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# Current and Future Labour Market Trends

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# Plan for the next hour:

- I'll talk for the next hour or so on:
    - Some basics from the research on the returns to education (focus on university)
    - Working during school/university and its subsequent labour market effects
    - The Great Recession and jobs
      - Which groups were hit hardest?
      - Effects on student employment this summer
    - The long term outlook for jobs in Canada
  - Feel free to interrupt and ask questions as we go along
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# The Return to University Education

- University graduates earn higher incomes than do non-graduates, and have lower unemployment rates
  - But this comes at a cost
    - Tuition fees net of financial assistance
    - 4 years out of the workforce
  - And it is possible that the types of people who go on to university would have earned more even had they not gone to university
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# The Return to a University Education

- So economists put a lot of effort into measuring the returns carefully
  - Basically, an additional year of study increases earnings by around 8-12 per cent
    - Rates of return higher for women than men
    - Some diminishing returns at the high end



# Wages by level of schooling

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	Male			Female		
	U. Rate	Wkly wage	% gain	U. Rate	Wkly wage	% gain
0 to 8 years	15.6%	\$743		12.4%	\$538	
Some secondary	12.6%	\$872	17.3%	10.9%	\$560	4.1%
Grade 11 to 13,grad	9.2%	\$937	7.5%	6.9%	\$720	28.5%
Some post secondary	7.0%	\$998	6.5%	6.4%	\$792	10.1%
PSE certificate of diploma	7.4%	\$1,061	6.3%	5.1%	\$813	2.6%
Bachelors degree	5.8%	\$1,278	20.4%	3.3%	\$1,060	30.3%
Graduate degree	5.0%	\$1,428	11.8%	4.0%	\$1,235	16.6%

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Source: LFS, May 2009. Data are means for 25-54 year olds. Wages are for main job, usual hours, for those employed and usually working 30 or more hours per week.

## By level and by field:

Level of schooling	Males	Females
BA (inc law, health)	17	20
MA	-	5
PhD	2	10
BA by field	Males	Females
Education	12	19
Humanities	-	13
Social science (inc law)	13	18
Commerce	18	25
Natural science	17	22
Engineering	22	24
Health science	29	30

Source: F. Vaillancourt and S. Bourdeau-Primeau. The returns to university education in Canada: 1990 and 1995. Estimates are private after-tax rates of return to the degree (not annual) taking into account fees and foregone earnings

# Rates of return by level and field using 1995 earnings

	Bachelor's		Master's		PhD	
	Men	Women	Men	Women	Men	Women
Total - non-medical	9.9	12.1	4.1	8.6	1.3	4.3
Non-science	9.1	11.8	7	9.6	0	3.4
Education	5.4	11.3	9.4	11.4	4	-0.2
Fine and Applied Arts		4.4	3.5	1.3	7.9	7.7
Humanities	3.6	10	-6	3.8	7.4	5.1
Social Science	10	11.7		6.2	3.6	7.8
Commerce, Mgt, Business	13.3	15.9	19.1	23.1		2.1
Science						
Agricultural/Biological	4.9	9.1	0.7	2.9	6.8	8.9
Engineering	13	13.9	-3.9	0.7	0.9	
Health	10.4	15.5	16.2	8.2		7.1
Math and Physical Science	11.9	14.6	-1.6	2.5	2.9	
Medical	15.1	15.9				

Source: A. Stark (2007), "Which fields pay, which fields don't? An examination of the returns to university education in Canada by detailed field of study" Department of Finance, Canada:

<http://www.oecd.org/dataoecd/4/5/37578152.pdf>

# Rates of return by level and field using 1995 earnings, within social sciences

	Bachelor's		Master's		PhD	
	Men	Women	Men	Women	Men	Women
Social Science	10	11.7		6.2	3.6	7.8
Economics	12.1	14.2	3.2	9.1	4.9	6.5
Geography	6.2	10.6	3.5	0.6	4.6	7.5
Law	11.1	12.9		-14.2		
Politics	9.3	12.3	0.2	2.1	4.5	4.4
Psychology	5.1	10	0.6	6.4	15.1	11.7
Sociology	6.3	11.1	0.3	5.7	9.6	5.9
Social Work		11.6	8	9.9		
Other	5	9.2	5.1	4	-1.5	8.2

Source: A. Stark (2007), "Which fields pay, which fields don't? An examination of the returns to university education in Canada by detailed field of study" Department of Finance, Canada:

<http://www.oecd.org/dataoecd/4/5/37578152.pdf>

# There are benefits to completing a degree:

Level of schooling	Males	Females
(i) Yrs of schooling, with credential effects	3.3	5.5
(ii) Benefits of acquiring particular credentials:		
Graduating from HS	5.2	6.1
Additional benefit of:		
College diploma	6.6	5.9
Bachelor's degree	22.8	25.2
Medicine	34.1	30.0
MA	4.6	7.0
PhD	4.2	0.8

