The SOE Premium and Government Support in China's Credit Market

Jun Pan

Shanghai Advanced Institute of Finance (SAIF)
Shanghai Jiao Tong University

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Joint work with Zhe Geng from SAIF

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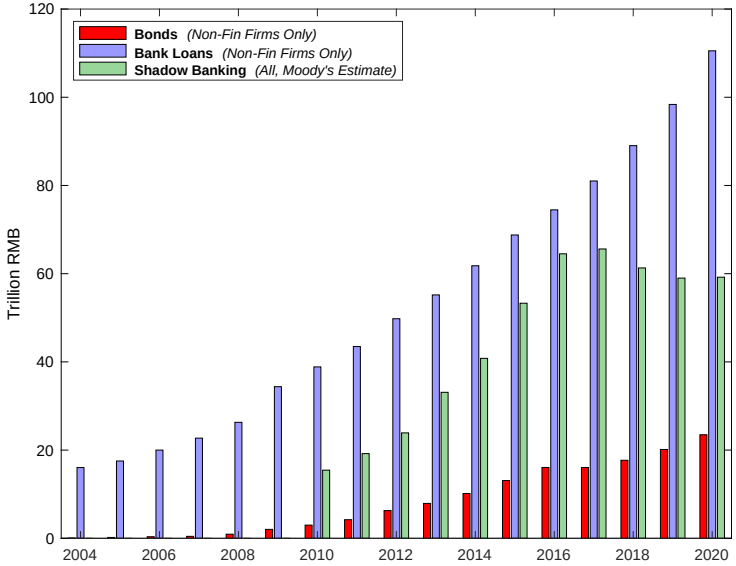

Bonds: transparent, driven by concerns over credit risk.

Bank Loans: opaque, relational, and clouded by other factors.

Shadow Banking: more opaque.

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  - Impact of government support on price discovery.
  - Impact of allocational inefficiency on firm fundamentals.

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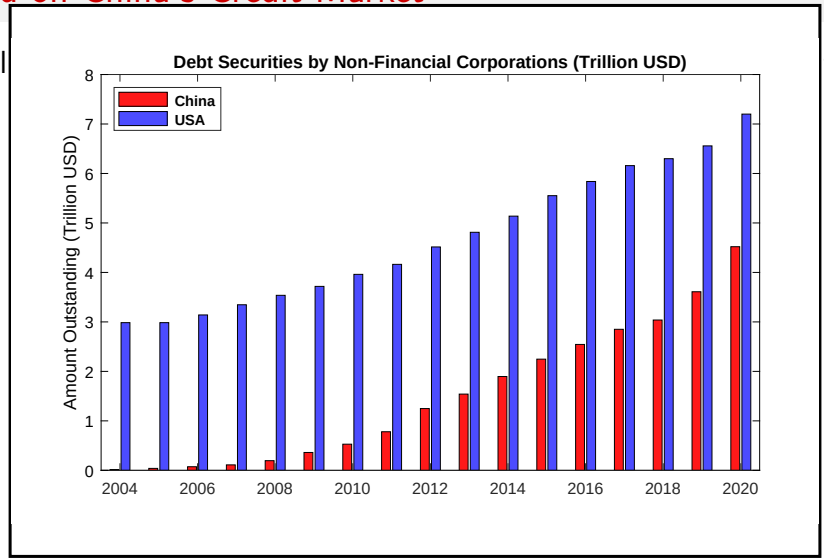

