How Do Firms Withstand A Global Economic Shock: Evidence From Within-Firm Responses

Xiao Cen
Mays Business School, Texas A&M University

Vyacheslav Fos
Boston College, CEPR, ECGI

Wei Jiang
Emory University Goizueta Business School, NBER, ECGI

ABFER

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Motivation

- A long literature on how firms respond to financial or product market shocks, mostly conducted at the firm level. Less is known as how firms reallocate resources and production within their organizations.

- The external economic shocks arising from government intervention have become a major concern among policymakers. However, how firms withstand and respond to such global shocks is less studied compared to analyzing the impact of the shocks.

This study explores how firms make internal production adjustments in response to a global economic shock. It also sheds light on how a battery of external and internal frictions and pre-conditions affect firms' ability to adapt to the shock.

Outline of research: Impact and response

An external shock negatively impacted firms in "treated" industries in the U.S.

- The shock set-up is the Five-Year Plans in China, the highest level of industrial policies supporting selected sectors.
- Expanded production in China crowded out production in the same sectors in the U.S.
- U.S. firms and markets did not seem to anticipate the shock.

U.S. firms respond to the shock via within-firm reallocation.

- Production and employment shrink among establishments in the treated industry, followed by plant closures.
- Firms reallocate their production to industries that benefited from the shock: Upstream & exporting and downstream & importing.
- Firms resort to offshoring.

Outline of research: Adjustment frictions and firm/shareholder outcomes

Firms with establishments in treated industries are able to reallocate investment and production if and only if they are not financially constrained.

- Various financial friction measures: Publicly traded firms (vs. private firms), PE-sponsoring, Hoberg and Maksimovic (2015) index, leverage, etc.

Labor frictions, measured by unionization rate and non-adoption of the Right-to-work Law, have a more nuanced effect.

Shareholders of "nimble" treated firms (based on pre-Plan conditions) came out almost unscathed.

- China production/operation presence.
- Toeholds in "beneficiary industries."
- Financially unconstrained.
- Non-entrenched boards.

These ex ante nimble firms did not have to cut production, investment, or employment despite the negative shocks.

Data sources

- Integrating the China Industrial Enterprise Database (CIED) and the U.S. Census Longitudinal Database (LBD).

    - The LBD (1998-2016), covering 23 million business establishments, tracks economic activities including production and employment longitudinally.

    - The CIED (1998-2013) covers all business entities with revenue above RMB 20 million (US\$ 1 = RMB 7.5 during this period). Key variables include sales, employment, export, and government subsidy.

    - Both databases build on mandatory and comprehensive government surveys; they cover business entities affiliated with public and private firms.

- Burning Glass, the most comprehensive database of job postings in the U.S., covering 2007 and 2010-2020.

Sample overview

- The resulting merged data set encompasses information from 1.6 million unique business establishments in the U.S. and 1.1 million firms on the Chinese side.

- Each industry on average includes 586 U.S. establishments (based on the ASM/CMF-LBD merged sample) and 1,503 Chinese "firms," employing 92,500 and 657,300 people.

- Each business entity employs 158 (437) people in the U.S. (China).

- The wage per employee for the U.S. establishments is $55,460.

- The export intensity averaged at the entity-year level is 19.4% (8.9%) for China (U.S.).

- In China, firms are required to disclose direct government subsidies in income statements, such as tax rebates, financial aids, and R&D grants. 12.7% of the firms receive government subsidy, the average industry-year subsidy is RMB 629 million, or 0.2% of the annual sales. (U.S. subsidy data is not available and not a focus of our study.)

China's Five-Year Plans

- China's Five-Year Plans are a series of social and economic development initiatives issued since 1953.

- They serve as the highest level of the central government's industrial policies.

- Targeted government interventions to promote specific economic sectors with the aim of increasing productivity and spreading positive externality. Follow Chen et al. (2017) for the classification of "encouraged industries."

- Policies of such nature are not unique to China. In fact, there has been a revival of interest around the world. Notably the 2022 CHIPS Act (Creating Helpful Incentives to Produce Semiconductors) of the U.S.

- Our sample covers the Plans with starting years of 2001 (the 10th), 2006, 2011, and 2016 (the 13th).

