



**Strengthening The Competitiveness of Thai Firms:
What Needs to be Done?**

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How can We Prepare Thai firms for the Challenge of Globalization?

World economic integration



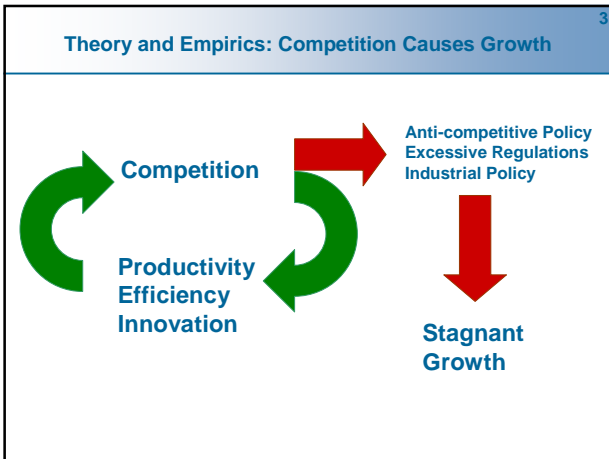
*"Let a Hundred Flowers Bloom,
Let a Thousand Schools of Thoughts Contend."
~Mao Tse-Tung*

*"All is transient; nothing is permanent."
~Buddha Shakyamuni*

The rise of China and India

Rising global competition

Policy Objectives
Refrain from picking winners and losers.
Create an environment in which **all firms** can raise their competitiveness.
Allow winners to **emerge**.
Build a foundation for successful **integration** into the global marketplace.

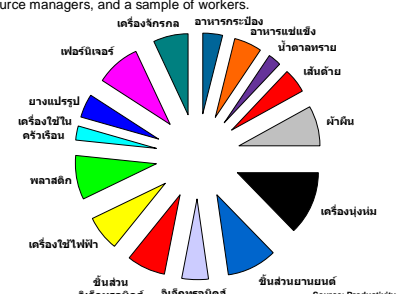


- ### Key Questions
- Does product market competition foster firm Total Firm Productivity (TFP)?
 - Does product market competition foster firm TFP growth?
 - Does product market competition foster firm innovation?

- ### Outline
- Motivation & Background
 - Measuring Firm Total Factor Productivity (TFP)
 - What are the Characteristics of High TFP firms?
 - Does Market Competition Foster TFP?
 - Regression Analysis: TFP and Competition
 - Policy Implications
 - Conclusion

Database: Productivity Investment Climate Survey

- Productivity Investment Climate Survey (NESDB, World Bank, Productivity Institute)
- Panel Data of Manufacturing Firms: 1,275 small, medium, and large firms, mostly outside the stock exchange, in 6 regions from 2000-2002 with an employee module in 2004
- The PICS survey responses are gleaned from interviews with CEOs, human resource managers, and a sample of workers.



Source: Productivity Investment Climate Survey



II. Measuring Firm Total Factor Productivity

A Competitive Firm is a Highly Productive Firm 9

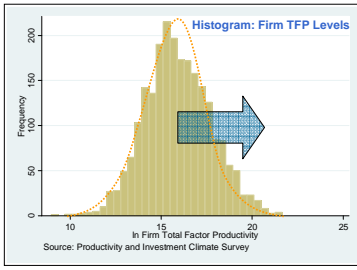
- TFP reflects technical know-how and ability in using inputs
- TFP growth is the main source of long-run growth
- Calculating firm TFP: we use the TFP calculation method of Levinsohn-Petrin (2003) which estimates a Cobb-Douglas production function using intermediate inputs as a proxy to distinguish between observed and unobserved productivity shocks

$$Y_{it} = A_{it} L_{it}^{\beta} K_{it}^{\gamma}$$

$y_{it} = \beta l_{it} + \gamma k_{it} + u_{it}$
 $y_{it} = \beta l_{it} + \gamma k_{it} + \underbrace{\varpi_{it}}_{\text{Estimated TFP}} + \underbrace{\epsilon_{it}}_{\text{Productivity shock}}$


Diversity in Firm TFP Levels 10

- Heterogeneity in firm TFP levels across firms and industries



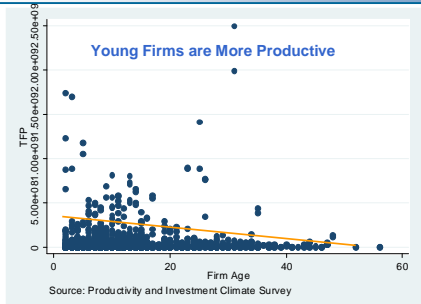
Source: Productivity and Investment Climate Survey

- What determines firm TFP?
- How can policymakers encourage firm TFP to rise?



