

# China's Global Ownership

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### Abstract

Assembling a comprehensive micro-level dataset of China's ownership in 154,699 firms across 159 countries between 2012 and 2021, we evaluate the scale, patterns, and motivations behind China's overseas investments and assess their real impact on target firms and the spillover effects on non-Chinese-owned peer firms in the same country and industry. Our findings show that China's global ownership has grown at an annual rate of 22%, reaching a 1.72% global share by 2021. China tends to target firms with **strong innovation, abundant natural resources, and those integrated into its supply chains**. After acquisition, target firms tend to **expand in firm size** by 10.4% and **increase R&D investments** by 4.9% on average compared to non-target peer firms. However, these investments **fail to result in higher patent output** and instead lead to **declines in operational efficiency and profitability**, highlighting a disconnect in the innovation process and inefficient investment under Chinese ownership. This impact is especially pronounced when Chinese shareholders are affiliated with the government or **state-owned enterprises**. Notably, these findings stand in stark contrast to the outcomes of acquisitions by other economies such as the United States, Japan, and India.

### Motivation

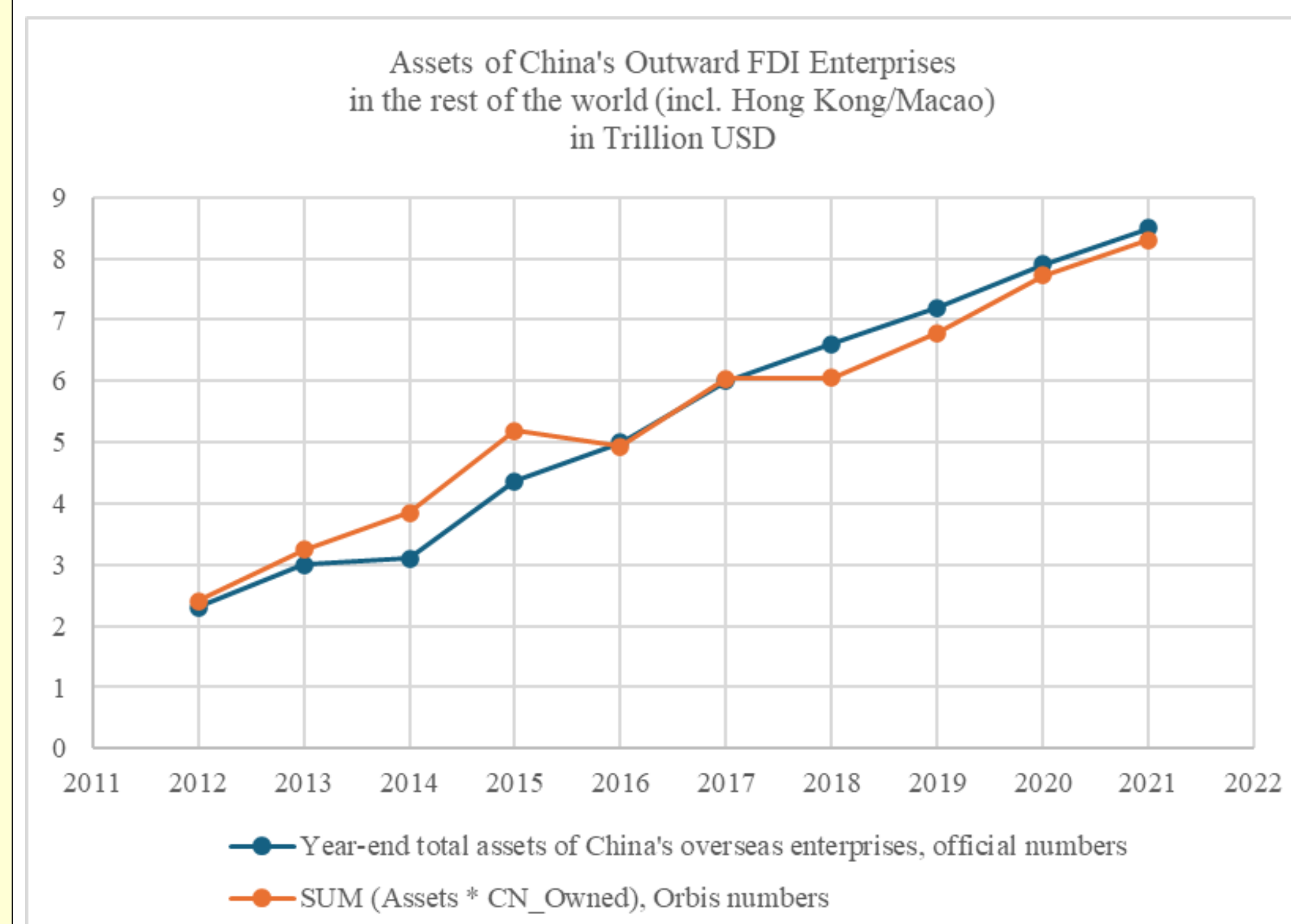
- China has experienced remarkable economic growth, solidifying its position as a global economic powerhouse
  - The world's second-largest economy since 2010
  - The world's largest exporter of goods since 2009
- Alongside China's economic rise, there has been growing anxiety and scrutiny in the Western world about China's new role in the global economy, giving rise to the so-called "**China threat**" narrative
  - whereby Chinese ownership would displace domestic activity and employment, including by acquiring Western technology

