Exporting and Frictions in Input Markets: Evidence from Chinese Data

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Motivation

- Large dispersion across average products of labor and capital within industries, possibly caused by frictions.
- Removing those frictions in input markets generates large TFP gains.
  - Hsieh and Klenow (2009): removing all sources of misallocations would increase total factor productivity (TFP) in China by 86-115 percent.

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- Many contributions analyze the direct effect of trade liberalization on TFP (Pavcnik (2002), Amiti and Konigs (2007), Goldberg et al. (2009), etc.)
- This paper: Shocks to export opportunities can alleviate misallocation, thus raising aggregate TFP.

Roadmap

1. Empirical Evidence
2. Framework
   - Borrowing constraints tied to past performance.
   - Exporting à la Helpman et al. (2010)
3. Empirical Analysis
   - The deviation of average products from the frictionless equilibrium tends to be smaller at firms facing a shock to market access.

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Data

- China's Annual Survey of Industry (AIS)
  - Balance sheet information, e.g., revenue, assets, investments, employments, etc.
  - Data on all state-owned firms and on non-state-owned firms with revenues above five million RMB ($\sim \$700K$)
  - Years: 1998-2007
  - Construct a real capital stock series from investments as in Brandt et al. (2012); moreover, we use their deflators for gross output, input and capital investments.
- Firm Export Customs (2000-2007)
  - Firm-level exports by country, product, and year.

Firm-level measures of dispersion

- Hsieh and Klenow (2004): frictions in capital and output markets induce within-sector variation in the average products of labor and capital across firms.
- Our firm-level measures: the deviation of firm-level outcomes from sector averages.

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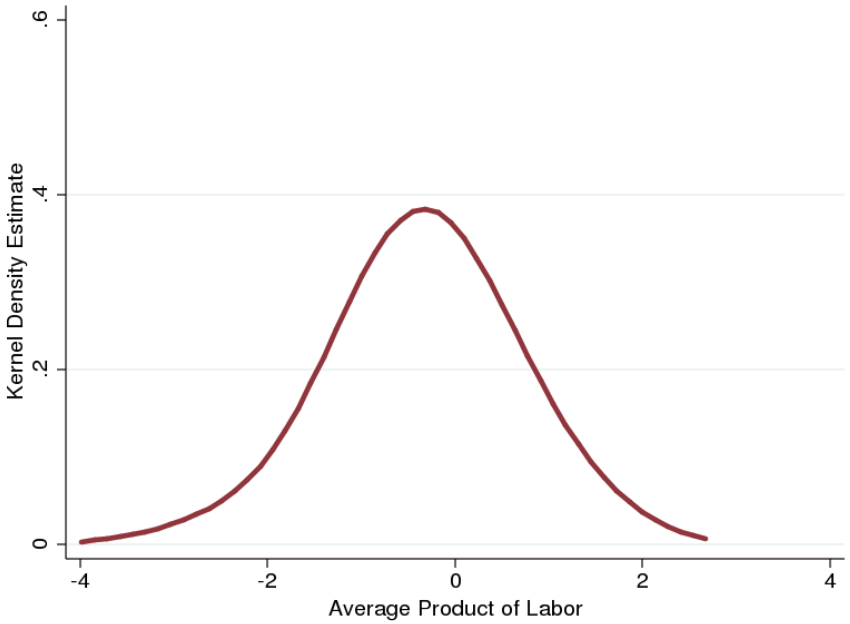
Constructing the measures

- Normalize the average products by the sector averages.
- Express the normalized measures in log-s.
- Take absolute value.

