# Factor Intensity, Product Switching, and Productivity: Evidence from Chinese Exporters

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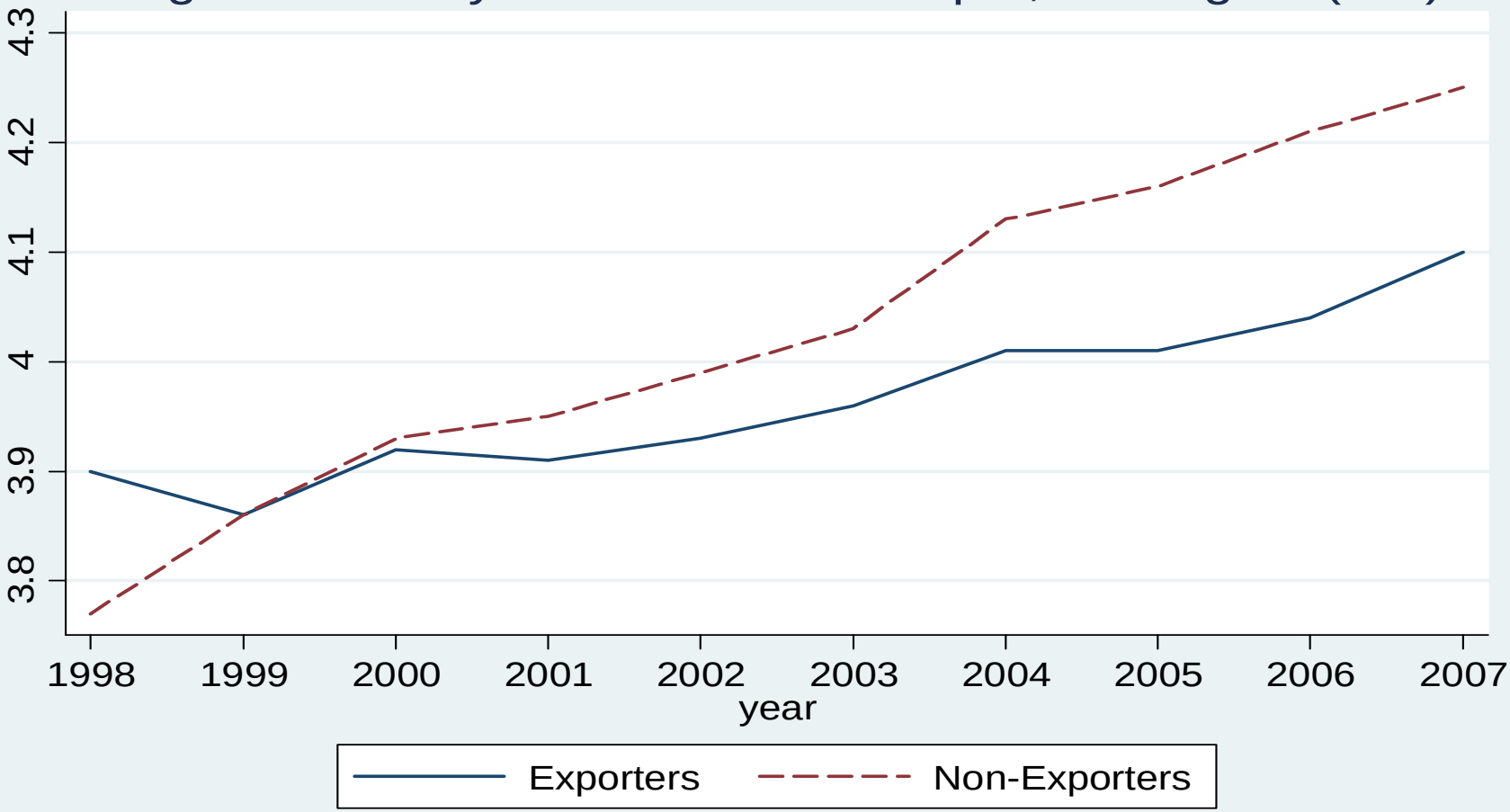
- Superior performance of exporters: larger, more capital-intensive, more skill-intensive, adopt better technology.
- We find that in China, a large labor-abundant country, exporters become more productive but less capital-intensive after exporting (within narrowly defined industries and productivity bins).
- The gap in capital intensity between exporters and non-exporters is widening over time (1998-2007).