III. Characteristics of Highly Productive Firms

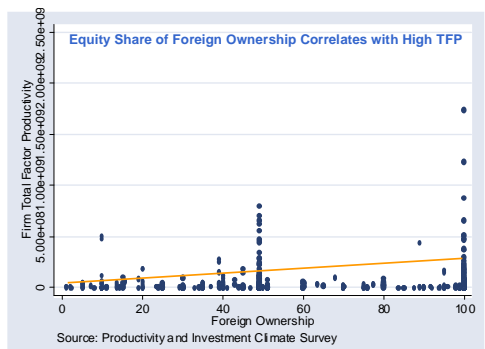
Creative Destruction 12



Source: Productivity and Investment Climate Survey

- Creative destruction refers to an ongoing process of technological revolution in which new technology replaces the old.
- Technological progress is what is important, not the firm *per se* which is a temporary construct

Foreign Ownership Correlates with High TFP 13

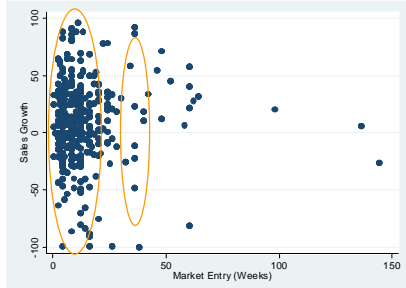


Source: Productivity and Investment Climate Survey

Vibrant Markets Create both Winners and Losers

14

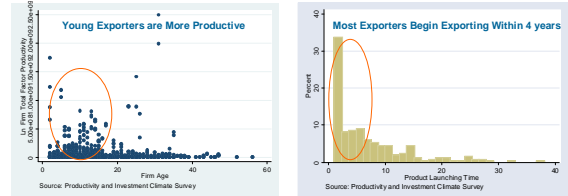
- High performance firms tend to be in vibrant markets.
- Winners and losers tend to occur together.
- For winners to emerge, we must accept that losers will also emerge as markets reallocate away from unproductive firms to productive firms.



How are Exporters Created?

15

- Exporting firms tend to be more productive.
- Exporters begin exporting quick after entry reflecting the importance of self-selection, rather than productivity learning.



IV. Product Market Competition & Firm Total Factor Productivity

How to Measure Market Competition?

17

- Market Concentration
- Contestability
- Market Segmentation
- Economic Rent

1. Market Concentration

18

Herfindahl Index: a measure of market concentration.

Calculated as

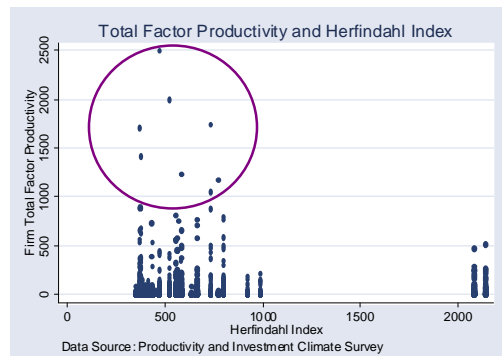
Herfindahl index Market share

$$HI_{jt} = \sum_{i=1}^n S_{i,t}^2$$

Range: [0-10,000]
 Moderately concentrated: [1000-1800]
 Highly concentrated: [1800-10,000]

Market Competition is Associated with High TFP

20



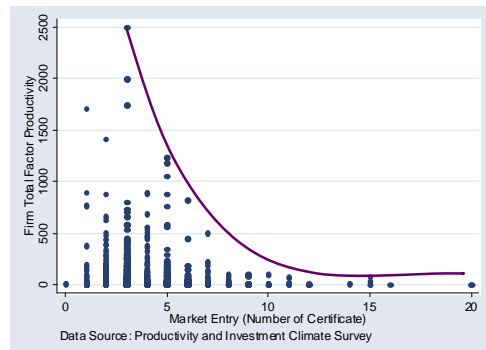
2. Contestability

23

- Are Market Contestable?
Theory: threat of entry makes firms "behave"
- Barriers to Entry
 - Number of licenses
 - Number of weeks

