \times 0.25 = 7.5$

Table: Overlap-weighted Sample

## Effects of Overlap Weights

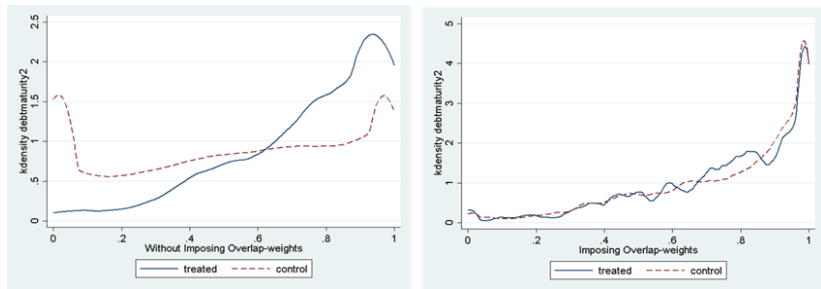


Figure: Debt Maturity



## Effects of Overlap Weights — cont'd

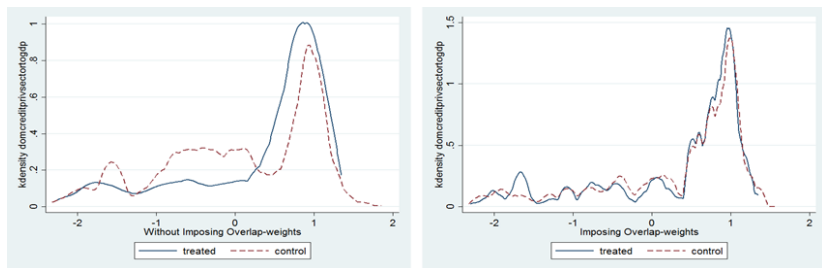


Figure: Domestic Credit/GDP

Our approach ensures perfect distributional balancing for a total of 32 firm- and country-level characteristics (Appendix E)

## Estimation

- Average treatment effect of treated (ATET) with conditioning effects of institutional environment
  - Baseline effect is captured by the "CDS Introduction" dummy
  - Conditioning effects captured by "CDS Introduction  $\times$  Country Variable"
  - The latter is our main focus
- Country variables classified in the following categories:
  - Strength of creditor rights (LLSV, 1998):  $\gamma$ 
    - Four dimensions on  $[1,0]$
  - Reliability of contract enforceability (ICRG):  $\lambda$ 
    - Higher is better
  - Availability of private credit (World Bank, BIS): Initial debt capacity  $B$
  - Degree of shareholders ownership concentration (LLSV, 1998):  $q$

Table 4: CDS Increase Leverage in Countries with...

- Strong Creditor Rights, in particular IN and OUT of bankruptcy

IN Creditor consent is required to file for an in-court restructuring ( $\gamma \uparrow$ )

OUT Secured creditors are paid first out of liquidation proceeds ( $S \uparrow$ )

	(1)	(2)	(3)	(4)	(5)	(6)
		Creditor Rights				
	Baseline	Creditor Rights	Restriction on Entry ( $\gamma$ )	No Automatic Stay	Management Does Not Stay	Secured Creditors First ( $S$ )
CDS Introduction $\times$ Country Variable		0.0042 (0.0055)	0.0152** (0.0067)	-0.0055 (0.0064)	-0.0060 (0.0056)	0.0143** (0.0061)
Country Variable		-0.0010 (0.0033)	-0.0140*** (0.0039)	0.0009 (0.0038)	0.0118*** (0.0040)	-0.0095*** (0.0033)
CDS Introduction	0.0123** (0.0056)	0.0133** (0.0057)	0.0149*** (0.0057)	0.0109* (0.0057)	0.0116** (0.0056)	0.0111** (0.0056)

Table 4: CDS Increase Leverage in Countries with... — cont'd

- Weak Contract Enforceability ( $\lambda \downarrow$ )
- Small Markets for Private Credit ( $B \downarrow$ )
- Highly Concentrated Equity Ownership ( $q \downarrow$ )

	(7)	(8) Property Rights ( $\lambda$ )	(9)	(10) Private Credit Availability ( $B$ )	(11)	(12)
	Law&Order	Corruption	Political Risk	Domestic Credit to Private Sector	Private Credit	Ownership Concentration ( $q$ )
CDS Introduction $\times$ Country Variable	-0.0192*** (0.0056)	-0.0085 (0.0072)	-0.0308*** (0.0074)	-0.0105 (0.0068)	-0.0255*** (0.0073)	0.0105* (0.0062)
Country Variable	-0.0004 (0.0034)	-0.0108** (0.0042)	0.0063 (0.0046)	0.0026 (0.0044)	0.0156*** (0.0047)	-0.0043 (0.0039)
CDS Introduction	0.0158*** (0.0057)	0.0129** (0.0057)	0.0228*** (0.0063)	0.0154*** (0.0060)	0.0123** (0.0055)	0.0152*** (0.0059)

Table 5: CDS Increase Capital Investment in Countries with...

