

# Minority Earnings Disparity 1995-2005

Krishna Pendakur and Ravi Pendakur  
Simon Fraser University and University of Ottawa

# Introduction

- What happened to visible minority and Aboriginal earnings disparity over 1995-2005?
- Focus on *inter-ethnic* disparity rather than immigrant disparity by looking exclusively at the Canadian-born population
- Use the main bases of the Censuses of Canada 1996, 2001, 2006
  - look at cities; look at specific minorities

# Background

- Census Definitions:
  - Aboriginal—any Aboriginal origin reported in Ancestry *or* Aboriginal identity reported in identity
  - Visible Minority—any non-European non-NA non-AU/NZ non-Israel ancestry *and* not Aboriginal
  - White—everyone else
- Disparity among the Canadian-born
  - Census information reveals disparity in *earnings* (P&P 1998, 2002, 2007).
    - Lots of cases, medium quality data
  - SLID reveals little or no disparity in *wages* (Hum and Simpson 1998, 2007)
    - Fewer cases, better data
    - noticeable disparity for blacks, though

# Background: Groups and Cities

- Visible Minorities and Aboriginals
  - course categories; significant disparities
  - Aboriginals massively most disadvantaged
  - differences smaller among women than among men
- Different across cities (P&P 1998, 2007)
  - east-west pattern: west is best for visible minorities; opposite for Aboriginals
- Different across ethnic groups
  - Chinese and West Asians less disadvantaged
  - South Asians and Black/Caribbean more

# Background: Over Time

- P&P 2002 show
  - status of disparity over time for visible minorities over 1970-1990.
  - deterioration for Aboriginals over 1970-1990
  - deterioration for visible minorities over 1990-5
- Aydemir and Skuterut (2010) show
  - a different kind of over time: 3<sup>rd</sup> generation Canadian-born minorities do better than 2<sup>nd</sup> generation Canadian-born minorities do better than immigrants. But worse than white folks.

# Findings: Visible Minorities

- the deterioration of the relative earnings of visible minorities observed over the early 1990s did not go away by 2005.
  - lack of convergence is observed for all cities
  - observed for all groups comprising the visible minority category
- people reporting South Asian, Black or Caribbean origin fare worst; people report East and SE Asian origins fare best.
- Western cities have lowest VM disparity
- density of Canadian-born visible minorities has been rising, and will continue to do so.

# Findings: Aboriginals

- Aboriginal disparity is gigantic:
  - registered Indians have low high-school attainment
  - registered Indian men have **half** the earnings of majority men with similar age, education, etc
- Inequality among Aboriginal people:
  - registered Indians fare worst;
  - people with Aboriginal identity, but who lack registry, also fare very badly, as badly as the worst off visible minority groups;
  - people with Aboriginal origins, but who lack registry or identity, as fare poorly
- Prairies and west have highest Aboriginal gaps

# The Data

- Censuses of Canada 1996, 2001, 2006
  - selection: Canadian-born, primary source of income is wages&salaries, earnings >\$100, aged 25-64
  - about 1.4 million in-sample cases per year
  - natural logarithm of total annual earnings in previous year from wages and salaries
    - the log function deskews the distribution
    - differences in logs correspond to proportionate differentials: e.g., log-earnings difference of 0.10 ~ earnings gap of 10 per cent.



# Census Data: Avg Log-Earnings

Table 1a

Descriptives: Average log of earnings for selected groups, Canada, 1996 - 2006

	Females			Males		
	1996	2001	2006	1996	2001	2006
Ethnic Group	Log of wages	Log of wages	Log of wages	Log of wages	Log of wages	Log of wages
British	9.69	9.97	10.14	10.24	10.48	10.63
Spanish Latin	9.25	9.73	10.03	9.76	10.07	10.29
Arab w Asia	9.74	10.00	10.15	10.11	10.38	10.46
Black	9.51	9.78	9.92	9.83	10.09	10.07
Caribbean	9.61	9.88	10.11	9.83	10.12	10.25
African Black	9.61	9.82	9.95	9.85	10.07	10.20
SE Asia	10.05	9.90	10.01	10.36	10.21	10.13
S. Asian	9.86	10.01	10.21	10.09	10.21	10.38
Chinese	10.06	10.27	10.42	10.26	10.47	10.62
Other Asia	9.86	10.29	10.33	9.88	10.58	10.51
vismin w white	9.70	10.00	10.13	10.16	10.32	10.48
Reg on-reserve	9.18	9.39	9.66	9.25	9.49	9.68
Reg off-reserve	9.30	9.52	9.80	9.65	9.92	10.17
NAI identity	9.34	9.65	9.87	9.87	10.09	10.30
Metis identity	9.30	9.64	9.90	9.81	10.12	10.41
Inuit Identity	9.21	9.49	9.90	9.55	9.71	10.05
single origin	9.18	9.63	9.81	9.66	10.16	10.34
multiple origin	9.48	9.79	9.96	10.04	10.28	10.46