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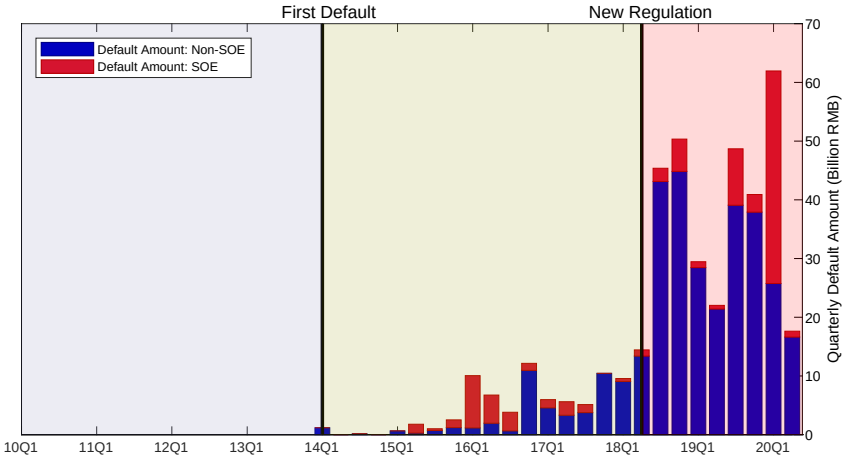

The Time-Varying SOE Premium

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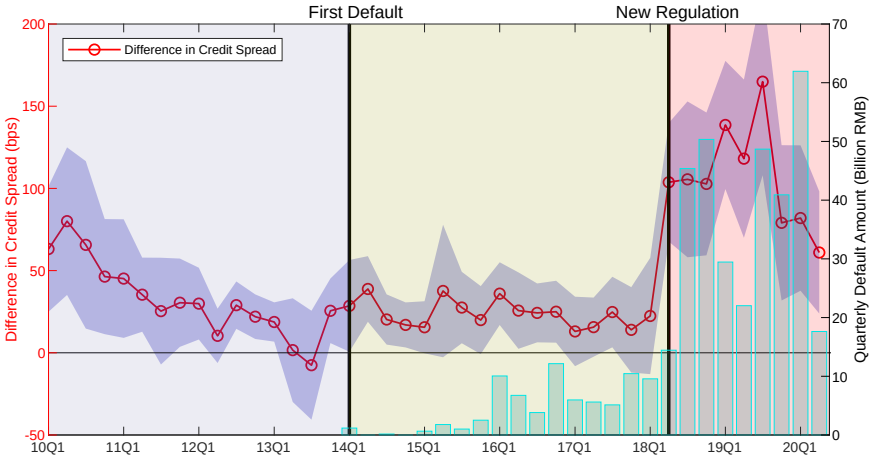