### Contribution

- Use microdata at the firm level to identify and track Chinese corporate ownership
- Distinguish the impact between **SOEs and private shareholders**
- Examine the spillover impact on non-Chinese-owned firms in the same country and industry
- The motivation to invest abroad is not fully oriented toward profit maximization but rather by **strategic reasons** such as **seeking natural resources** or **gaining technology transfer**

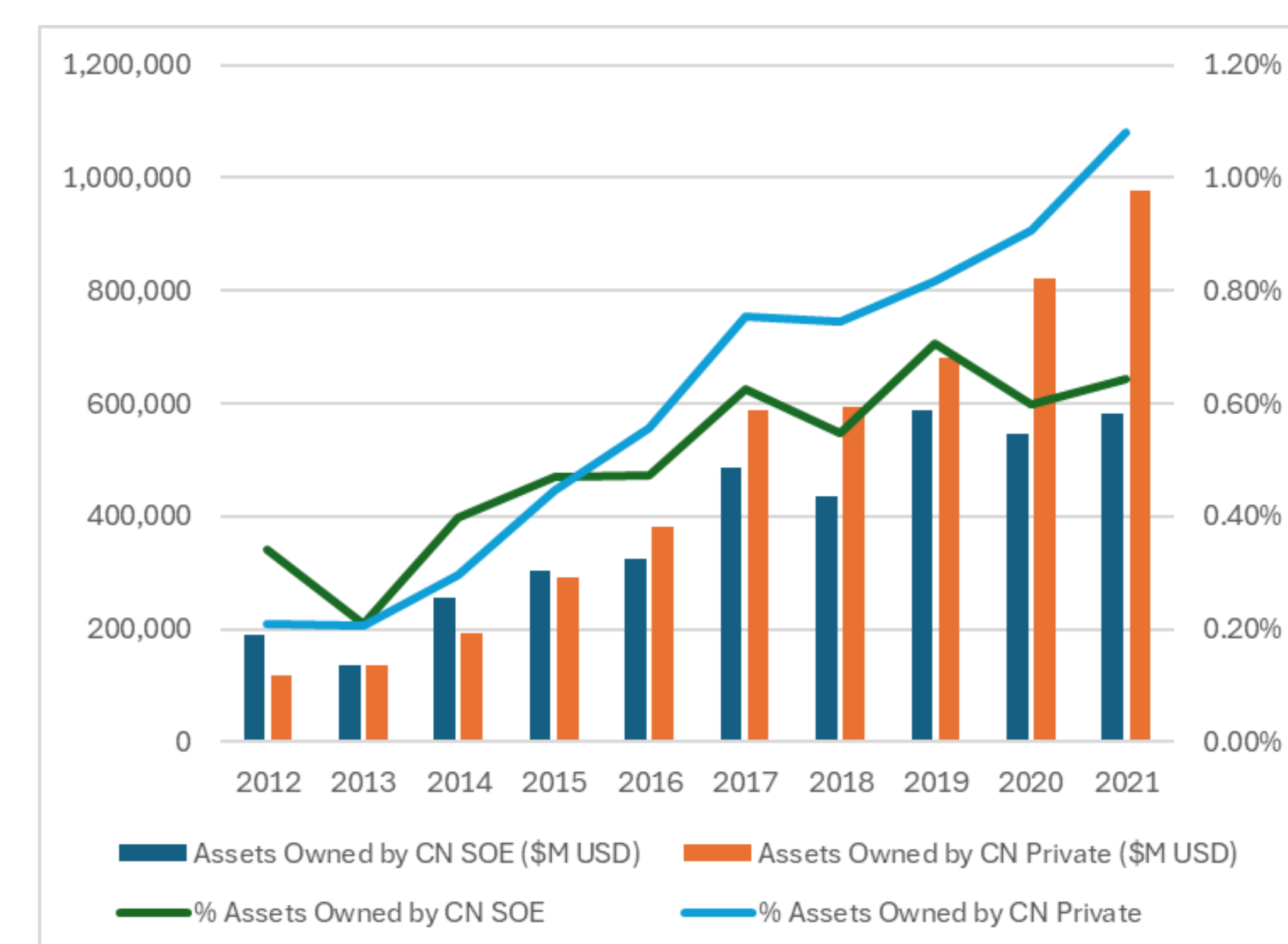
### Data

- Orbis Ownership data, financial data, patent data (BvD)
  - Original data: 400 million public and private firms in 212 economies
  - Use the annually updated data to construct a panel data that **does not have the survivorship bias**.
  - Filtering: "Very Large Company" category with valid balance sheet information, 1% of all firms but **80%~90% of total assets** in the Orbis universe
  - Final sample: 1,046,966 firm-year observations between 2012 and 2022 for 154,652 firms located in 159 countries
- Global supply-chain data from FactSet Revere



### Stylized Facts

- China has the **most rapid growth in outbound investment** in the world
- The top five industries targeted by China's outward investment are **financial services, manufacturing, information and communication, real estate, and scientific and technical activities**
- Europe** accounts for approximately 24.23% of China's overseas investment as of 2021. **Asia**, excluding China, Hong Kong, and Macau, accounts for 6.92%, and **Northern America** for 5.19% of total Chinese overseas investment.



### How China Firms Select Their Targets?

$$\text{Log}(\sum \text{CN\_Owned\_Assets})_{c,j,t+1} = \alpha + \sum_k \beta^k * Z_{c,j,t}^k + \text{Contl} + \alpha^C + \alpha^{Ind} + \alpha^{Year} + \varepsilon_{c,j,t}$$

- Z includes measures for **innovation (R&D), number of employees, supply chain reliance** (intermediate inputs; intermediate outputs), **natural resources** (country-level natural resources rents; indicators for natural resource-intensive sectors) at the country-sector level