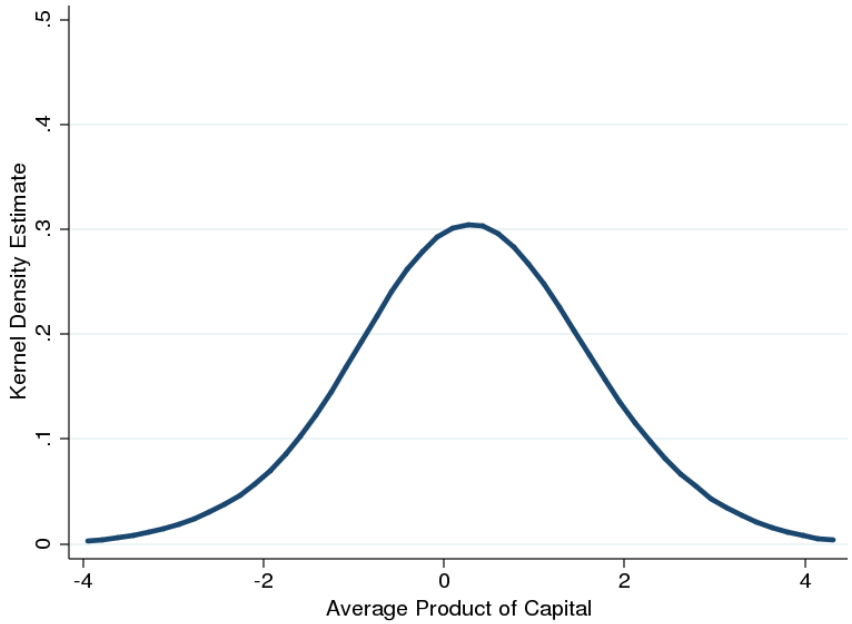
For labor return, for example,

$$|\ln \lambda_{ist}| = \left| \ln \frac{\frac{P_{ist}Y_{ist}}{L_{ist}}}{\frac{P_{st}Y_{st}}{L_{st}}} \right| = \left| \ln \left[\frac{1}{(1+\mu_{is,t+1})} \int_{i \in I} (1+\mu_{is,t+1}) \, \mathrm{d}i \right] \right|$$

Looking at Firm-level Measures



Distribution of Labor Returns ($\ln \lambda$)



Distribution of Capital Returns ($\ln \kappa$)

- Positive and negative deviations of individual returns from zero reveal the presence of heterogeneous wedges affecting input choices. For labor, e.g.,
  - Firms with $\ln \lambda > 0$ have labor returns above the sector average, i.e. their labor input demand is below the sector's.
  - Firms with $\ln \lambda < 0$ have labor returns below the sector average, i.e. their labor input demand is above the sector's.

Controlling for Firm Heterogeneity

Firm heterogeneity affects the dispersion across average products of labor and capital.

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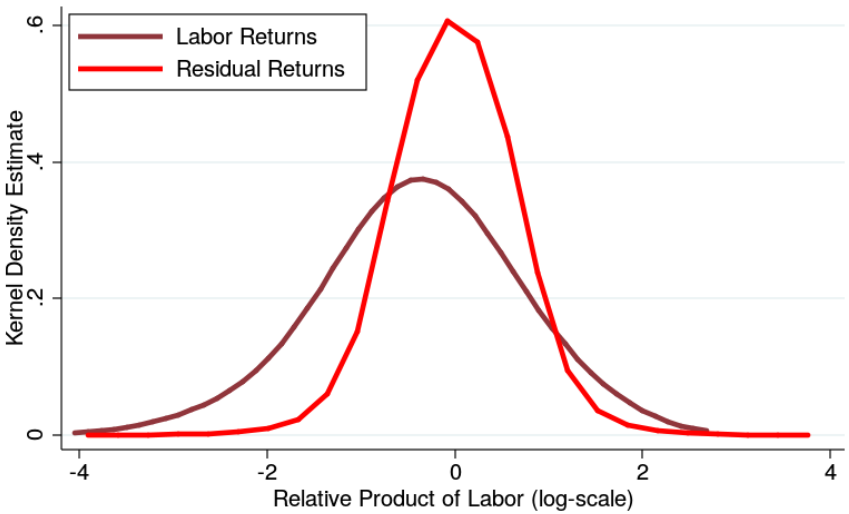
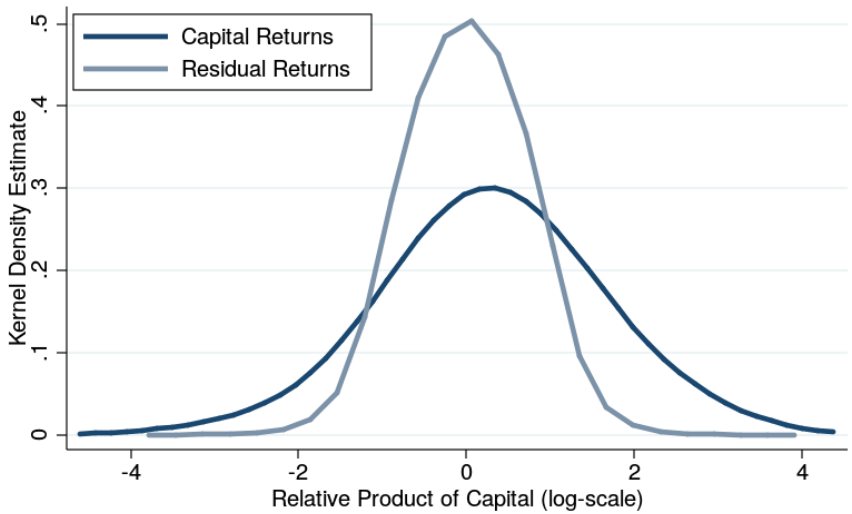
Firm heterogeneity affects the dispersion across average products of labor and capital.