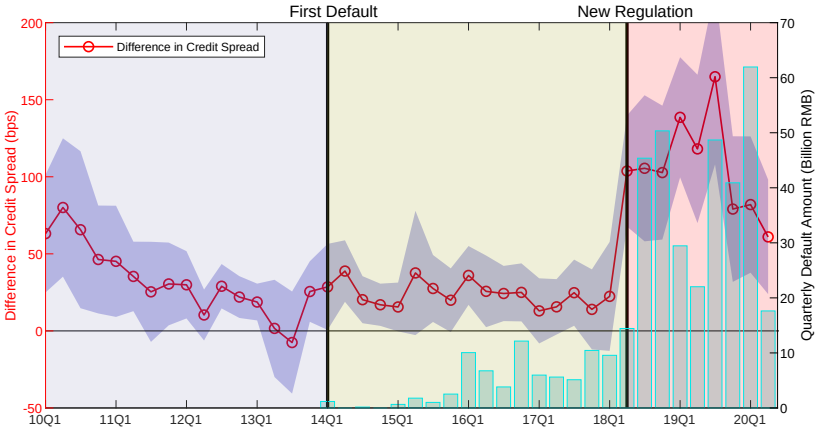
Contributions to the Literature

- The macro literature on credit misallocations and their impact on China's growth:
  - Brandt and Zhu (2000), Dollar and Wei (2007), Hsieh and Klenow (2009), Song, Storesletten, and Zilibotti (2011), Lardy (2019), Cong, Gao, Ponticelli, and Yang (2019), and Huang, Pagano, and Panizza (2020).
  - **Our paper:** Use credit market to uncover the opaque credit allocation, and document the severe segmentation in pricing post 2018Q2 and its real impact.
- The asset-pricing literature studying the information content of credit spreads:
  - Evidence from the US: Collin-Dufresne, Goldstein and Martin (2001), Campbell and Taksler (2003), Bao (2009), Bao, Pan, and Wang (2011), and others.
  - **Our paper:** The information content of credit spreads in China.
- Government support and credit spreads:
  - Berndt, Duffie, and Zhu (2019): Bailout probability and banks' credit spreads.
  - **Our paper:** Government support and credit spreads in China.

Growing Literature on China's Credit Market

- Overview: Hu, Pan and Wang (2019) and Amstad and He (2019).
- Government guarantee in
  - SOE bonds: Jin, Wang and Zhang (2018).
  - Chengtou Bonds: Bai and Zhou (2018) and Liu, Lyu and Fu (2017).
- Other topics:
  - Wang, Wei, and Zhong (2015) on yield-chasing retail investors.
  - Mo and Subrahmanyam (2019) on liquidity.
  - Chen, Chen, He, Liu and Xie (2019) on pledgeability.
  - Chen, He, and Liu (2020) on the growth of Chengtou bonds.
  - Ding, Xiong, and Zhang (2020) on issuance overpricing.
  - Gao, Huang, and Mo (2020) on credit enhancement.
  - Huang, Liu, and Shi (2020) on the determinants of short-term credit spreads.

The SOE Premium, Credit Cycles, and Government Policies



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- 2014-16: Credit boom.
- 2016-17: 降杠杆 Deleveraging campaigns.
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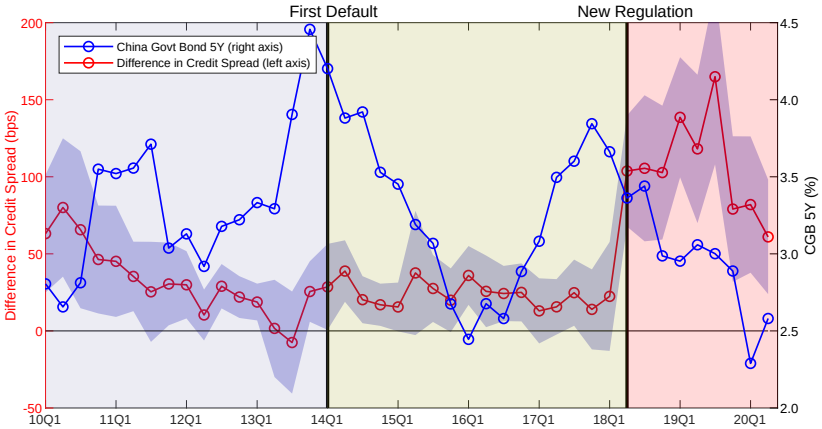

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Behind the Exploding SOE Premium

- Government-led credit tightening policies:
  - Severely weakened the demand from the asset-management industry in China.
  - Shrunk the financing and re-financing channels of corporate issuers.
- Competing explanations:
  - **Government support:** Lacking government support, non-SOEs are more vulnerable than SOEs. Akin to a run on non-SOEs, investors seek safety in SOE bonds and shun non-SOE bonds.
  - **Credit quality:** Due to over-borrowing and over-expanding, non-SOEs are weak in fundamental strength and ill prepared for the credit contraction.