- Strong Creditor Rights ( $\gamma \uparrow$ )

	(1)	(2)	(3)	(4)	(5)	(6)
		Creditor Rights				
	Baseline	Creditor Rights	Restriction on Entry	No Automatic Stay	Management Does Not Stay	Secured Creditors First
CDS Introduction $\times$ Country Variable		0.0027* (0.0016)	0.0054*** (0.0020)	0.0031 (0.0019)	-0.0013 (0.0016)	0.0015 (0.0018)
Country Variable		-0.0004 (0.0010)	-0.0007 (0.0012)	-0.0015 (0.0011)	0.0005 (0.0012)	0.0007 (0.0010)
CDS Introduction	0.0013 (0.0017)	0.0019 (0.0017)	0.0022 (0.0017)	0.0021 (0.0017)	0.0012 (0.0016)	0.0012 (0.0017)

Table 5: CDS Increase Capital Investment in Countries with... —  
cont'd

- Weak Contract Enforceability ( $\lambda \downarrow$ )
- Small Markets for Private Credit ( $B \downarrow$ )

	(7)	(8)	(9)	(10)	(11)	(12)
		Property Rights		Private Credit Availability		
	Law&Order	Corruption	Political Risk	Domestic Credit to Private Sector	Private Credit	Ownership Concentration
CDS Introduction $\times$ Country Variable	-0.0005 (0.0019)	0.0001 (0.0024)	-0.0048* (0.0028)	-0.0050** (0.0022)	-0.0035 (0.0026)	0.0022 (0.0019)
Country Variable	-0.0036*** (0.0012)	-0.0022* (0.0013)	-0.0042** (0.0017)	-0.0018 (0.0014)	-0.0033** (0.0016)	0.0023* (0.0012)
CDS Introduction	0.0014 (0.0017)	0.0013 (0.0017)	0.0030 (0.0021)	0.0028 (0.0019)	0.0013 (0.0016)	0.0019 (0.0018)

## Table 6: Effects of CDS on R&D Share

- The trend is the opposite, implying credit multiplier effects (Almeida and Campello, 2007)
- CDS firms invest primarily in pledgeable assets to support subsequent borrowing

	(1)	(2)	(3)	(4)	(5)	(6)
		Creditor Rights				
	Baseline	Creditor Rights	Restriction on Entry	No Automatic Stay	Management Does Not Stay	Secured Creditors First
CDS Introduction × Country Variable		0.0040 (0.0056)	-0.0144** (0.0063)	0.0062 (0.0066)	0.0169*** (0.0064)	-0.0088* (0.0051)
Country Variable		-0.0117*** (0.0039)	-0.0271*** (0.0039)	-0.0238*** (0.0044)	0.0035 (0.0042)	0.0169*** (0.0030)
CDS Introduction	-0.0115* (0.0064)	-0.0106* (0.0064)	-0.0140** (0.0062)	-0.0099 (0.0063)	-0.0094 (0.0064)	-0.0108* (0.0063)

Table 6: Effects of CDS on R&D Share — contd.

	(7)	(8) Property Rights	(9)	(10) Private Credit Availability	(11)	(12)
	Law&Order	Corruption	Political Risk	Domestic Credit to Private Sector	Private Credit	Ownership Concentration
CDS Introduction × Country Variable	0.0035 (0.0054)	-0.0028 (0.0076)	0.0235*** (0.0076)	0.0173*** (0.0065)	0.0171** (0.0067)	-0.0047 (0.0055)
Country Variable	0.0157*** (0.0027)	0.0142*** (0.0037)	0.0319*** (0.0039)	0.0345*** (0.0036)	0.0366*** (0.0036)	-0.0292*** (0.0036)
CDS Introduction	-0.0122* (0.0064)	-0.0113* (0.0064)	-0.0195*** (0.0066)	-0.0167*** (0.0063)	-0.0115* (0.0061)	-0.0128** (0.0061)



## Table 7: Effects of CDS on Shareholders' Risk

- Idiosyncratic volatility of stock return as a dependent variable
- Creditor rights increase, strategic default declines, shareholders bear more residual risk

	(1)	(2)	(3)	(4)	(5)	(6)
		Creditor Rights				
	Baseline	Creditor Rights	Restriction on Entry	No Automatic Stay	Management Does Not Stay	Secured Creditors First
CDS Introduction × Country Variable		0.0024 (0.0128)	0.0532*** (0.0128)	-0.0009 (0.0148)	-0.0188 (0.0117)	-0.0197 (0.0136)
Country Variable		-0.0107 (0.0071)	-0.0171** (0.0074)	0.0000 (0.0083)	-0.0200*** (0.0071)	0.0210*** (0.0070)
CDS Introduction	-0.0070 (0.0118)	-0.0065 (0.0120)	0.0021 (0.0117)	-0.0073 (0.0126)	-0.0095 (0.0117)	-0.0054 (0.0118)

Table 7: Effects of CDS on Shareholders' Risk — contd.