# Census Data: Log-Earnings Diffs

Table 10

Descriptives: Difference in Average log of earnings from British Average, 1996 - 2006

	Females			Males		
	1996	2001	2006	1996	2001	2006
Ethnic Group	Log of wages	Log of wages	Log of wages	Log of wages	Log of wages	Log of wages
British						
Spanish Latin	-0.44	-0.23	-0.11	-0.48	-0.40	-0.35
Arab w Asia	0.05	0.04	0.00	-0.13	-0.10	-0.18
Black	-0.18	-0.19	-0.23	-0.42	-0.39	-0.57
Caribbean	-0.08	-0.08	-0.04	-0.41	-0.35	-0.38
African Black	-0.08	-0.14	-0.20	-0.39	-0.40	-0.44
SE Asia	0.35	-0.06	-0.13	0.12	-0.27	-0.50
S. Asian	0.16	0.04	0.06	-0.15	-0.26	-0.25
Chinese	0.37	0.30	0.27	0.02	-0.01	-0.02
Other Asia	0.16	0.32	0.19	-0.36	0.10	-0.12
vismin w white	0.01	0.04	-0.01	-0.09	-0.15	-0.15
Reg on-reserve	-0.51	-0.58	-0.48	-0.99	-0.99	-0.95
Reg off-reserve	-0.39	-0.45	-0.34	-0.59	-0.56	-0.46
NAI identity	-0.35	-0.32	-0.27	-0.37	-0.39	-0.33
Metis identity	-0.39	-0.33	-0.24	-0.43	-0.36	-0.22
Inuit Identity	-0.48	-0.48	-0.24	-0.69	-0.77	-0.58
single origin	-0.51	-0.34	-0.33	-0.58	-0.32	-0.29
multiple origin	-0.21	-0.18	-0.18	-0.20	-0.20	-0.17

# Average Log-Earnings

- Table is average log-earnings for Canadian-born workers in different visible minority and Aboriginal groups
- Some visible minority groups have *higher* average log-earnings than British-origin people, particularly among women
- All Aboriginal groups have lower log-earnings
- But,
  - Canadian-born visible minorities are younger and more educated than Canadian-born white folks
  - Aboriginals are younger and less educated than Canadian-born white folks

# Tabular Methods

- We could correct for age and education via tabular methods (e.g., Ravi Pendakur, 1999, Immigrants in the Labour Market)
- Such a table would have a lot of cells, and would have a story for each cell.
  - **in each age/education cell**, you could ask the log-earnings difference between visible minority, Aboriginal and white workers.
  - but, because these cells might be small, these estimated differences might be imprecise

# Regression Digression

- *regression* allows you to aggregate the differences across all those cells
  - (Angrist and Pischke, 2008, Mostly Harmless Econometrics offer a nice exposition of this)
  - aggregation gets the precision back
    - instead of a million imprecise estimated differences, one for each age/education cell, you get one precise estimate corresponding to a weighted average of all those age/education-specific estimates
    - the weights in the weighted average maximise the precision of the one estimated overall difference
- or, regression estimate can be interpreted as difference in log-earnings *assuming* that the difference is the same in all age/education cells

