

Discussion on the Paper "Labor Market Integration and Entrepreneurship"

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Research Questions & Findings

Question: What is the impact of China's Hukou policy reform on firms' entry and location decisions?

It provides empirical evidence that

- Skill-biased relaxation attracts high-skilled workers and migrant entrepreneurs, but crowd out local entrepreneurs.
- Non-restrictive policies stimulate overall entrepreneurial activities.

Table 2: Effect of Hukou Reform on Entrepreneurship

	Total	Total	Migrant	Local
Hukou	0.0154 (0.0160)			
Hukou_skill		0.00950 (0.0272)	0.0626*** (0.0195)	-0.0600*** (0.0190)
Hukou_other		-0.0175 (0.0290)	0.0275 (0.0205)	-0.0337* (0.0181)
Hukou_nonrestrictive		0.0741*** (0.0244)	0.0917*** (0.0311)	0.0691** (0.0290)

Research Questions & Findings

- The skill-biased hukou reform increases profit/TFP more than nonrestrictive hukou reform.

Table 6: Effect of Hukou Reform on Firm Performance

	log(Revenue)	log(Profit)	log(Value-added)	TFP	log(Employment)	log(Wage)
Hukou_skill	0.142*** (0.00970)	0.133*** (0.00618)	0.127*** (0.00979)	0.0477*** (0.00377)	0.00684*** (0.00218)	-0.0273*** (0.00295)
Hukou_other	0.0626*** (0.0102)	0.0648*** (0.00668)	0.0403*** (0.0103)	0.0448*** (0.00406)	0.0143*** (0.00230)	-0.0139*** (0.00313)
Hukou_nonrestrictive	0.152*** (0.0128)	0.0322*** (0.00718)	0.137*** (0.0129)	0.00683 (0.00517)	0.0263*** (0.00251)	0.00178 (0.00338)

Key channel: labor market

- Skill-biased relaxation attracts high-skill workers only and reduces their labor costs, which would benefit the migrant entrepreneurs (who are more likely to be in high-skill intensive industries) more.
- Non-restrictive policies attract both low-skilled workers and high-skilled workers, which are beneficial to both migrant entrepreneurs and local entrepreneurs.

Table 5: Effect of Hukou Reform on Internal Labor Mobility

	Total	Below College	College & Above
Hukou_skill	0.127*** (0.0397)	0.0309 (0.0318)	0.214*** (0.0421)
Hukou_other	0.122*** (0.0392)	0.0637** (0.0314)	0.152*** (0.0416)
Hukou_nonrestrictive	0.159*** (0.0585)	0.213*** (0.0469)	0.113* (0.0531)

Key channel: labor market

Table 7: Effect of Hukou Reform on Firm Performance (By Skill Intensity)

	log(Revenue)	log(Profit)	log(Value-added)	TFP	log(Employment)	log(Wage)
Hukou_skill	-0.078*** (0.0240)	-0.065*** (0.0111)	-0.0947*** (0.0171)	0.0311*** (0.00642)	-0.0227*** (0.00378)	0.0400*** (0.00494)
Hukou_skill*Skill	0.194*** (0.0390)	0.0915*** (0.0178)	0.109*** (0.0273)	0.0593*** (0.0107)	0.0961*** (0.00607)	-0.0347*** (0.00796)
Hukou_other	-0.168*** (0.0253)	-0.0120 (0.0119)	-0.0117 (0.0178)	0.0194*** (0.00685)	-0.0211*** (0.00399)	0.0177*** (0.00526)
Hukou_other*Skill	0.210*** (0.0406)	0.127*** (0.0188)	0.161*** (0.0285)	0.0764*** (0.0113)	0.107*** (0.00629)	-0.0117 (0.00833)
Hukou_nonrestrictive	0.701*** (0.0300)	0.0211* (0.0101)	0.0763*** (0.0231)	-0.0221** (0.00896)	0.00364 (0.00447)	-0.00118 (0.00582)
Hukou_nonrestrictive*Skill	0.273*** (0.0470)	0.0274 (0.0205)	0.116*** (0.0360)	0.0754*** (0.0145)	0.0661*** (0.00707)	0.00422 (0.00923)

Quantitative model

It builds a spatial general equilibrium model, in which

- Workers (high-skilled/low-skilled) face different migration costs related to hukou policies, and choose the cities to migrate
- Firms in high-skilled/low-skilled industries choose different cities to operate

It quantifies the impact of different hukou policies on labor migration, entrepreneurs' migration, and social welfare.