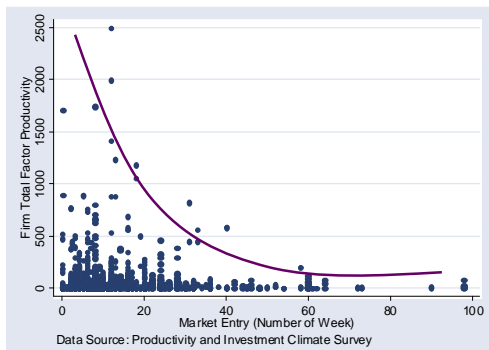
Contestable Markets Promote TFP

24



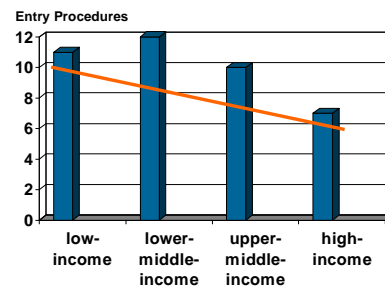
Contestable Markets Promote TFP

25



Poor Countries Regulate Business the Most

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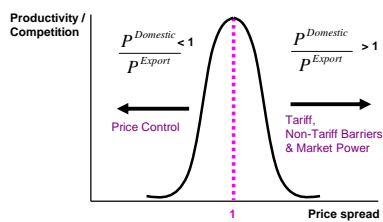
Source: Doing Business in 2004, World Bank

3. Market Segmentation

27

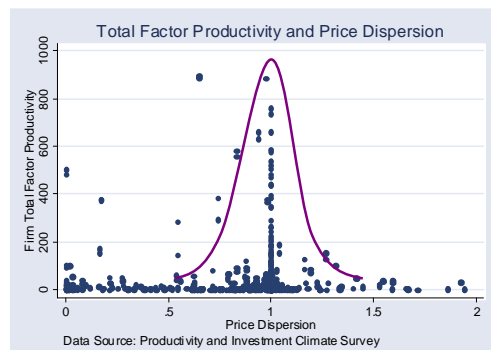
Price Dispersion

The spread between domestic and export prices for a firm's good reflects market segmentation, price controls, and tariff and non-tariff barriers.



Market Segmentation Decreases Firm TFP

28



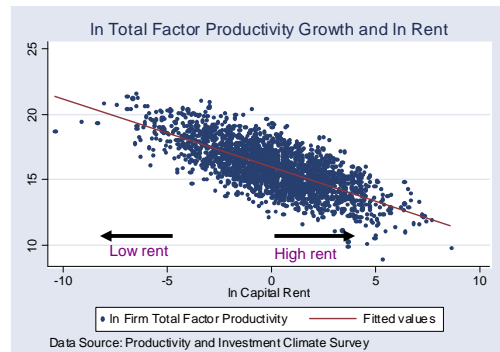
4. Economic Rent

29

- Rent is the difference between what is realized in the current use and opportunity cost, the income offered in the next, best alternative use of the factor.
- Calculation of Capital Rent (normalized on value added):
 - Capital Rent = profits before tax
 - + depreciation
 - + interest payment
 - cost of capital x capital stock

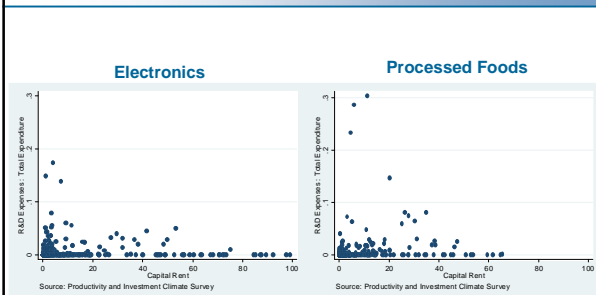
Less Capital Rent, More TFP

30



Competition Fosters Research and Development

31



V. Regression Analysis: Product Market Competition, TFP and TFP growth.

Panel Regression Models

33

- Does product market competition foster efficiency and TFP growth?

Firm TFP (Panel, Random Effects)

