

# Redrawing the Map of Global Capital Flows: The Role of Cross-Border Financing and Tax Havens

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Harvard

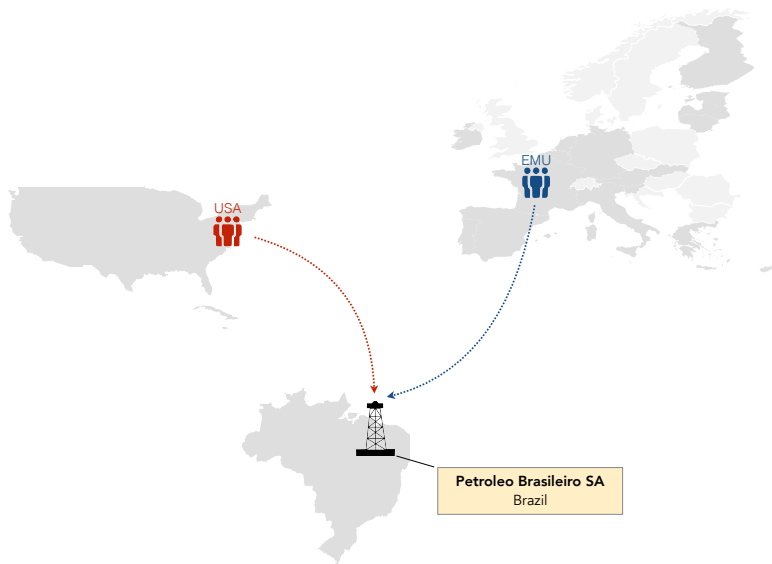
Matteo Maggiori  
Stanford

Brent Neiman  
Chicago

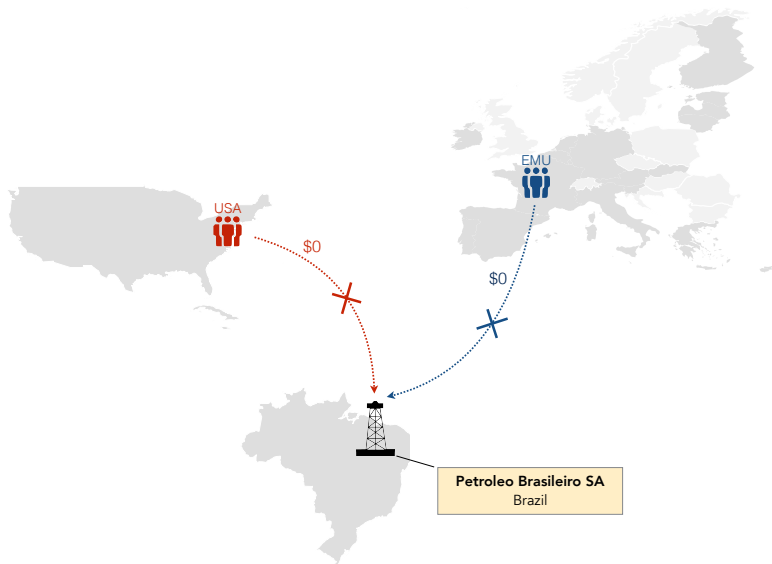
Jesse Schreger  
Columbia

July 2020

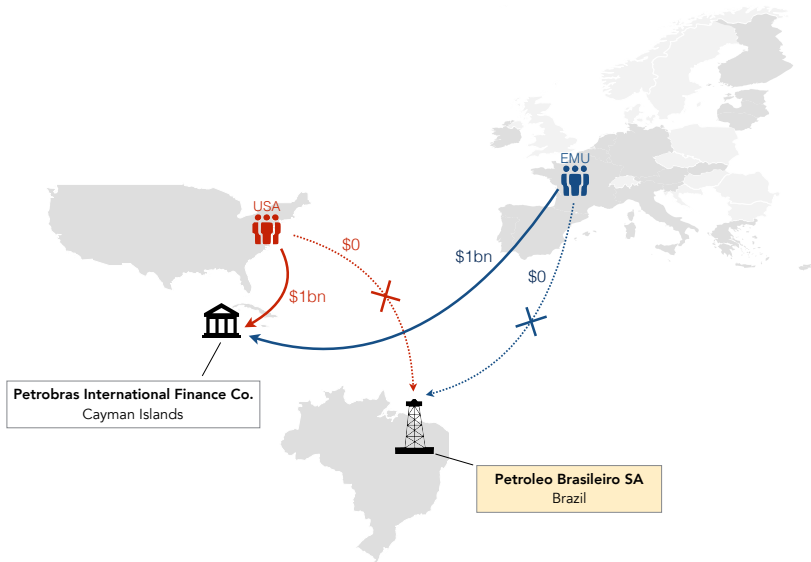
# How Petrobras Raises Capital From Developed Countries



