Industrial Policy and Asset Prices: Evidence from the Made in China 2025 Policy

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What We Do?

Using the Made in China 2025 (MC2025) policy as an experiment, we examine

1. How financial market investors assess government industrial policy announcements.
2. How industrial policy announcements and evolutions impact targeted industries, both the presumed domestic industrial beneficiaries and their international competitors.

What is the MC2025?

It is the most important industrial policy initiative of recent decades.

- **Time:** It is proposed in October 2014 and officially announced on May 08, 2015.
- **Policy:** The policy targets ten mostly high-tech industries with promised subsidies, tax benefits, protection from competition, and other preferences.
- **Goal:** To achieve Chinese industrial prominence by 2025 and dominance by 2040.
- **Sector-based:** 10 high-tech industries
- **Placed-based:** Key regions/cities: 30 cities in 14 provinces

Empirical Design

1. We investigate market investors' responses to the policy announcement in China and the US, both the immediate market reaction and long-term stock performance.
2. We explain the long-term performance of Chinese firms by investigating
   1) City-based policy outcomes
   2) The DID results of Chinese firms'
      - External support (government subsidies, external financing)
      - Business expansion (R&D, capex, employment)
      - Operating performance (ROA, ROE)

Sample

The sample contains public listed firms in MC2025 targeted industries in China and the US.

- **China**: 169 firms
  - Listed on the Shanghai or Shenzhen stock exchanges
- **US**: 24 firms
  - Listed on the NYSE, Nasdaq, or Amex stock exchange
  - Headquartered in the United States
  - Have at least 20% of average annual revenues from China over 2012-2018
  - Disclose average research and development expenses exceeding $100 million over 2012- 2018

Event Study Results

Daily Analysis: around 8 May 2015

China	Model	CAR[-1,1]	CAR[-5,5]
	MAR - SH SZ A share VW index	4.523%***	11.455%***
	MM - SH SZ A share VW index	4.630%***	9.933%***
	Raw returns	9.144%***	12.656%***
US	**Model**	**CAR[-1,1]**	**CAR[-5,5]**
	MAR - CRSP VW index	1.073%**	1.783%*
	MM - CRSP VW index	1.581%***	2.827%**
	FF - CRSP VW index	0.971%**	1.624%
	Raw returns	2.737%***	4.604%***

Long-term Analysis: May 2015-Dec 2018

- [0,17]: May 2015 to Oct. 2016 (before Trump's election);
- [18,33]: Nov. 2016 to Feb. 2018 (before the start of the US-China trade war);
- [34,43]: Mar. 2018 to Dec. 2018.

China	Model	AR[0]	CAR[0,17]	CAR[18,33]	CAR[34,43]
	MAR - SH SZ A share VW index	28.856%***	12.805%***	-32.941%***	-8.762%***
	MM - SH SZ A share VW index	23.883%***	-21.974%***	-61.249%***	-21.604%***
	Raw returns (Buy & Hold returns)	38.464%***	-10.308%***	-19.787%***	-27.540%***
US	**Model**	**AR[0]**	**CAR[0,17]**	**CAR[18,33]**	**CAR[34,43]**
	MAR - CRSP VW	8.974%***	16.744%*	14.547%*	1.564%
	MM - CRSP VW	8.797%***	22.783%**	4.003%	5.921%
	FF- CRSP VW	8.208%***	23.516%**	6.452%	4.255%
	Raw returns (Buy & Hold returns)	10.008%***	20.109%	48.573%***	-4.956%

Why Chinese firms perform so badly?

Our empirical analyses show that

1. Treated firms headquartered in key-cities **do not have better performance**.
2. Treated firms **do not actually receive better** external government support or financing support as promised.

VARIABLES	(1) GovtSupport	(2) GovtSupport	(3) ChgSTD	(4) ChgSTD	(5) ChgLTD	(6) ChgLTD
Treated	0.003***		0.434***		-0.205	
	(3.579)		(2.732)		(-0.361)	
After	0.001		0.322		0.778	
	(0.954)		(1.335)		(0.894)	
Treated*After	-0.000	-0.001	-0.097	-0.116	1.053	0.792
	(-0.585)	(-0.998)	(-0.316)	(-0.337)	(0.942)	(0.581)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,095	3,095	2,477	2,477	1,822	1,822
Adjusted R-squared	0.059	0.514	0.008	0.053	0.004	0.028
Year FE	No	Yes	No	Yes	No	Yes
Firm FE	No	Yes	No	Yes	No	Yes

3. Treated firms **do not actively respond** to the MC2025 announcement by expanding their R&D, CapEx, or employment.

VARIABLES	(1) R&D	(2) R&D	(3) CapEx	(4) CapEx	(5) Employees	(6) Employees
Treated	0.009***		-0.005		-0.104	
	(3.572)		(-1.245)		(-1.226)	
After	0.001		-0.013***		-0.130*	
	(0.553)		(-3.544)		(-1.814)	
Treated*After	0.000	-0.001	0.002	0.003	-0.020	-0.029
	(0.238)	(-0.443)	(0.449)	(0.548)	(-0.267)	(-0.362)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,135	2,135	3,213	3,213	3,245	3,245
Adjusted R-squared	0.139	0.816	0.095	0.401	0.686	0.903
Year FE	No	Yes	No	Yes	No	Yes
Firm FE	No	Yes	No	Yes	No	Yes

4. Treated firms experience **a significant decrease in their operating performance** measured by ROA and ROE.

VARIABLES	(1) ROA	(2) ROA	(3) ROE	(4) ROE	(3) NI/EMP	(4) NI/EMP
Treated	0.009**		0.014		0.285**	
	(1.970)		(1.554)		(2.349)	
After	-0.009**		-0.024**		0.078	
	(-2.003)		(-2.319)		(0.705)	
Treated*After	-0.013**	-0.016***	-0.017	-0.025**	-0.303**	-0.377***
	(-2.536)	(-3.194)	(-1.412)	(-2.053)	(-2.384)	(-2.768)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,250	3,250	3,250	3,250	2,905	2,905
Adjusted R-squared	0.105	0.418	0.062	0.226	0.050	0.544
Year FE	No	Yes	No	Yes	No	Yes
Firm FE	No	Yes	No	Yes	No	Yes

Conclusions

- Chinese treated-industry firms benefit during the first few months, but then lose heavily in the long-term; US high-tech companies emerge as the biggest long-term financial winners.
- There is no increased government subsidy or external financing available, and, therefore, treated firms do not have incentives to expand their R&D investment, capital expenditures, or employment. The poor long-term stock performance is associated with the declined profitability of treated firms after 2015.