Five-Year Plan as an economic shock: Chinese firms

Impact on *Chinese* firms in the treated industries: Industry (4-digit NAICS) - year level stacked panel.

Dependent variable:	$\log(\text{Firms}_{CN})$ (1)	$\log(\text{Employment}_{CN})$ (2)
Treated	0.145***	0.125***
	(2.83)	(3.02)
Observations	1,900	1,900
Industry-Plan FE	Yes	Yes
Year-Plan FE	Yes	Yes
Observation level	Industry	Industry

Once an industry in China was covered by a FYP, the number of firms and the level of employment increased by 14.5% and 12.5% from its pre-plan levels, with time-trend filtered out.

## Five-Year Plan as an economic shock: US establishments

Impact on *US* establishments in the treated industries: establishment-year level stacked panel.

Dependent variable:	log(Employment$_{US}$) (1)	log(Investment$_{US}$) (2)	Closure$_{US}$ (3)	Output$_{US}$ (4)
Treated	-0.051***	-0.061***	0.010***	-0.036***
	(-6.17)	(-5.67)	(7.14)	(-4.35)
Observations	1,245,000	1,245,000	1,245,000	1,245,000
Establishment-Plan FE	Yes	Yes	Yes	Yes
Year-Plan FE	Yes	Yes	Yes	Yes
Observation level	Establishment	Establishment	Establishment	Establishment

Once an industry in China was covered by a FYP, U.S. establishments in the same industry witnessed a 5.1% (6.1%) drop in employment (investment). The output of U.S. establishments decreases by about 3.6%. The probability of plant closure increases by 1.0 ppt (or 12.5% of the sample average).

Five-Year Plan an economic shock: Parallel pre-trends

Employment, investment, # establishment, and plant closure all followed
parallel pre-trends till year 0 (announcement).
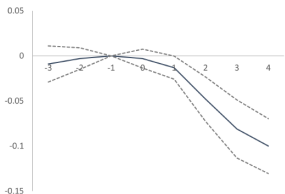
(a) The employment of U.S. establish-
ments around a Five-Year Plan.
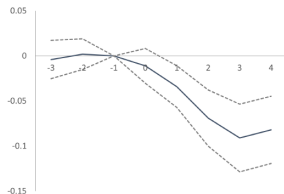
(b) The investment of U.S. establish-
ments around a Five-Year Plan.
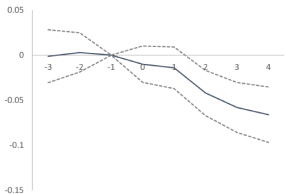
(c) U.S. establishments operating in an
industry around a Five-Year Plan.
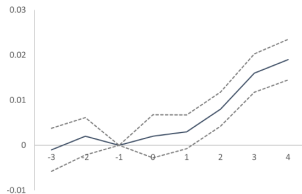
(d) The likelihood of closure of U.S. es-
tablishments around a Five-Year Plan.

Five-Year Plan an economic shock: Not anticipated by U.S. firms and markets

- No softening of stock prices, or slowing down in job postings occurs among U.S. firms in treated industries until after the announcement of a Plan.

- Both stock price and desire-to-hire are considered leading (or forward-looking) economic measures.
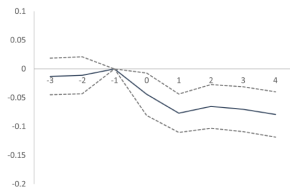
(e) The accumulated stock returns of U.S. firms around a Five-Year Plan.
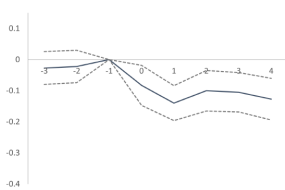
(f) The Tobin's Q of U.S. firms around the release of a Five-Year Plan.
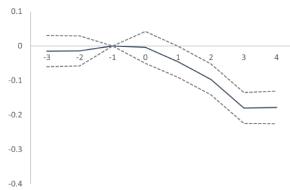
(g) Job postings in a U.S. industry around a Five-Year Plan.

