

Constrained choice: health behaviour of Chinese migrants

Lina Song

(GEP, IZA, School of Sociology and Social
Policy, Nottingham University)

Simon Appleton

(School of Economics, Nottingham University)



Issues (1)

Rural-urban migration in China is primarily motivated by an expected income gain and thus should reduce income poverty.

However, migration may increase health risks, which may have to be traded off with expected income gains.



Issues (2)

- Migrants tend to live and work in dreadful conditions in order to save for remittances, to contribute to their families in poor rural areas. This has been commonly observed through migrants' occupations, job-location, living and working arrangements. Moreover, migrants in China's big cities, without permanent urban residency, receive fewer benefits from public health policy.



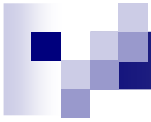
Issues (3)

- The nexus of issues surrounding income, migration and health behaviour in China is of great contemporary policy interest.
- The relationship between socio-economic causes and migrants' health status is not yet established. Most importantly, there is a lack of evidence-based research on the links between poverty alleviation and migrants' health behaviours in China.
- The paper provides a multi-dimensional assessment of the impact of migration on health behaviour highlighting income effects.



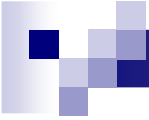
Objectives:

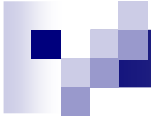
- Using pseudo panel data constructed from two national representative household /labour force surveys (1994 and 2002), we
- Identify the effect of migration and income on health in general.
- Examining migrants health behaviour by exploring the determinants of health risks at individual level.



Data

Data used for this research is a pseudo panel data constructed by the authors from two cross-sectional and national-representative household surveys referring to the year of 1994 and 2002.

- 
- 1994 survey, designed to be national representative, was conducted by the Ministry of Labour, PR China for the purpose of study rural-urban migration (thereafter MOL Survey), covering 8000 rural households within 8 provinces, seven of which are migrant-sending provinces.

- 
- 2002 survey was a multi-purposed survey with a focus on income distribution (thereafter CHIP2002). Sufficient information of labour issues including migration and health from this survey allows us to pursue the objective of this paper.

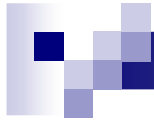


Table: Distribution of sampled labour force by province


<i>Province:</i>	<i>1994</i>	<i>2002</i>
Sichuan	13.16	16.97
Hubei	15.28	10.44
Jiangsu	15.19	13.33
Anhui	14.08	15.68
Shandong	13.03	16.00
Hebei	14.18	16.93
Gansu	15.07	10.65
Number of observations	8,827	11,068

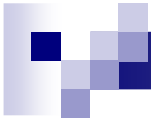
	1994	2002
<i>Working location:</i>		
Migrating (outside county)	2248 (25.47%)	3077 (27.80%)
Of which to urban centres	1050 (11.90%)	2604 (23.53%)
Remaining in rural origin	6579 (74.53%)	7991 (72.20%)
<i>Self-reported health status (%);</i>		
Health	93.84	85.10
So-so	4.80	10.90
Not healthy	1.36	4.00



Method of pseudo panel data analysis:

$$\bar{h}_{ijklt} = B_0 + B_{1l} \bar{h}_{ijklt-1} + B_{2l} \bar{f}(y_{ijklt}) + B_{3l} \bar{U}_{ijklt} + B_{4l} \bar{g}(a_{ijklt}) + \bar{v}_{ijkl} + \bar{e}_{ijklt}$$

- 
- In the equation, y is income, a is age, $f(\cdot)$ and $g(\cdot)$ are possible non-linear functions of income or age, M is a binary variable representing migration, v is an individual-specific term which should not vary over time and e is an error term.