# Regression Controls

- Age: 8 age cohorts as dummy variables (age 25 to 29, 30 to 34, 35 to 39, 40 to 44, 45 to 49, 50 to 54, 55 to 59 and 60 to 64). Age 25 to 29 is the left-out dummy.
- Schooling: 12 levels of certificates as dummy variables (none, high school, trades certificate, college certificate less than 1 year, college certificate less than 3 years, college certificate 3 or more years, university certificate less than Bachelors, Bachelors degree, BA+, medical degree, Masters degree and PhD). Less than high school is the left-out dummy variable.
- Marital Status: 5 dummy variables indicating marital status (Single– never married, married, separated, divorced, widowed). Single is the left-out dummy variable.
- Household size: a dummy variable indicating a single person household and a continuous variable indicating the number of family members for other households.
- Official Language: 3 dummy variables (English, French, bilingual– English and French). English is the left-out dummy variable. We note that because our sample is entirely Canadian-born, every observation reports speaking either English or French. This also eliminates the much variation in quality of language knowledge that plagues the estimation of earnings differentials across ethnic groups.
- CMA: In regressions which pool all the cities together, we use 12 dummy variables indicating the Census Metropolitan Area / Region (Halifax, Montreal, Ottawa, Toronto, Hamilton, Winnipeg, Calgary, Edmonton, Vancouver, Victoria, or not in one of the 10 listed CMAs). Toronto is the left-out dummy variable.
- Group Status: 3 dummy variables indicating group status (White, Visible Minority, Aboriginal person). White is the left-out dummy variable. Alternatively, 42 dummy variables indicating ethnic origin (with separate dummies for various multiple-origin groups), with British-only as the left-out ethnic origin.