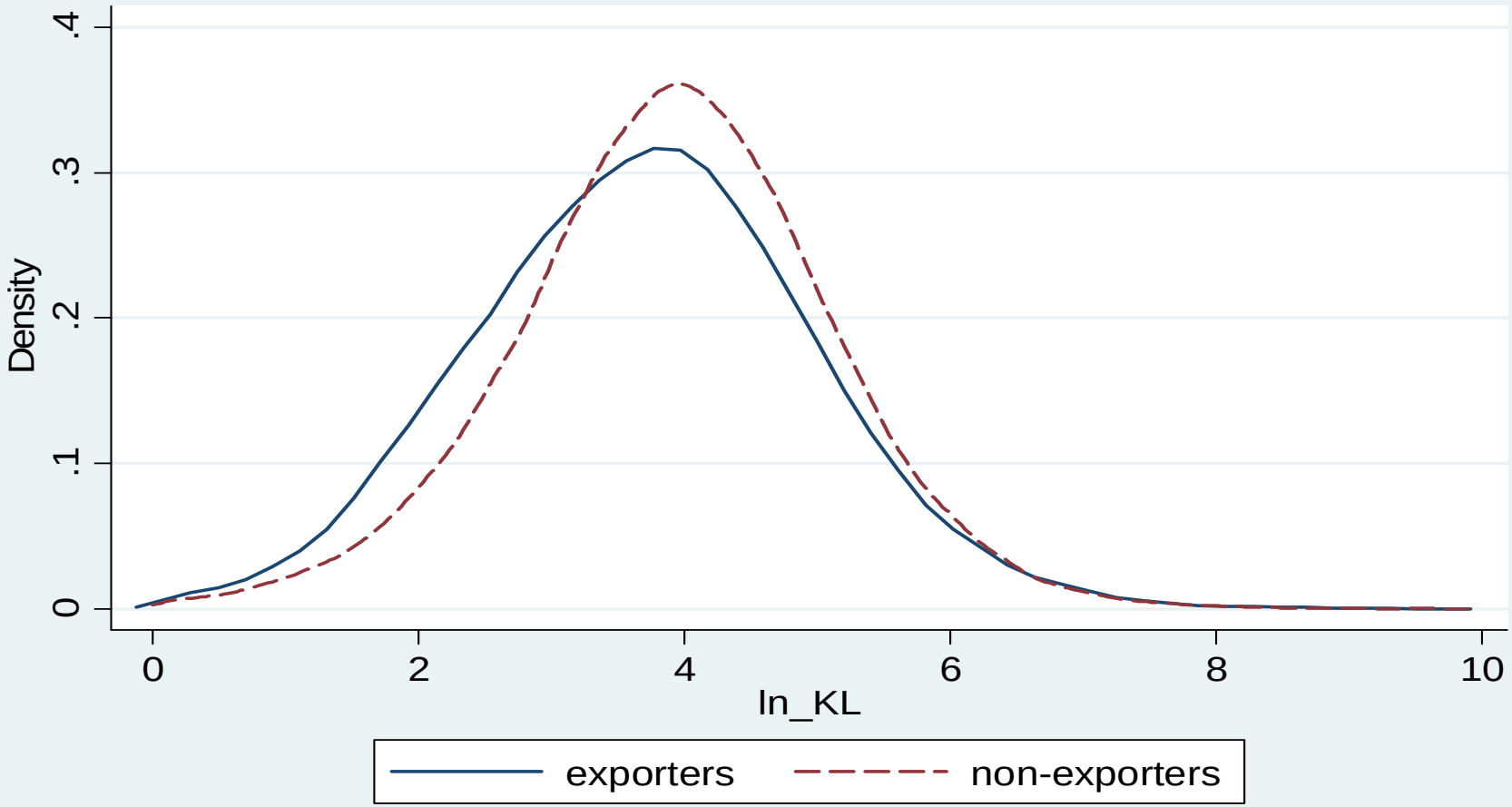
# Mean Capital Intensities of Exporters and Non-exporters

Figure 2: Ten-year Balanced Sample, Average ln(K/L)




Average ln(K/L) is calculated using China's NBS Industrial Survey Data

# Distribution of Capital Intensity




ln(K/L) are measured relative to the ownership and industry (4-digit) means

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- Upon exporting, a firm in a labor-abundant country adds or expands sales of L-intensive products (core competencies) and reduce sales of K-intensive products. (Heckscher-Ohlin forces within firms)

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- Upon exporting, a firm in a labor-abundant country adds or expands sales of L-intensive products (core competencies) and reduce sales of K-intensive products. (Heckscher-Ohlin forces within firms)
- Use transactions-level data to examine the predictions.

# Exporting, core competencies, and productivity

- Recent literature on core competencies: upon exporting, firms seek opportunities to specialize in their best-performing (core) products
  - Feenstra and Ma (08); Nocke and Yeaple (08); Eckel and Neary (10); Bernard, Redding, and Schott (10-11); Arkolakis and Muendler (11); Melitz, Mayer, and Ottaviano (12); Manova and Zhang (12).
- Little effort to establish an empirical link between within-firm specialization patterns to firm productivity.