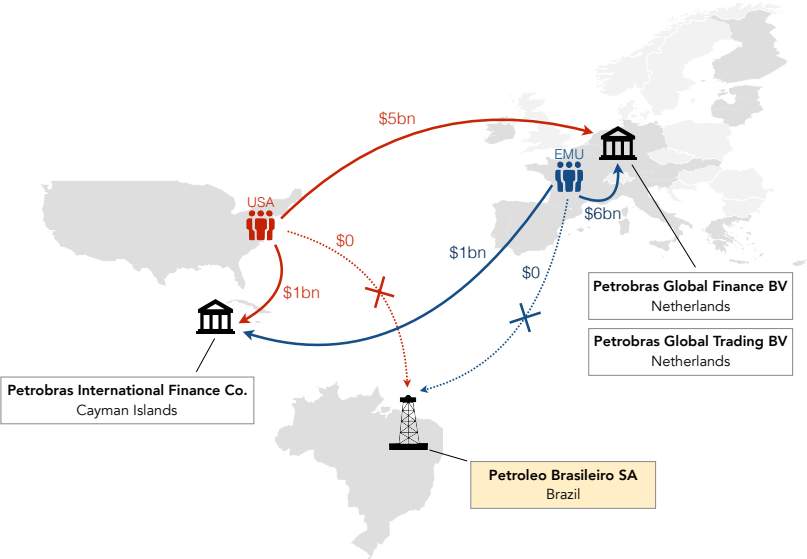
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# New Map of Global Capital Allocation

- ▶ How big of a deal is this?
  - ▶ Tax haven issuances account for  $\approx 10\%$  of all corporate financing, and nearly 50% of all cross-border issuances
- ▶ Takeaways:
  - ▶ Developed market exposure to large emerging markets bigger than in official data
  - ▶ Due to tax haven issuance, China's official NFA is twice true value

## Aggregate Each Security to Ultimate Parent Company

- Map 27m securities from issuer (**Residency**) to ultimate parent (**Nationality**)

Issuer	Residency	Parent	Nationality	Value (\$B)
<i>A. Corporate bonds</i>				
Petrobras Intl. Finance Co.	CYM	Petroleo Brasileiro SA	BRA	12.8
Gaz Capital SA	LUX	Gazprom PJSC	RUS	29.7
<i>B. Equities</i>				
Alibaba Group Holding Ltd.	CYM	Alibaba Group Holding Ltd.	CHN	441.6
Medtronic Plc	IRL	Medtronic Plc	USA	85.7

# Reallocation Matrices

- ▶ Merge mapping with Morningstar data on mutual fund and ETF *positions*
- ▶ Key assumption: Within each year, asset class, and bilateral country pair, fund holdings are representative of the universe of portfolio investment
  - ▶ Verified for US insurance holdings and Norwegian sovereign wealth fund

US Corporate Bond Reallocation Matrix						
Destination	BRA	CHN	CYM	GBR	USA	RoW
BRA	100.0					
CHN		99.2		0.8		
CYM	20.1	33.0	1.4	3.5	13.3	28.7
USA	0.3	0.1		1.3	92.3	6.0



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## Restating TIC for the US: Corporate Bonds

Destination	TIC	Tax Haven Only		Full Nationality	
		Position	$\Delta$	Position	$\Delta$
Brazil	8	50	42	68	59
Bermuda	30	0	-30	0	-30
Cayman Islands	80	1	-79	1	-79
China	3	47	44	55	52
Hong Kong	8	7	-1	9	0
India	6	6	1	21	15
Ireland	63	24	-39	40	-23
Luxembourg	72	3	-69	3	-69
Russia	0	12	12	12	12