A Simple Model

There are two regions: urban (M), and rural (A). The representative firms in urban/rural area use both high-skilled and low-skilled labor to produce manufactured goods.

$$Y^M = M (H^M)^\beta (L^M)^{1-\beta} \quad (1)$$

$$Y^A = A (H^A)^\alpha (L^A)^{1-\alpha} \quad (2)$$

where $\alpha < \beta$, i.e., urban production are more high-skilled intensive.

We have

$$\frac{p^A Y^A \alpha}{H^A} = (1 - \tau^H) \frac{p^M Y^M \beta}{H^M} \quad (3)$$

$$\frac{p^A Y^A (1 - \alpha)}{L^A} = (1 - \tau^L) \frac{p^M Y^M (1 - \beta)}{L^M} \quad (4)$$

in which τ^H, τ^L denote the labor migration cost for high-skilled/low-skilled workers respectively.

A Simple Model(Cont.)

If $\tau^L \geq \tau^H$, we have

$$\frac{H^A/L^A}{H^M/L^M} = \frac{\alpha}{1-\alpha} \frac{1-\beta}{\beta} \frac{1-\tau^L}{1-\tau^H} < 1 \quad (5)$$

Households have utility

$$U = \gamma \ln C^A + (1-\gamma) \ln C^M \quad (6)$$

and households face consumption tax λ^A, λ^M respectively. Assume all tax revenue is transferred back to households in a lump sum.

$$\frac{p^A C^A}{p^M C^M} = \frac{\gamma}{1-\gamma} \frac{1+\lambda^M}{1+\lambda^A} \quad (7)$$

and therefore,

$$\frac{H^A}{H^M} = \frac{\gamma}{1-\gamma} \frac{1+\lambda^M}{1+\lambda^A} \frac{\alpha}{\beta} \frac{1}{1-\tau^H} \quad (8)$$

and similarly

$$\frac{L^A}{L^M} = \frac{\gamma}{1-\gamma} \frac{1+\lambda^M}{1+\lambda^A} \frac{1-\alpha}{1-\beta} \frac{1}{1-\tau^L} \quad (9)$$

A Simple Model: the impact of Hukou reform

Now we study the impact of τ^H , keeping τ^L unchanged. It is clear that $\tau^H \downarrow \Rightarrow \frac{H^A}{H^M} \downarrow, H^M \uparrow, L^M$ unchanged (consistent with data), therefore, $Y^M \uparrow, Y^A \downarrow$

$$\frac{W^{MH}}{p^M} = \frac{Y^M \beta}{H^M} = M\beta \left(\frac{H^M}{L^M} \right)^{\beta-1} \downarrow$$

and $\frac{W^{ML}}{p^M} \uparrow$.

The real wage of high-skilled agricultural workers is given by

$$\frac{W^{AH}}{p^M} = \frac{p^A Y^A \alpha}{p^M H^A} = M\beta (1 - \tau^H) \left(\frac{H^M}{L^M} \right)^{\beta-1} \uparrow$$

Because

$$\frac{\partial \frac{W^{AH}}{p^M}}{\partial \tau^H} = -M\beta \left(\frac{H^M}{L^M} \right)^{\beta-1} \left(1 + (1 - \beta) \frac{1 - H^M}{H^M} \right) < 0$$

We also have $\frac{W^{AL}}{p^M} = (1 - \tau^L) \frac{W^{ML}}{p^M} \uparrow$.

Summary

It seems that the simple model can predict many qualitative results. It can be extended to include the non-unitary elasticity of substitution between high-skilled and low-skilled labor (Fan,2019).

The contribution of a full-fledged quantitative model with entrepreneur sorting lies in

- First, it can quantify the impact of Hukou reforms on entrepreneurial activities in the data.
- Second, it can highlight the contribution of firms' sorting.