Construct a **residual average product**: control for the effect of profit margin (proxy for demand elasticity), size, TFP, and sector-time dummies



Source: AIS data, 1998-2007.
Note: Labor returns are relative to industry averages; residual returns are obtained from a regression of labor returns on profit margin, TFP, capital stock, firm and sector-time fixed effects.

Distribution of Labor Returns ($\ln \lambda$)

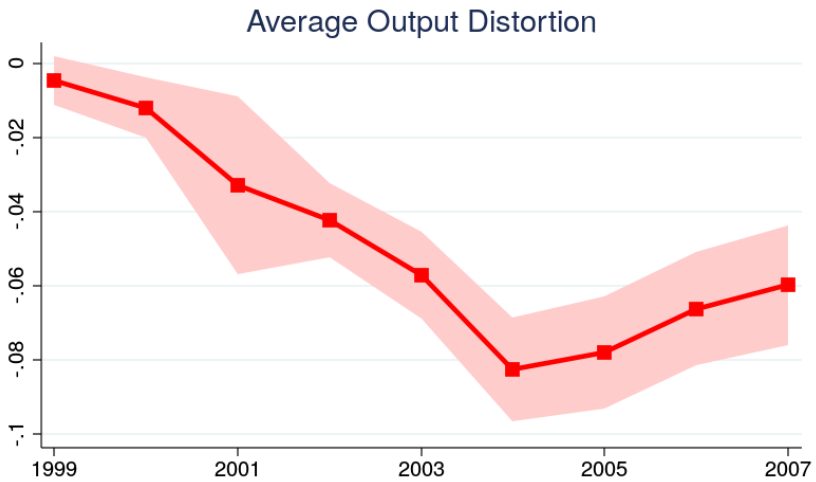


Source: AIS data, 1998-2007.
Note: Capital returns are relative to industry averages; residual returns are obtained from a regression of capital returns on profit margin, TFP, total employment, firm and sector-time fixed effects.

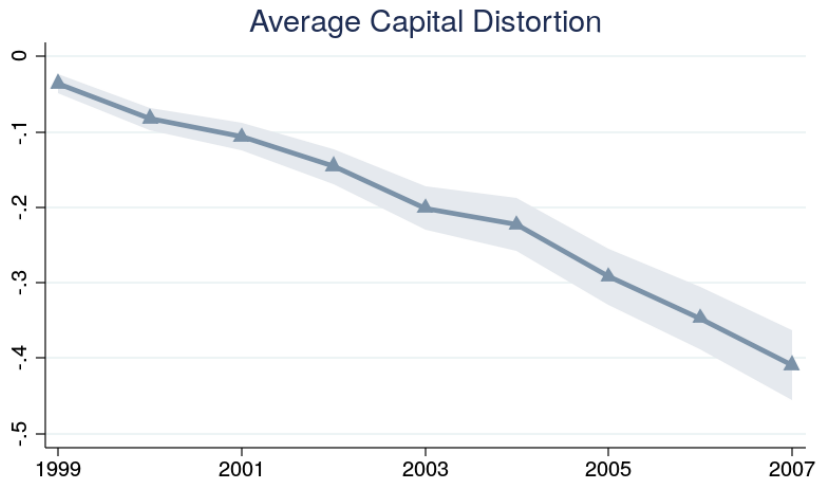
Distribution of Capital Returns ($\ln \kappa$)

Dispersions across L and K over time

Within-sector dispersion across input returns declined over 1998-2007



Source: AIS Data, 1998-2007.
Notes: the average output distortion is obtained from a regression of residual labor returns on time dummies; the estimates are relative to 1998. Red-shaded area denotes 95 percent confidence interval.



Source: AIS Data, 1998-2007.
Notes: the average capital distortion is obtained from a regression of residual capital returns on time dummies; the estimates are relative to 1998. Blue-shaded area denotes 95 percent confidence interval.