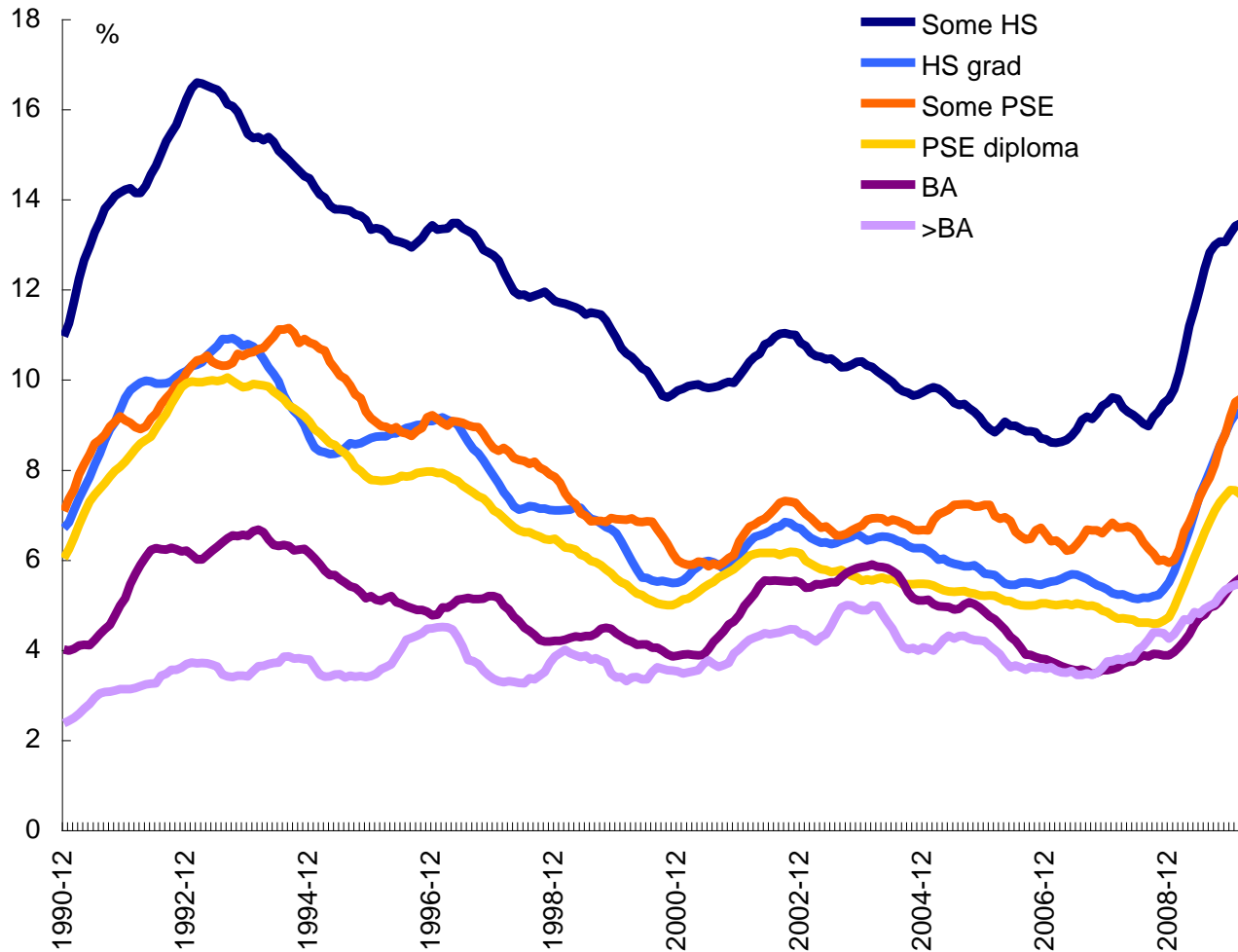
Source: Ferrer and Riddell (2001).

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# Ferrer-Riddell estimates

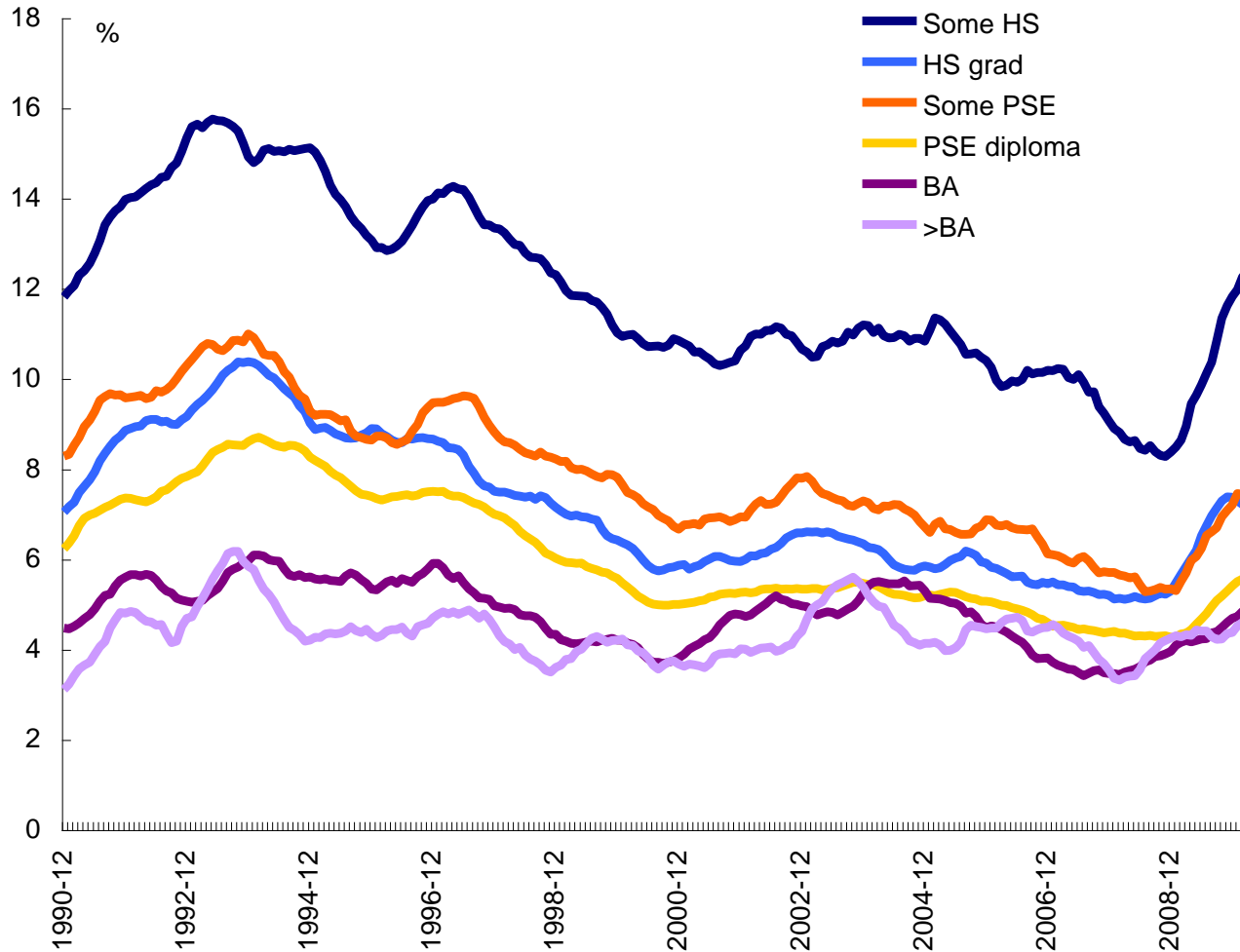
- For a four year BA compared with high school:
    - For males, roughly 36% higher before tax income
    - For females, roughly 50% higher before tax income
      - These are higher than the Vaillancourt/Bordeau Primeau estimates because they don't take account of the costs of education (fees, foregone income while studying).
  - This is largely based on incomes of full-time workers, so doesn't take into account benefits from lower unemployment rates
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# Male unemployment rates by level of education



Source: LFS

# Female unemployment rates by level of education



Source: LFS

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# Bottom line

- University education leads to considerably higher income and lower unemployment rates, but
    - Advantage on unemployment has been diminishing over the past decade
    - Field of study matters for earnings – fine arts is low, engineering and medicine are high
    - Advanced degrees do not typically have very high financial rates of return compared with undergrad degrees – especially true of PhDs
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# What students can do while in university to improve future labour market outcomes