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- Little effort to establish an empirical link between within-firm specialization patterns to firm productivity.
- 2 additional results:
  1. Firm ex ante productivity : a smaller decline in capital intensity after exporting.
  2. A sharper post-exporting decline in capital intensity: a larger increase in measured total factor productivity.

# Literature Review

Exporting firms are superior

- Bernard and Jensen (99); Van Biesebroeck (05); Bernard, Jensen, and Schott (06); De Loecker (07); Bustos (11); Harrigan and Reshef (11).

Self-selection

- Bernard, Eaton, Jensen, and Kortum (03); Melitz (03).
- Clerides, Lach, and Tybout (98); Bernard and Jensen (99); Aw, Chung, and Roberts (00); Delgado, Farinas, and Ruano (02).

Learning by Exporting

- Wagner (02); Girma, Greenway, and Kneller (03); Alvarez and Lopez (05); Van Biesebroeck (05); De Loecker (07); Lileeva and Trefler (10) ...

# Firm-level Data

- Annual surveys of industrial firms from China's National Bureau of Statistics (NBS) over 1998-2007.
- All state-owned enterprises (SOEs) + all non-SOE with sales over 5 million yuan.
- Account for 94% of total industrial value added in 2007.
- Basic data cleaning procedures (e.g. drop all firms with fewer than 8 employees, winsorize (e.g. Verhoogen, 2008))
- 17% of firms in the raw data set are dropped from the sample in 1998, but this fraction drops to 6% in each year after 2001.
- 148,685 firms in 1998 to 313,048 in 2007.

# Measuring Revenue TFP and Capital Intensity

- 3 measures of capital intensity ln(K/L)
  1. Use the perpetual inventory method (Brandt, et al., 2011) to measure real capital stock, then divide it by the firm's employment.
  2. Deflated Net value of fixed asset/ employment.
  3. (1)/ firm wage bill.
- Revenue TFP are estimated using Levinsohn and Petrin (2003) method. Different production functions for exporters and non-exporters.
  - Results are robust to using the standard approach (e.g., Van Biesbroeck, 2005; De Loecker, 2007).

# Exporters are less capital-intensive

| Sample | All Firms | Domestic | Foreign | All firms |
|---|---|---|---|---|
| **Panel A: Dependent variable ln(K/L)** | | | | |
| Exporter | -0.062*** | -0.072*** | -0.031*** | -0.054*** |
| N | 1,976,637 | 1,555,076 | 421,561 | 1,976,637 |
| **Panel B: Dependent variable ln(K/wL)** | | | | |
| Exporter | -0.143*** | -0.175*** | -0.078*** | -0.116*** |
| N | 1,974,962 | 1,554,766 | 421,463 | 1,976,637 |
| Year FE | Yes | Yes | Yes | Yes |
| Industry (4-digit) FE | Yes | Yes | Yes | No |
| Ownership FE | Yes | No | No | No |
| Firm FE | No | No | No | Yes |

Notes: 4-digit industry classification contains 480 industries. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Numbers in brackets are p-values corrected for industry-ownership clustering.

# Capital Intensity Gap by Bins

$\triangle \ln(K/L)_{new} - \triangle \ln(K/L)_{non\text{-}exp}$

| | | ln(TFP) quartiles before exporting | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| ln(K/L) qt before exp | 1 | -0.033*** | -0.031*** | -0.018** | -0.002* |
| | 2 | -0.045*** | -0.039*** | -0.026*** | -0.019** |
| | 3 | -0.051*** | -0.043*** | -0.038*** | -0.039*** |
| | 4 | -0.063*** | -0.061*** | -0.055*** | -0.051*** |

This table reports the difference of capital intensity growth between new exporters and non-exporters within each bin. In Panel A, bins are defined by ln(TFP) and ln(K/L) quartiles. In Panel B, bins are defined by ln(TFP), ln(K/L) and ln(sales). We calculate these bins industry by industry to ensure each bin covers all industries. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

# Capital Intensity Gap by Bins - Propensity-scored Matched

$\triangle \ln(K/L)_{new} - \triangle \ln(K/L)_{non\text{-}exp}$

| | | (1) | (2) | (3) |
|---|---|---|---|---|
| K/L Group | TFP Group | All Firms | Domestic | Foreign |
| | All | -0.051*** | -0.054*** | -0.042*** |
| Low | Low | -0.046*** | -0.049*** | -0.036*** |
| | | -0.048*** | -0.048*** | -0.037*** |
| | Hi | -0.029** | -0.031** | -0.029 |
| | | -0.032** | -0.041** | -0.027 |
| High | Low | -0.064*** | -0.067*** | -0.061*** |
| | | -0.061*** | -0.066*** | -0.053*** |
| | Hi | -0.063*** | -0.068*** | -0.051*** |
| | | -0.059*** | -0.062*** | -0.61*** |