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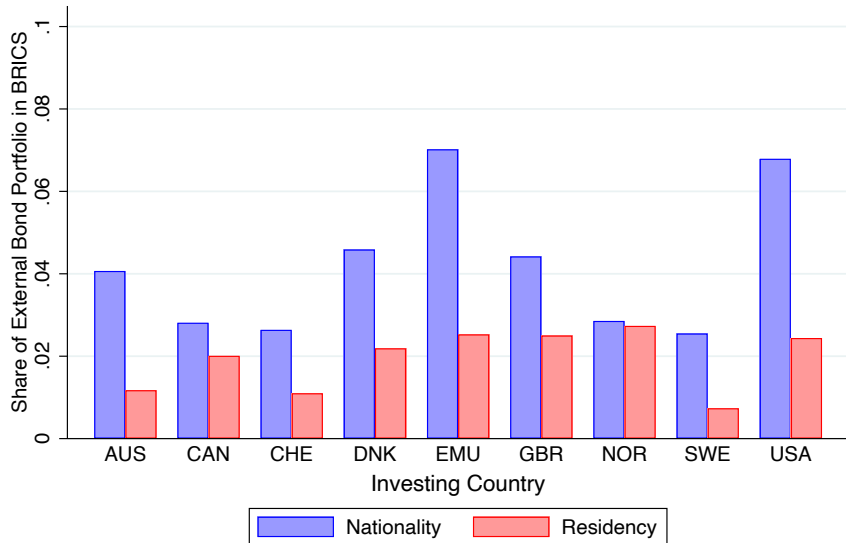
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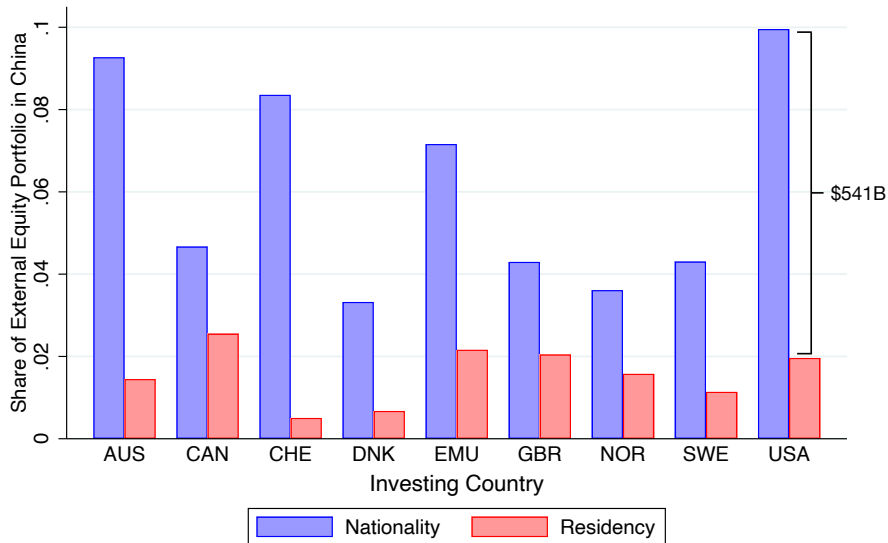
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## Developed Market Investment in BRICS Debt

