Misallocation and Inequality

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Liverpool and CEPR

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This paper

Two big questions:

- How does the distribution of labour earnings change as countries develop and become richer?

- To what extent, can the pattern of the change be explained by resource misallocation and labour market frictions?

  $\Rightarrow$ Wages are ultimately paid by firms; need to consider
  - Productivity distribution of firms
  - How workers match with firms
  - On-the-job trainings after match

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Key contributions

Two sets of new empirical facts:

1. The middle class (p50) earns relatively more in richer countries
   GDP per capita$\uparrow \Rightarrow$ p50/p10$\uparrow$, p90/p50$\downarrow$, mean/p50$\downarrow$

2. Richer countries & bigger firms provide more on-the-job trainings
   trainings$\uparrow \Rightarrow$ wages$\uparrow$, less so in poorer countries

A model with heter. firms and workers to explain the above facts:

- Endogenous job matching and training $\Rightarrow$ generates fact 2.
- Two distortions:
  - output distortion: firm with prod. $z \Rightarrow z^{1-\zeta}$, $0 \leq \zeta < 1$
  - job matching friction: η controls the quality of matching

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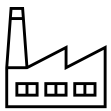
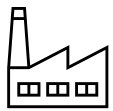
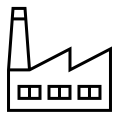
How does the output distortion affect distribution of outputs and wages?

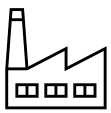
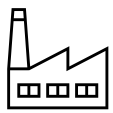
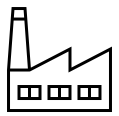
A simplified example

			
Productivity	Small **1**	Medium **5**	Large **12.5**
Wage (Identical workers; Random match; Equal share of profits)	 p10 **0.5**	 p50 **2.5**	 p90 **6.25**

p50/p10 = 5 p90/p50 = 2.5

How does the output distortion affect distribution of outputs and wages?

With output distortion $z \Rightarrow z^{1-\zeta}$; $\zeta = 0.2$

	 Small	 Medium	 Large
Productivity	**1 → 1**	**5 → 3.45**	**12.5 → 7.0**
Wage (Identical workers; Random match; Equal share of profits)	 p10 **0.5 → 0.5**	 p50 **2.5 → 1.73**	 p90 **6.25 → 3.5**

p50/p10 = 5 → **3.45**  p90/p50 = 2.5 → **2.02** 

⇒ Recall in data: p50/p10↓ (✓) and p90/p50↑ (x)

⇒ Similar problem for other channels: each channel affects multiple moments

Comment 1: more (analytical) discussions on how each channel works

⇒ Start with a more transparent model and add elements one-by-one

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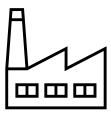
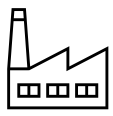
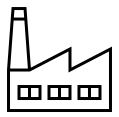
	 Small	 Medium	 Large
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Comment 2: Better match of the wage distributions

- Model does a great job in matching the targeted moments; Well done!
- But the match of wage distributions (non-targeted) is less satisfactory

Match of non-targeted moments

	UK Data	Model
Mean-median wage ratio, $\mathrm{E}[w_{it}]/\mathrm{p}^{50}[w_{it}]$	1.2763	1.2067
90-50 pct. wage ratio, $\mathrm{p}^{90}[w_{it}]/\mathrm{p}^{50}[w_{it}]$	2.4100	2.5506
50-10 pct. wage ratio, $\mathrm{p}^{50}[w_{it}]/\mathrm{p}^{10}[w_{it}]$	**2.9384**	**5.2618**

Possible solution: may be a small output distortion also for the UK?

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Comment 3: Within-country changes of wage distributions?

- Empirically, most facts are based on cross-country variations
  - Does the relationship hold within a country overtime? Perhaps more relevant for understanding development?
  - Measuring the variables in changes also helps to control country-specific factors

Comment 4: More on the role of on-the-job training

- Clarify why on-the-job training benefits workers in the middle of the skill distribution.
- Show more statistics related to on-the-job training, e.g.
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Concluding remarks

- Great paper! Very impressive work!
- Document new empirical evidence on how the distribution of earnings change as a country develops and link this observation to differences in on-the-job training
- Provide a modelling framework to study this problem and quantify the importance of various channels
- Could benefit from
  - more analytical discussions on how each channel works
  - better match of the wage distributions in the baseline model
  - facts on within-country changes of wage distributions
  - more discussions and stats on the role of on-the-job training