Who entered the high-wage industries in China?

——The roles of productivity and non-productivity factors

- Literature review and contribution
- Dataset and variables
- Methodology
- Results
- Conclusion

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Literature review

- Income differentials between industries have become an increasingly important component of the overall income inequality in urban China
- The mechanisms:

1. dual non-competitiveness in both the commodity and the labour market
2. the efficiency wage theory

Contribution

- verify that the inter-industrial wage differentials are not entirely related to labour productivity
- verify industry as the source of segmentation of the labour market for future studies if non-productivity-related factors are proven to hinder labour movement.
- prove whether economic development and marketisation alleviated or deteriorated this inter-industrial income inequality by using cross-sectional data analysis in different years in 2002 and 2013

Dataset

- This paper uses data from the Chinese Household Income Project (CHIP), which conducted four waves of household surveys in 1995, 2002, 2007 and 2013. These surveys were carried out by the Institute of Economics Chinese Academy of Social Sciences, Chinese and international researchers and were assisted by the National Bureau of Statistics (NBS).
- Covers 12 cities and can classify into coastal and mid-west cities, which coastal cities have much more prosperous economies. Usable sample sizes are about 9500 across the years.

Variables

The most important explanatory variables we want to investigate:

- Hukou (household registration)
- Way of finding the current job (the accessibility and use of social network)
- Party membership
- Family background (father's education, occupation and party membership)

Other explanatory variables:

- Years of education
- Years of working
- Age
- Health
- Marriage status
- Gender
- Ethnicity
- Changed jobs
- Family burden ration

Explained variable in sorting industries:

- Log income

Explained variable in evaluating factors:

- Dummy variable of industries (base group: manufacturing)

Methodology-Two parts

The Paper used a logarithm income regression function and controlled variables that reflect productivity, provinces and cities.

Step one: Identify industries that pay wages above the market-clearing level.

Industry classification

	2013		2007		2002		1995	
	coef.	P>|t|	coef.	P>|t|	coef.	P>|t|	coef.	P>|t|
Farm, forest, husbandry and fishery	-0.305	0.675	0.0725	0.3	0.0489	0.534	0.0774	0.028
Electricity, gas and water supply facilities	0.0764	0.124	0.1494	0.000	0.3299	0.000	-	-
Management of water conservancy, environment and public facilities	0.0573	0.410	0.0471	0.479	-	-	-	-
Construction	0.0584	0.172	0.0927	0.121	0.0706	0.028	-0.0024	0.930
Mineral/Mining	0.2515	0.000	0.0734	0.300	0.0101	0.836	-	-
Geological prospecting, irrigation administration	-	-	-	-	0.1036	0.290	-	-
Mining, Geological survey and prospecting	-	-	-	-	-	-	0.0159	0.722
Transportation, storage, post office and communication	-	-	-	-	0.1626	0.000	0.0852	0.000
Transportation, storage and post	0.0156	0.685	0.1011	0.000	-	-	-	-
Information transmission, software and information technology services	0.1722	0.013	0.1390	0.000	-	-	-	-
Wholesale, retail and food services	-	-	-	-	-0.0259	0.283	0.0092	0.522
Wholesale and retail trades	-0.026	0.444	0.0424	0.159	-	-	-	-
Accommodation and catering services	-0.0709	0.184	-0.0670	0.026	-	-	-	-
Finance and insurance	-	-	-	-	0.2275	0.000	0.2584	0.000
Financial industry	0.1429	0.020	0.2936	0.000	-	-	-	-
Real estate	0.0203	0.756	0.2502	0.000	0.2053	0.001	0.0021	0.930
Leasing and business services	-0.0678	0.132	0.0577	0.176	-	-	-	-
Social services	-	-	-	-	-0.0899	0.001	-	-
Residential services, repairing and other services	-0.1831	0.000	-0.2008	0.000	-	-	-	-
Health, sports and social welfare	-	-	-	-	0.0497	0.362	0.0749	0.001
Health and social work	-0.0919	0.098	0.0129	0.306	-	-	-	-
Culture, sport and entertainment	-0.0356	0.533	-0.0036	0.945	-	-	-	-
Education, culture and arts, mass media and entertainment	-	-	-	-	0.0898	0.094	0.0690	0.000
Education	-0.0104	0.862	0.1747	0.000	-	-	-	-
Scientific research and professional services	-0.4550	0.566	0.2341	0.000	0.0935	0.174	0.0329	0.294
Government agents, party organisations and social groups	-	-	-	-	0.081	0.222	0.0799	0.000
Public management and social organisation	-0.1155	0.004	0.0326	0.372	-	-	-	-
International organisation	-	-	0.3668	0.259	-	-	-	-

Methodology-Two parts

Step two: Independently pooled cross-sectional data analysis (2002,2013)

Set industry as the dependent dummy variable, and use the ordered probit model to investigate the factors influencing entry into high-wage industries.