Dispersion across Input Returns: Exporters vs. Nonexporters

Cross-sectional comparison

$$\text{Disp}\left(\ln y\right)_{jast} = \alpha_0 + \alpha_1 \text{Export}_{jast} + D_{as} + D_t + \eta_{iast}, \quad y = \lambda, \kappa$$

where $\text{Export}_{jast} = 1$ indicates that the dispersion is computed across exporting firms of age a in sector s at time t.

Additional controls

- Dispersion across profit margin
- Dispersion across size
- Dispersion across TFP

Remove export status-sector-age-time cells with less than 10 firms.

Results

Within-sector-age dispersion is smaller across exporters.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
		Avg $\lvert ln\lambda \rvert$			Avg $\lvert ln\kappa \rvert$	
Export	-0.047***	-0.045***	-0.039***	-0.112***	-0.110***	-0.102***
	(0.008)	(0.008)	(0.007)	(0.010)	(0.010)	(0.010)
sd ln ψ		0.033***	0.031***		0.027***	0.025***
		(0.004)	(0.004)		(0.005)	(0.005)
sd TFP			0.188***			0.232***
			(0.007)			(0.010)
sd K			-0.021***			
			(0.005)			
sd Empl						-0.041***
						(0.011)
Sector[a]-Age	y	y	y	y	y	y
Year	y	y	y	y	y	y
Obs.	47,526	47,526	47,526	47,526	47,526	47,526
R^2	0.472	0.475	0.509	0.494	0.495	0.523

Roadmap

1. Empirical Evidence
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The Effect of Trade on Misallocation

Focus on borrowing constraints as a source of misallocation.

How trade can reduce misallocation

- Premise: borrowing constraints tied to past revenues.
- Shocks to export opportunities are equivalent to a shock to revenues.
- Larger revenues relax the borrowing constraints, allowing inputs to flow towards more efficient firms.

A Framework of Analysis

Main Elements of the Model (Partial Equilibrium Analysis)

- CES Demand, with elasticity σ.
- Cobb-Douglas Production.

$$Y_{ist} = z_{ist} L_{ist}^{\alpha_s} K_{ist}^{1-\alpha_s}$$

- Borrowing constraints are linked to size (Gopinath et al. (2015), Arellano et al. (2012); Evidence)

$$K_{ist} \leq A_{is0} + P_{is,t-1} Y_{is,t-1}$$

- Decision to export is modeled as in Helpman et al. (2010)

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Model Implication: Shocks to export opportunities induce input choices closer to the frictionless equilibrium.

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Firm-Level Implications

Shocks to export opportunities induce firm to move closer to optimal equilibrium

With our firm-level measures of distortion

- Under the frictionless equilibrium, $\ln \lambda = 0$ and $\ln \kappa = 0$.
- Therefore, $|\ln \lambda|$ and $|\ln \kappa|$ measure the firm deviation from the frictionless equilibrium.

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Our Baseline Model

$$|\ln y|_{ist} = \beta_0 + \beta_1 \text{Mkt Access}_{is,t-1} + D_{st} + D_{pt} + D_i + \varepsilon_{ist}$$

Market Access Shocks:

- Export Status
- Export Shipments
- Tariffs above the 75th percentile

Tariffs as Market Access Shocks

Measure of Tariffs

- For exporters: $\tau_{ist} = \sum_j w_{2000}\tau_{ijst}$, where j denotes country/product groups
- For non-exporters: $\tau_{ist} = \tau_{st}$

Weights are export/production shares of total revenues for 2000.

Consider firms facing large vs. small tariffs within a sector

- Firms facing tariffs above 75th percentile vs. below
- Correlation with export status: -0.6

Firm-level Distortions: Results

Variables	(1)	(2)	(3)	(4)	(5)	(6)
		$\lvert\ln\lambda\rvert$			$\lvert\ln\kappa\rvert$	
Tariffs Above 75_{t-1}	0.007**	0.007**	0.007**	0.010***	0.010***	0.011***
	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)
ln Age	-0.040***	-0.039***	-0.033***	-0.156***	-0.157***	-0.155***
	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)
$\ln\psi$		0.014***	0.014***		-0.006***	-0.007***
		(0.001)	(0.001)		(0.001)	(0.001)
TFP			0.055***			0.259***
			(0.003)			(0.004)
$\ln K$			-0.033***			
			(0.002)			
ln Empl						-0.131***
						(0.003)
Sector-Year	y	y	y	y	y	y
Prov-Year	y	y	y	y	y	y
Firm FE	y	y	y	y	y	y
Obs.	893,613	893,613	893,613	893,613	893,613	893,613
R^2	0.011	0.012	0.015	0.013	0.013	0.050
Number of Firm IDs	297,718	297,718	297,718	297,718	297,718	297,718