Table 9: Counterfactual Experiments for Further Migration Liberalization

	Biased			Unrestrictive		
	Overall	Relaxed	Unrelaxed	Overall	Relaxed	Unrelaxed
Panel A: Random 1 City						
Total Welfare	0.80%	35.49%	-0.49%	2.63%	98.91%	-0.94%
Welfare (High Skill)	4.92%	89.04%	-0.77%	5.79%	108.40%	-0.11%
Welfare (Low Skill)	-0.40%	5.02%	-0.36%	2.25%	93.51%	-0.09%
Wage (High Skill)	0.74%	-9.35%	0.77%	0.75%	-0.09%	0.77%
Wage (Low Skill)	-0.37%	4.62%	-0.39%	-0.09%	-0.75%	-0.02%
Labor (High Skill)	-	4.27%	-1.53%	-	4.29%	-0.87%
Labor (Low Skill)	-	0.38%	-0.03%	-	2.51%	-0.07%
Firm (High Skill)	-	4.78%	-1.60%	-	4.21%	-1.49%
Firm (Low Skill)	-	-3.91%	1.05%	-	1.95%	-0.48%

Comment 1: how to understand the large welfare implication

- The author found substantial welfare gains from the removal of Hukou barriers in counterfactual experiments. Are these findings comparable to the impact of reduced labor mobility costs on the GDP/welfare, as discussed in the literature, such as in Tombe and Zhu (2019)?
- How much of the additional gains are due to the sorting of entrepreneurs?

Comment 2: better alignment between the model and data

- In the model, when a firm relocates from one city to another, production in the old location ceases to exist, and production is fully transferred to the new location.
- In the data, the entrepreneur may set up multiple firms. In empirical studies, identification mainly comes from serial entrepreneurs or newly registered firms.
- It is recommended to consider firms' entry and exit behaviors in the modeling to achieve better alignment between the model and the data.

Comment 3: patterns of the hukou reform

- The relaxation of the Hukou system is not random. First-tier cities have more strict standards in skill-biased hukou policy. The welfare analysis can mimic this and explain the reform history.

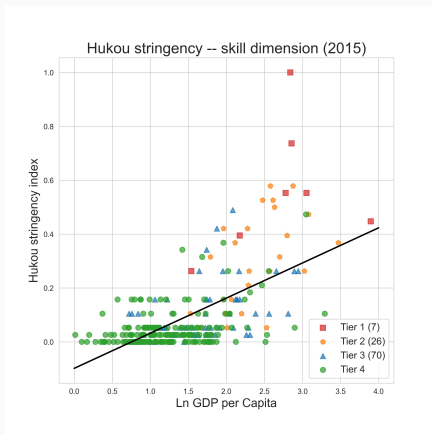


Figure 1: Han, Tanaka, and Zhao (2024)

Comment 4: public goods, land, non-tradables

- This article considers the Hukou system as a restriction on mobility but overlooks that it is also the basis for the government to provide local public resources, resulting in differences in public service provision and regional segmentation.
- Additionally, this article does not consider the fixed production factor of land. As the urban population influx increases rents, the resulting congestion can reduce welfare levels.
- Moreover, the article does not consider the existence of non-tradable goods, which can also raise price levels and lead to a decline in welfare.

Comment 5: some measurement issues

The measurement of skill-biased reform

- The definition of skilled-biased Hukou reform in the paper includes “requirements for a college degree or higher, high-level skill certificates, or business investment.”
- I would suggest the business investment requirement should be excluded from this definition, as it directly pertains to entrepreneurial investment behavior.

The measurement of entrepreneur

- “We define an entrepreneur as the largest shareholder of a firm” “we exclude the self-employed individuals from the sample of entrepreneurs.”
- Comparing incorporated self-employed vs unincorporated self-employed, I believe the former should remain in the sample, while the latter can be excluded.

Comment 6: some typos

On page 22, $\omega_{ds}(\omega) = L_{ds}^{-\frac{1}{\epsilon}} W_{ds}(I_{ds}(\omega))^{-\frac{1}{\epsilon}} \rightarrow L_{ds}^{-\frac{1}{\epsilon}} W_{ds}(I_{ds}(\omega))^{\frac{1}{\epsilon}}$

On page 24: the power of W_{ds} should be $-\epsilon/(\epsilon + 1)$

On page 25: the revenue function

$$r_{dl}(z) = F(I) C_{dl}^{-\frac{1-\psi}{\psi}} (\varphi_{dl}(\omega))^{\frac{\sigma-1}{\sigma}} \rightarrow F(I) C_{dl}^{-\frac{1-\psi}{\psi}} (\varphi_{dl}(\omega))^{\frac{1}{\psi} \frac{\sigma-1}{\sigma}}$$

On page 26: the profit function r_{dh} has the following shape parameters:

$$\epsilon\psi \frac{\sigma-1}{\sigma} \rightarrow \epsilon \frac{\psi\sigma}{\sigma-1}$$