Fig 1: Aboriginal Women, 1971-2006

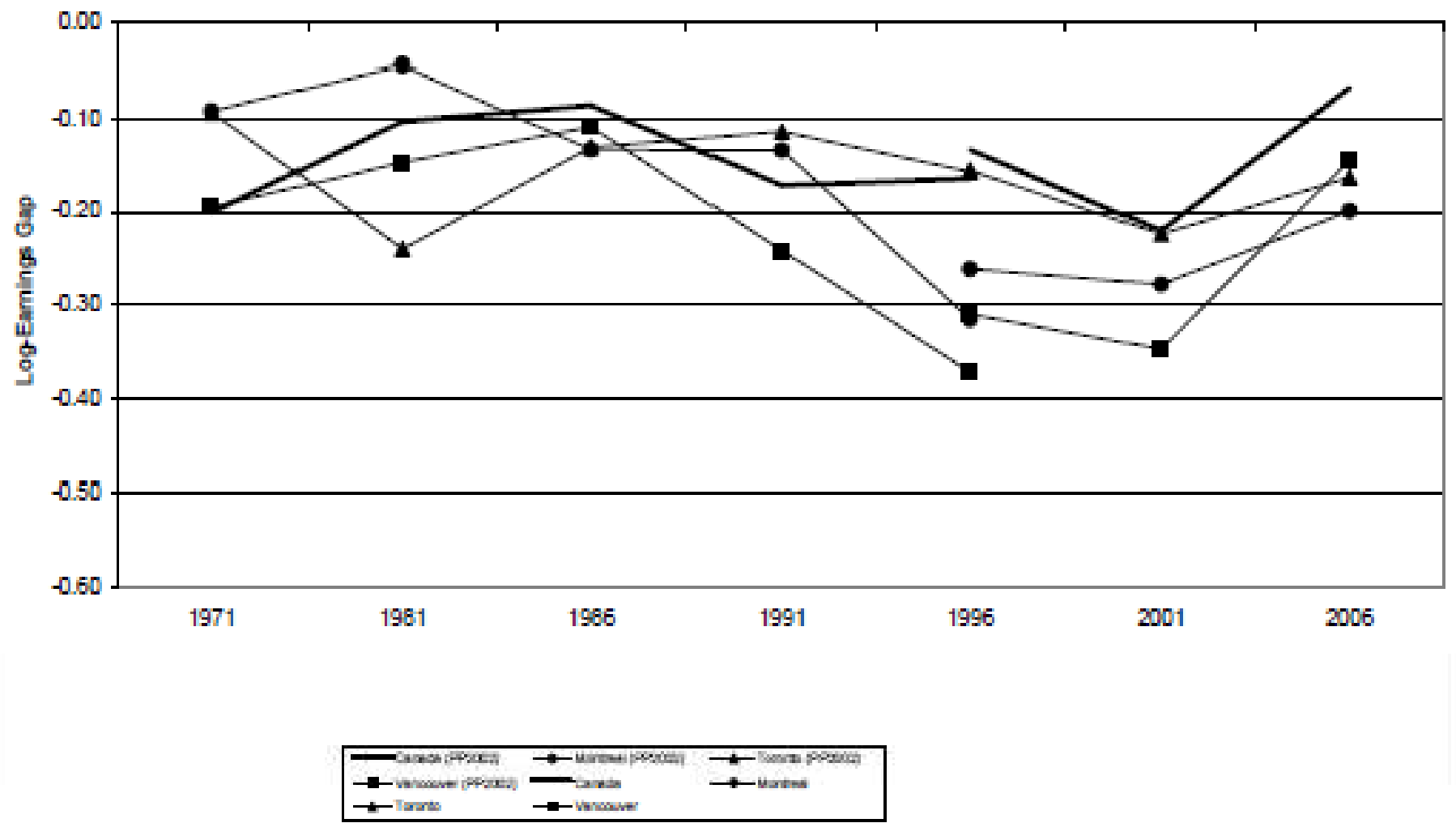
