

# Earnings Mobility in Hong Kong

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5 December 2012

# Introduction

- The first question: how mobile are individual earnings in Hong Kong?
- By measuring earnings mobility (EM), we can learn about whether Hong Kong's labour market provides opportunities to move up the earnings ladder
- Main measure of EM: correlation between current and past earnings
- Contribution of this study
  - Understanding the determinants of earnings mobility
  - Assessment of changes over time

# Introduction

- The second question: how are children's earnings related to the earnings of their parents?
- By measuring intergenerational earnings mobility (IEM), we can gain an idea of whether there are opportunities to move up in society (or not).
- Main measure of IEM: elasticity of son's lifetime income with respect to father's lifetime income
- Contribution of this study
  - First estimates of IEM for Hong Kong
  - Estimates of IEM for mother/daughter pairs also

# Introduction

- Background of study
  - Third round of a series commissioned by the Hong Kong government
  - Objective: to assess and monitor social mobility in Hong Kong
  - Methodology: add a special module to the 2008 Q4 General Household Survey and analyze the resulting data
- Areas of inquiry
  - Earnings mobility in Hong Kong
  - Intergenerational earnings mobility in Hong Kong
  - Effectiveness of subsidized training program

# Data Collection

- Earnings mobility
  - focus on ages 30 to 65
  - collected data on current earnings; earnings 5 years ago; and earnings 10 years ago
- Intergenerational earnings mobility
  - focus on respondents ages 30 to 45
  - collect data on parents' lifetime income (imputed from industry, occupation, educational attainment)
- Effectiveness of government policy
  - Information on participation in the policy, and earnings trajectory before/after implementation of the policy
  - Unfortunately, <5% of sample participated

# Data Reliability

- As no panel data sets are available, it is necessary to rely on recalled data
- For EM:
  - Density of recalled earnings data is consistent with GHS data from relevant years
  - Two types of earnings models were estimated, one to predict earnings directly (censored regression), and another to predict earnings quintile (ordered probit), both based on demographic information
  - In neither case did we find the correlations present in the recalled data significantly different from the correlations present in the GHS data

# Data Reliability

- For IEM: asking children about parents' earnings is hopeless.
- Many have no idea and even if they do know they are reluctant to answer.
- Symptoms of the problem: a lot of missing data and responses that are not correlated with parents' characteristics (i.e. random responses).
- Solution is to impute parents' earnings from their job characteristics and educational attainment.

# Earnings Mobility

- Main measure of earnings mobility: correlation between current log wages and log wages 5 or 10 years ago
- High correlation--> low mobility
- Key results for 1998-2008
  - Men: 0.72
  - Women: 0.79
  - Whole population: 0.75
- Key results for 2003-2008
  - Men: 0.85
  - Women: 0.88
  - Whole population: 0.87



# Earnings Mobility

- General observations
  - Mobility is **greater** over longer time horizons
  - Men's earnings are **more mobile** than women's earnings
  - When compared to analogous figures from past surveys, earnings mobility in Hong Kong has been **decreasing** over the long term
  - Mobility has been declining in **manufacturing** and **construction**, and for **clerks**
  - Strong decline in 1990s; much slower decline in 2000s
- Recent observations
  - Earnings mobility has declined in the **finance sector**

# Earnings Mobility

- More detailed 10 year mobility rates, for all workers:

1998 \ 2008	Bottom	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	Top
Bottom	54.1%	29.8%	12.2%	3.4%	0.6%
2 <sup>nd</sup>	16.5%	32.9%	35.0%	12.6%	3.0%
3 <sup>rd</sup>	10.7%	16.8%	39.9%	27.5%	5.2%
4 <sup>th</sup>	4.1%	7.7%	19.5%	43.0%	25.7%
Top	3.3%	3.6%	4.2%	14.4%	74.5%

# Earnings Mobility

- Developments since last survey:
  - Mobility at low end has not changed much, or improved slightly
  - Chance of being “trapped at the bottom” was 58% in 1996-2005; now 54%
  - Mobility at middle and high end has declined significantly
  - Chance of staying in 3<sup>rd</sup> quintile increased from 26% to 40%
  - Chance of staying in top quintile increased from 68% to 75%

# Earnings Mobility

- Overall, we see a pattern of **more upward mobility** at the low end, and **more downward mobility** at the high end:

**Five-Year Mobility Rates by Quintile Group for All Workers in the 2006 and Current (2009) Studies**

Quintile Group	2001-2005			2003-2008		
	Up	No	Down	Up	No	Down
Bottom	25.6%	74.4%		37.2%	62.8%	
2 <sup>nd</sup>	28.2%	49.7%	22.1%	36.3%	49.3%	14.4%
3 <sup>rd</sup>	25.8%	48.5%	25.7%	23.1%	59.6%	17.3%
4 <sup>th</sup>	18.0%	59.7%	22.3%	12.5%	61.3%	26.2%
Top		86.2%	13.8%		81.9%	18.1%

# Earnings Mobility

- Specific observations
  - Government-subsidized training (up to HK\$10,000 subsidy for qualifying programs) was not effective in increasing participants' upward earnings mobility
  - Education is in general an important determinant of earnings mobility
  - At younger ages, educated workers have much higher rates of upward mobility
  - At older ages, educated workers have much lower rates of downward mobility
  - The lowest 10-year downward mobility rate (9%) is enjoyed by **professionals**
- After the crisis, most negative changes in earnings mobility were experienced by **managers and administrators**; downward mobility increased from 9% to 17%

# Earnings Mobility

- We also examined the probability of being **trapped at the bottom**.
- This means the probability of staying in the lowest earnings quintile, conditional on staying there.

Probability of being “Trapped at the Bottom,” 1998-2008		
Age (at end)	Men	Women
30-39	31%	31%
40-49	42%	59%
50-65	66%	78%
Education (at beginning)		
Primary or Below	71%	82%
Secondary	40%	53%
Degree or Higher	20%	16%

# Earnings Mobility

- Generally, the probability of being “trapped at the bottom” **increases with age** and **decreases with education** (even holding the other factor constant).

Probability of being “Trapped at the Bottom,” 1998-2008

Education \ Age	Age 30-39	Age 40-49	Age 50-65
Primary or Below	52%	69%	84%
Secondary	34%	51%	60%
Degree or Above	0%	19%	49%

# Earnings Mobility

- There is also considerable variation in the probability of being “trapped at the bottom” by occupation:

Probability of being “Trapped at the Bottom” by Occupation (at beginning), 1998-2008	
Managers and Administrators	24%
Professionals	0%
Associate Professionals	28%
Clerks	32%
Service Workers & Shop Sales Workers	60%
Craft & Related Workers	33%
Plant and Machine Operators and Assemblers	72%
Elementary Occupations	74%



# Earnings Mobility

- General observations:
  - The probability of being “trapped at the bottom” is much lower for younger people, who can increase their earning power more easily by accumulating work experience;
  - The probability of being “trapped” is also much lower for those with more education (as well as the probability for being initially in the lowest quintile);
  - The best occupations for breaking out of the lowest quintile (with a non-negligible probability of being there in the first place) are **associate professionals, clerks, and craft and related workers.**

# Earnings Mobility: Policy Implications

- Education continues to be an important vehicle for social mobility in Hong Kong
- This includes formal education as well as employer-sponsored education
- Education is particularly valuable where it can lead to associate professional or clerical career paths
- Professional careers are of course even better but the entry barriers and necessary qualifications are much higher

# Intergenerational Earnings Mobility

- Methodology
  - Target population: workers between the ages of 30 and 45, and their parents
  - Lifetime earnings were estimated based on reported industry, occupation, educational status
  - All four types of relationships studied (father/mother to son/daughter)
- IEM is generally measured in terms of the elasticity of the child's income with respect to the parent's income; higher elasticity (correlation) means lower mobility

# Intergenerational Earnings Mobility

- Measurements of IEM in various countries, including Hong Kong:

Country	Elasticity of Son's Earnings w.r.t. Father's Earnings
United States (2005)	0.61
United Kingdom (1997)	0.57
Italy (2007)	0.51
<b>Hong Kong (current study)</b>	<b>0.42</b>
Germany (1997)	0.34
Malaysia (1995)	0.26
Canada (2006)	0.21
France (2003)	0.17
Sweden (2000)	0.13

# Intergenerational Earnings Mobility

- More detailed intergenerational mobility rates, for fathers/sons:

	Bottom	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	Top
Bottom	18.1%	26.9%	22.4%	19.8%	12.9%
2 <sup>nd</sup>	17.1%	23.7%	23.0%	21.2%	15.1%
3 <sup>rd</sup>	15.6%	21.4%	22.9%	22.7%	17.5%
4 <sup>th</sup>	12.9%	18.9%	22.3%	24.2%	21.8%
Top	8.5%	14.9%	19.8%	25.8%	31.0%

# Intergenerational Earnings Mobility

- General observations: even if the father is in the lowest lifetime earnings quintile, the son has a  $\geq 50\%$  chance of being in at least the 3<sup>rd</sup> quintile.
- However, family background matters much more in terms of breaking into the top quintile.
- What about mother-son, father-daughter, mother-daughter relationships?
- After taking into account the other parent's income, mother-son and father-daughter relationships are **not significant** ( $p=0.643$ ,  $p=0.149$ ).
- The correlation between mother's incomes and daughter's incomes is statistically significant, but lower than that between fathers and sons (0.28 vs 0.42).