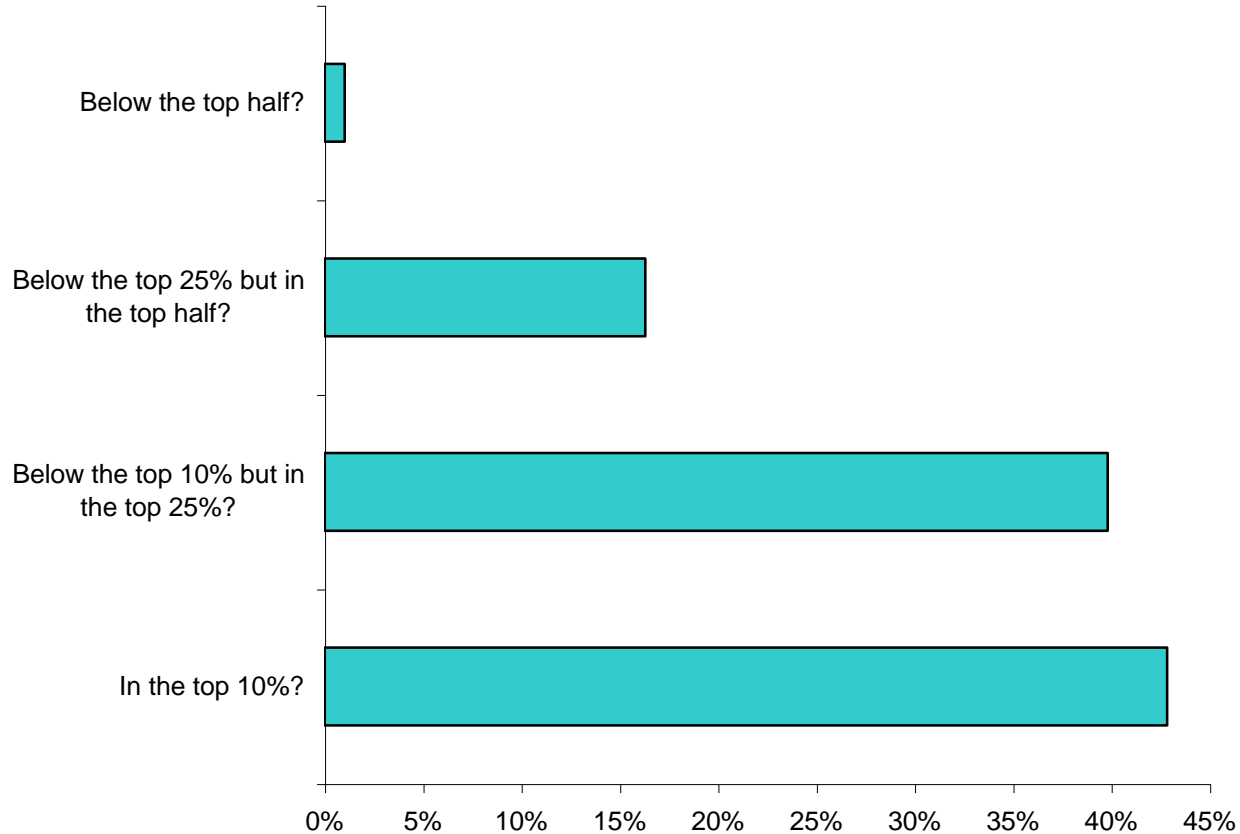
- Get good grades?
  - Work part time?
  - Take a co-op program?
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# Get good grades?

- NGS has information on income after graduation and asks: Compared to the rest of your graduating class in your field(s) of study, did you rank academically ...
    - In the top 10%?
    - Below the top 10% but in the top 25%?
    - Below the top 25% but in the top half?
    - Below the top half?
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... but sadly, that's not going to be very helpful