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  - Measured quarterly, using firms' equity and balance-sheet information:

$$\text{DM}_t = \text{DD}_t^{-1} \quad \text{and} \quad \text{DD} = \frac{\left(\mu - \frac{1}{2}\sigma_A^2\right) T - \ln\left(K/V_0\right)}{\sigma_A \sqrt{T}}$$

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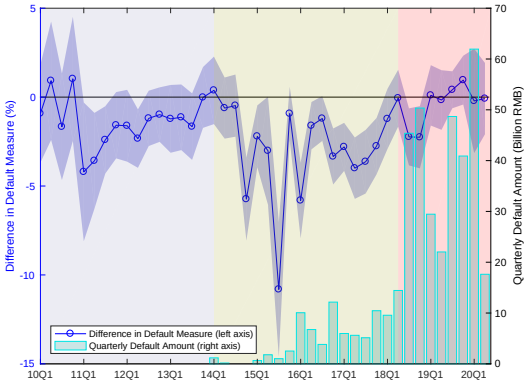

Default Measure: NSOE – SOE

$$\text{DM}_{i,t} = a + \mathbf{b}\,\text{NSOE}_{i,t} + c\,\text{Rating}_{i,t} + \sum_k \text{Controls}^k_{i,t} + \epsilon_{i,t}$$

	DM (%)		
	Phase I	Phase II	Phase III
NSOE	-1.50***	-3.08***	-0.55
	[-2.95]	[-4.23]	[-0.91]
Rating	0.79*	-0.18	1.60***
	[1.94]	[-0.51]	[3.13]
Obs	4,344	10,072	5,350
Adj R^2	0.151	0.660	0.331

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- **The Non-SOE Dummy (NSOE)**: divides firms into two solid blocks.
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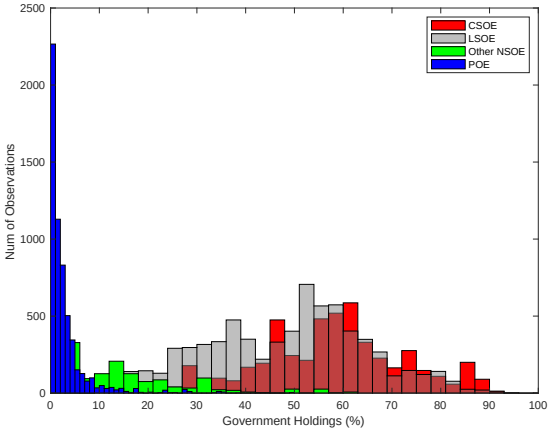
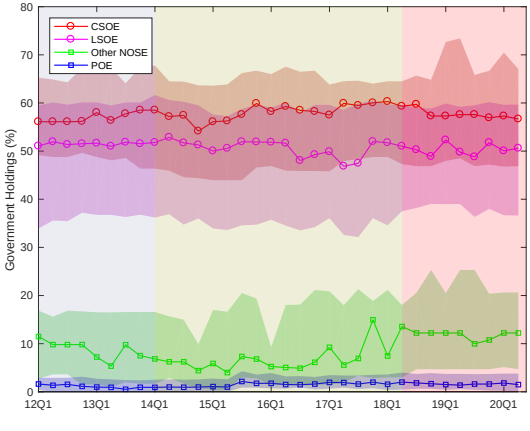


Bond×Quarter Distribution



Quarterly Variation

Explaining the SOE Premium: Credit Quality vs Government Support

$$\text{CreditSpread}_{i,t} = a + \mathbf{b}\,\text{NSOE}_{i,t} + \mathbf{c}\,\text{DM}_{i,t} + \mathbf{d}\,\text{GovtHoldings}_{i,t} + e\,\text{Rating}_{i,t} + \sum_k \text{Controls}^k_{i,t} + \epsilon_{i,t}$$

	Phase I			Phase II			Phase III		
NSOE	0.20***	0.20***	0.20**	0.21***	0.25***	0.18*	1.06***	1.09***	-0.09
	[3.08]	[2.95]	[2.46]	[3.58]	[4.32]	[1.68]	[7.78]	[7.76]	[-0.48]
DM		-0.13			1.26***			4.78***	
		[-0.40]			[4.52]			[5.24]	
GovtHoldings			0.00			-0.08			-2.81***
			[0.01]			[-0.37]			[-7.82]
Rating	0.51***	0.51***	0.51***	0.53***	0.53***	0.52***	1.24***	1.16***	1.20***
	[6.39]	[6.29]	[6.23]	[10.96]	[11.23]	[11.01]	[4.84]	[4.73]	[4.66]
Obs	4,344	4,344	4,344	10,072	10,072	10,072	5,348	5,348	5,348
Adjusted R^2	0.543	0.543	0.543	0.468	0.476	0.468	0.385	0.402	0.398