# Intergenerational Earnings Mobility

- Overall, sons and daughters of parents in the lowest two quintile groups have a **greater than 50% chance** of moving up in the earnings distribution

## Comparison of Parent's and Children's Lifetime Earnings Quintiles

Parent's Quintile Group	Son's LEQ Relative to Father			Daughter's LEQ Relative to Mother		
	Higher	Same	Lower	Higher	Same	Lower
Bottom	81.9%	18.1%		77.4%	22.6%	
2 <sup>nd</sup>	59.2%	23.7%	17.1%	58.6%	18.9%	22.5%
3 <sup>rd</sup>	40.1%	22.9%	37.0%	41.0%	21.0%	38.0%
4 <sup>th</sup>	21.8%	24.1%	54.1%	28.3%	23.3%	48.4%
Top		31.0%	69.0%		39.8%	60.2%

# Intergenerational Earnings Mobility

- Educational attainment of fathers and sons:

Father \ Son	Primary or Below	Secondary	Post-Secondary	Degree or Above
Primary or Below	4.3%	58.5%	16.9%	20.3%
Secondary	0.5%	41.8%	19.0%	38.7%
Post-Secondary	1.3%	23.7%	23.4%	51.4%
Degree or Above	0.0%	16.0%	10.4%	73.6%



# Intergenerational Earnings Mobility

- Occupation of fathers and sons:

Occupation of father \ son (%)	MA	P	AP	C	SW	CW	PO	EO
Managers and Administrators (MA)	<b>36</b>	13	30	5	8	2	3	4
Professionals (P)	24	<b>43</b>	19	0	5	4	0	5
Associate Professionals (AP)	18	21	30	4	7	12	7	3
Clerks (C)	22	13	26	14	7	6	7	4
Service and Shop Sales Workers (SW)	14	18	26	5	14	11	7	5
Craft and Related Workers (CW)	15	9	<b>32</b>	5	7	17	8	7
Plant and Machine Operators (PO)	12	12	<b>29</b>	6	9	13	12	8
Elementary Occupations (EO)	10	8	<b>19</b>	9	13	21	13	7

# Intergenerational Earnings Mobility

- Key observations:
  - Sons of professional and manager/administrator fathers are much more likely than others to take up these occupations
  - Parents' occupational choices have a lot of influence on sons' choices, and thereby future earnings
  - Associate professional occupations are still quite attainable for sons from disadvantaged backgrounds
  - Mobility from elementary occupations to professional occupations might take two generations

# Intergenerational Earnings Mobility

- Relationships between **fathers' occupations** and **daughters' occupations** were much weaker
- A father with a professional occupation is still 35% likely to have a daughter in a professional occupation
- No other significant patterns emerged
- **Mothers' occupations** had even less influence on daughters' occupations

# Intergenerational Earnings Mobility

- Hong Kong's compulsory education policy has been effective in ensuring universal secondary education
- There are good opportunities to access post-secondary education, but **significant barriers still exist** at the degree level
- In addition, significant barriers were found in terms of taking up professional occupations
- **43%** of professional fathers had sons who became professionals themselves, but only **13%** of fathers who were clerks had sons who became professionals
- However, taking up associate professional occupations was relatively easier

# Intergenerational Earnings Mobility: Policy Implications

- At the high end of the lifetime earnings distribution, mobility is hindered by the **difficulty of breaking into the professional class.**
- Attention may be given to expanding opportunities to earn professional qualifications (PCLL, MBBS, etc) by lifelong learning.
- At the lower end, an important role is played by the **availability of opportunities to take up mid-level occupations.**
- This role of the education system (education through senior secondary) in preparing students for such occupations should continue to be supported.
- Vocational training later in life should also be available.

# Conclusions

- Compared to other countries, Hong Kong has greater social mobility than the United States or the United Kingdom, but less social mobility than Western European countries
- At the low end of the earnings distribution, the situation is positive
  - good opportunities for children of the poorest families to move up, at least to the 3<sup>rd</sup> quintile
  - good access to secondary and post-secondary education
- However, access to degree education and professional occupations is still very limited, and strongly related to family background