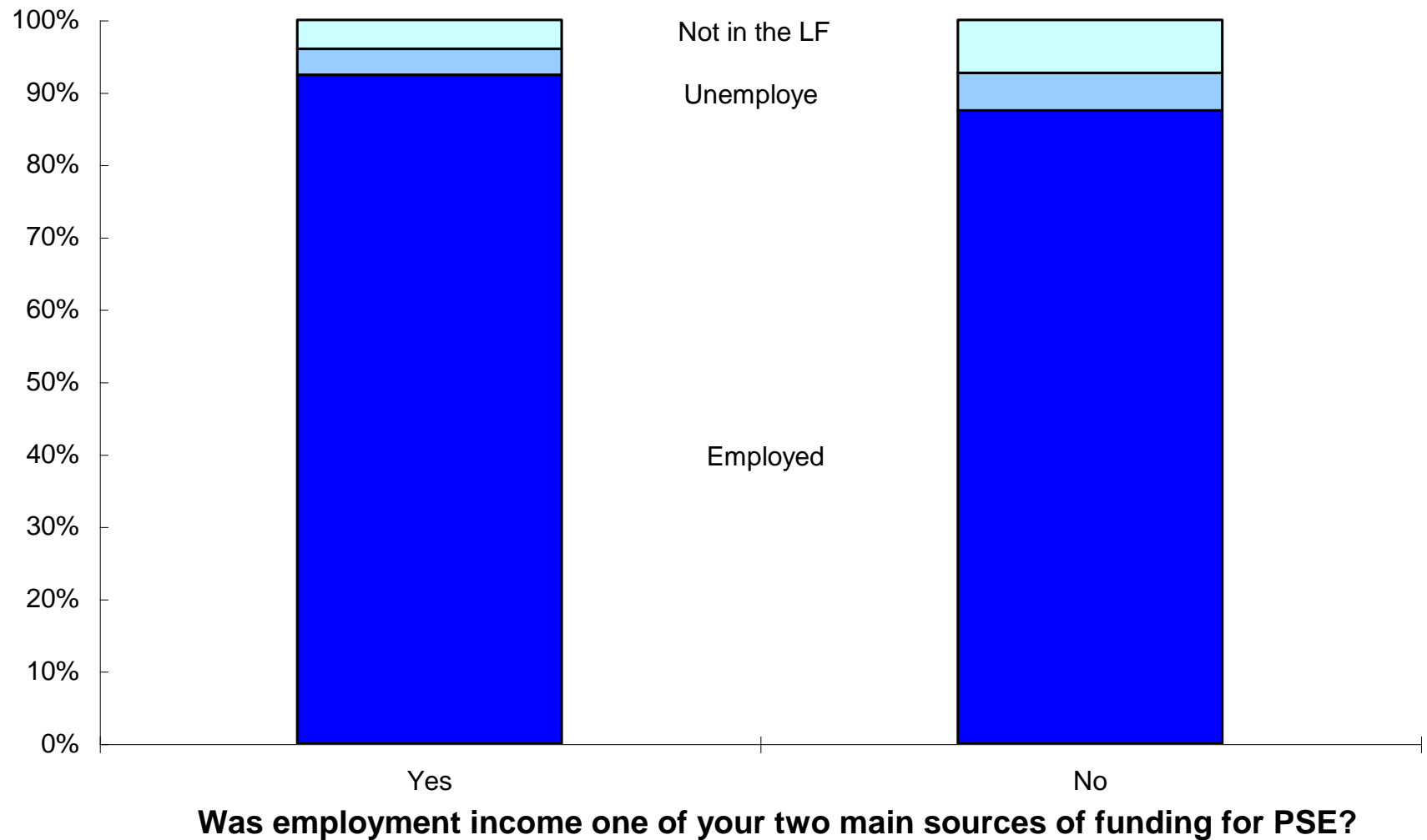


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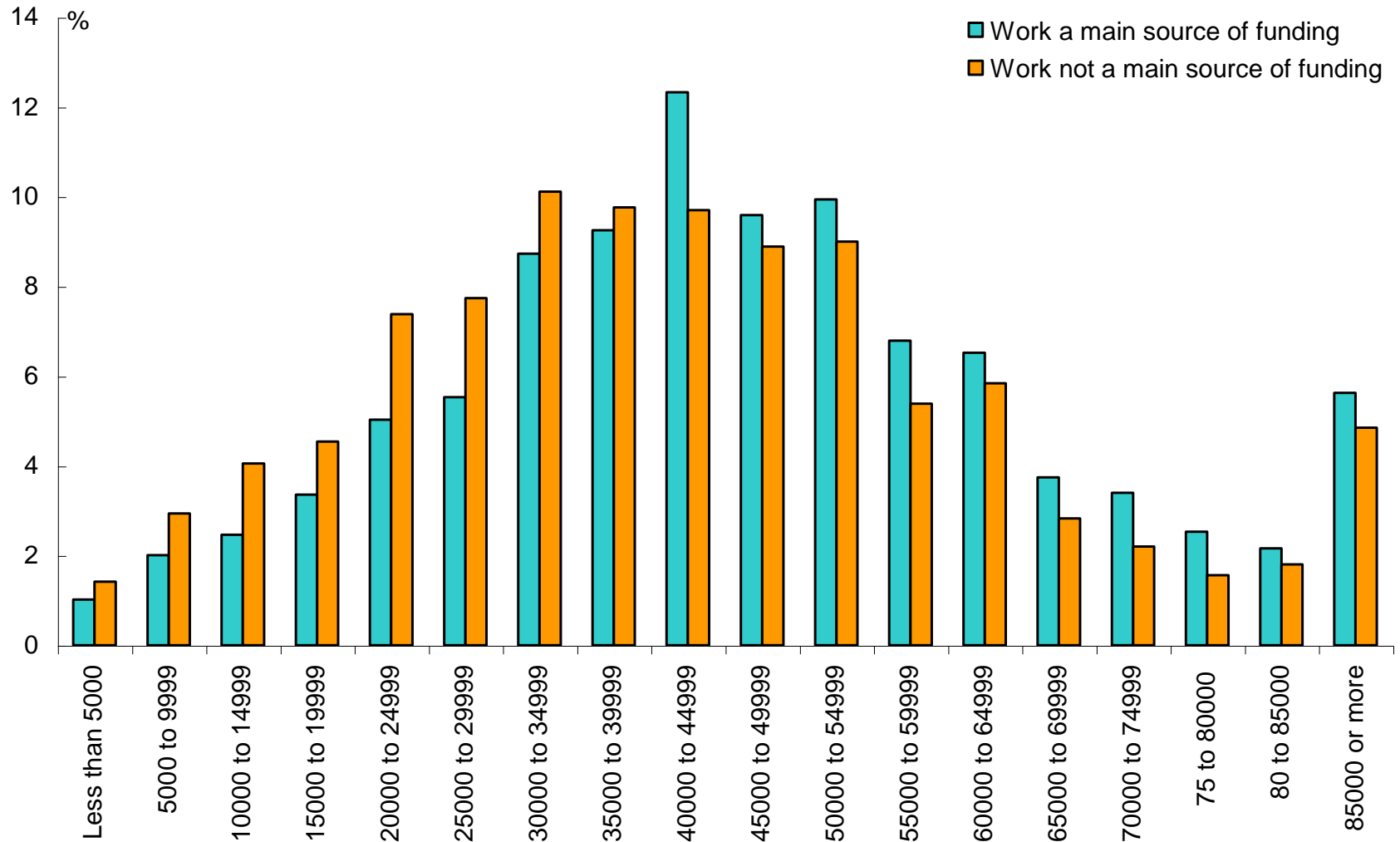
# Work part time?

- Hard to tell what the effects are
    - Students who work part-time during PSE tend to earn more than those who don't
      - But maybe because they're more motivated generally, are better time managers, are bright enough that they don't need to study so much, or because they care more about money?
      - Once you take account of such individual differences, there doesn't seem to be much evidence of a large effect of in-school work on longer run income
      - Working during school reduces grades/persistence in a program only at moderately high work hours
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# Work during studies and LFS in 2005?