Distortions and Borrowing Constraints

- Interaction between sector-level average debt-to-asset ratio and market access shocks
  - Firms facing tariffs above the 75th percentile and in sectors with higher debt-to-asset ratio experience even higher capital distortions.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
		$\lvert\ln\lambda\rvert$			$\lvert\ln\kappa\rvert$	
Tariffs Above 75_{t-1}	0.079*	0.077*	0.077*	-0.153***	-0.152***	-0.152***
	(0.044)	(0.044)	(0.044)	(0.051)	(0.051)	(0.051)
Tariffs Above 75_{t-1}*Lev. Ratio	-0.121	-0.118	-0.118	0.275***	0.274***	0.275***
	(0.074)	(0.074)	(0.074)	(0.086)	(0.086)	(0.086)
ln Age	-0.041***	-0.040***	-0.034***	-0.156***	-0.156***	-0.155***
	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)
$\ln\psi$		0.014***	0.014***		-0.007***	-0.008***
		(0.001)	(0.001)		(0.001)	(0.001)
TFP			0.055***			0.261***
			(0.003)			(0.004)
$\ln K$			-0.033***			
			(0.002)			
ln Empl						-0.132***
						(0.003)
Sector-Year	y	y	y	y	y	y
Prov-Year	y	y	y	y	y	y
Firm FE	y	y	y	y	y	y
Obs.	898,817	898,817	898,817	898,817	898,817	898,817
R^2	0.011	0.012	0.015	0.013	0.013	0.050
Number of Firm IDs	298,746	298,746	298,746	298,746	298,746	298,746

Quantifications and Robustness

Firms facing tariffs above the 75th percentile experience larger distortions in output and input markets

- Facing tariffs above the 75th percentile increases
  - output distortions by 0.7% of a sd.
  - capital distortions by 0.8% of a sd.
- Controlling for proxies of financial constraints reduces the effect on capital distortions by 1/3 (Table).
- the effect on capital distortions is 1.4% of a sd at constrained firms.

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Robustness Checks

- Other market access shocks (Export Status and Export Shipments)
- Private firms vs. SOEs (Table)
- Alternative specification (Petrin & Sivadasan (2013))

Conclusions

- Within-sector input dispersion is significantly lower across exporters.
- Trade shocks induce firms to move closer to the frictionless equilibrium.
  - The effect is significant for both labor and capital measures.
- Back-of-the-envelope calculation: firm-level effects imply that trade shocks increase productivity by 1% by reducing input misallocation. (Effect on TFP)

Borrowing Constraints: Empirical Evidence

Larger firms face higher costs of default and, as such, are allowed to borrow more.

Variables	(1) Debt/Assets	(2) Debt/Equity	(3) Fee Share	(4) Interest Share
Revenues_{t-1}	0.029***	0.016***	0.002***	0.002***
	(0.001)	(0.002)	(0.0004)	(0.0004)
Sector-Year	y	y	y	y
Prov-Year	y	y	y	y
Obs.	1,212,190	1,212,190	1,212,190	1,212,190
R^2	0.062	0.056	0.002	0.002

Back

Market Access Shocks and the Effect on Constraints

Let $E = \{E_0, E_1, \ldots, E_T\}$ be the sequence of market size indicators. The n-th borrowing constraints satisfies

$$\frac{(1+\mu_{is,n+1})^{\sigma}}{[r+\mu_{is,n}]^{\sigma(1-\alpha_s)+\alpha_s}} - \frac{\Psi}{\tilde{\theta}_K}\frac{E_{n-1}}{E_n}\frac{(1+\mu_{is,n})^{\sigma-1}}{[r+\mu_{is,n-1}]^{(1-\alpha_s)(\sigma-1)}} = \frac{A_{is}}{z_{is}^{\sigma-1}} w^{\alpha_s(\sigma-1)}$$

By the Implicit Function Theorem,

$$\frac{\partial \mu_{is,n}}{\partial E_n} > 0$$
$$\frac{\partial \mu_{is,n}}{\partial E_{n-1}} < 0$$