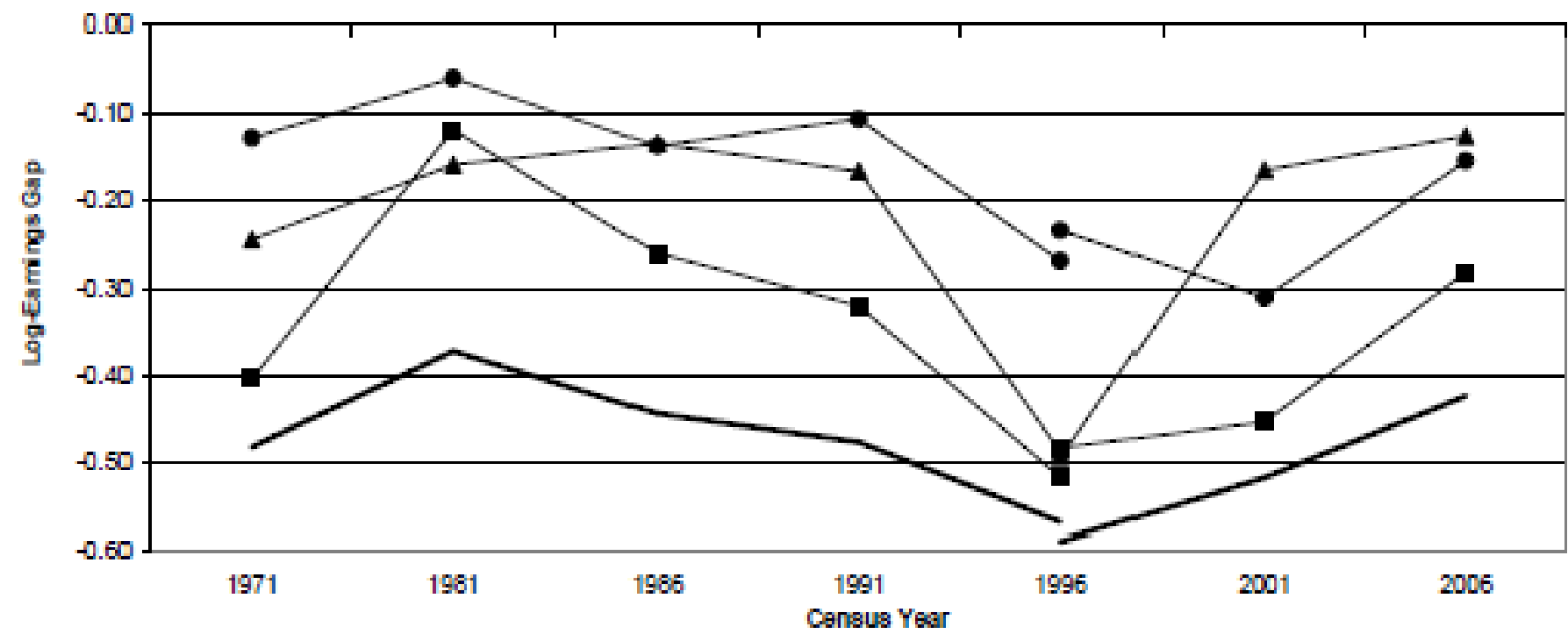