Dynamics of the shock: Timing of response

Intensive-margin adjustment (investment, employment, output)

	log(Employment$_{US}$) (1)	log(Investment$_{US}$) (2)	log(Output$_{US}$) (3)
Treated^{-3}	-0.009	-0.004	0.000
	(-0.88)	(-0.37)	(0.04)
Treated^{-2}	-0.003	0.002	-0.008
	(-0.49)	(0.23)	(-0.73)
Treated^{0}	-0.003	-0.011	-0.008
	(-0.56)	(-1.12)	(-0.91)
Treated^{1}	-0.013**	-0.034***	-0.015*
	(-1.99)	(-2.88)	(-1.76)
Treated^{2}	-0.048***	-0.069***	-0.033**
	(-3.83)	(-4.34)	(-2.41)
Treated^{3}	-0.081***	-0.091***	-0.060***
	(-4.93)	(-4.75)	(-4.70)
Treated^{4}	-0.100***	-0.082***	-0.077***
	(-6.45)	(-4.32)	(-5.58)
Observations	1,058,000	1,058,000	1,058,000
Establishment-Plan FE	Yes	Yes	Yes
Firm-Plan FE			
Industry-Plan FE			
Year-Plan FE	Yes	Yes	Yes
Observation level	Establishment	Establishment	Establishment

Dynamics of the shock: Timing of response

Intensive-margin adjustment (investment, employment, output) + extensive-margin adjustment (plant closure).

	$\log(\text{Employment}_{US})$ (1)	$\log(\text{Investment}_{US})$ (2)	$\log(\text{Output}_{US})$ (3)	$\log(\text{Establishments}_{US})$ (4)	Closure_{US} (5)
Treated^{-3}	-0.009	-0.004	0.000	-0.001	-0.001
	(-0.88)	(-0.37)	(0.04)	(-0.08)	(-0.41)
Treated^{-2}	-0.003	0.002	-0.008	0.003	0.002
	(-0.49)	(0.23)	(-0.73)	(0.27)	(0.95)
Treated^{0}	-0.003	-0.011	-0.008	-0.010	0.002
	(-0.56)	(-1.12)	(-0.91)	(-0.97)	(0.82)
Treated^{1}	-0.013**	-0.034***	-0.015*	-0.014	0.003
	(-1.99)	(-2.88)	(-1.76)	(-1.19)	(1.57)
Treated^{2}	-0.048***	-0.069***	-0.033**	-0.042***	0.008***
	(-3.83)	(-4.34)	(-2.41)	(-3.29)	(4.14)
Treated^{3}	-0.081***	-0.091***	-0.060***	-0.058***	0.016***
	(-4.93)	(-4.75)	(-4.70)	(-4.10)	(7.35)
Treated^{4}	-0.100***	-0.082***	-0.077***	-0.066***	0.019***
	(-6.45)	(-4.32)	(-5.58)	(-4.21)	(8.29)
Observations	1,058,000	1,058,000	1,058,000	1,900	1,058,000
Establishment-Plan FE	Yes	Yes	Yes		Yes
Firm-Plan FE					
Industry-Plan FE				Yes	
Year-Plan FE	Yes	Yes	Yes	Yes	Yes
Observation level	Establishment	Establishment	Establishment	Industry	Establishment

Dynamics of the shock: Timing of response

Intensive-margin adjustment (investment, employment, output) + extensive-margin adjustment (plant closure) + Forward-looking measures (stock valuation and desire-to-hire)

