

# DISCUSSION OF RED 2018 “INSTITUTIONS FOR PRODUCTIVITY: TOWARDS A BETTER BUSINESS ENVIRONMENT”

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## IN THIS REPORT

- Income per capita remains low in Latin America (around 20 percent of the US level)
- Income gap due to productivity gap, even after accounting for differences in human capital quality
- Key question: What accounts for the productivity gap?
- Productivity differences are large in all sectors, hence focus on productivity at the micro level
- Similar findings in “The Latin American Productivity Problem,” *Economía*, Spring 2013
- Characterizes institutions affecting productivity at the micro level, where Latin America lags behind developed countries: competition, access to inputs, labor markets, financial markets

# MY DISCUSSION

- Focus on connecting institutions with micro-level productivity
- Describe simple framework to emphasize potential channels of low productivity: misallocation, selection, and technology
- Highlight characteristics of policies/institutions driving low productivity:
  - **Idiosyncratic** distortions across establishments (misallocation)
  - **Systematic** idiosyncratic distortions, where more productive establishments face larger distortions (selection, technology)

# SIMPLE FRAMEWORK OF TFP DIFFERENCES

- In each period, a single good produced by  $M$  potential heterogeneous production units indexed by  $i$
- Output  $y_i$  is produced according to

$$y_i = A_i \cdot h_i^\gamma, \quad \gamma \in (0, 1)$$

where  $A_i$  reflects productivity differences across producers,  $h_i$  is labor input, and  $\gamma$  measures the extent of decreasing returns to scale at the establishment level

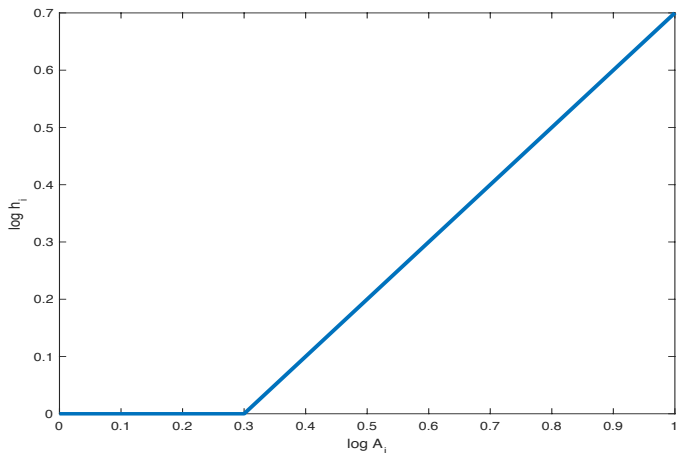
- Fixed cost of operation  $c$  in units of output

# SIMPLE FRAMEWORK OF TFP DIFFERENCES

Efficient allocation:

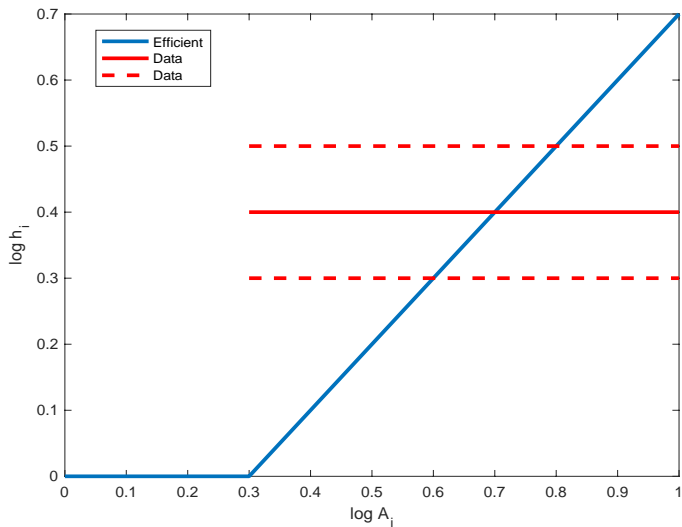
- Consider the efficient allocation of labor across producers that maximizes aggregate output net of operation costs
- Given aggregate labor  $H$ , there is unique threshold  $\bar{A}$  such that producers with  $A_i \geq \bar{A}$  operate, producers with  $A_i < \bar{A}$  do not operate
- Among operating producers, those with higher  $A_i$  are allocated greater amount of labor, producers with the same productivity operate at the same scale