This table reports the estimation results of the impact of exporting on ln(K/L) for new exporters, using DID propensity score matching method. The matching is conducted within each bin. These bins (bin1 to bin 8) are illustrated in Panel B of Table 2. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

▸ Matching equations ▸ Decision to start exporting

▸ More Results on TFP ▸ More Results on ln(K/L) ▸ Matching over time

# Preferences

- Based on Bernard, Redding, and Schott (2010, 2011).
- Country $j$ has a mass of $L_j$ consumers with identical preferences; each endowed with $\frac{K_j}{L_j}$ amount of capital
- Consumers consume a continuum of products, and derive utility $U = \left[\int_0^1 C_s^\nu ds\right]^{\frac{1}{\nu}}$;elasticity of subst. $= \kappa = \frac{1}{1-\nu} > 1$.

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- Within each product, firms produce horizontally differentiated varieties.

$$C_s = \left[\int_{\omega \in \Omega_s} \left(\lambda_s(\omega) c_s(\omega)\right)^{\rho} d\omega\right]^{\frac{1}{\rho}}, \ 0 < \rho < 1,$$

where elasticity of subst $\sigma = \frac{1}{1-\rho} > \kappa > 1$.

# Technology

- Two factors of production – capital and labor; a firm's cost function:

$$TC_s = \left[ f_s + \frac{q_s}{\varphi} \right] w^{1-\beta(s)} r^{\beta(s)},$$

where $w$ and $r$ are the wage rate and the rental rate, respectively; $\beta(0) = 0$, $\beta(1) = 1$, and $\beta'(s) > 0$.

- Firm profit is determined by productivity and market-specific fixed cost:

$$\pi_j(\varphi) = \int_0^1 \left[ \int_{\lambda_s^*(\varphi)}^{\infty} \pi_{sj}(\varphi, \lambda_s) g(\lambda_s) d\lambda_s \right] ds - f_j$$

# Product Cutoffs

- Zero profit condition for selling a product

$$\pi_s\left(\varphi, \lambda_s^*\left(\varphi\right)\right) = \frac{R_s}{\sigma}\left(\rho P\left(s\right)\varphi\lambda_s^*\left(\varphi\right)\right)^{\sigma-1} - f_s w^{1-\beta(s)} r^{\beta(s)} = 0$$

- Product cutoff for domestic sales

$$\lambda_s^*\left(\varphi\right) \propto \frac{P\left(s\right)^{-\gamma}}{\varphi}\left(\frac{f_s \widehat{P}}{R} w^{1-\beta(s)} r^{\beta(s)}\right)^{\frac{1}{\sigma-1}},$$

where $\gamma$ is a parameter in terms of elasticities of subst.

- Product cutoff for foreign sales

$$\lambda_{sj}^*\left(\varphi\right) \propto \frac{\tau_j P_j\left(s\right)^{-\gamma}}{\varphi}\left(\frac{f_{sj} \widehat{P}_j}{R_j} w^{1-\beta(s)} r^{\beta(s)}\right)^{\frac{1}{\sigma-1}}$$

# Product Cutoffs

- $$\lambda_{sj}^{*}(\varphi) = \Phi_j(s)\,\lambda_s^{*}(\varphi)$$

$$\Phi_j(s) = \tau_j \left(\frac{f_{sj}}{f_s}\frac{\widehat{P}_j}{\widehat{P}}\frac{R}{R_j}\right)^{\frac{1}{\sigma-1}} \left(\frac{P_j(s)}{P(s)}\right)^{-\gamma}$$

- If country $j$ is more capital-abundant than China, $\frac{P_j(s)}{P(s)}$ is decreasing in $s$. $\Phi_j'(s) > 0$.
- Lu (2011).