	$\log(\text{Employment}_{US})$ (1)	$\log(\text{Investment}_{US})$ (2)	$\log(\text{Output}_{US})$ (3)	$\log(\text{Establishments}_{US})$ (4)	Closure_{US} (5)	AccumReturn_{US} (6)	Q_{US} (7)	$\log(\text{Job Postings}_{US})$ (8)
Treated^{-3}	-0.009	-0.004	0.000	-0.001	-0.001	-0.027	-0.013	-0.015
	(-0.88)	(-0.37)	(0.04)	(-0.08)	(-0.41)	(-1.00)	(-0.80)	(-0.65)
Treated^{-2}	-0.003	0.002	-0.008	0.003	0.002	-0.022	-0.011	-0.014
	(-0.49)	(0.23)	(-0.73)	(0.27)	(0.95)	(-0.83)	(-0.67)	(-0.63)
Treated^{0}	-0.003	-0.011	-0.008	-0.010	0.002	-0.083**	-0.044**	-0.004
	(-0.56)	(-1.12)	(-0.91)	(-0.97)	(0.82)	(-2.53)	(-2.34)	(-0.17)
Treated^{1}	-0.013**	-0.034***	-0.015*	-0.014	0.003	-0.140***	-0.077***	-0.046**
	(-1.99)	(-2.88)	(-1.76)	(-1.19)	(1.57)	(-4.90)	(-4.52)	(-2.01)
Treated^{2}	-0.048***	-0.069***	-0.033**	-0.042***	0.008***	-0.100***	-0.065***	-0.097***
	(-3.83)	(-4.34)	(-2.41)	(-3.29)	(4.14)	(-3.01)	(-3.35)	(-4.24)
Treated^{3}	-0.081***	-0.091***	-0.060***	-0.058***	0.016***	-0.105***	-0.070***	-0.180***
	(-4.93)	(-4.75)	(-4.70)	(-4.10)	(7.35)	(-3.26)	(-3.53)	(-7.87)
Treated^{4}	-0.100***	-0.082***	-0.077***	-0.066***	0.019***	-0.127***	-0.079***	-0.178***
	(-6.45)	(-4.32)	(-5.58)	(-4.21)	(8.29)	(-3.72)	(-3.94)	(-7.38)
Observations	1,058,000	1,058,000	1,058,000	1,900	1,058,000	49,000	49,000	16,357
Establishment-Plan FE	Yes	Yes	Yes		Yes			
Firm-Plan FE						Yes	Yes	
Industry-Plan FE				Yes				Yes
Year-Plan FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observation level	Establishment	Establishment	Establishment	Industry	Establishment	Firm	Firm	Industry

Shocks create winners and losers

While a Five-Year Plan hurts the focal industries in the U.S., upstream (or downstream) businesses stand to benefit, and more so if they export to (or import from) China.

Dependent Variable:	log(Employment$_{US}$) (1)	log(Investment$_{US}$) (2)	Closure$_{US}$ (3)
Upstream Businesses			
UpstreamToTreated*ExportToChina$_{-1}$	0.018***	0.022***	-0.004***
	(5.89)	(6.19)	(-4.05)
Downstream Businesses			
DownstreamToTreated*ImportFromChina$_{-1}$	0.020***	0.021***	-0.004***
	(6.09)	(5.93)	(-5.27)
Observations	1,051,000	1,051,000	1,051,000
Establishment-Plan FE	Yes	Yes	Yes
Year-Plan FE	Yes	Yes	Yes

Upstream (downstream) industries in the U.S. that export to (import from) China experience a 1.5% - 2.0% increase in the number of establishments and level of employment. Henceforth, "beneficiary industries."

Plants within the same firm respond differently

For a sample of establishments from all industries, plants in treated industries shrink (confirming earlier results), but "sister plants" (within the same firm) in beneficiary industries expand.

Dependent variable:	$\log(\text{Employment}_{US})$ (1)	$\log(\text{Investment}_{US})$ (2)	Closure_{US} (3)
Treated	-0.047***	-0.058***	0.009***
	(-5.97)	(5.41)	(6.93)
SameFirmAsTreated*BeneficiaryUpstr$_{-1}$	0.032**	0.052***	-0.013***
	(2.24)	(3.06)	(-5.87)
SameFirmAsTreated*BeneficiaryDownstr$_{-1}$	0.051***	0.068***	-0.015***
	(3.12)	(4.34)	(-7.06)
SameFirmAsTreated*NonBeneficiary$_{-1}$	-0.013	-0.006	0.003
	(-0.80)	(-0.35)	(0.24)
Sample		All industries	
Observations	1,245,000	1,245,000	1,245,000
Establishment-Plan FE	Yes	Yes	Yes
Year-Plan FE	Yes	Yes	Yes
Observation level	Establishment	Establishment	Establishment

The effects are relative to the pre-Plan levels of the same establishment.

Within-firm reallocation: Upstream/downstream industries

For a sample of establishments from all non-treated industries, establishments in beneficiary industries & with "sister plants" in treated industries take up a larger share of the firm total.