# STYLIZED EFFICIENT ALLOCATION

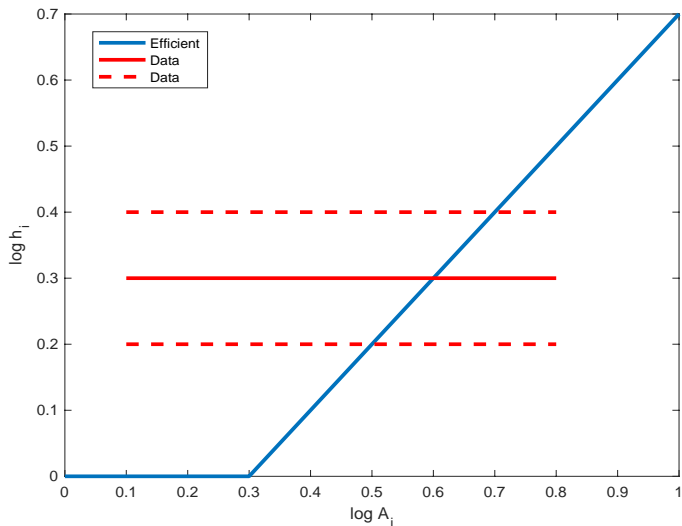


- Any deviation from this allocation would lower aggregate output and hence aggregate TFP

# STYLIZED MISALLOCATION



# MISALLOCATION AND SELECTION/TECHNOLOGY





# SIMPLE FRAMEWORK OF TFP DIFFERENCES

- Holding the amount of aggregate resources constant, three channels can account for aggregate TFP differences across countries:
  - Distribution of  $A_i$ 's differs across countries (**technology**)
  - Countries choose different set of producers to operate (**selection**)
  - Countries allocate inputs differently across producers (**misallocation**)
- Remark: specific policies/institutions generating misallocation can have larger effects on TFP by affecting technology/selection channels (Restuccia and Rogerson, 2017)

# (1) VIRTUE OF PRODUCTION HETEROGENEITY

- Aggregate production function:

$$Y = \sum_{i=1}^O y_i = AO^{1-\gamma}H^\gamma = \text{TFP} \times F(\text{factors})$$

- Limited scope for policies/institutions that drive TFP differences across countries (aggregate institutions)
- Recognizing production heterogeneity opens the door for many policies/institutions to drive idiosyncratic effects across producers that are potentially measurable

# (1) VIRTUE OF PRODUCTION HETEROGENEITY

- Key insight: to maximize aggregate output, the marginal (or average) product of factors should equalize across producers

$$\underbrace{(1 - \tau_i)\gamma \frac{y_i}{h_i}}_{\text{Value of marginal output}} = w \quad \Rightarrow \quad \text{TFPR}_i \equiv \frac{y_i}{h_i} \propto \frac{1}{(1 - \tau_i)}$$

- Suggests two broad approaches to assess the empirical relevance of misallocation:
  - Indirect: measure deviations in  $\text{TFPR}_i$  across producers using data on output and inputs
  - Direct: Measure specific policies and institutions that generate  $(1 - \tau_i)$  differences
- Policies/institutions can have aggregate productivity effects (low TFP) even if no impact on aggregate prices or aggregate resources

## EXAMPLES

- **Indirect:** Evidence points to substantial misallocation, large TFP losses (e.g. Hsieh and Klenow 2009, Pages 2010 for Latin America context)

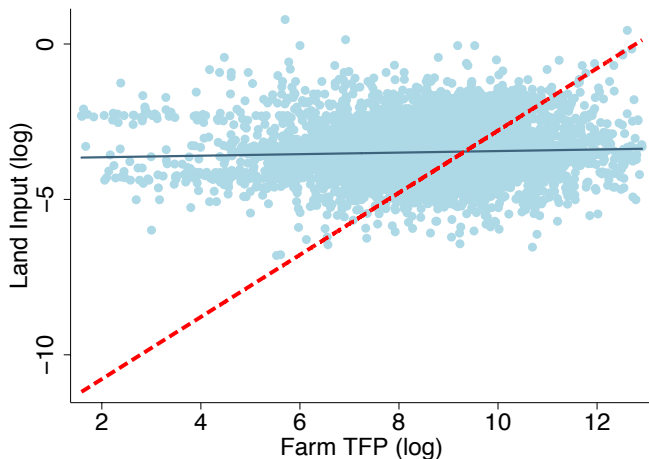
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	SD ( $\log \text{TFPR}_i$ )	TFP gains
China (1998)	0.74	115%
India (1994)	0.67	128%
United States (1997)	0.49	43%

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- **Direct:** Land institutions
  - Poor countries characterized by lack of well-defined property rights over land, land-use rights distributed uniformly across rural households, restrictions to sales/rentals
  - Result: land not allocated to best uses
  - Institution resulting in implicit wedges

# LAND MISALLOCATION IN CHINA

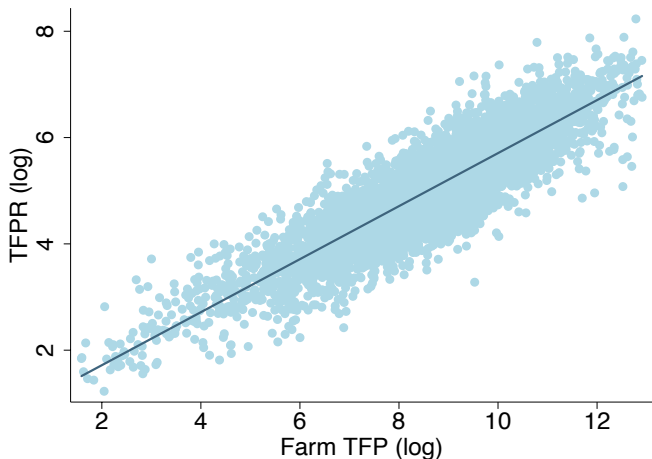


- [Adamopoulos et al \(2017\)](#): Efficient reallocation of operated land can increase agricultural productivity by 57%