Fig 2: Aboriginal Men, 1971-2006



— Canada (PP0002)    — Montreal (PP0002)    — Toronto (PP0002)  
 — Vancouver (PP0002)    — Canada    — Montreal  
 — Toronto    — Vancouver



Fig 3: Visible Minority Women, 1971-2006

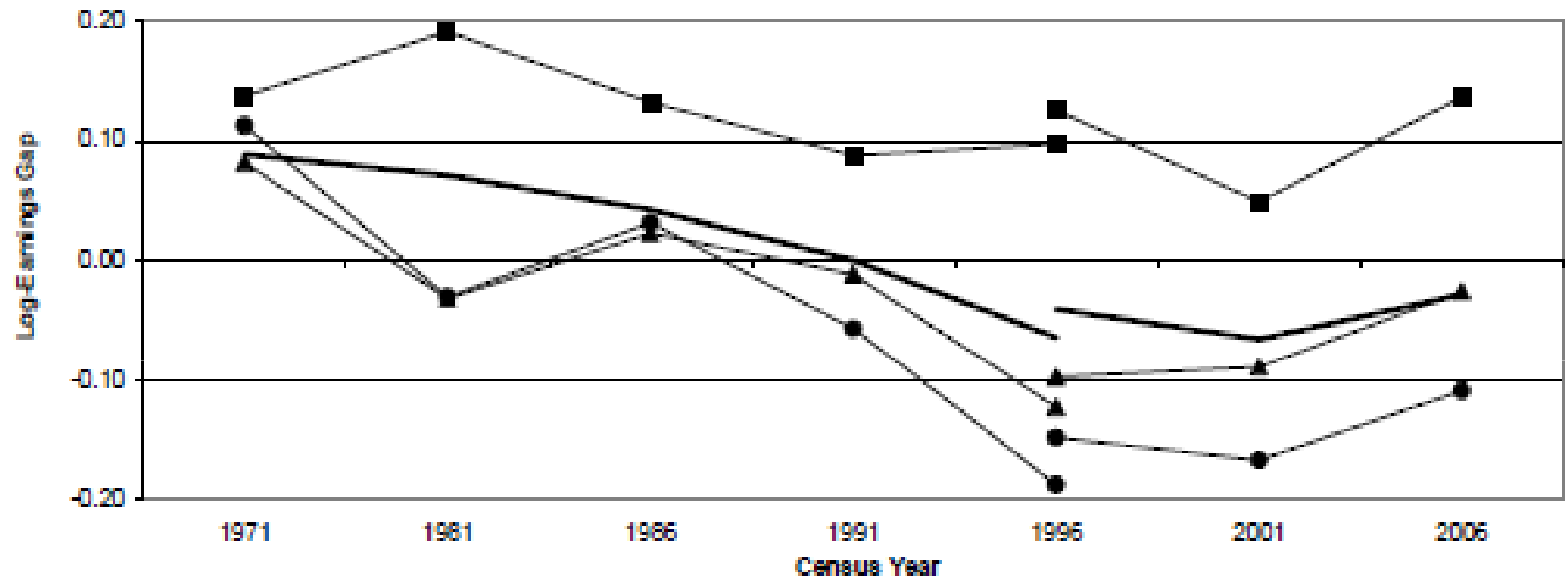
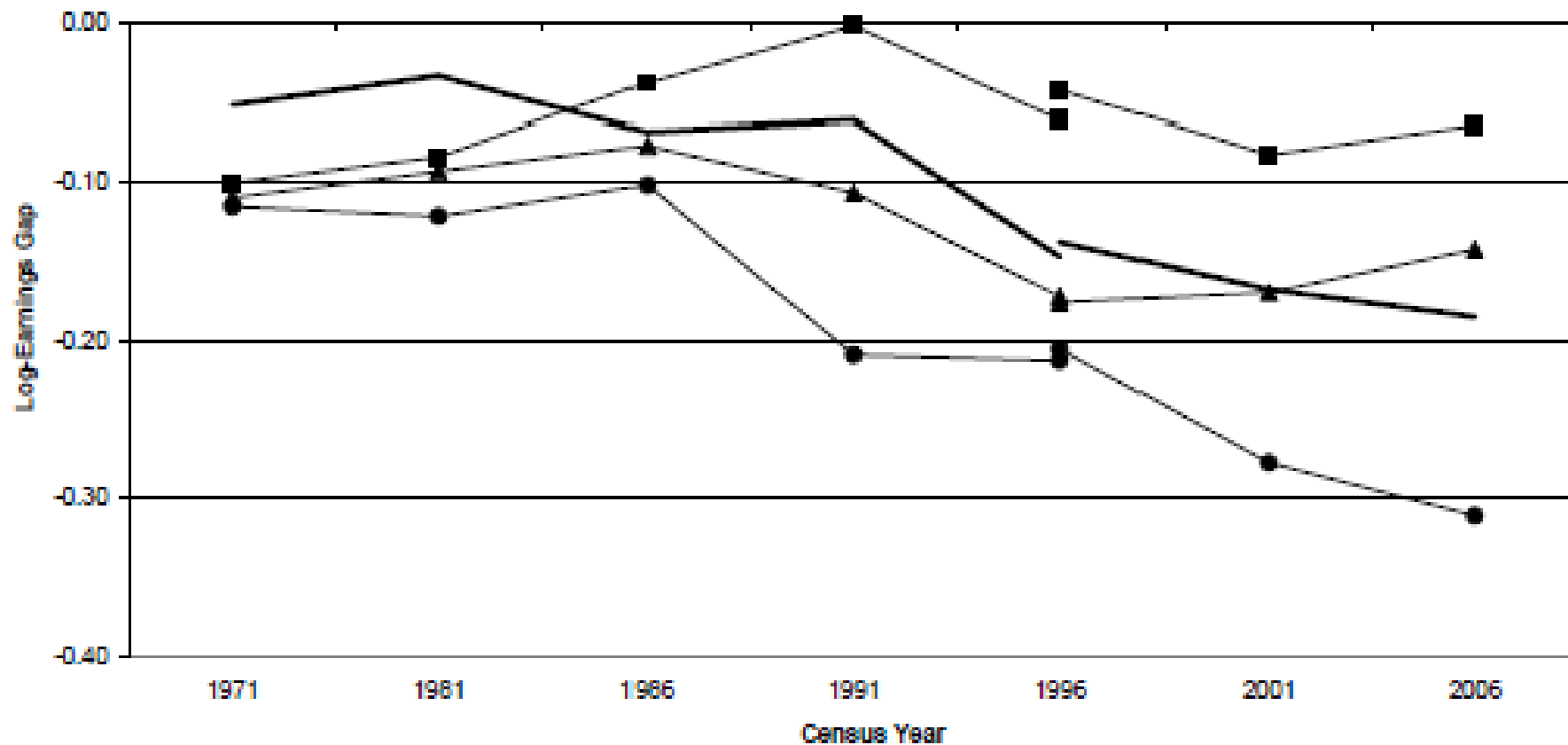