Dependent variable:	log(Employment$_{US}$) (1)	log(Investment$_{US}$) (2)	Closure$_{US}$ (3)
SameFirmAsTreated*BeneficiaryUpstr$_{-1}$	0.044**	0.053**	-0.016**
	(2.15)	(2.03)	(-2.32)
SameFirmAsTreated*BeneficiaryDownstr$_{-1}$	0.063***	0.069***	-0.018***
	(2.86)	(3.11)	(-2.89)
Sample		Non-treated industries	
Observations	1,051,000	1,051,000	1,051,000
Establishment-Plan FE	Yes	Yes	Yes
Firm-Year-Plan FE	Yes	Yes	Yes
Observation level	Establishment	Establishment	Establishment

With both establishment-Plan and firm-year-plan fixed effects, the effects are relative to the average change-in-level of all non-treated, non-beneficiary establishments within a firm-year.

Within-firm reallocation: Offshoring activity

Affected (publicly-listed) firms expanded their production in China after Plans.

Dependent variable:	$\log(\text{OffshoreIntensity}_{US})$	$\text{ForeignFirmPercent}_{CN}$
	(1)	(2)
Treated	0.051***	0.064**
	(5.65)	(2.15)
Observations	57,500	1,900
Firm-Plan FE	Yes	
Industry-Plan FE		Yes
Year-Plan FE	Yes	Yes
Observation level	Firm	Industry

Following Hoberg and Moon (2017) and Hoberg and Moon (2019), we measure a firm's extent of operation in China using text-based information from 10-Ks.

Alternative analysis based on the percentage of foreign & non-Greater China firms in China's industry provides consistent results.

Role of financial and labor frictions: Reallocation along supply chains

Establishments in beneficiary industries experienced a boom only if their parent firms were not financially constrained. The adjustment is slightly stronger for firms in low-unionization states and with shorter board tenure.

Dependent variable:	log(Employment$_{US}$)		log(Investment$_{US}$)	
	High Friction	Low Friction	High Friction	Low Friction
Financial frictions:				
Hoberg and Maksimovic (2015) index:				
SameFirmAsTreated*BeneficiaryUpDown$_{-1}$	-0.006	0.142***	-0.019	0.150***
	(-0.08)	(2.84)	(-0.11)	(2.99)
Private versus Public firms:				
SameFirmAsTreated*BeneficiaryUpDown$_{-1}$	0.022***	0.113***	0.033***	0.116***
	(2.88)	(2.98)	(2.85)	(3.25)
Non-PE backed versus PE backed private firms:				
SameFirmAsTreated*BeneficiaryUpDown$_{-1}$	0.020***	0.098***	0.030***	0.111***
	(2.74)	(2.88)	(2.69)	(2.22)
Human capital frictions:				
Low versus high exposure to right-to-work law:				
SameFirmAsTreated*BeneficiaryUpDown$_{-1}$	0.027**	0.080***	0.034**	0.088***
	(2.45)	(3.44)	(2.44)	(2.94)
High versus low board tenure:				
SameFirmAsTreated*BeneficiaryUpDown$_{-1}$	0.048**	0.178***	0.068**	0.164***
	(2.40)	(3.76)	(2.10)	(3.34)
Establishment-Plan FE	Yes	Yes	Yes	Yes
Firm-Year-Plan FE	Yes	Yes	Yes	Yes
Observation level	Establishment	Establishment	Establishment	Establishment

Within-firm across-country reallocation: Offshore to China

Affected (public) firms expanded their production in China post Plans only if they were not financially constrained. Reallocation to China is more intensive for firms more exposed to labor unions and those with shorter board tenure.