Back

Role of Credit Constraint

Exporters display lower dispersion in sectors with higher financial dependence (Manova (2009))

- Qualitatively similar results with measure of capital intensity or tangibility

Variables	(1)	(2)	(3)	(4)	(5)	(6)
		Avg $\lvert ln\lambda \rvert$			Avg $\lvert ln\kappa \rvert$	
Export	-0.076***	-0.072***	-0.064***	-0.169***	-0.166***	-0.155***
	(0.013)	(0.013)	(0.012)	(0.017)	(0.017)	(0.017)
Export*Fin Dep	-0.070	-0.061	-0.040	-0.546**	-0.540**	-0.512**
	(0.090)	(0.094)	(0.089)	(0.227)	(0.221)	(0.219)
sd ln ψ		0.047***	0.045***		0.033***	0.030***
		(0.006)	(0.006)		(0.006)	(0.006)
sd TFP			0.159***			0.206***
			(0.012)			(0.017)
sd K			-0.016***			
			(0.006)			
sd Empl						-0.036**
						(0.015)
Sector[a]-Age	y	y	y	y	y	y
Year	y	y	y	y	y	y
Obs.	21,590	21,590	21,590	21,590	21,590	21,590
R^2	0.323	0.329	0.359	0.338	0.340	0.369

Role of Credit Constraint: Chinese Measure

Exporters display lower dispersion in sectors with higher financial dependence

- Firms classified based on their average debt-to-assets ratio

Variables	(1)	(2)	(3)	(4)	(5)	(6)
		Avg $\lvert ln\lambda \rvert$			Avg $\lvert ln\kappa \rvert$	
Export	0.064	0.062	0.095	0.165	0.163	0.210*
	(0.086)	(0.085)	(0.082)	(0.118)	(0.118)	(0.117)
Export*Lev Ratio	-0.185	-0.178	-0.224	-0.461**	-0.456**	-0.520***
	(0.147)	(0.146)	(0.140)	(0.198)	(0.197)	(0.196)
sd ln ψ		0.033***	0.031***		0.027***	0.025***
		(0.004)	(0.004)		(0.005)	(0.005)
sd TFP			0.188***			0.232***
			(0.007)			(0.010)
sd K			-0.020***			
			(0.005)			
sd Empl						-0.039***
						(0.010)
Sector[a]-Age	y	y	y	y	y	y
Year	y	y	y	y	y	y
Obs.	47,526	47,526	47,526	47,526	47,526	47,526
R^2	0.472	0.475	0.509	0.495	0.496	0.524

Back

Tariff Variation across Sectors

Exporters display lower dispersion in sectors with lower tariffs

Variables	(1)	(2) Avg $\lvert ln\lambda \rvert$	(3)	(4)	(5) Avg $\lvert ln\kappa \rvert$	(6)
Export	-0.010	-0.004	-0.022	-0.216***	-0.212***	-0.233***
	(0.023)	(0.023)	(0.020)	(0.030)	(0.030)	(0.028)
W Exp Tariff	0.017	0.009	0.053	-0.188	-0.194	-0.136
	(0.199)	(0.203)	(0.171)	(0.290)	(0.293)	(0.248)
Export*W Exp Tariff	-0.364*	-0.404**	-0.163	1.021***	0.992***	1.279***
	(0.203)	(0.202)	(0.175)	(0.294)	(0.293)	(0.265)
sd ln ψ		0.034***	0.032***		0.025***	0.022***
		(0.004)	(0.004)		(0.005)	(0.005)
sd TFP			0.186***			0.235***
			(0.007)			(0.010)
sd K			-0.021***			
			(0.005)			
sd Empl						-0.034***
						(0.011)
Sector[a]-Age	y	y	y	y	y	y
Year	y	y	y	y	y	y
Obs.	45,720	45,720	45,720	45,720	45,720	45,720
R^2	0.474	0.476	0.509	0.496	0.497	0.527