# Impact of exporting on capital intensity

- Product s's capital intensity: $\theta_s = \frac{rk_s}{rk_s + wl_s}$
- Capital intensity of the domestic and export baskets:

$$\Theta_d(\varphi) = \int_0^1 \frac{R_s(\varphi, \lambda_s)}{R(\varphi)} \theta_s I_s\left(\lambda_s \geq \lambda_s^*(\varphi)\right) ds,$$

$$\Theta_j(\varphi) = \int_0^1 \frac{R_{sj}(\varphi, \lambda_s)}{R_j(\varphi)} \theta_s I_s\left(\lambda_s \geq \Phi_j(s)\, \lambda_s^*(\varphi)\right) ds,$$

- After exporting, a firm's capital intensity:

$$\Theta_{d+j}(\varphi) = \left(1 - \frac{R_j(\varphi)}{R(\varphi) + R_j(\varphi)}\right) \Theta_d(\varphi) + \frac{R_j(\varphi)}{R(\varphi) + R_j(\varphi)} \Theta_j(\varphi)$$

- Since $\Phi_j'(s) > 0$, $\Theta_j(\varphi) < \Theta_d(\varphi)$

# Predictions

## Hypothesis

*A firm's overall capital intensity $\Theta_{d+j}(\varphi)$ after exporting to a capital-abundant country satisfies the following inequality:*

$$\Theta_{j,t+1}(\varphi) < \Theta_{t+1}(\varphi) < \Theta_{d,t+1}(\varphi) = \Theta_t(\varphi),$$

*where $\Theta_d(\varphi)$ and $\Theta_j(\varphi)$ are the capital intensities of the domestic and foreign baskets of products after exporting.*

# Predictions

## Hypothesis

*An ex-ante more productive firm experiences a smaller decline in capital intensity $\Theta_{d+j}(\varphi)$ after exporting. Formally,*

$$\frac{\Theta_{d+j}(\varphi)}{\Theta_d(\varphi)} < \frac{\Theta_{d+j}(\varphi')}{\Theta_d(\varphi')} < 1 \quad \text{if } \varphi' > \varphi.$$

# Determinants of the Change in Capital Intensity

| | Dep. Var.: $\triangle \ln(K/L)_{\text{non-exp}} - \triangle \ln(K/L)_{\text{new}}$ | | |
|---|---|---|---|
| | All New Exporters | Domestic New Exporters only | Foreign New Exporters only |
| $ln(TFP)_{t-1}$ | -0.096 | -0.132 | 0.021 |
| | [0.006]*** | [0.007]*** | [0.011]*** |
| $ln(K/L)_{t-1}$ | 0.298 | 0.345 | 0.276 |
| | [0.000]*** | [0.000]*** | [0.000]*** |
| $ln(wagerate)_{t-1}$ | -0.188 | -0.193 | -0.198 |
| | [0.000]*** | [0.000]*** | [0.024]** |
| $ln(age)_{t-1}$ | -0.029 | -0.035 | -0.027 |
| | [0.008]*** | [0.009]*** | [0.012]** |
| Ownership FE | Yes | No | No |
| Industry FE | Yes | Yes | Yes |
| Province FE | Yes | Yes | Yes |
| N | 49,742 | 33,409 | 16,333 |

All regressors are lagged by one year. Only new exporters are included in the regressions. P-values based on standard errors clustered at the four-digit industry are reported in brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Exporters and their matched non-exporters are matched using the DID propensity score matching techniques which is conducted within their own bins.

# Product Churning Effects on Measured Productivity

- Product-specific productivity, $\mu_s = R(\varphi, \lambda_s) / x_s(\varphi, \lambda_s)$:

$$\text{Domestic:} \quad \mu_s = \frac{w^{1-\beta(s)} r^{\beta(s)}}{\rho} \left(1 - \frac{f_s}{x_s(\varphi, \lambda_s)}\right);$$

$$\text{Exports:} \quad \mu_{sj} = \frac{\tau_j w^{1-\beta(s)} r^{\beta(s)}}{\rho} \left(1 - \frac{f_{sj}}{x_{sj}(\varphi, \lambda_s)}\right)$$

- $\mu_{sj} > \mu_s$ if $\frac{f_{sj}}{f_s} < \left(\frac{P_j(s)}{P(s)}\right)^{\gamma} \Psi_j$ and $\tau_j = 1$ (for simplicity)
- The estimated revenue-based productivity of an exporter:

$$\widehat{TFP}_j(\varphi) = \int_0^1 \mu_s \frac{R_s(\varphi, \lambda_s)}{R(\varphi) + R_j(\varphi)} ds + \int_0^1 \mu_{sj} \frac{R_{sj}(\varphi, \lambda_s)}{R(\varphi) + R_j(\varphi)} ds$$