Dependent variable:	log(OffshoreIntensity$_{US}$)			ForeignFirmPercent$_{CN}$		
	(1)	(2)	(3)	(4)	(5)	(6)
Treated	-0.015	0.065***	0.044***	0.020	0.105***	0.045*
	(-1.49)	(6.52)	(5.90)	(0.88)	(3.37)	(1.75)
Treated*LowConstraint$_{-1}$	0.082***			0.054***		
	(4.16)			(2.69)		
Treated*HighRTW$_{-1}$		-0.030***			-0.074***	
		(-3.47)			(-2.91)	
Treated*LowBoardTenure$_{-1}$			0.018**			0.044*
			(2.41)			(1.76)
Observations	57,500	57,500	57,500	1,900	1,900	1,900
Firm-Plan FE	Yes	Yes	Yes			
Industry-Plan FE				Yes	Yes	Yes
Year-Plan FE	Yes	Yes	Yes	Yes	Yes	Yes
Observation level	Firm	Firm	Firm	Industry	Industry	Industry

Conflicting roles of unions

- Firms in high-unionization states are less likely to relocate production to "beneficiary industries," usually in a different location.
- Such firms face more resistance to reduce employment *if* they stay.
- However, the same group of firms are more likely to offshore, which results in a larger scale of employment termination.

- Such a contradiction—that labor unions deter firms from pivoting to a different sector/region but fail to stop firms from moving to a different country, or even make them more likely to do so—has not been empirically established in the literature.

Shareholders of "nimble" firms came out less scathed

Investors/shareholders of treated firms incurred loss post Plans, but those firms that are pre-positioned to make adjustments ("nimble firms") are able to substantially offset the losses.

Dependent variable:	Q_{US} (1)	AccumReturn$_{US}$ (2)	Q_{US} (3)	AccumReturn$_{US}$ (4)	Q_{US} (5)	AccumReturn$_{US}$ (6)
Treated	-0.064***	-0.095***	-0.069***	-0.106***	-0.064***	-0.094***
	(-4.03)	(-3.49)	(-3.83)	(-4.07)	(-3.75)	(-4.10)
Treated*ChinaPresence$_{-1}$	0.048***	0.044*				
	(3.28)	(1.86)				
Treated*BeneficiaryIndExposure$_{-1}$			0.058***	0.087**		
			(4.73)	(2.45)		
Treated*LowBoardTenure$_{-1}$					0.023**	0.024*
					(2.17)	(1.70)
Observations	57,500	57,500	57,500	57,500	57,500	57,500
Firm-Plan FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-Plan FE	Yes	Yes	Yes	Yes	Yes	Yes
Observation level	Firm	Firm	Firm	Firm	Firm	Firm

"Nimble firms" are those with China presence (production or operation), or toeholds in beneficiary industries, low financial constraints, or shorter board tenure, all measured during the year prior to a Plan.

Shareholders of "nimble" firms came out less scathed (con't)

Investors/shareholders of treated firms incurred loss post Plans, but those firms that are pre-positioned to make adjustments ("nimble firms") are able to substantially offset the losses.

Low financial constraint or low union presence reduce valuation loss based on Q.

Dependent variable:	Q_{US} (1)	AccumReturn$_{US}$ (2)	Q_{US} (3)	AccumReturn$_{US}$ (4)	Q_{US} (5)	AccumReturn$_{US}$ (6)
Treated	-0.145***	-0.240***	-0.068***	-0.090***	-0.071***	-0.086***
	(-4.58)	(-7.10)	(-3.32)	(-2.51)	(-3.87)	(-2.76)
Treated*LowConstraint$_{-1}$	0.116***	0.192***				
	(3.06)	(6.53)				
Treated*LowUnionization$_{-1}$			0.033***	0.016		
			(2.89)	(0.90)		
Treated*RTW$_{-1}$					0.039***	0.003
					(2.62)	(0.17)
Observations	57,500	57,500	57,500	57,500	57,500	57,500
Firm-Plan FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-Plan FE	Yes	Yes	Yes	Yes	Yes	Yes
Observation level	Firm	Firm	Firm	Firm	Firm	Firm

"Nimble firms" are those with China presence (production or operation), or toeholds in beneficiary industries, low financial constraints, or shorter board tenure, all measured during the year prior to a Plan.

Real outcomes of "toehold-nimble" firms in U.S. operation

Overall employment declines among treated firms post Plans, but those firms that are pre-positioned to make adjustments to beneficiary industries are able to mitigate the shrinkage.

Toehold in China amplifies the shrinkage of a treated firm's US operation.