- Controls: aggregated total assets, tangible fixed assets, and debt across all firms; indicators for missing R&D
- Strategic investment** in R&D-intensive firms, supply-chain networks, and natural resources
  - In particular, for SOE's investment

	(1)	(2)	(3)	(4)	(5)	(6)
	Log(1+#R&D)	Log(1+#GrantedPatents)	Log(1+#Fixed)	ROA		
Log(1+#R&D)	0.107*** (0.020)	0.093*** (0.019)	0.100*** (0.018)	0.086*** (0.017)	0.038*** (0.013)	0.038*** (0.014)
Log(1+#Empl)	0.039* (0.023)	0.023 (0.023)	0.029 (0.020)	0.007 (0.016)	0.011 (0.016)	0.014 (0.016)
II_CN/II	4.777* (2.760)	1.990 (3.465)	5.580** (2.684)	0.811 (3.344)	-0.633 (1.428)	1.807 (2.923)
IO_CN/IO	5.639** (2.343)	6.239** (2.585)	6.433** (2.193)	6.656*** (2.419)	2.237 (2.205)	2.923 (2.602)
Nature_Resources_Rent_Country	0.071*** (0.014)	0.077*** (0.014)	0.058*** (0.011)	0.059*** (0.011)	0.035*** (0.010)	0.035*** (0.010)
Agriculture_hunting_forestry (indicator)	-0.305 (0.357)	-0.269 (0.338)	-0.269 (0.338)	-0.269 (0.338)	-0.269 (0.338)	-0.269 (0.338)
Mining&quarrying - energy (indicator)	0.537 (0.591)	-0.544 (0.347)	-0.544 (0.347)	-0.544 (0.347)	0.976* (0.554)	0.976* (0.554)
Mining&quarrying - non-energy (indicator)	0.012 (0.588)	0.028 (0.507)	0.028 (0.507)	0.028 (0.507)	0.323 (0.486)	0.323 (0.486)
Mining support service activities (indicator)	0.190 (0.532)	-0.548* (0.280)	-0.548* (0.280)	-0.548* (0.280)	0.733 (0.473)	0.733 (0.473)
Financial and insurance activities (indicator)	3.194*** (0.715)	2.187*** (0.634)	2.187*** (0.634)	2.187*** (0.634)	2.709*** (0.697)	2.709*** (0.697)
HHI	-4.296*** (0.884)	-3.927*** (0.904)	-3.711*** (0.760)	-3.400*** (0.790)	-1.530** (0.683)	-1.321* (0.701)
HHI*HHI	3.871*** (0.758)	3.675*** (0.769)	3.183*** (0.654)	3.052*** (0.670)	1.545*** (0.575)	1.375*** (0.588)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	Yes	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	20,682	20,682	20,682	20,682	20,682	20,682
R-squared	0.235	0.253	0.218	0.237	0.131	0.143