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	[6.39]	[6.29]	[6.23]	[10.96]	[11.23]	[11.01]	[4.84]	[4.73]	[4.66]
Obs	4,344	4,344	4,344	10,072	10,072	10,072	5,348	5,348	5,348
Adjusted R^2	0.543	0.543	0.543	0.468	0.476	0.468	0.385	0.402	0.398

Explaining the SOE Premium: Credit Quality vs Government Support

$$\text{CreditSpread}_{i,t} = a + \mathbf{b}\,\text{NSOE}_{i,t} + \mathbf{c}\,\text{DM}_{i,t} + \mathbf{d}\,\text{GovtHoldings}_{i,t} + e\,\text{Rating}_{i,t} + \sum_k \text{Controls}^k_{i,t} + \epsilon_{i,t}$$

	Phase I			Phase II			Phase III		
NSOE	0.20*** [3.08]	0.20*** [2.95]	0.20** [2.46]	0.21*** [3.58]	0.25*** [4.32]	0.18* [1.68]	1.06*** [7.78]	1.09*** [7.76]	-0.09 [-0.48]
DM		-0.13 [-0.40]			1.26*** [4.52]			4.78*** [5.24]	
GovtHoldings			0.00 [0.01]			-0.08 [-0.37]			-2.81*** [-7.82]
Rating	0.51*** [6.39]	0.51*** [6.29]	0.51*** [6.23]	0.53*** [10.96]	0.53*** [11.23]	0.52*** [11.01]	1.24*** [4.84]	1.16*** [4.73]	1.20*** [4.66]
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Evolving Contents of Price Discovery

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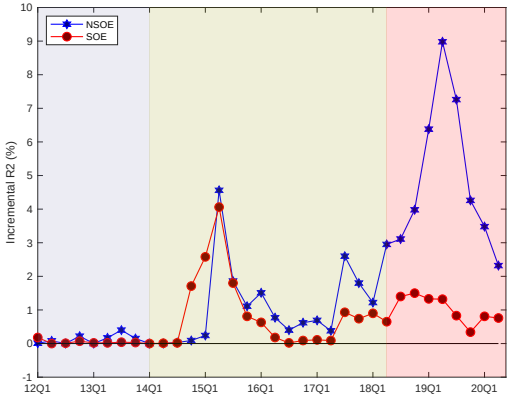
Default Measure, Incremental R2



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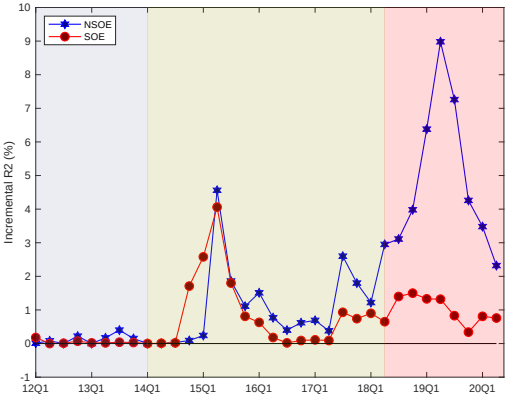
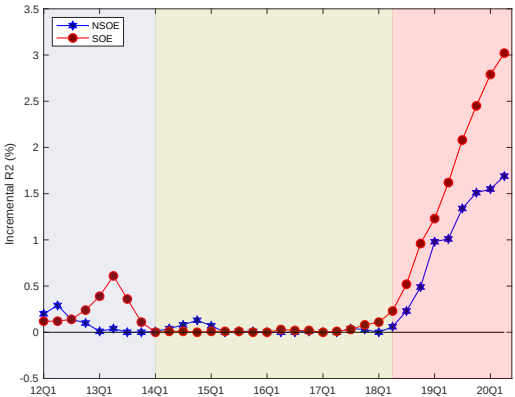