Dependent variable:	$\log(\text{Employment}_{US})$ (1)	$\log(\text{Investment}_{US})$ (2)	$\log(\text{Establishments}_{US})$ (3)	$\log(\text{Employment}_{US})$ (4)	$\log(\text{Investment}_{US})$ (5)	$\log(\text{Establishments}_{US})$ (6)
Treated	-0.029**	-0.035***	-0.011***	-0.067***	-0.081***	-0.023***
	(-2.50)	(-2.57)	(-2.65)	(-7.94)	(-9.53)	(-9.85)
Treated*ChinaPresence$_{-1}$	-0.020*	-0.023***	-0.009***			
	(-1.94)	(-3.21)	(-3.01)			
Treated*BeneficiaryIndExposure$_{-1}$				0.056***	0.072***	0.018***
				(4.66)	(7.32)	(9.82)
Observations	57,500	57,500	57,500	665,000	665,000	665,000
Firm-Plan FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-Plan FE	Yes	Yes	Yes	Yes	Yes	Yes
Observation level	Firm	Firm	Firm	Firm	Firm	Firm

Real outcomes of "financial-nimble" firms in U.S. operation

The treated firms that are not financially constrained experience significantly less shrinkage in their US operations.

Dependent variable:	log(Employment$_{US}$) (1)	log(Investment$_{US}$) (2)	log(Establishments$_{US}$) (3)	log(Employment$_{US}$) (4)	log(Investment$_{US}$) (5)	log(Establishments$_{US}$) (6)
Treated	-0.081*** (-5.21)	-0.132*** (-6.46)	-0.042*** (-10.48)	-0.108*** (-4.06)	-0.137*** (-3.66)	-0.051*** (-3.73)
Treated*LowConstraint$_{-1}^{HM}$	0.060*** (4.27)	0.113*** (5.36)	0.036*** (9.23)			
Treated*LowConstraint$_{-1}^{WW}$				0.093* (1.92)	0.119** (2.50)	0.048*** (2.96)
Observations	57,500	57,500	57,500	57,500	57,500	57,500
Firm-Plan FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-Plan FE	Yes	Yes	Yes	Yes	Yes	Yes
Observation level	Firm	Firm	Firm	Firm	Firm	Firm

Real outcomes of "institution-nimble" firms in U.S. operation

Shorter board tenure and lower exposure to labor union mitigate the negative impact on treated firms' US operating outcomes.

Dependent variable:	$\log(\text{Employment}_{US})$ (1)	$\log(\text{Investment}_{US})$ (2)	$\log(\text{Establishments}_{US})$ (3)	$\log(\text{Employment}_{US})$ (4)	$\log(\text{Investment}_{US})$ (5)	$\log(\text{Establishments}_{US})$ (6)
Treated	-0.086***	-0.101***	-0.029***	-0.041***	-0.051***	-0.015***
	(-4.55)	(-7.39)	(-7.22)	(-4.72)	(-4.28)	(-6.07)
Treated*RTW_{-1}	0.053**	0.056***	0.017***			
	(2.11)	(3.35)	(3.35)			
Treated*$LowBoardTenure_{-1}$				0.016**	0.018**	0.004*
				(2.52)	(2.04)	(1.79)
Observations	665,000	665,000	665,000	57,500	57,500	57,500
Firm-Plan FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-Plan FE	Yes	Yes	Yes	Yes	Yes	Yes
Observation level	Firm	Firm	Firm	Firm	Firm	Firm

Shareholder interest and overall job provision are not inevitably in conflict when it comes to within-firm adjustment to negative shocks.

What do we learn?

- Industrial policies from a major competing economy constitute a negative economic shock on the focal industries, while the policies create winning and losing sectors simultaneously.

- Firms adjust promptly into winning situations (reallocating to beneficiary industries and offshoring.) Financial and institutional flexibility plays an important role in making firms nimble in adapting to changes.

- Shareholders of disrupted firms that are able to adjust due to geographic and sectoral pre-positions and low financial frictions do not suffer significant losses.

- Adaptive affected firms are able to largely mitigate the negative impact on their U.S. operation outcomes, which suggests the firm adjustments that aim to preserve shareholder value may also benefit other stakeholders.