### The Real Impact on Target Firms

$$Y_{i,t} = \alpha + \beta_1 \times \text{CN\_Owned}_{i,t} + \text{Control} + \alpha^{FE} + \varepsilon_{i,t}$$

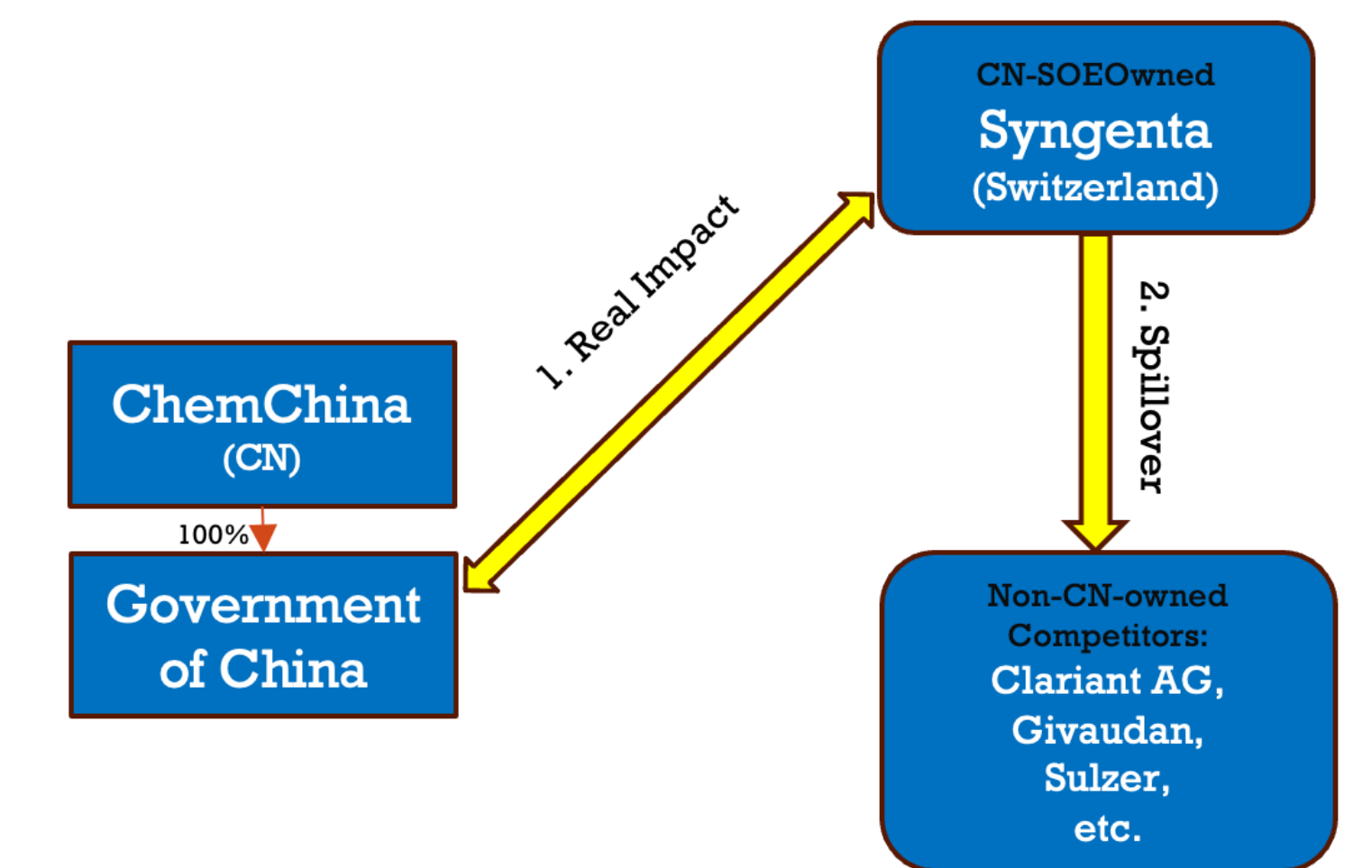
- Y is the firm's logarithm of R&D expenses, number of patents granted, fixed assets, employment, or the firm's ROA, TFP, supply-chain relationship with Chinese companies, etc.
- Results are robust under different sets of fixed assets:
  - Firm, Year
  - Firm, Industry\*Year
  - Firm, Country\*Year
  - Firm, Industry\*Year, Country\*Year
- Use Factset Revere to identify supply chain relationships (customers and suppliers)

