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### The widening income dispersion in Hong Kong : 1986-2006

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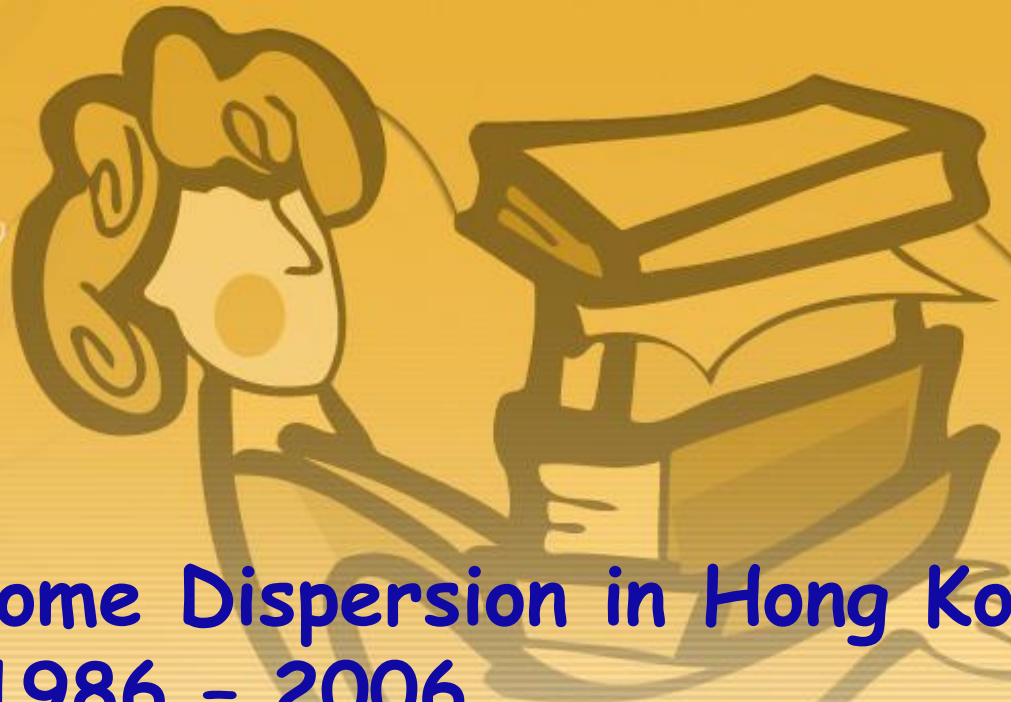
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#### Recommended Citation

Lui, H.-K. (2008, March). The widening income dispersion in Hong Kong: 1986-2006. Paper presented at the Conference on Social Inequality and Social Mobility in Hong Kong, Hong Kong.

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*Research*



# The Widening Income Dispersion in Hong Kong: 1986 - 2006

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(March 14, 2008)



# Economic Background

- “The Death of Hong Kong”, *Fortune*, June 29, 1995
- Before the handover, Hong Kong recorded significant economic growth
- The collapse of the Thai Baht on July 2, 1997, marked the beginning of the Asian Financial Crisis
- Since 1998 Q3, Hong Kong experienced six consecutive years of deflation
- Thanks to the help of the Chinese Mainland, Hong Kong bottoming out from recession in 2003.
- “Oops! Hong Kong is Hardly Dead”, *Fortune*, June 28, 2007

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Table 1

## Main Employment Income and GDP Per Capita

	1986	1991	1996	2001	2006
Median Income	2,573	5,170	9,500	10,000	10,000
GDP (HKD Billion)	319.2	690.3	1,229.5	1,298.8	1,472.3
GDP per capita	57,784	120,015	191,047	193,440	214,710
GDP Deflator (2000=100)	49.4	77.2	106.3	98.2	84.9
Population (Million)	5.40	5.52	6.22	6.71	6.86

Note: All figures are expressed in Hong Kong Dollars at current market prices. It should be noted that monthly main employment income does not include new year bonus and double pay.

Sources: Census & Statistics Department (1997; 2007a; 2007b).