Back

Age as a Proxy of Credit History: Results

Variables	(1)	(2) Avg $\lvert ln\lambda \rvert$	(3)	(4)	(5) Avg $\lvert ln\kappa \rvert$	(6)
Age	0.0003	0.0003	-0.0004	-0.006***	-0.006***	-0.006***
	(0.0004)	(0.0004)	(0.0003)	(0.001)	(0.001)	(0.001)
sd ln ψ		0.038***	0.039***		0.052***	0.053***
		(0.009)	(0.009)		(0.010)	(0.010)
sd TFP			0.148***			0.273***
			(0.018)			(0.024)
sd K			-0.025**			
			(0.011)			
sd Empl						-0.152***
						(0.021)
Sector	y	y	y	y	y	y
Year	y	y	y	y	y	y
Obs.	5,562	5,562	5,562	5,562	5,562	5,562
R^2	0.417	0.421	0.439	0.373	0.378	0.415

Back

Controlling for Proxies of Financial Constraints

- Effect on output distortions unchanged.
- Effect on capital distortions 1/3 lower.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
		$\lvert\ln\lambda\rvert$			$\lvert\ln\kappa\rvert$	
Tariffs Above 75_{t-1}	0.006*	0.006**	0.007**	0.007**	0.007**	0.008**
	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)
ln Assets	-0.023***	-0.025***	-0.031***	-0.107***	-0.107***	-0.157***
	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
ln Lev. Ratio	0.001	0.002	0.0003	0.011***	0.011***	0.007***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
ln Age	-0.035***	-0.033***	-0.031***	-0.130***	-0.130***	-0.127***
	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)
$\ln\psi$		0.015***	0.015***		-0.004***	-0.004***
		(0.001)	(0.001)		(0.001)	(0.001)
TFP			0.062***			0.285***
			(0.003)			(0.004)
$\ln K$			-0.018***			
			(0.002)			
ln Empl						-0.087***
						(0.003)
Sector-Year	y	y	y	y	y	y
Prov-Year	y	y	y	y	y	y
Firm FE	y	y	y	y	y	y
Obs.	893,613	893,613	893,613	893,613	893,613	893,613
R^2	0.0116	0.0125	0.0153	0.0187	0.0187	0.0603
Number of Firm IDs	297,718	297,718	297,718	297,718	297,718	297,718

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Export Status and Firm Distortions

Variables	(1)	(2)	(3)	(4)	(5)	(6)
		$\lvert\ln\lambda\rvert$			$\lvert\ln\kappa\rvert$	
Export_{t-1}	-0.012***	-0.012***	-0.014***	-0.013***	-0.013***	-0.020***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
ln Age	-0.053***	-0.051***	-0.042***	-0.168***	-0.169***	-0.154***
	(0.004)	(0.004)	(0.004)	(0.006)	(0.006)	(0.005)
$\ln\psi$		0.012***	0.012***		-0.006***	-0.008***
		(0.001)	(0.001)		(0.001)	(0.001)
TFP			0.055***			0.248***
			(0.003)			(0.004)
$\ln K$			-0.035***			
			(0.002)			
ln Empl						-0.137***
						(0.003)
Sector-Year	y	y	y	y	y	y
Prov-Year	y	y	y	y	y	y
Firm FE	y	y	y	y	y	y
Obs.	1,001,582	1,001,582	1,001,582	1,001,582	1,001,582	1,001,582
R^2	0.011	0.011	0.015	0.015	0.015	0.050
Number of Firm IDs	309,905	309,905	309,905	309,905	309,905	309,905

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Past Export Shipments and Firm Distortions

Variables	(1)	(2) $\lvert\ln\lambda\rvert$	(3)	(4)	(5) $\lvert\ln\kappa\rvert$	(6)
ln Exports$_{t-1}$	-0.003*	-0.003**	0.001	-0.004**	-0.004**	-0.014***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
ln Age	-0.053***	-0.049***	-0.032***	-0.245***	-0.244***	-0.213***
	(0.008)	(0.008)	(0.008)	(0.011)	(0.011)	(0.011)
ln ψ		0.023***	0.023***		0.005**	0.001
		(0.002)	(0.002)		(0.002)	(0.002)
TFP			-0.015***			0.192***
			(0.004)			(0.007)
ln K			-0.037***			
			(0.003)			
ln Empl						-0.126***
						(0.005)
Sector-Year	y	y	y	y	y	y
Prov-Year	y	y	y	y	y	y
Firm FE	y	y	y	y	y	y
Obs.	307,716	307,716	307,716	307,716	307,716	307,716
R^2	0.012	0.014	0.015	0.022	0.022	0.042
Number of Firm IDs	95,087	95,087	95,087	95,087	95,087	95,087

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Proxies of Credit Constraints: SOE vs. Private Firms