$$y_{it} = f(\text{competition}_{it}, \text{characteristics}_{it})$$

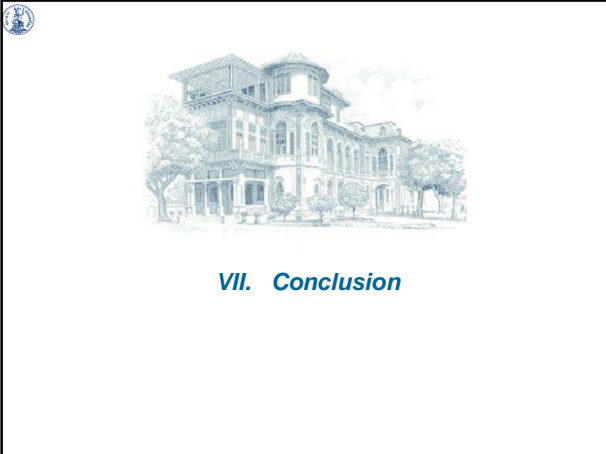
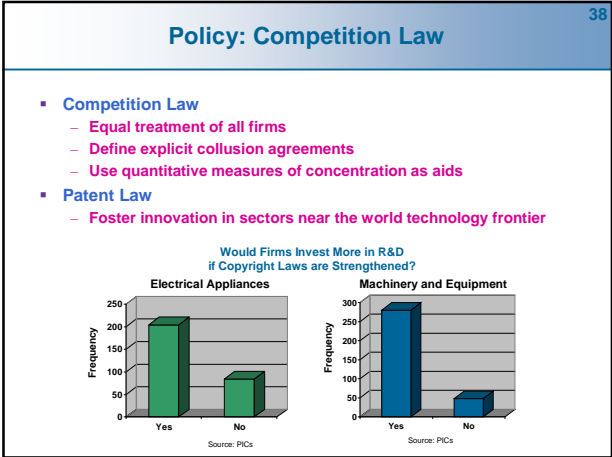
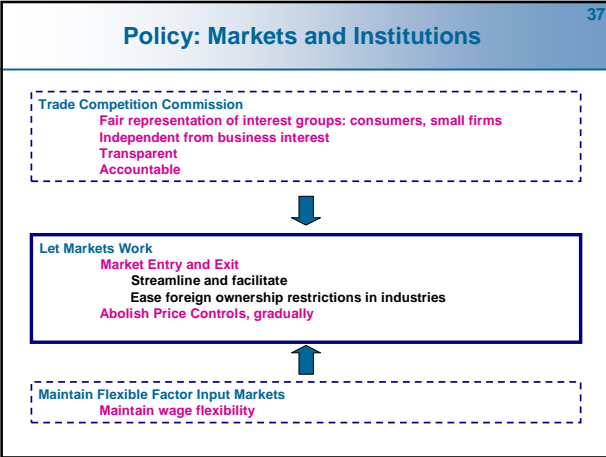
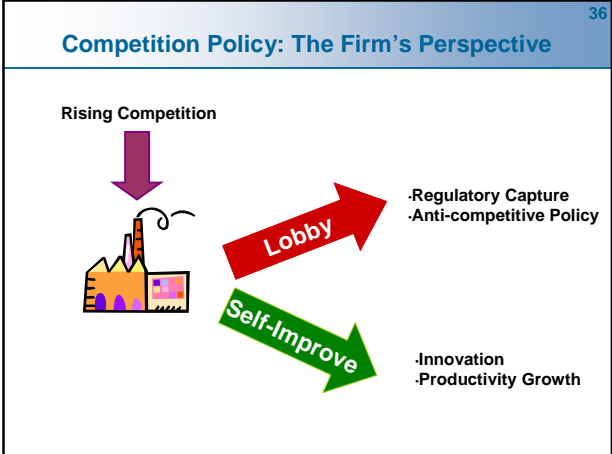
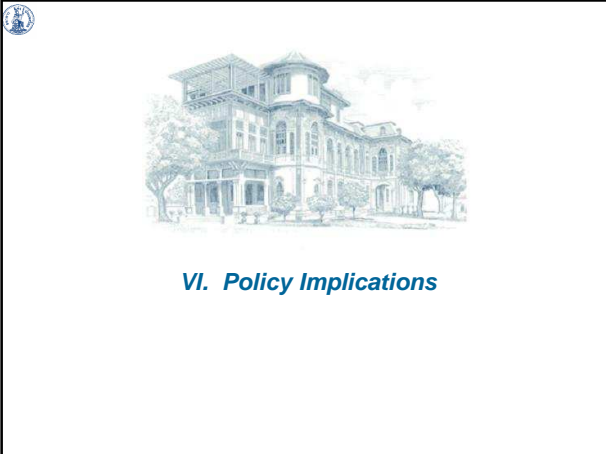
Firm TFP growth (Cross-section)

$$y_i = f(\text{competition}_i, \text{characteristics}_i)$$

Regression Results

34

Independent Variables	Firm TFP	Firm TFP Growth
Capital Rent	↓	↓
Price Control	↓	n/a
Herfindahl	--	↓
Exporter	↑	--
Foreign Ownership	↑	--
Age	↑	↓



- 40
- ### Conclusion
- Does product market competition foster firm TFP?
 - Yes
 - Does product market competition foster firm TFP growth?
 - Yes
 - Does product market competition foster firm innovation?
 - Yes, in certain sectors.
 - Market competition can help Thailand meet the challenges of globalization and long-run growth.