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# Economic Background (cont'd)

- Before the expansion of tertiary education in the early 1990s, tertiary education was largely restricted to elites
- A large supply of low-skilled workers fitted well with the demand in the 1980s
- The rapid economic restructuring required better educated workers
- Strong government commitment in education was well supported by changing environment

*Would sectoral shifts increase inequality?*

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Table 2

## Working Population by Educational Attainment

<b>Educational Attainment</b>	<b>1986</b>	<b>1991</b>	<b>1996</b>	<b>2001</b>	<b>2006</b>
Degree	5.3	7.4	13.3	16.8	20.7
Post-secondary	5.7	6.7	6.2	4.9	9.4
Matriculation	4.9	5.7	6.7	10.6	6.3
Upper Secondary	26.8	30.6	32.5	30.6	30.9
Lower Secondary	20.0	21.1	20.4	19.8	19.0
Primary	29.2	22.9	18.1	15.2	12.2
No Schooling	8.1	5.6	2.9	2.0	1.6

Note: All figures are in percentage. The classification of educational attainment has changed over time and data have been adjusted to enable direct comparison

Sources: Census & Statistics Department, Population Census report, various issues.



# Income Inequality: An Overview

- Gini coefficient (household income) stood at 0.453, 0.518, and 0.533 in 1986, 1996, and 2006 respectively
- C&SD (2007a) analyses the household income distribution in Hong Kong, which makes a number of strong assumptions

*This paper focuses on the working population*

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Table 3

# Income Distribution of the Working Population

	1986	1991	1996	2001	2006
Gini Coefficient	0.390	0.389	0.416	0.422	0.432
Theil Index	0.324	0.313	0.351	0.340	0.354
Atkinson Index	0.232	0.227	0.254	0.260	0.271
Variance of log earnings	0.457	0.434	0.495	0.540	0.569
$P_{50}/P_{10}$	2.083	1.833	2.000	2.200	2.011
$P_{90}/P_{50}$	2.400	2.273	2.500	2.727	2.983





# Income Dispersion by Industry

- Between 1986 and 2006, the employment share of the manufacturing sector fell from 35.8% to 9.7%
- In the past, manufacturing industries mainly employed low-skilled workers and the income dispersion was less uneven
- In 2006, services sectors recruited 82.7% of the labour force
- Employment share and income dispersion of the construction sector were rather stable



Table 4(a)  
**Employment Share by Industry**

<b>Industry</b>	<b>1986</b>	<b>1991</b>	<b>1996</b>	<b>2001</b>	<b>2006</b>
Manufacturing	35.8	28.2	18.9	12.3	9.7
Construction	6.2	6.9	8.1	7.6	6.8
Wholesale and retail trade, restaurants and hotels	22.3	22.5	24.9	26.2	27.2
Transport, storage, and Communication	8.0	9.8	10.9	11.3	11.6
Financing, insurance, real estate and business services	6.4	10.6	13.4	16.1	17.0
Community, social and personal services	18.4	19.9	22.3	25.5	26.9
Others	2.9	2.1	1.5	1.0	0.8

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Table 4(b)  
**Income Dispersion by Industry**  
(variance of log earnings)

<b>Industry</b>	<b>1986</b>	<b>1991</b>	<b>1996</b>	<b>2001</b>	<b>2006</b>
Manufacturing	0.3924	0.4039	0.4653	0.4800	0.5250
Construction	0.3889	0.3710	0.4033	0.3731	0.3775
Wholesale and retail trade, restaurants and hotels	0.3776	0.3635	0.4100	0.4474	0.4740
Transport, storage, and communication	0.2550	0.2708	0.3375	0.3763	0.3841
Financing, insurance, real estate and business services	0.4186	0.4785	0.5779	0.5731	0.6032
Community, social and personal services	0.5389	0.5264	0.5921	0.7033	0.7688
Others	0.7760	0.5979	0.7059	0.7510	0.7630