	(1)	(2)	(3)	(4)
	Log(1+#R&D)	Log(1+#GrantedPatents)	Log(1+#Fixed)	ROA
CN_Owned	0.049*** (0.014)	-0.011* (0.006)	0.093*** (0.027)	-1.501*** (0.346)
Controls	Yes	Yes	Yes	Yes
FE	Yes	Yes	Yes	Yes
Observations	980,046	980,046	1,026,549	916,587
R-squared	0.992	0.848	0.916	0.579

	(5)	(6)	(7)	(8)
	TFP	Log(1+#Employment)	CNSupplier	CNCustomer
CN_Owned	-0.060 (0.319)	-0.080*** (0.019)	0.012 (0.012)	0.035** (0.016)
Controls	Yes	Yes	Yes	Yes
FE	Yes	Yes	Yes	Yes
Observations	420,884	631,037	121,253	121,253
R-squared	0.265	0.958	0.543	0.584

### Private Firms vs. SOEs



	(1)	(2)	(3)	(4)
	Log(1+#R&D)	Log(1+#GrantedPatents)	Log(1+#Fixed)	ROA
CN_PvtOwned	0.048*** (0.017)	-0.010 (0.007)	0.083*** (0.029)	-1.472*** (0.405)
CN_SOEOwned	0.053** (0.023)	-0.017* (0.009)	0.133** (0.058)	-1.614*** (0.496)
Controls	Yes	Yes	Yes	Yes
FE	Yes	Yes	Yes	Yes
Observations	980,046	980,046	1,026,549	916,587
R-squared	0.992	0.848	0.916	0.579

	(5)	(6)	(7)	(8)
	TFP	Log(1+#Employment)	CNSupplier	CNCustomer
CN_PvtOwned	0.255 (0.344)	-0.086*** (0.021)	0.016 (0.013)	0.035** (0.016)
CN_SOEOwned	-1.355*** (0.652)	-0.055 (0.035)	-0.003 (0.023)	0.037 (0.043)
Controls	Yes	Yes	Yes	Yes
FE	Yes	Yes	Yes	Yes
Observations	420,884	631,037	121,253	121,253
R-squared	0.265	0.958	0.543	0.584

### Spillover

$$\text{Log}(R\&D)_{i,t} = \alpha + \beta_1 \times \% \text{CN\_Owned\_Assets}_{c,j,t} + \text{Contl} + \alpha^{C+Ind} + \alpha^{C+Year} + \alpha^{Ind+Year} + \varepsilon_{c,j,t}$$

- Log(R&D)<sub>i,t</sub>: R&D expenses for firms that never have Chinese shareholders.
- %CN\_Owned\_Assets: the sum of firm-level assets owned by China scaled by the sum of firm-level total assets for all firms in country c, industry j, and year t

	Non-CN Owned Firm R&D	
%CN_Owned_Assets	-0.051 (0.057)	
%CN_PvtOwned_Assets		-0.041 (0.096)
%CN_SOEOwned_Assets		-0.060** (0.029)

### Is China Unique?

- In contrast to the US, JP, and IN, only China ownership
  - boosts target firms' R&D expenses

XX=	US	JP	IN	CN
XX_Owned	0.006 (0.005)	0.011 (0.011)	0.002 (0.017)	0.049*** (0.014)
Controls	Yes	Yes	Yes	Yes
FE	Yes	Yes	Yes	Yes
Observations	1,110,686	1,015,326	1,031,711	980,046
R-squared	0.988	0.992	0.992	0.992

- reduces target firms' # of granted patents (inefficiency)

XX=	US	JP	IN	CN
XX_Owned	-0.003 (0.003)	0.01 (0.008)	0.01 (0.011)	-0.011* (0.006)
Controls	Yes	Yes	Yes	Yes
FE	Yes	Yes	Yes	Yes
Observations	1,097,542	1,002,794	1,019,239	980,046
R-squared	0.838	0.818	0.844	0.848