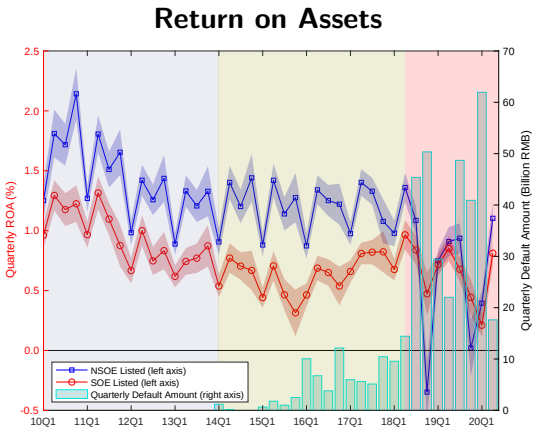
Government Holdings, Incremental R2



The Real Impact

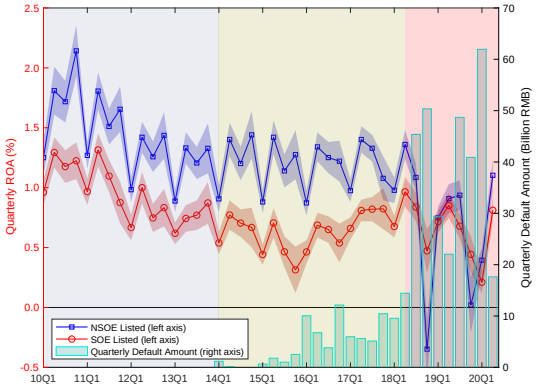
- The differentiation between SOEs and non-SOEs is among the most important friction in China's economy.
- Widely documented:
  - The inefficiency of China's SOEs and their preferential access to debt financing.
  - The importance of the private sector: 60% of GDP, 70% of innovation, 80% of urban employment, and 90% of new jobs.
- How has the severe credit segmentation since 2018Q2 affected the non-SOEs?

The Real Impact



The Real Impact

Return on Assets



$$\text{ROA}_{i,t} = a + \mathbf{b}\,\text{NSOE}_{i,t} + c\,\text{EquitySize}_{i,t} + \epsilon_{i,t}$$

	Quarterly ROA (%)		
	Phase I	Phase II	Phase III
NSOE	0.56***	0.52***	0.13
	[7.76]	[8.83]	[1.07]
EquitySize	0.18***	0.19***	0.35***
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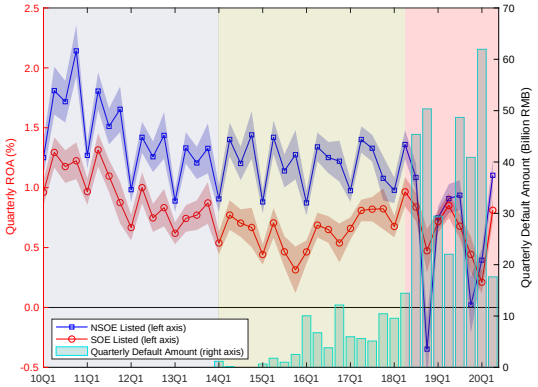