Fig 4: Visible Minority Men, 1971-2006



— Canada (PP2002)    ● Montreal (PP2002)    ▲ Toronto (PP2002)  
 ■ Vancouver (PP2002)    — Canada    ● Montreal  
 ▲ Toronto    ■ Vancouver

# Log-Earnings Gaps by Aboriginal Group

			1996		2001		2006	
			Prop Diff	s.e.	Prop Diff	s.e.	Prop Diff	s.e.
Earnings	female	Observations	806,880		840,887		923,350	
		R <sup>2</sup>	0.14		0.14		0.16	
		Reg. on-reserve	-0.14	0.01	-0.23	0.01	-0.09	0.01
		Reg. off-reserve	-0.10	0.01	-0.25	0.01	-0.12	0.01
		N. Amer Indian	-0.17	0.02	-0.18	0.02	-0.12	0.01
		Métis	-0.17	0.01	-0.17	0.01	-0.09	0.01
		Inuit	0.01	0.02	-0.08	0.01	0.33	0.01
		Other Aborig identity	-0.13	0.08	-0.16	0.07	-0.15	0.04
		Aborig ancestry (single)	-0.21	0.03	-0.10	0.02	-0.11	0.02
		Aborig ancestry (multiple)	-0.09	0.01	-0.10	0.01	-0.09	0.01
	male	Observations	884,835		891,695		941,615	
		R <sup>2</sup>	0.19		0.18		0.19	
		Reg. on-reserve	-0.53	0.00	-0.50	0.00	-0.48	0.00
		Reg. off-reserve	-0.35	0.01	-0.32	0.01	-0.23	0.01
		N. Amer Indian	-0.24	0.01	-0.25	0.01	-0.18	0.01
		Métis	-0.30	0.01	-0.21	0.01	-0.11	0.01
		Inuit	-0.37	0.01	-0.38	0.01	-0.26	0.01
		Other Aborig identity	-0.30	0.07	-0.26	0.07	-0.17	0.04
		Aborig ancestry (single)	-0.18	0.03	-0.08	0.02	-0.11	0.02
		Aborig ancestry (multiple)	-0.09	0.01	-0.08	0.01	-0.06	0.01

# Log-Income Gaps by Aboriginal Group

			1996		2001		2006	
			Prop Diff	s.e.	Prop Diff	s.e.	Prop Diff	s.e.
Total income	female	Observations	920,515		947,329		1,080,960	
		R <sup>2</sup>	0.13		0.13		0.13	
		Registered on-reserve	-0.02	0.01	-0.09	0.01	-0.15	0.00
		Registered off-reserve	-0.04	0.01	-0.15	0.01	-0.10	0.01
		N. Amer. Indian	-0.12	0.02	-0.15	0.01	-0.15	0.01
		Métis	-0.08	0.01	-0.09	0.01	-0.07	0.01
		Inuit	0.16	0.02	0.17	0.01	0.42	0.01
		Other Aborig identity	-0.07	0.07	-0.10	0.06	-0.11	0.04
		Aboriginal ancestry (single)	-0.13	0.03	-0.06	0.02	-0.07	0.02
	Aboriginal ancestry (multiple)	-0.07	0.01	-0.07	0.01	-0.07	0.01	
	male	Observations	1,077,515		1,055,022		1,167,085	
		R <sup>2</sup>	0.18		0.18		0.16	
		Registered on-reserve	-0.43	0.00	-0.45	0.00	-0.56	0.00
		Registered off-reserve	-0.27	0.01	-0.29	0.01	-0.23	0.01
		N. Amer. Indian	-0.20	0.01	-0.24	0.01	-0.22	0.01
		Métis	-0.24	0.01	-0.19	0.01	-0.11	0.01
		Inuit	-0.25	0.01	-0.27	0.01	-0.14	0.01
		Other Aborig identity	-0.20	0.06	-0.23	0.06	-0.14	0.04
		Aboriginal ancestry (single)	-0.19	0.02	-0.07	0.02	-0.11	0.02
Aboriginal ancestry (multiple)		-0.07	0.01	-0.08	0.01	-0.06	0.01	

# On-Reserve Gaps by City

		1996				2001				2006			
		female		male		female		male		female		male	
		Prop Diff	s.e.	Prop Diff	s.e.	Prop Diff	s.e.	Prop Diff	s.e.	Prop Diff	s.e.	Prop Diff	s.e.
Reg. on-reserve	Halifax	-0.91	0.36	-0.68	0.34	-0.80	0.26	-0.34	0.30	-0.59	0.25	-0.70	0.28
	Montreal												
††	Ottawa												
	Toronto	-0.13	0.17	-0.46	0.12	-0.50	0.12	-0.30	0.12	-0.36	0.11	-0.39	0.12
	Hamilton												
††	Winnipeg	-0.21	0.16	-0.54	0.09	-0.38	0.10	-0.54	0.08	-0.35	0.10	-0.46	0.08
	Regina												
	Saskatoon	-0.34	0.20	-0.59	0.13	0.16	0.22	-0.52	0.14	-0.29	0.14	-0.53	0.11
††	Calgary	-0.96	0.59	0.51	1.07	-0.44	0.08	-0.68	0.06				
	Edmonton	-0.19	0.06	-0.58	0.04	-0.24	0.05	-0.56	0.03	-0.18	0.05	-0.52	0.03
	Vancouver	-0.35	0.05	-0.46	0.04	-0.39	0.05	-0.48	0.04	-0.16	0.05	-0.38	0.04
	Victoria	-0.47	0.12	-0.64	0.09	-0.66	0.06	-0.63	0.06	-0.43	0.06	-0.50	0.05