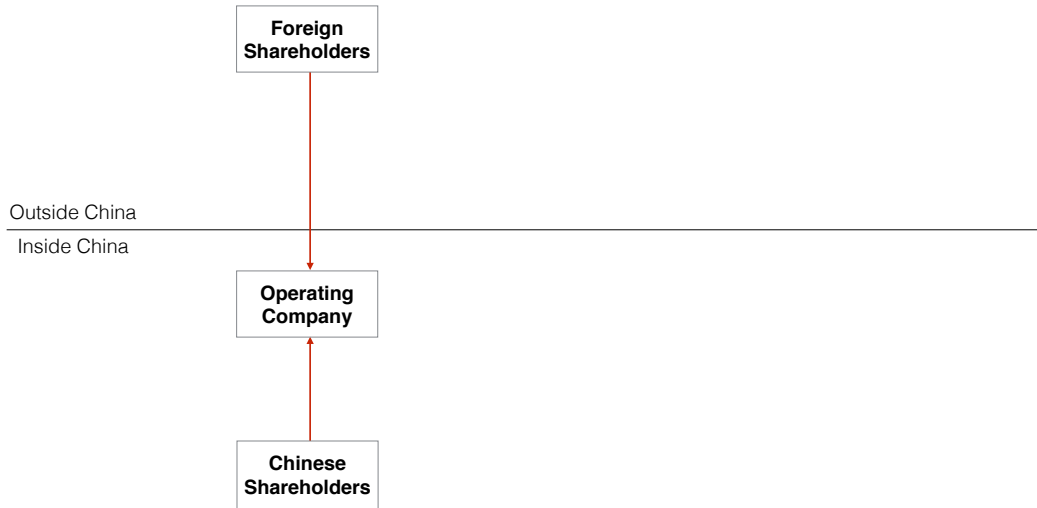


## Developed Market Investment in Chinese Equity



# Standard vs. VIE Structure

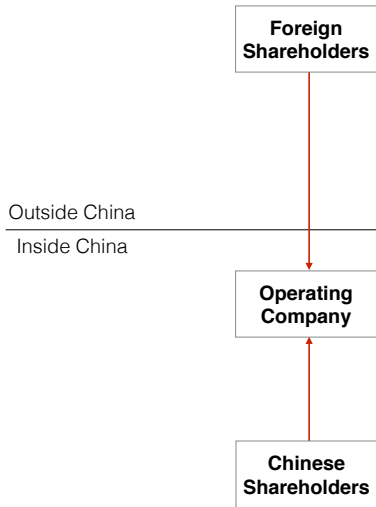
## Standard Structure



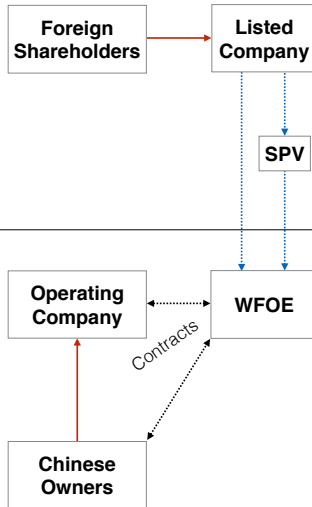


# Standard vs. VIE Structure

Standard Structure



VIE Structure



# Implications for China's Net Foreign Assets (NFA)

- ▶ Net Foreign Asset Position (*NFA*) captures net claims on RoW:

$$NFA = A - L$$

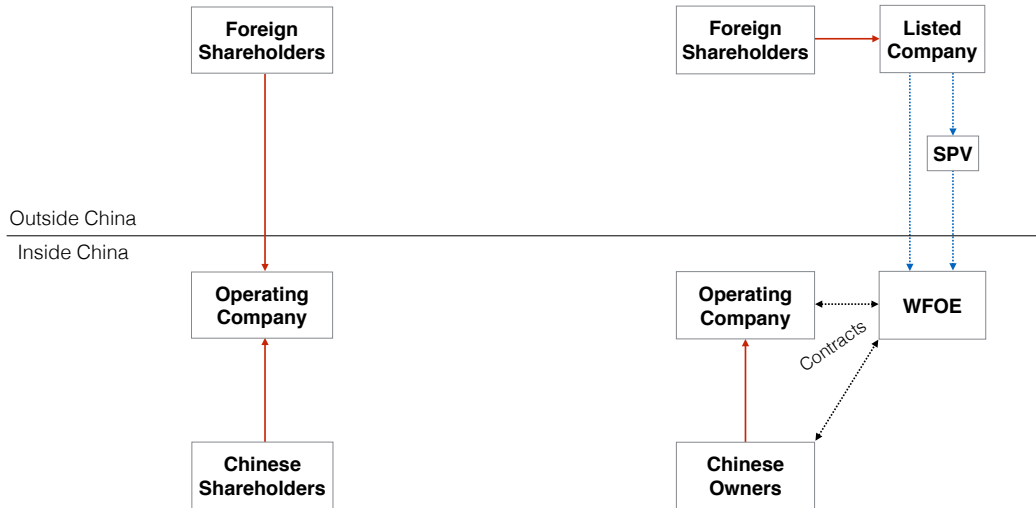
$$\Delta NFA = CA + \text{Valuation Changes}$$