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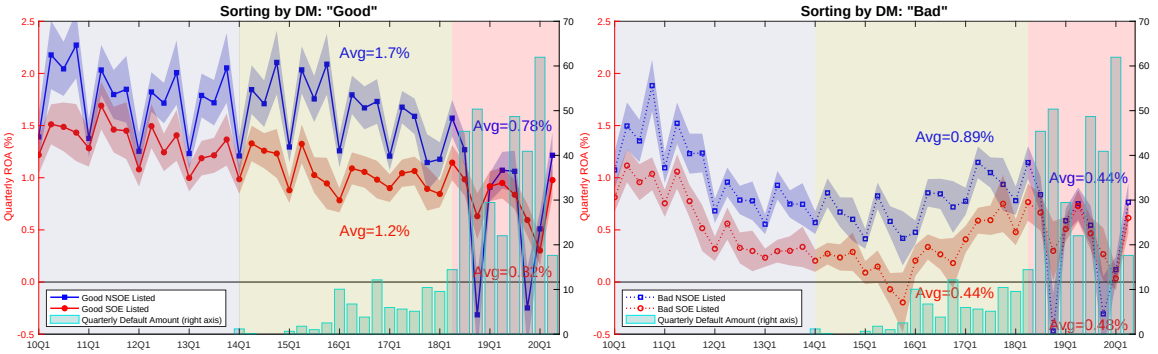
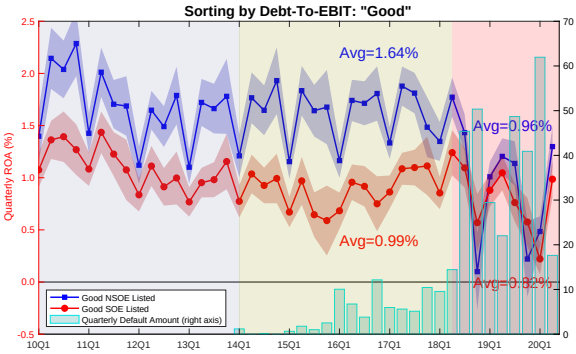
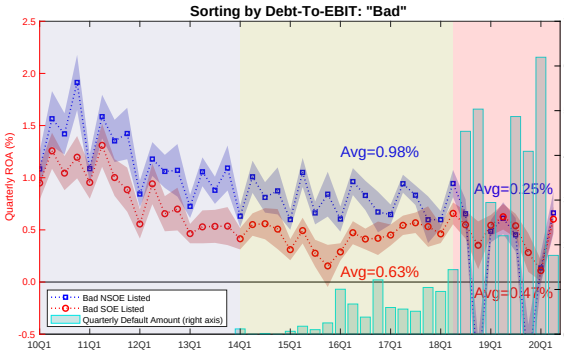
The Real Impact: "Good" and "Bad" Firms by Default Measures

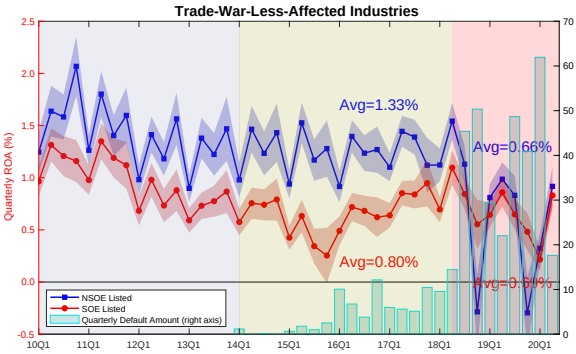


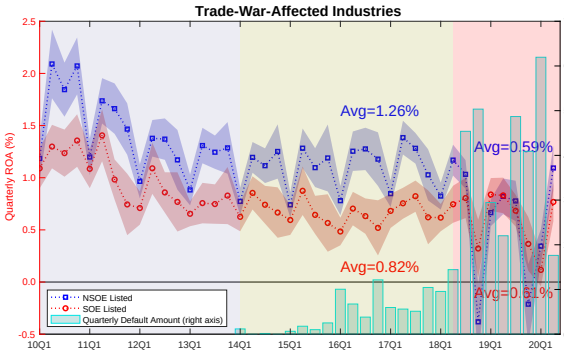
The Real Impact: "Good" and "Bad" Firms by Interest Coverage





The Real Impact: US-China Trade War





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