Variables	(1)	(2)	(3)	(4)	(5)	(6)
		$\lvert\ln\lambda\rvert$			$\lvert\ln\kappa\rvert$	
SOE	-0.040	0.033	0.111**	0.021	0.130***	0.681***
	(0.031)	(0.032)	(0.053)	(0.036)	(0.036)	(0.060)
Tariffs Above 75_{t-1}	0.007**	0.007**	0.008**	0.011***	0.011***	0.014***
	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)
SOE*Tariffs Above 75_{t-1}	0.010	0.014	-0.014	-0.032	-0.026	-0.082***
	(0.018)	(0.018)	(0.018)	(0.020)	(0.020)	(0.021)
ln Age	-0.042***	-0.040***	-0.040***	-0.155***	-0.154***	-0.165***
	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)
SOE*ln Age	0.015*	0.024***	0.018**	-0.002	0.010	0.013
	(0.008)	(0.008)	(0.009)	(0.010)	(0.010)	(0.011)
$\ln\psi$		0.011***	0.011***		-0.011***	-0.013***
		(0.001)	(0.001)		(0.001)	(0.001)
SOE*$\ln\psi$		0.035***	0.040***		0.053***	0.064***
		(0.004)	(0.004)		(0.004)	(0.004)
TFP			0.065***			0.280***
			(0.003)			(0.004)
SOE*TFP			-0.160***			-0.280***
			(0.010)			(0.012)
$\ln K$			-0.035***			
			(0.00)			
SOE*$\ln K$			0.048***			
			(0.006)			
ln Empl						-0.140***
						(0.003)
SOE*ln Empl						0.072***
						(0.009)
Sector-Year	y	y	y	y	y	y
Prov-Year	y	y	y	y	y	y
Firm FE	y	y	y	y	y	y
Obs.	898,817	898,817	898,817	898,817	898,817	898,817
R^2	0.011	0.013	0.017	0.013	0.014	0.056
Number of Firm IDs	298,746	298,746	298,746	298,746	298,746	298,746

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Alternative Measure of Distortions

- Petrin and Sivadasan (2013) measure resource misallocation at the firm level as the gap between the marginal input product and its marginal cost,

$$G_{ist}^{j} = \left| MP_{ist}^{j} - p_{ist} \right|, \quad j = L, K$$

- Marginal input costs proxied by average costs.

- Positive correlation with our measures:
  - Correlation of 0.25 between G_{ist}^{L} and $|\ln \lambda_{ist}|$.
  - Correlation of 0.46 between G_{ist}^{K} and $|\ln \kappa|$.

Alternative Measure of Distortions: Results

Variables	(1)	(2)	(3)	(4)	(5)	(6)
		G^L			G^K	
Tariffs Above 75_{t-1}	0.068	0.064	0.303***	0.034**	0.034**	0.057***
	(0.121)	(0.121)	(0.114)	(0.016)	(0.016)	(0.014)
ln Age	2.287***	2.272***	0.144	-0.260***	-0.261***	-0.454***
	(0.201)	(0.201)	(0.184)	(0.026)	(0.026)	(0.023)
ln ψ		-0.286***	-0.409***		-0.024***	-0.038***
		(0.028)	(0.026)		(0.003)	(0.003)
TFP			15.668***			2.534***
			(0.109)			(0.015)
ln K			1.223***			
			(0.084)			
ln Empl						-0.533***
						(0.012)
Sector-Year	y	y	y	y	y	y
Prov-Year	y	y	y	y	y	y
Firm FE	y	y	y	y	y	y
Obs.	732,065	732,065	732,065	732,065	732,065	732,065
R^2	0.079	0.079	0.216	0.028	0.028	0.266
Number of Firm IDs	263,592	263,592	263,592	263,592	263,592	263,592

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TFP and Misallocation

Variables	(1)	(2)	(3)	(4)
	Avg TFP			
Avg $\lvert \ln \kappa \rvert$	-0.266**		-0.197*	-0.393***
	(0.107)		(0.101)	(0.149)
Avg $\lvert \ln \lambda \rvert$		-0.307**	-0.225	-0.142
		(0.148)	(0.149)	(0.124)
Sd Profit				-0.129
				(0.093)
Sd K				0.547**
				(0.245)
Sd Empl				-0.008
				(0.212)
Year	y	y	y	y
Industry[a] FE	y	y	y	y
Obs.	4,232	4,232	4,232	4,232
R^2	0.813	0.812	0.815	0.838
No. of Industries	425	425	425	425

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