For each year, run three regressions that respectively control for network, Hukou and background.

- In ordered probit model, coefficient uninformative in terms of direction and magnitude. After comparing with OLS, the sign of coefficient and significance weren't significantly different from those in the OPM. For more straightforward interpretation, present with OLS.

Ordered Probit Model:

$$P(Y_{it} = K) = \Phi(\beta M_{it} + \varepsilon_{it})$$

$$K = \begin{cases} 1 & \text{if wage is significantly higher than manufacturing} \\ 0 & \text{if wage is not significantly different from manufacturing} \\ -1 & \text{if wage is significantly lower than manufacturing} \end{cases}$$

OLS Model:

$$Y_{it} = \alpha + \beta M_{it} + \varepsilon_{it}$$

Y is the industry dependent variable.
K is the three possible values for Y.
M represents all the explanatory variables.
i is the individual and t is the year (t =2002, 2013).
ε is the error term

Results

The basic model in 2002 and 2013:

- The network variable 'way of finding a job' are significantly positive in 2002 and 2013; it is twice as high in 2013 as in 2002.
- The family background's significance level dropped from 2002 to 2013.
- Having a local hukou was one of the most significant variables in 2002 with a coefficient of 0.302, but the coefficient dropped drastically in 2013.
- Productivity-related factors matter. Education level, health status, and work experience are crucial determinants in entering high-wage industries.

Other interesting variables:

- In 2002 and 2013, gender all played a vital role in industry entry
- Not being a party member don't necessarily imply a disadvantage
- Having changed one's job was a disadvantage in 2002, but not necessarily in 2013.
- The Family burden motivates people more in 2002 than in 2013

Trans-regional comparison:

- the network variable:
  - twice as crucial in the mid-west compared to coastal regions in 2002
  - the coefficients increased significantly in both regions in 2013.
- Having a local hukou:
  - high coefficient in coastal regions but insignificant in mid-west (2002)
  - coefficients dropped: to 0.1033 in coastal and 0.0762 in mid-west (2013)

Results:

IV-adjusted

Endogeneity bias caused by simultaneity:
People might rely more on a network to find a job if they were in the low-income industry.

Instrumental variable choice:
Respondent's father-in-law's education level

Why?
If the respondent's father-in-law's education were high, the father's family would be overall privileged and have better chances of having a better personal network, this will influence the respondent's network to some extent

IV adjusted trans-regional comparison:

- endogeneity of the network was much higher in the coastal regions, where the market mechanism was more mature.
- a good network is much more critical for entering high-wage industries in the coastal part of China than in the mid-west part

Summary:

- Economic development and marketisation progress reduced the effects of having a local *hukou* and good family background.
- Having a better network gave people an advantage in the more prosperous coastal regions of China

Hukou's receding influence: facts and background

- ***Definition:*** *Hukou* is a registration system that records individuals and their respective households (*Hu* means 'household' and *Kou* means 'mouth', referring to how many mouths are there to feed in a household).
- Initially used to allocate state-sponsored resources like education, job, benefits and food rations in the planned economy era in China. As a result, the location of a person's *hukou* is not supposed to be changed easily to prevent disequilibria in resource rations.
- The policy's momentum lingered, and some implicit benefits to having a local *hukou*, like lower administrative costs for the firm.
- **After several rounds of *hukou* reform**, population mobility was largely optimised, and the location of one's *hukou* became increasingly irrelevant to one's job.
- Although the first-tier cities set high criteria for local *hukou* registration, the main benefits of a local *hukou* were not directly relevant to labour-market entry (Zhang, Wang & Lu, 2018).
- The effects of *hukou* as a labour-market entry barrier receded with the implementation of policies that promotes marketisation. This result is corroborated by our analysis.

Conclusion:

- The effect of **hukou** decreased from 2002 to 2013 in all parts of China. Marketisation and economic development reduced the inequality of opportunity induced by hukou.
- In the coastal regions, the **network**'s coefficient is more than two times larger than in the mid-west region, implying that marketisation and economic development cannot reduce the effect of the network.

- The endogeneity caused an underestimation of the effects of personal network.

Policy implication:

- Breaking down the entry barriers of different industries is a crucial step if China wants to form a fair and competitive labour market and equalise industrial wages.
- High income from monopoly industries can be controlled if the non-market factors consolidating the entry barriers can be reduced.