## (2) SYSTEMATIC IDIOSYNCRATIC EFFECTS

- **Idiosyncratic** effects from policies/institutions: dispersion in effective prices (wedges) across producers
  - Generate misallocation
  - Note that a tax/wedge common to **all** producers has **no** effect on aggregate productivity (given factors)
- **Systematic** idiosyncratic effects: policies/institutions that effectively penalize more productive producers (correlated distortions)
  - Affecting aggregate productivity via selection and technology channels
  - Altering occupational/production choices
  - Effectively lowering the return to technology adoption/productive investments

# IMPLICIT AGRICULTURAL DISTORTIONS IN CHINA



- Large implied correlated distortions in the agricultural sector  
 $\sigma(\log\text{TFPR})=0.78$ ,  $\rho(\log\text{TFPR},\log\text{TFP})=0.86$

## (2) SYSTEMATIC IDIOSYNCRATIC EFFECTS

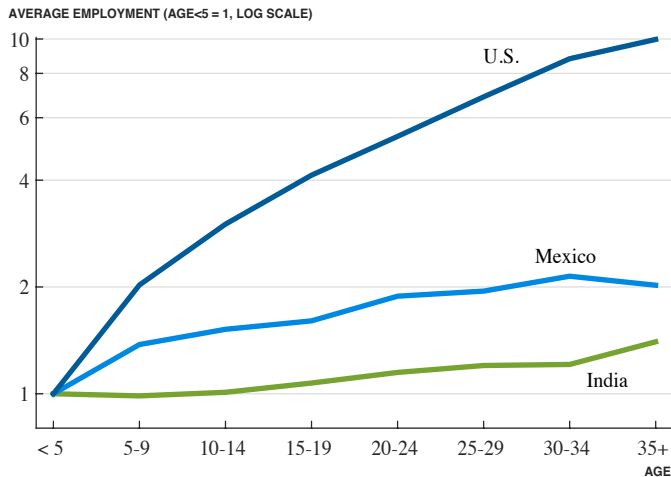
- Systematic idiosyncratic effects common, most often implicit/effective, not designed
- Example 1: a regulation that applies to all producers in a market but...in practice is enforced more strictly among larger (more productive) producers, connects to informality
- Example 2: land institutions
- Example 3: labor market policies, firing costs
- Example 4: financial development
- Example 5: trade policy



## BROADER CONSEQUENCES OF MISALLOCATION

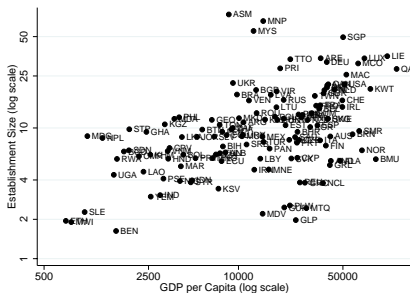
- A prevalent property of policies/institutions that create misallocation in developing countries: disproportionately affect more productive producers (correlated distortions)
- In models of firm dynamics these distortions effectively lower the return to productivity growth
  - Connection between misallocation and technology/selection channels
  - Establish a connection to the average size of establishments

# PLANT LIFE-CYCLE GROWTH

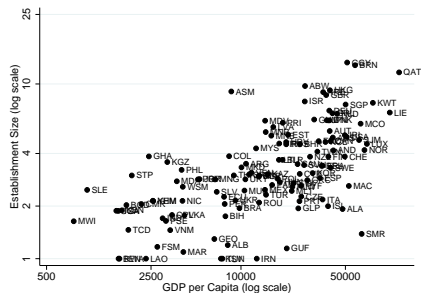


● Source: Hsieh and Klenow (2014)

# AVERAGE ESTABLISHMENT SIZE



(a) Manufacturing



(b) Services

● Source: [Bento and Restuccia \(2017, 2018\)](#)

### (3) THE PITFALLS OF WELL-INTENDED POLICIES

- Report suggest numerous areas for policy action
- A key insight of the misallocation literature is that size is deeply confounded by distortions, making policy implementation challenging
- Even if policy makers can identify productivity at the micro level, difficult to assess “optimal” size
- My take on policy:
  - Focus on better rather than more policy: review policy framework to minimize systematic idiosyncratic effects
  - Foster the development and efficiency of markets for the allocation of productive resources
  - Delink resource allocation from redistribution: for instance, operational scales achieved via efficient rental markets