- ▶ VIE structure causes understatement of *L*
  - ▶ Missing valuation changes

# Implications for China's Net Foreign Assets (NFA)

Standard Structure

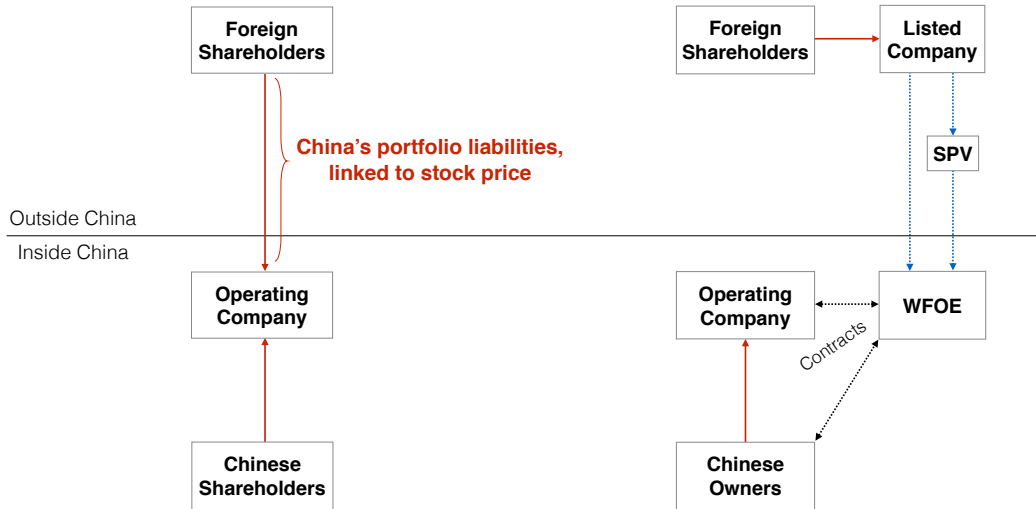
VIE Structure



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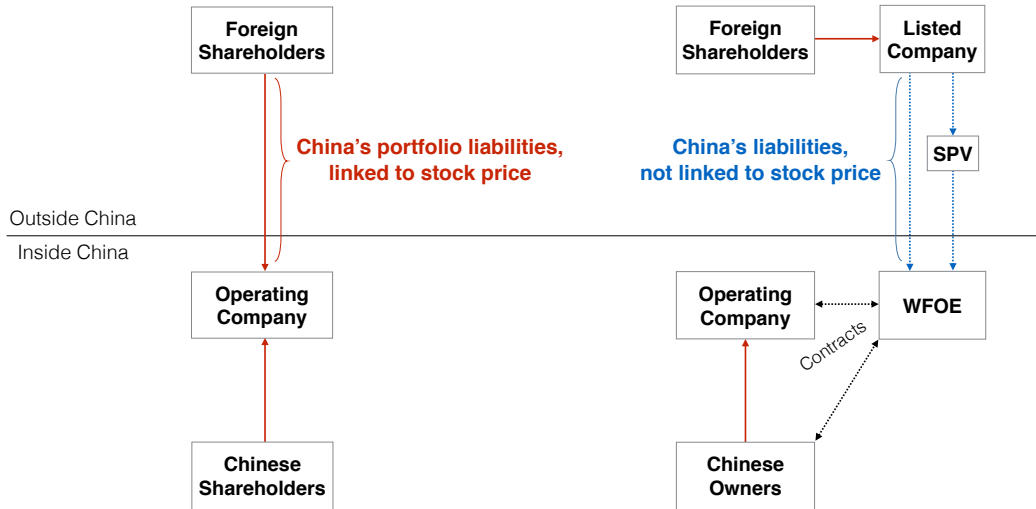
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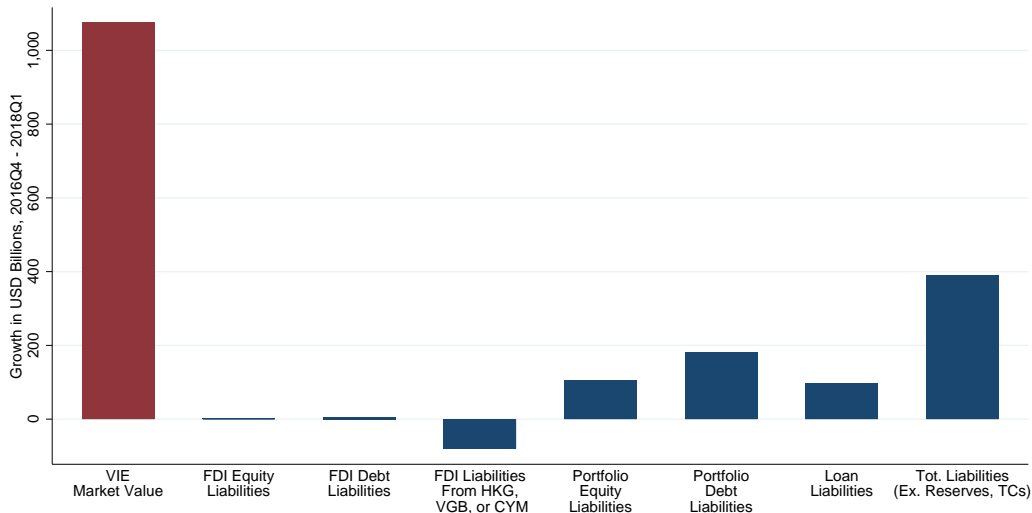
Standard Structure