# Product Churning Effects on TFP

| Dep. Var.: $\triangle \ln(TFP)_{new} - \triangle \ln(TFP)_{non\text{-}exp}$ | | | |
|---|---|---|---|
| | All New Exporters | Domestic | Foreign |
| $\triangle\ ln(L/K)_{t-1}$ | 0.049 | 0.055 | 0.022 |
| | [0.000]*** | [0.005]*** | [0.022]*** |
| $ln(TFP)_{t-1}$ | 0.121 | 0.135 | 0.119 |
| | [0.000]*** | [0.000]*** | [0.000]*** |
| $ln(wagerate)_{t-1}$ | 0.087 | 0.093 | 0.076 |
| | [0.000]*** | [0.002]*** | [0.002]*** |
| $ln(age)_{t-1}$ | -0.076 | -0.086 | -0.078 |
| | [0.009]*** | [0.013]** | [0.037]** |
| Industry FE | Yes | Yes | Yes |
| Ownership FE | Yes | No | No |
| Province FE | Yes | Yes | Yes |
| N | 50,019 | 33,637 | 16,382 |

All regressors are lagged by one year, besides labor intensity increase, which is defined as the first difference in labor intensity from year t-1 to t. Only new exporters are included in the regressions. P-values, based on standard errors clustered at the four-digit industry level, are reported in brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

# Transaction-level Trade Data

- Transaction-level (firm-product-country-year) trade data that cover the universe of Chinese exporters and importers (2000-2006).
- Information on import, export values, and quantities from China to 200 destination countries at the HS 6-digit level.
- We merge the NBS data with the transaction-level trade data based on firm names and contact information (phone number, area code).
- 70% of export value recorded in NBS is merged.

# Product Churning

| | Nb. of new exporters | Nb. survived next year | Avg nb. products (HS6) added next year | Avg nb. products dropped | Avg nb. of continuing products |
|---|---|---|---|---|---|
| 2001 | 15,928 | 13,187 | 10.17 | 4.28 | 4.85 |
| 2002 | 21,383 | 18,410 | 9.56 | 4.46 | 5.34 |
| 2003 | 27,107 | 22,941 | 10.02 | 5.58 | 5.48 |
| 2004 | 37,646 | 31,583 | 10.22 | 6.56 | 5.13 |
| 2005 | 40,024 | 33,552 | 9.29 | 7.92 | 4.97 |
| 2006 | 46,400 | | | | |

# Capital Intensity of New Products and Dropped Products

$$\ln(K/L)_{ik} = \alpha + \beta * new\_product_{ik} + \delta * dropped\_product_{ik} + e_i$$

| | Dependent Variable = ln(K/L) at firm-product cell | | | | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | All New Exporters | Intermediaries Excl. | Non-processing | Processing | K-Abundant Dest | K-Scarce |
| New | -0.048 | -0.049 | -0.050 | -0.045 | -0.050 | -0.043 |
| | [0.000]*** | [0.000]*** | [0.000]*** | [0.000]*** | [0.000]*** | [0.000]*** |
| Dropped | 0.023 | 0.021 | 0.024 | 0.013 | 0.022 | 0.023 |
| | [0.000]*** | [0.000]*** | [0.000]*** | [0.005]*** | [0.000]*** | [0.002]*** |
| Year Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes |
| N | 326,784 | 281,035 | 252,887 | 73,897 | 213,272 | 42,987 |

This table reports the results of regressions of capital intensity on the new product portfolio dummy and the dropped product portfolio dummy. The omitted group is the continuing product portfolio. The classification of capital abundance is based on Antweiler and Trefler (2002). P-values, based on robust standard errors, are reported in brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

# Concluding Remarks

- Within a narrow industry, firms become less capital-intensive after exporting, relative to the matched non-exporters. The gap is widening over time.
- Chinese exporters add new products that are more labor-intensive and drop those that are less.
- Ex-ante more productive firms experience a smaller decline in capital intensity.
- Specialization in labor-intensive products contributes to higher measured TFP.
- Research direction: Product churning and TFP estimation

# Export Status

- Non-exporters: firms that never exported up to and including the reporting year.
- New exporters : firms that did not export in the previous years but started exporting in the year of analysis.
- Existing exporters : firms that have export records in previous years, or firms that start exporting already in their first year of entry.
- New exporters' pre-export characteristics are used to match similar non-exporters.

# Exporters are more productive

**Dependent variable = ln(TFP)**

| Sample | All Firms | Private | Foreign | All |
|---|---|---|---|---|
| Exporter | 0.087 | 0.095 | 0.003 | 0.124 |
| | [0.000]*** | [0.000]*** | [0.439] | [0.000]** |
| Year FE | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | No |
| Ownership FE | Yes | No | No | No |
| Firm FE | No | No | No | Yes |
| N | 1,916,347 | 1,495,115 | 421,232 | 1,916,347 |

Notes: 4-digit industry classification contains 480 industries. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Numbers in brackets are p-values corrected for industry-ownership clustering.