# Off-Reserve Gaps by City

		1996				2001				2006			
		female		male		female		male		female		male	
		Prop Diff	s.e.	Prop Diff	s.e.	Prop Diff	s.e.	Prop Diff	s.e.	Prop Diff	s.e.	Prop Diff	s.e.
Reg. off-reserve	Halifax	-0.31	0.16	-0.20	0.13	-0.24	0.12	-0.38	0.12	-0.17	0.09	-0.11	0.10
	Montreal	-0.25	0.07	-0.18	0.07	-0.22	0.06	-0.24	0.06	-0.14	0.05	-0.15	0.06
	Ottawa	-0.10	0.07	-0.23	0.06	0.04	0.06	-0.26	0.05	-0.08	0.05	-0.12	0.05
	Toronto	-0.20	0.05	-0.41	0.05	-0.23	0.04	-0.16	0.04	-0.12	0.04	-0.17	0.04
	Hamilton	0.00	0.11	-0.25	0.09	-0.16	0.08	-0.20	0.07	-0.24	0.07	-0.35	0.07
	Winnipeg	-0.34	0.05	-0.57	0.04	-0.42	0.04	-0.43	0.03	-0.26	0.04	-0.32	0.03
	Regina	-0.30	0.07	-0.54	0.06	-0.40	0.06	-0.45	0.06	-0.16	0.07	-0.35	0.05
	Saskatoon	-0.35	0.08	-0.59	0.06	-0.36	0.07	-0.57	0.05	-0.29	0.06	-0.41	0.05
	Calgary	-0.39	0.06	-0.46	0.05	-0.36	0.05	-0.34	0.05	-0.28	0.05	-0.27	0.05
	Edmonton	-0.42	0.05	-0.51	0.04	-0.32	0.04	-0.34	0.04	-0.33	0.04	-0.29	0.03
	Vancouver	-0.36	0.04	-0.48	0.04	-0.37	0.04	-0.40	0.03	-0.19	0.04	-0.30	0.03
	Victoria	-0.22	0.09	-0.36	0.10	-0.27	0.10	-0.38	0.08	-0.27	0.07	-0.34	0.08

# Gaps for Registered Indians

- for men: are bigger for on-reserve than off-reserve registered Indians
- for women: are bigger for off-reserve than on-reserve registered Indians
- Are really big in all cities
  - so are not driven solely by remoteness
- Are diminishing over time
  - except maybe off-reserve women

# Quantile Differences, by Group

Results from Quantile Regressions: Proportionate Earnings Differences at the 20th, 50th, 80th and 90th quantiles, 2001 Census year

variable	females				males			
	q20	q50	q80	q90	q20	q50	q80	q90
Pseudo R <sup>2</sup>	0.08	0.10	0.12	0.12	0.12	0.12	0.12	0.13
Reg. on reserve	-0.29	-0.12	-0.13	-0.13	-0.63	-0.47	-0.36	-0.33
Reg. off reserve	-0.42	-0.17	-0.08	-0.07	-0.51	-0.25	-0.13	-0.11
N. Amer. Indian	-0.24	-0.12	-0.07	-0.08	-0.38	-0.19	-0.12	-0.11
Métis	-0.24	-0.12	-0.07	-0.05	-0.33	-0.15	-0.09	-0.06
Aboriginal ancestry (single)	-0.21	-0.09	-0.06	-0.03	-0.34	-0.14	-0.07	-0.06
Aboriginal ancestry (multiple)	-0.33	-0.14	-0.07	-0.06	-0.40	-0.28	-0.13	-0.08



# What Drives Average Earnings Gaps?

- High-school attainment is much lower than for non-Aboriginals
- But, even compared to non-Aboriginals with the same education levels (etc), their earnings are very very low.
- Gaps are biggest at the *bottom* of the conditional earnings distribution
- This is not a glass ceiling (gaps would be biggest at the top)
- It is more like a sticky floor: Aboriginals are crowded into the bottom of the distribution