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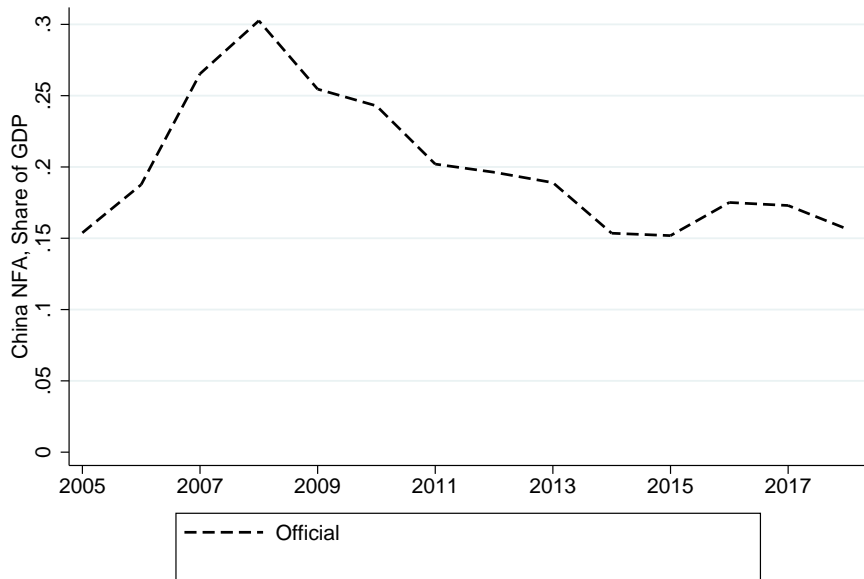


# Valuation Effects Not Captured in China's Liabilities

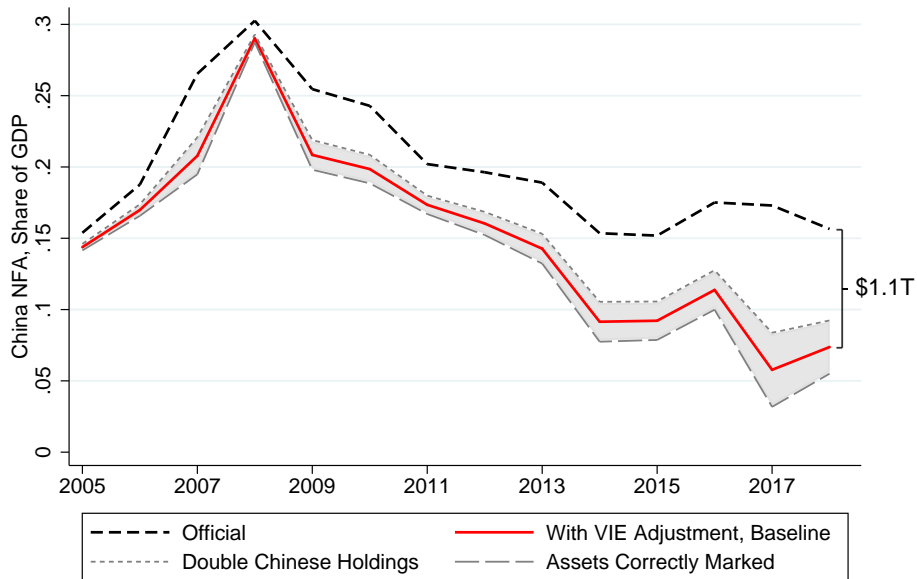
- Focusing on surge in value of VIEs from 2016:Q4 to 2018:Q1:



## NFA Mismeasurement is Large



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## Much More in Paper and Online

- ▶ Currency composition of emerging market bonds
- ▶ Spurious foreign investment
- ▶ Sales-based reallocation
- ▶ Full reallocation and issuance matrices by country, year, asset class
- ▶ Disaggregated bilateral investment data (currency, industry, by asset class)
- ▶ Analysis of US insurance and Norwegian sovereign wealth fund

# Conclusion

- ▶ Novel view of global capital allocation
- ▶ Methodology:
  - ▶ Pierce veil of tax havens to measure true risk exposures
  - ▶ Provide new data and restate commonly used public datasets
- ▶ Takeaways:
  - ▶ Flows from developed market investors to EMs underestimated
  - ▶ Drives huge NFA mismeasurement in China (elsewhere?)
- ▶ Follow Global Capital Allocation Project, data, code: [globalcapitalallocation.com](https://globalcapitalallocation.com)