# Work during studies and income in 2005

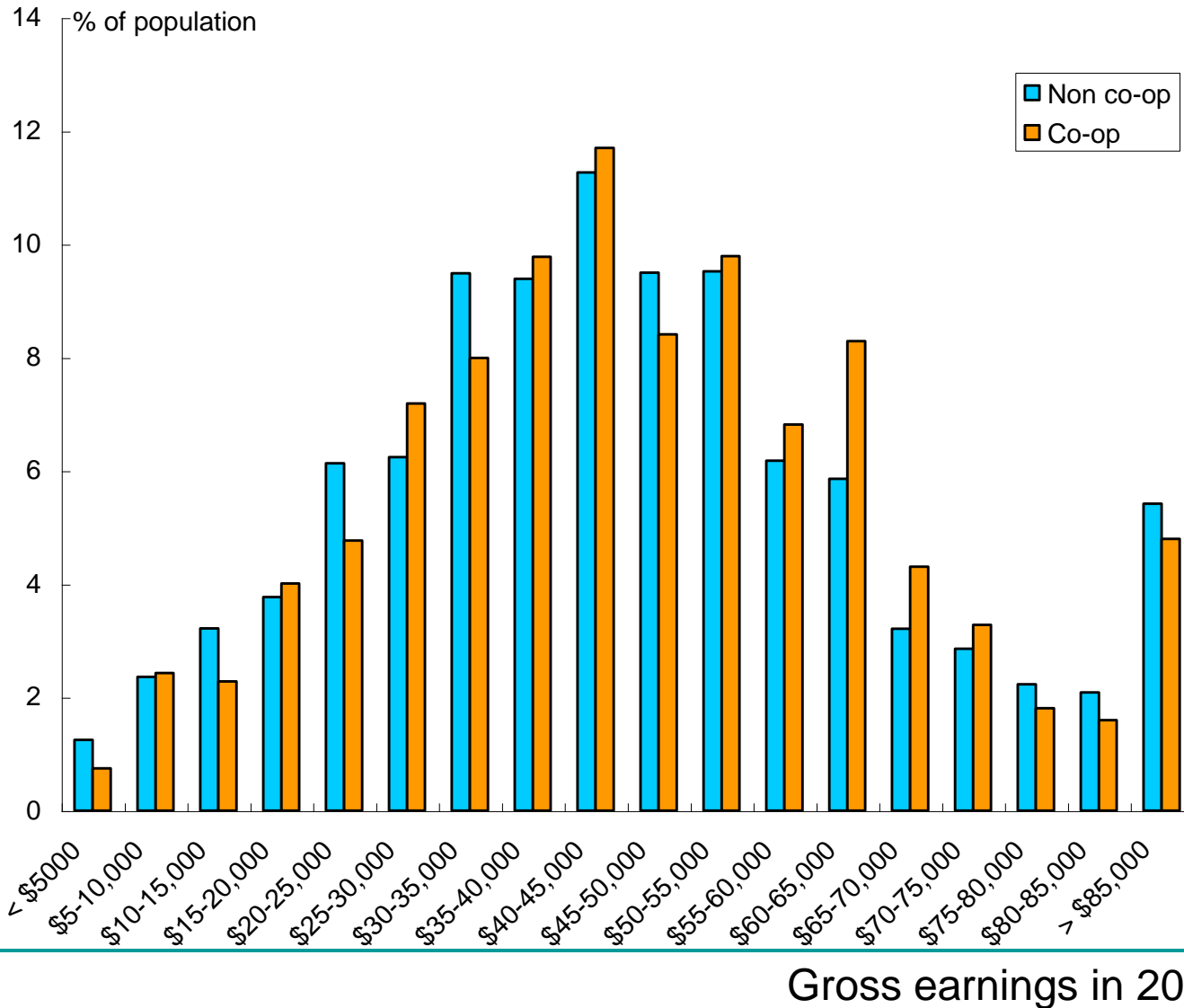


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# Take a co-op program?

- Very little (no?) reliable research on this topic
    - There appears to be some positive effect on income 5 years after graduation, but
      - Not controlling for field of study or for program
      - Selection issues are a confounding factor
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# Take a co-op program?



Gross earnings in 2005

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# The 'Great Recession' and Canada's Labour Market

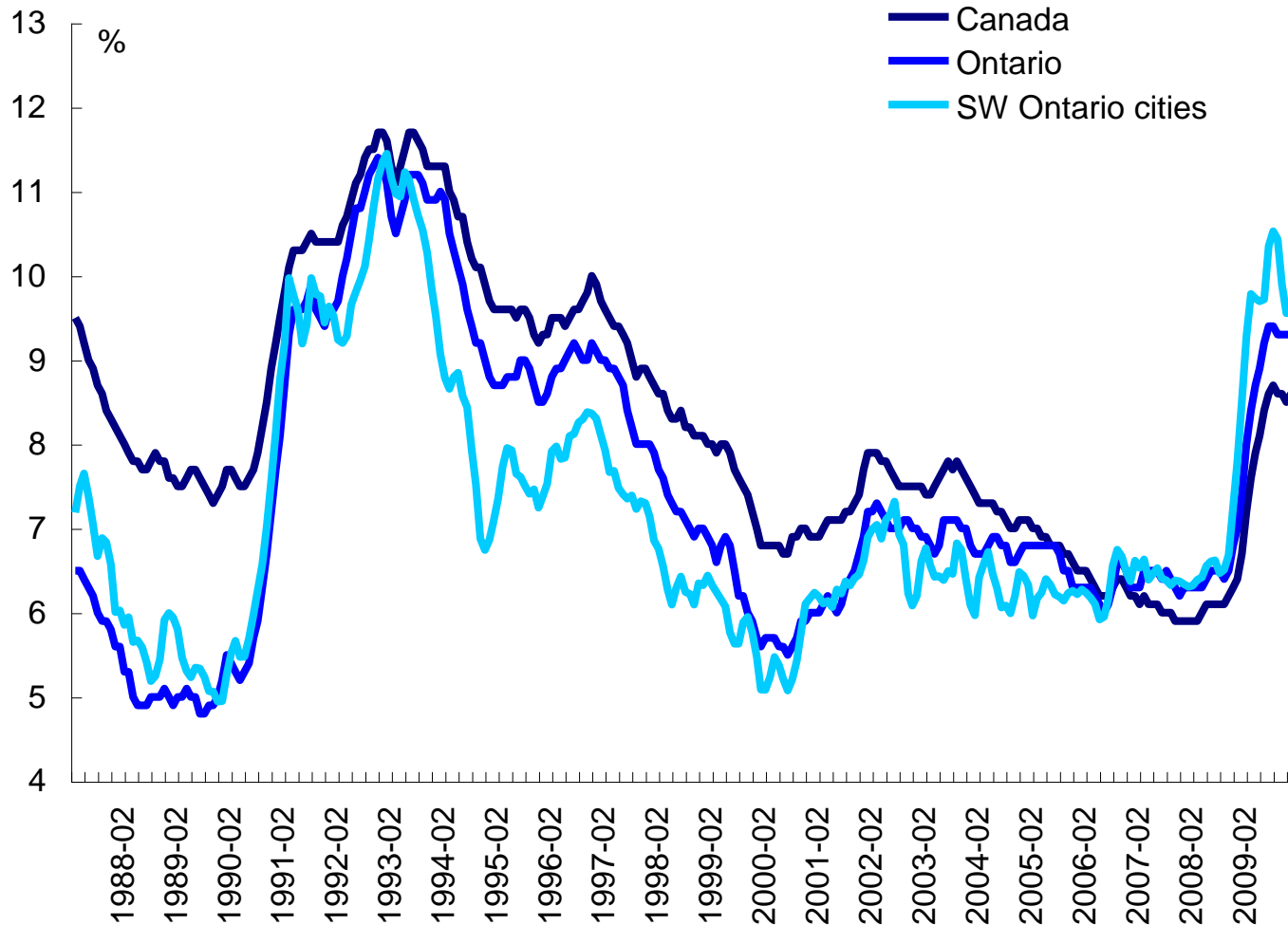
- Not really so 'great' in Canada

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# The Great Recession and employment