# Sectoral Shifts and Inequality

- Employment shifts from low inequality manufacturing to high inequality services
- It is tempting to put a link between sectoral shifts and rising inequality
- Decompose the variance of log earnings

$$\sigma^2 = \sum_i w_i \sigma_i^2 + \sum_i w_i (X_i - \bar{X})^2$$

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Table 5  
**Decomposition of Change in Earnings Variance**

<b>Period</b>	<b>Total Change</b>	<b>Within Industry</b>		<b>Between Industry</b>	
		Variance	Composition	Variance	Composition
1986 – 2006	0.113	0.141	-0.004	-0.025	0.000
1991 – 2006	0.135	0.137	0.004	-0.005	0.000
1996 – 2006	0.074	0.073	0.005	-0.006	0.002
2001 – 2006	0.030	0.034	0.003	-0.009	0.001

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# Sectoral Shifts and Inequality (Cont'd)

- Between 1986 and 2006, composition change reduced the earnings variance by 3.5%
- Sectoral shifts did not cause rising inequality
- Changes in within-industry variance explained the increasing earnings variance

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Table 6(b)

# Income Dispersion by Occupation

(variance of log earnings)

<b>Occupation</b>	<b>1991</b>	<b>1996</b>	<b>2001</b>	<b>2006</b>
Managers and Administrators	0.5276	0.5505	0.5139	0.5339
Professionals	0.4746	0.4926	0.4678	0.4896
Associate Professionals	0.3255	0.3354	0.3298	0.3633
Clerks	0.1589	0.1783	0.2204	0.2262
Service Workers and Shop Sales Workers	0.2784	0.2980	0.3497	0.3593
Craft and Related Workers	0.2634	0.2828	0.2762	0.2707
Plant and Machine Operators and Assemblers	0.2592	0.2648	0.2594	0.2282
Elementary Occupations	0.2439	0.2582	0.2862	0.3242
Others	0.6795	0.8858	0.8182	0.6158



# Income Dispersion by Occupation

- Economic restructuring was associated with sharp reduction in the proportion of production related workers
- Increasing earnings variance for 3 groups: (i) clerks, (ii) service workers; and (iii) elementary workers
- The employment shifts from low inequality occupations (craft and related workers; and plant and machine operators and assemblers) to high inequality occupations (professionals; and associate professionals)
- The changing composition, within-occupation variance, and between occupation variance explained 40.0%, 32.6% and 27.4% of the overall increase in earnings variance

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Table 7  
**Estimated Returns to Education**

<b>Educational Level</b>	<b>1986</b>	<b>1991</b>	<b>1996</b>	<b>2001</b>	<b>2006</b>
Degree	1.2879	1.2698	1.3553	1.3611	1.2442
Post Secondary	1.1292	0.9705	1.0459	1.1200	0.9079
Matriculation	0.7666	0.7810	0.8399	0.8112	0.7642
Upper Secondary	0.5749	0.5597	0.6377	0.6320	0.5612
Lower Secondary	0.3412	0.3036	0.3316	0.3123	0.2504
Primary	0.1721	0.1414	0.1628	0.1235	0.0761

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# Income Dispersion by Education