	(7)	(8)	(9)	(10)	(11)	(12)
		Property Rights		Private Credit Availability		
	Law&Order	Corruption	Political Risk	Domestic Credit to Private Sector	Private Credit	Ownership Concentration
CDS Introduction × Country Variable	-0.0343*** (0.0132)	0.0108 (0.0162)	-0.0506*** (0.0143)	-0.0358*** (0.0132)	-0.0386*** (0.0143)	0.0577*** (0.0130)
Country Variable	-0.0096 (0.0069)	-0.0464*** (0.0080)	-0.0486*** (0.0088)	-0.0131* (0.0076)	-0.0420*** (0.0088)	-0.0200*** (0.0074)
CDS Introduction	-0.0006 (0.0121)	-0.0078 (0.0118)	0.0102 (0.0127)	0.0038 (0.0128)	-0.0071 (0.0116)	0.0090 (0.0126)

## Robustness Tests

- Estimating ATET with additional controls
- Omitted variables test through simulated confounders (Ichino, Mealli and Nannicini, 2008) Panels B
- Consistent inferences on conditioning effects by OLS estimators (Bun and Harrison, 2014)
- Robust to testing on CDS existence, rather than CDS introduction
- Robust to excluding U.S. firms (and also Japanese firms) from our test sample
  - Highlight the truly global aspects of our findings
  - XR CDS (which exclude restructuring from credit events) after 2009 Big Bang Protocol are not driving forces of our main findings
- Largely robust to the inclusion of multiple country-specific variables, with the exception of ownership concentration

## Conclusion

- CDS introduction affects real decisions within the firm, including leverage, investment, and the risk of the investments taken by the firm
- The legal and market environment in the country in which the reference entity operates has a significant influence on the impact of CDS
  - The effect of CDS is larger in countries where legal uncertainty regarding trigger events is reduced, and where the CDS mitigate weak property rights
- Our results shed light on the incomplete nature of CDS contracts in international capital markets, related to significant legal uncertainty surrounding the interpretation of underlying credit events.

# Robustness Check: Sensitivity to Omitted Variables

## Simulated Confounders: Sensitivity Analysis for Omitted Variables (Leverage)

		(2)	(3)	(4)	(5)	(6)
		Creditor Rights				
		Creditor Rights	Restriction on Entry	No Automatic Stay	Management Does Not Stay	Secured Creditors First
Panel A: Leverage						
Interaction Effect from Table 4		0.0042	0.0152**	-0.0055	-0.0060	0.0143**
Calibrated Confounders	Minimum	0.0039	0.0147**	-0.0062	-0.0061	0.0141**
	Maximum	0.0046	0.0156**	-0.0048	-0.0056	0.0146**
Killer Confounders	Minimum	0.0026	0.0115*	-0.0081	-0.0079	0.0113*
	Maximum	0.0053	0.0171**	-0.0002	-0.0045	0.0146**

## Simulated Confounders: Sensitivity Analysis for Omitted Variables (Leverage) – contd.

		(7)	(8)	(9)	(10)	(11)	(12)
		Property Rights			Private Credit Availability		
		Law&Order	Corruption	Political Risk	Domestic Credit to Private Sector	Private Credit	Ownership Concentration
Panel A: Leverage							
Interaction Effect from Table 4		-0.0192***	-0.0085	-0.0308***	-0.0105	-0.0255***	0.0105*
Calibrated Confounders	Minimum	-0.0193***	-0.0090	-0.0309***	-0.0110	-0.0258***	0.0101*
	Maximum	-0.0187***	-0.0080	-0.0305***	-0.0099	-0.0251***	0.0109*
Killer Confounders	Minimum	-0.0212***	-0.0089	-0.0349***	-0.0177**	-0.0299***	0.0072
	Maximum	-0.0163***	-0.0064	-0.0254***	-0.0067	-0.0213***	0.0171**

## Simulated Confounders: Sensitivity Analysis for Omitted Variables (Capital Investment)

		(2)	(3)	(4)	(5)	(6)
		Creditor Rights				
		Creditor Rights	Restriction on Entry	No Automatic Stay	Management Does Not Stay	Secured Creditors First
Panel B: Capital Investment						
Interaction Effect from Table 5		0.0027*	0.0054***	0.0031	-0.0013	0.0015
Calibrated Confounders	Minimum	0.0030*	0.0040*	0.0032	0.0002	0.0010
	Maximum	0.0035**	0.0044*	0.0037*	0.0008	0.0011
Killer Confounders	Minimum	0.0022	0.0039*	0.0020	-0.0009	0.0006
	Maximum	0.0042**	0.0049*	0.0047**	0.0016	0.0012