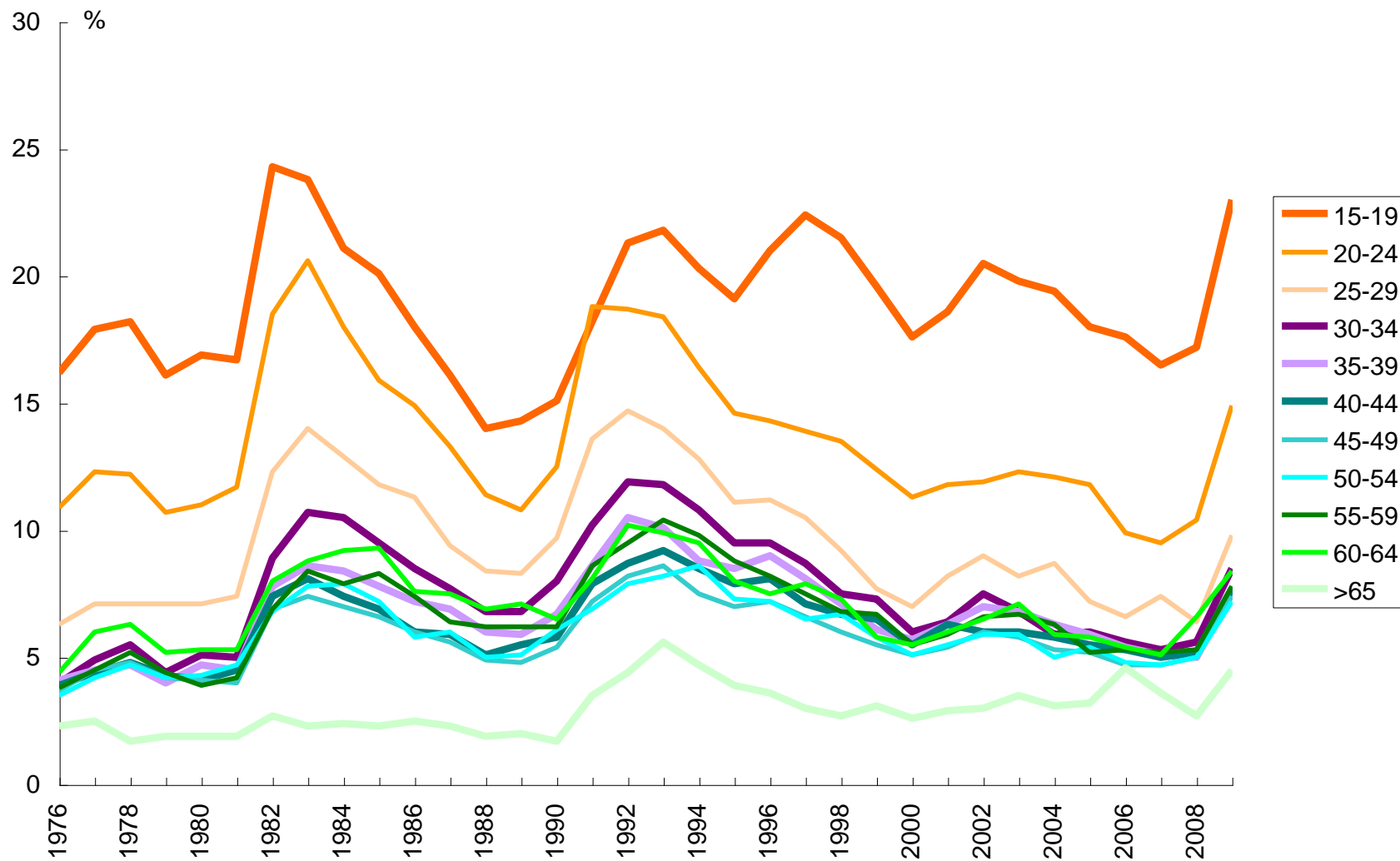
- Unemployment rose very sharply, and reached its highest levels since the 1990s recession
  - Particularly harsh for
    - younger workers
    - men
    - students
  - The increase in unemployment rates was bigger for less educated workers, but proportionately similar across all education levels
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# Unemployment increased very quickly, but didn't get as high as in the 1990s recession