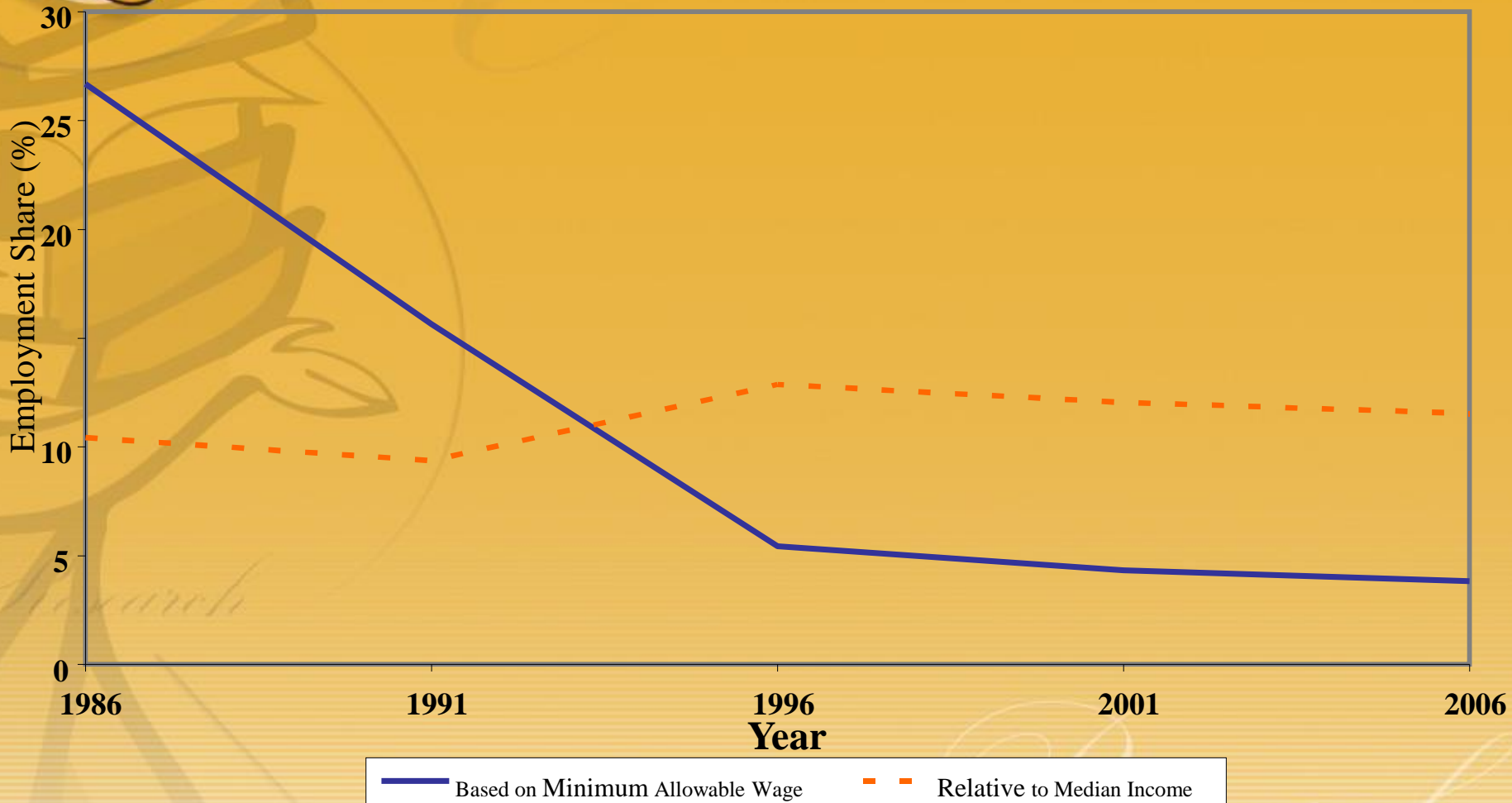
- The increase in the supply of post-secondary and degree graduates was more than offset the increase in demand for better educated workers
- The estimated earnings premiums for upper secondary graduates and matriculants were largely unchanged
- Workers with lower secondary or primary education experienced a significant drop in returns to education during the period from 1986 to 2006

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# The Increasing Working Poor?





# Conclusions

- All inequality measures employed in this paper show widening income dispersion.
- The decile ratios indicate that while the income dispersion of the upper income class has widened substantially, the income dispersion of the lower income class has narrowed.
- Although changing industrial composition was named as the prime suspect that caused rising income inequality, it actually helped reducing the earnings variance by 3.5 per cent.
- The results show that increasing within-industry variance was responsible for the increasing earnings dispersion.

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# Conclusions (Cont'd)

- The employment shift from low inequality occupations to high inequality occupations explained 40 per cent of the overall increase in earnings variance.
- The increase in the supply of post-secondary and degree graduates was more than offset the increase in demand for better educated workers. As a result, their earnings premium experienced a decline.

~ The End ~

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