## Simulated Confounders: Sensitivity Analysis for Omitted Variables (Capital Investment) – contd.

		(7)	(8)	(9)	(10)	(11)	(12)
		Property Rights			Private Credit Availability		
		Law&Order	Corruption	Political Risk	Domestic Credit to Private Sector	Private Credit	Ownership Concentration
Panel B: Capital Investment							
Interaction Effect from Table 5		-0.0005	0.0001	-0.0048*	-0.0050**	-0.0035	0.0022
Calibrated Confounders	Minimum	-0.0013	0.0002	-0.0049*	-0.0045**	-0.0025	0.0015
	Maximum	-0.0008	0.0006	-0.0041	-0.0040*	-0.0017	0.0019
Killer Confounders	Minimum	-0.0022	-0.0003	-0.0075**	-0.0060**	-0.0051**	0.0034
	Maximum	-0.0004	0.0011	-0.0023	-0.0031	0.0001	0.0034

## Simulated Confounders: Sensitivity Analysis for Omitted Variables (R&D Share)

		(2)	(3)	(4)	(5)	(6)
		Creditor Rights				
		Creditor Rights	Restriction on Entry	No Automatic Stay	Management Does Not Stay	Secured Creditors First
Panel C: R&D Share						
Interaction Effect from Table 6		0.0040	-0.0144**	0.0062	0.0169***	-0.0088*
Calibrated Confounders	Minimum	0.0005	-0.0146**	-0.0005	0.0134**	-0.0061
	Maximum	0.0010	-0.0143**	0.0002	0.0140**	-0.0057
Killer Confounders	Minimum	-0.0031	-0.0219**	-0.0094	0.0124*	-0.0062
	Maximum	0.0010	-0.0144**	0.0001	0.0156**	0.0011

## Simulated Confounders: Sensitivity Analysis for Omitted Variables (R&D Share) – contd.

		(7)	(8)	(9)	(10)	(11)	(12)
		Property Rights			Private Credit Availability		
		Law&Order	Corruption	Political Risk	Domestic Credit to Private Sector	Private Credit	Ownership Concentration
Panel C: R&D Share							
Interaction Effect from Table 6		0.0035	-0.0028	0.0235***	0.0173***	0.0171**	-0.0047
Calibrated Confounders	Minimum	0.0012	-0.0026	0.0192**	0.0159**	0.0114	-0.0065
	Maximum	0.0018	-0.0014	0.0199**	0.0171**	0.0119	-0.0059
Killer Confounders	Minimum	0.0012	-0.0036	0.0189**	0.0157**	0.0115	-0.0123*
	Maximum	0.0037	0.0021	0.0258**	0.0265***	0.0164*	-0.0062

## Simulated Confounders: Sensitivity Analysis for Omitted Variables (Risk)

		(2)	(3)	(4)	(5)	(6)
		Creditor Rights				
		Creditor Rights	Restriction on Entry	No Automatic Stay	Management Does Not Stay	Secured Creditors First
Panel D: Risk						
Interaction Effect from Table 7		0.0024	0.0532***	-0.0009	-0.0188	-0.0197
Calibrated Confounders	Minimum	0.0022	0.0518***	-0.0012	-0.0191	-0.0201
	Maximum	0.0038	0.0534***	-0.0005	-0.0173	-0.0168
Killer Confounders	Minimum	-0.0051	0.0464***	-0.0068	-0.0281**	-0.0198
	Maximum	0.0049	0.0535***	0.0024	-0.0166	-0.0158

## Simulated Confounders: Sensitivity Analysis for Omitted Variables (Risk) – contd.

		(7)	(8)	(9)	(10)	(11)	(12)
		Property Rights			Private Credit Availability		
		Law&Order	Corruption	Political Risk	Domestic Credit to Private Sector	Private Credit	Ownership Concentration
Panel D: Risk							
Interaction Effect from Table 7		-0.0343***	0.0108	-0.0506***	-0.0358***	-0.0386***	0.0577***
Calibrated Confounders	Minimum	-0.0345***	0.0069	-0.0530***	-0.0373***	-0.0400***	0.0567***
	Maximum	-0.0337**	0.0119	-0.0498***	-0.0354***	-0.0380***	0.0582***
Killer Confounders	Minimum	-0.0359***	-0.0004	-0.0609***	-0.0414***	-0.0454***	0.0548***
	Maximum	-0.0255*	0.0292	-0.0315**	-0.0266*	-0.0266	0.0584***

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