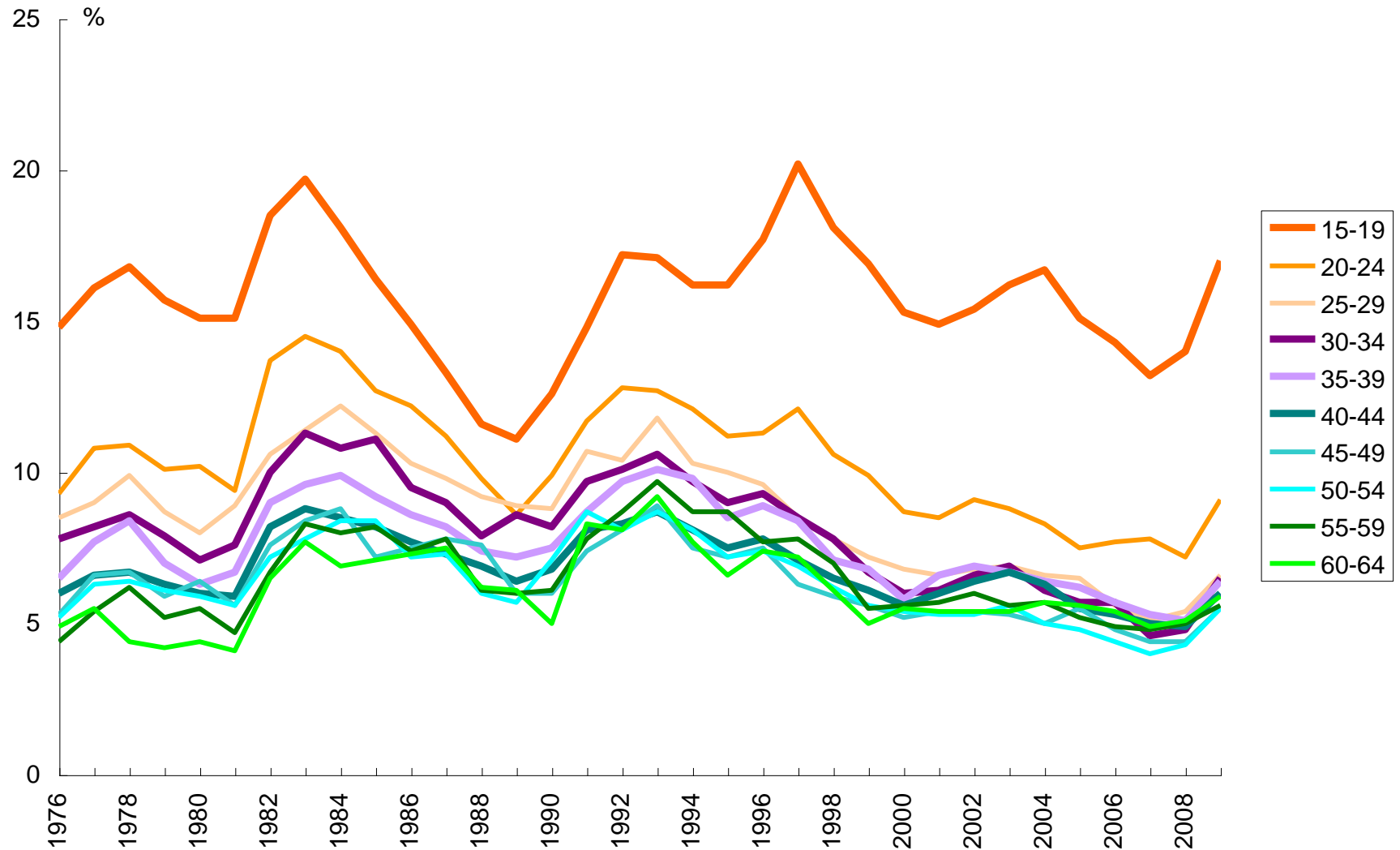
Source: LFS

# Male unemployment rate by age group



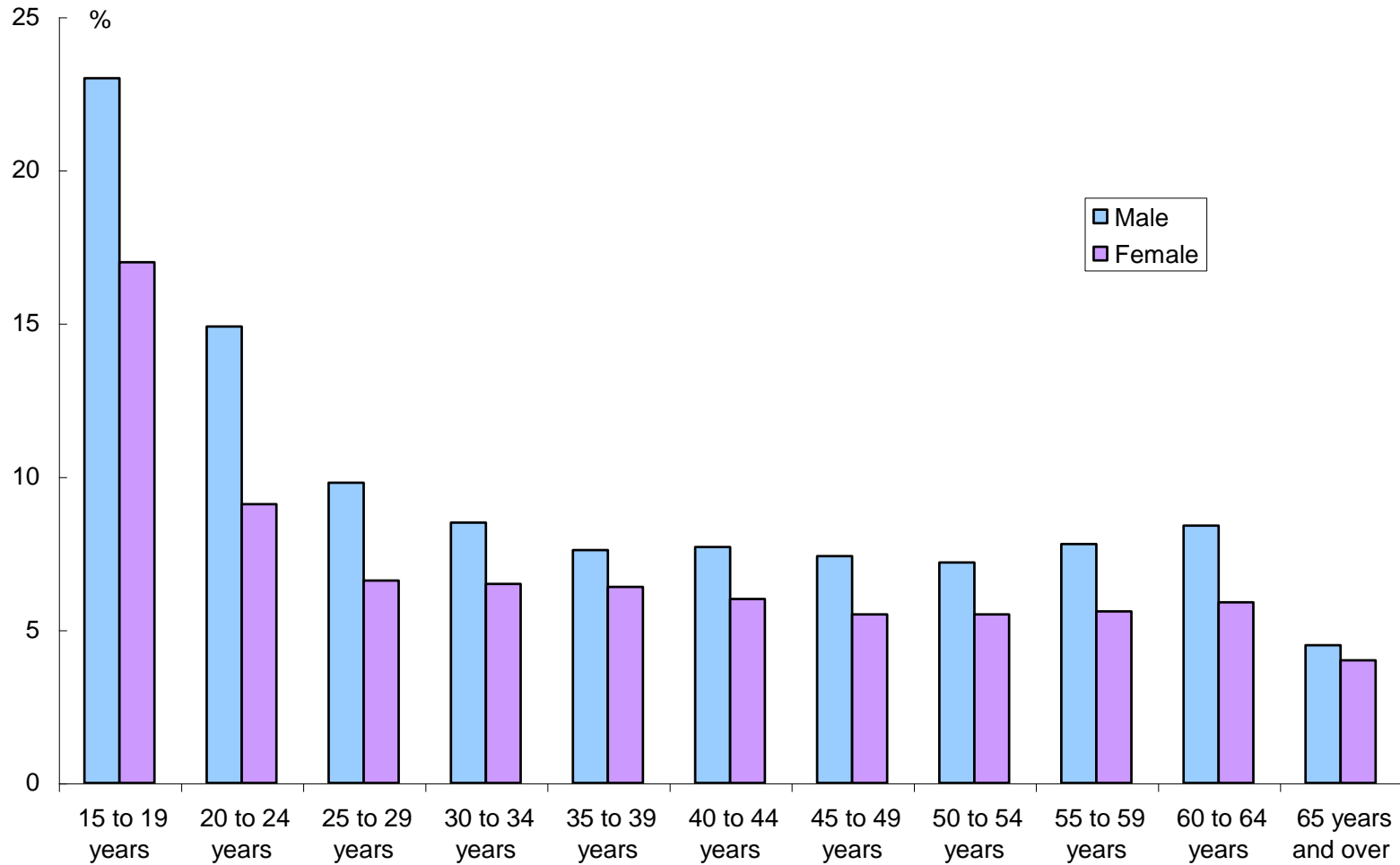
Source: LFS

# Female unemployment rate by age group



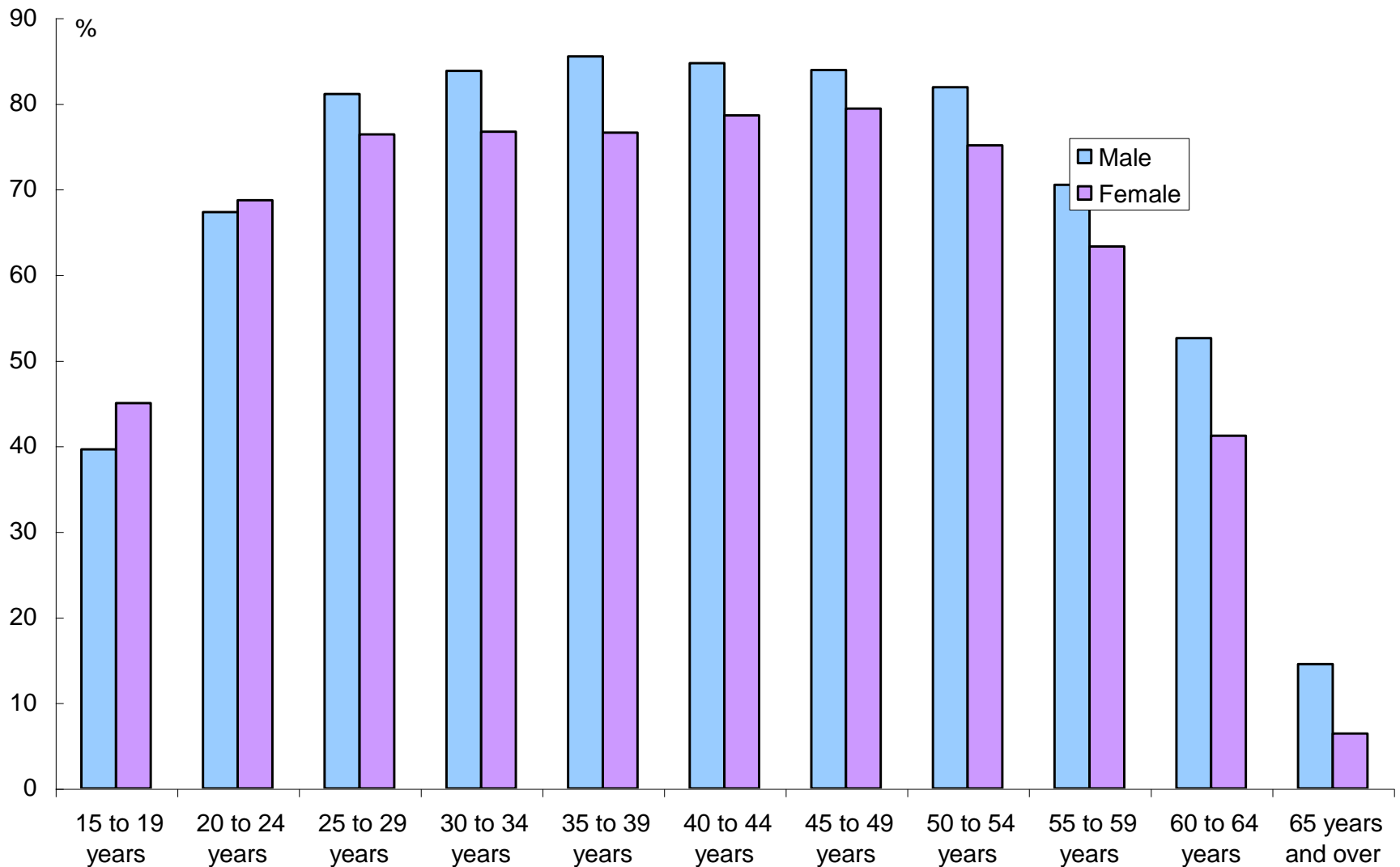