- Using province, sex and birth cohorts, we have generated our cell-observations for pseudo panel data analysis. From each wave, we generated 168 cells, and in total we have 336 cell-observations

Pseudo Panel analysis: Two stage least square regressions on self-assessed health scores, 1994-2002 (Second Stage)

Variable	Self-assessed health score	
	Model One	Model Two
Age	0.0695 (1.06)	0.0973 (1.67)*
Age squared	-0.0004 (2.79)***	-0.0004 (3.67)***
Log (earnings)	0.0988 (2.12)**	0.0750 (1.81)*
Migration (outside county-town)	-0.2214 (1.74)*	0.4987 (3.06)***
Migration to large urban centres or outside province		-0.7408 (5.11)***
Wave	-0.0501 (1.07)	-0.0879 (1.68)*
Constant	124.76 (1.09)	174.51 (1.70)*
Number of observations	336	336
F-values	2.02	2.02
R ² within	0.7725	0.8154
R ² between	0.4697	0.5635
R ² overall	0.1469	0.2531

Regression analysis on self-reported health score: Determinants from CHIP 2002 migrant survey				
Variable	Off-sick day Tobit model		Self-reported health score, OLS	
	Scaled coefficient	Wald-Chi-square	Coefficient	T- statistics
Age	0.0097***	39.94	-0.0119***	8.69
Male	-0.0186	0.49	0.0500**	2.13
Married	0.0253	0.33	0.0424	1.09
Education (year)	-0.0101**	4.51	0.0145***	3.42
Migration (year)	0.0032	1.89	-0.000	0.01
Log (household saving)	-0.1504***	12.67	0.0119***	3.12
Working normal hour	0.1641	1.45	-0.0029	0.26
Employed	-0.1686**	5.24	0.2290***	3.14
Housework	-0.0248	0.09	0.0344	0.42

Regression analysis on off-sick-days and self-reported health score:
Determinants from CHIP 2002 migrant survey

Variable	Off-sick day Tobit model		Self-reported health score, OLS	
	Scaled coefficient	Wald-Chi- square	Coefficient	T-statistics
<u>Occupation:</u>				
Private firm owner (manager)	0.0258	0.13	-0.0819	1.32
Professional	-0.3442	2.18	-0.0884	1.10
State-owned director or manager	0.3321*	3.14	-0.2566	1.46
Office worker	0.1000	0.91	-0.1789*	1.93
Industrial worker (default)				
Commercial worker	0.0774	0.87	-0.0867	1.17
Service worker	0.0787	1.05	-0.1436**	2.20
Construction worker	0.0447	0.14	-0.0771	0.71
Household service	0.0857	0.24	-0.0828	0.68
Other	0.0414	0.20	-0.0620	0.83

Regression analysis on self-reported health score: Selected industrial sectors

Variable	Self-reported health score, OLS	
	Coefficient	T-statistics
<u>Industrial sector:</u>		
Mining	-0.6269	2.60
Machinery for heavy industry	-0.2866	1.73
Manufacture of plastic products	0.0998	1.58
Electronic products	-0.1910	1.31
Chemical industry	-0.0851	1.63
Garments (default)		
Daily-use products	-0.1031	1.00
Transportation, communication, storage	0.0857	0.94
Whole-sale, retail, catering	0.0629	1.01
Finance, insurance	0.0657	1.20
Health, sports and social welfare	0.1615	1.34
Science and science service	0.2386	1.24



Pseudo-panel estimates of effect of migration on self-reported health status (SRHS)

- Direct effect of migration on health (earnings held constant)
 - On average: migration lowers SRHS by 0.22 (85% of a s.d.)
 - Rural-urban migration lowers by 0.24
 - Rural-rural migration *raises* by 0.50
- Indirect health benefits of migration (via earnings)
 - Rural-urban migration raises log earnings by 2.23 & SRHS by 0.17
 - Rural-rural migration raises log earnings by 1.53 & SRHS by 0.11
- Total effects of migration (direct + indirect)
 - Rural-urban worsens SRHS by 0.07 (27% of s.d.)
 - Rural-rural improves SRHS by 0.61 (235% of s.d.)



Conclusions

- Standard estimates of effect of migration on health biased because of “healthy migrant” phenomenon
 - Solve by panel data: ideally on individuals (=> CHIP survey)
 - But can also remove bias by pseudo-panel based on cohorts
- Results for 1994 and 2002
 - Mild negative effect of rural-urban migration on SRHS
 - (equal to 27% of a standard deviation)
 - Large income benefits offset most of negative direct effects
 - Puzzle: rural-rural migration appears to greatly improve SRHS