# Decision to start exporting

Dependent variable = New-exporter indicator

Probit estimation

| | Domestic firms | Foreign firms |
|---|---|---|
| $\ln(TFP)_{t-1}$ | 0.113 | 0.002 |
| | [0.000]*** | [0.314] |
| $\ln(wage)_{t-1}$ | 0.030 | 0.008 |
| | [0.000]*** | [0.298] |
| $\ln(K/L)_{t-1}$ | -0.038 | -0.031 |
| | [0.000]*** | [0.000]*** |
| $Age_{t-1}$ | -0.059 | -0.119 |
| | [0.000]*** | [0.000]*** |
| $\ln(Sales)_{t-1}$ | 0.113 | 0.101 |
| | [0.000]*** | [0.001]*** |
| Industry FE | Yes | Yes |
| Provincial FE | Yes | Yes |
| Year FE | Yes | Yes |
| Pseudo R-squared | 0.103 | 0.099 |
| Log pseudo-likelihood | -98,745.12 | -23,457.83 |
| Observations | 1,216,415 | 150,328 |

Notes: The dependent variable is an indicator of a firm's first year of exporting. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. All regressions include a full set of industry and provincial dummies. P-values based on standard error clustered at the industry-province level are in brackets.

# Matching estimators to evaluate the exporting effect

- Using matching estimators to evaluate the average (exporting) treatment effect on the treated (ATT):

$$\begin{aligned} ATT &= E\left[Y_i^1 - Y_i^0 | Start_i = 1\right] \\ &= E\left[Y_i^1 | Start_i = 1\right] - E_{Z|Start_i=1}\left\{E\left[Y_i^0 | Start_i = 0, Z\right]\right\}, \end{aligned}$$

  where $Y_i$ is firm $i$'s TFP or capital intensity. Matching variables ($Z$) include all regressors in the previous Probit estimation.

- Among many matching estimators, use differnece-in-difference estimator by Heckman, Ichimura, and Todd (1997, 1998)

# More Matching Estimation Results on TFP

| Dependent variable = ln(TFP) | | |
|---|---|---|
| All New Exporters | Domestic Private | Foreign |
| **Local Linear Regression Matching** | | |
| 0.069 | 0.071 | 0.062 |
| [0.004]*** | [0.006]*** | [0.084]* |
| **Nearest Neighbor Matching** | | |
| 0.054 | 0.056 | 0.051 |
| [0.002]*** | [0.010]*** | [0.011]** |

Notes: ln(TFP) is estimated using LP (2003) method. P-values are reported in brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

# More Matching Results on Capital Intensity

| Dependent variable = ln(K/L) | | | |
|---|---|---|---|
| All New Exporters | Domestic New Exp. | Foreign New Exp. | All New Exp.;ln(K/wL) |
| **Local Linear Regression Matching** | | | |
| -0.048<br>[0.015]** | -0.047<br>[0.028]** | -0.042<br>[0.037]** | -0.081<br>[0.007]*** |
| **Nearest Neighbor Matching** | | | |
| -0.062<br>[0.016]** | -0.075<br>[0.020]** | -0.040<br>[0.025]** | -0.103<br>[0.014]** |

Notes: Capital stock is measured by the perpetual inventory method. P-values are reported in brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

# Over-time Effects on Capital Intensity

**Over-time Relative Change in Exporters' Capital Intensity: DID Matching Estimation**

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 |
|---|---|---|---|---|---|---|---|---|---|
| 1999 | -0.086 | -0.132 | -0.149 | -0.171 | -0.178 | -0.182 | -0.185 | -0.186 | -0.184 |
| | [0.054]* | [0.028]** | [0.034]** | [0.041]** | [0.048]** | [0.052]* | [0.047]** | [0.064]* | [0.069]* |
| 2000 | -0.054 | -0.085 | -0.105 | -0.123 | -0.133 | -0.140 | -0.143 | -0.147 | |
| | [0.049]* | [0.027]** | [0.029]** | [0.034]** | [0.043]** | [0.045]** | [0.054]* | [0.059]* | |
| 2001 | -0.053 | -0.102 | -0.124 | -0.141 | -0.149 | -0.155 | -0.157 | | |
| | [0.021]** | [0.019]** | [0.033]** | [0.037]** | [0.049]** | [0.051]* | [0.058]* | | |
| 2002 | -0.014 | -0.062 | -0.075 | -0.081 | -0.090 | -0.096 | | | |
| | [0.352] | [0.041]** | [0.034]** | [0.046]** | [0.052]* | [0.063]* | | | |
| 2003 | -0.054 | -0.085 | -0.097 | -0.107 | -0.116 | | | | |
| | [0.019]** | [0.022]** | [0.025]** | [0.034]** | [0.037]** | | | | |
| 2004 | -0.077 | -0.090 | -0.105 | -0.113 | | | | | |
| | [0.023]** | [0.031]** | [0.036]** | [0.037]** | | | | | |
| 2005 | -0.052 | -0.086 | -0.101 | | | | | | |
| | [0.032]** | [0.027]** | [0.036]** | | | | | | |
| 2006 | -0.063 | -0.091 | | | | | | | |
| | [0.009]*** | [0.011]** | | | | | | | |
| 2007 | -0.074 | | | | | | | | |
| | [0.005]** | | | | | | | | |
| Pooled | -0.062 | -0.092 | -0.108 | -0.122 | -0.133 | -0.143 | -0.159 | -0.167 | -0.184 |
| | [0.019]** | [0.021]** | [0.027]** | [0.28]** | [0.031]** | [0.034]** | [0.041]** | [0.045]** | [0.069]* |

Notes: Firms are matched using the propensity score matching estimation. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. P-values based on bootstrapped standard errors are reported in brackets. "Marginal change" refers to the change of ln(K/L) estimated from balanced sample.

# Example: Footware, Gaiters, & the like

55 HS6

| | |
|---|---|
| 640110 | Waterproof footwear incorporating a protective metal toe-cap... |
| 640191 | Waterproof footwear covering the knee... |
| 640192 | Waterproof footwear covering the ankle but not the knee |
| 640199 | Waterproof footwear (not covering the ankle) |
| 640212 | Ski-boots & cross-country ski footwear of rubber or plastics |
| 640219 | Sport footwear, nes, of rubber or plastics |
| 640220 | Footwear with thongs plugged into soles, of rubber or plastics |
| 640230 | Footwear, with metal toe-cap, of rubber or plastics |
| 640312 | Ski-boots, etc, with rubber/plastics/leather.. soles, leather uppers |
| 640319 | Sports footwear, with rubber/plastics/leather..soles, leather uppers |
| 640320 | Sandles, with leather soles & straps (over instep, around big toe) |
| 640330 | Footwear with a wood base, no inner soles or caps, leather uppers |
| 640340 | Footwear, with a metal toe-cap, leather uppers |
| 640351 | Footwear with leather soles & uppers, covering the ankle |
| 640359 | Footwear with leather soles & uppers, not covering the ankle |
| 640420 | Footwear with leather or composition leather soles & textile uppers |
| 640510 | Footwear, nes, with leather or composition leather uppers |
| 640520 | Footwear, nes, with textile uppers |
| ..... more | |

# Capital Intensities Across Products

| Sector | HS 2-digit | Nb. of HS 6-digits | ln(K/L) Mean | ln(K/L) Std. Dev. |
|---|---|---|---|---|
| Animals & Animal Products | 01-05 | 174 | 70.9 | 56.9 |
| Vegetable Products | 06-14 | 254 | 71.8 | 61.1 |
| Animal Or Vegetable Fats | 15 | 35 | 64.9 | 63.3 |
| Prepared Foodstuffs | 16-24 | 173 | 94.6 | 69.0 |
| Mineral Products | 25-27 | 134 | 90.1 | 70.9 |
| Chemical Products | 28-38 | 764 | 111.6 | 66.5 |
| Plastics & Rubber | 39-40 | 198 | 79.6 | 65.2 |
| Hides & Skins | 41-43 | 62 | 45.5 | 47.0 |
| Wood & Wood Products | 44-46 | 75 | 62.3 | 56.5 |
| Wood Pulp Products | 47-49 | 147 | 93.7 | 66.8 |
| Textiles & Textile Articles | 50-63 | 818 | 68.1 | 54.9 |
| Footwear, Headgear | 64-67 | 55 | 27.8 | 43.0 |
| Articles Of Stone, Plaster, Cement, Asbestos | 68-70 | 147 | 72.2 | 64.9 |
| Pearls, Precious Or Semi-Precious Stones, Metals | 71 | 41 | 32.1 | 59.5 |
| Base Metals & Articles Thereof | 72-83 | 563 | 93.9 | 63.5 |
| Machinery & Mechanical Appliances | 84-85 | 792 | 99.2 | 63.9 |
| Transportation Equipment | 86-89 | 121 | 107.2 | 66.8 |
| Instruments - Measuring, Musical | 90-92 | 235 | 99.6 | 62.8 |
| Arms & Ammunition | 93 | 10 | 152.4 | 69.9 |
| Miscellaneous | 94-96 | 130 | 47.8 | 51.5 |
| Works Of Art | 97-99 | 9 | 30.7 | 53.2 |