Source: LFS

# Unemployment rate by age and sex, 2009



Source: LFS

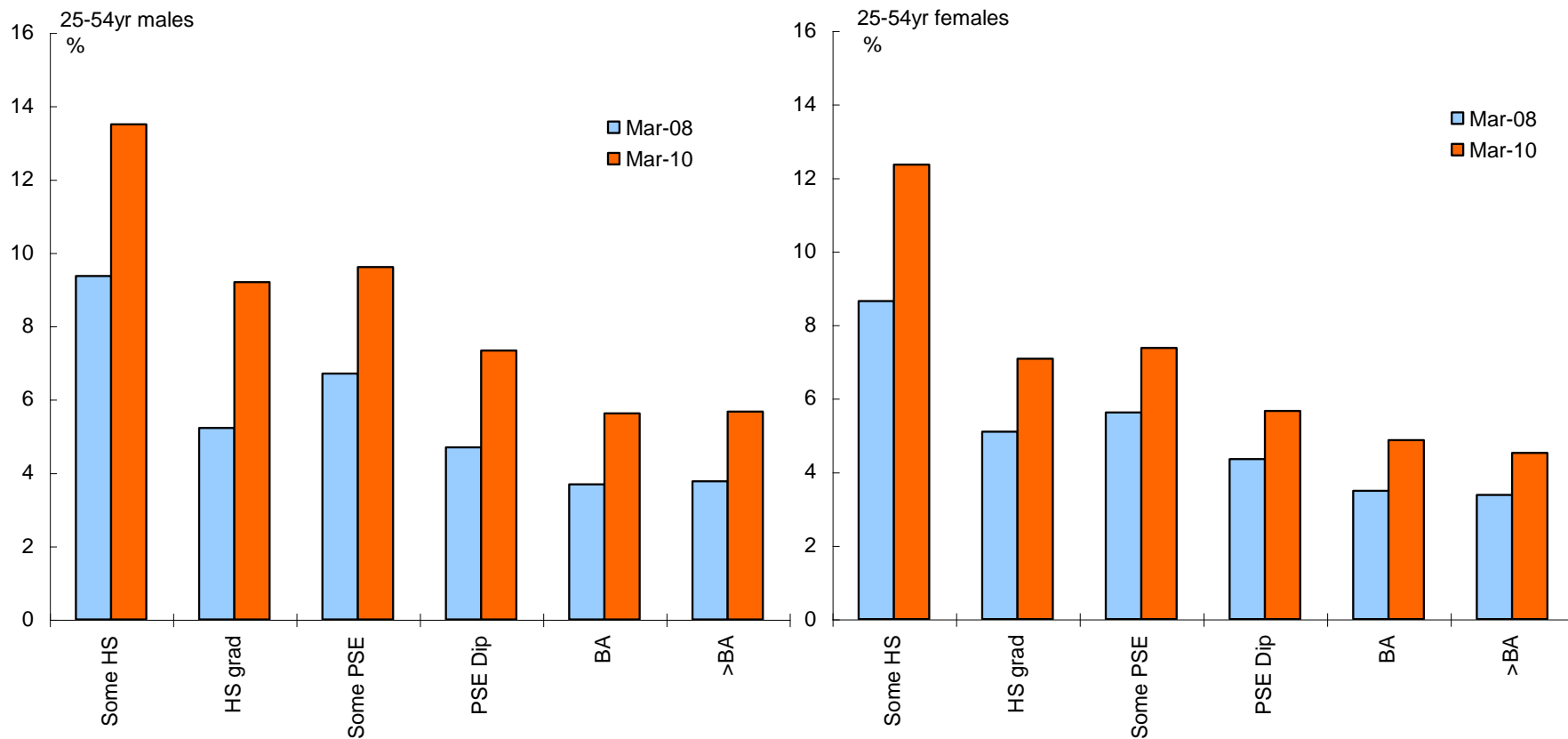
# Employment rate by age and sex, 2009



Source: LFS

# Unemployment rate by education level

## March 2008 and March 2010



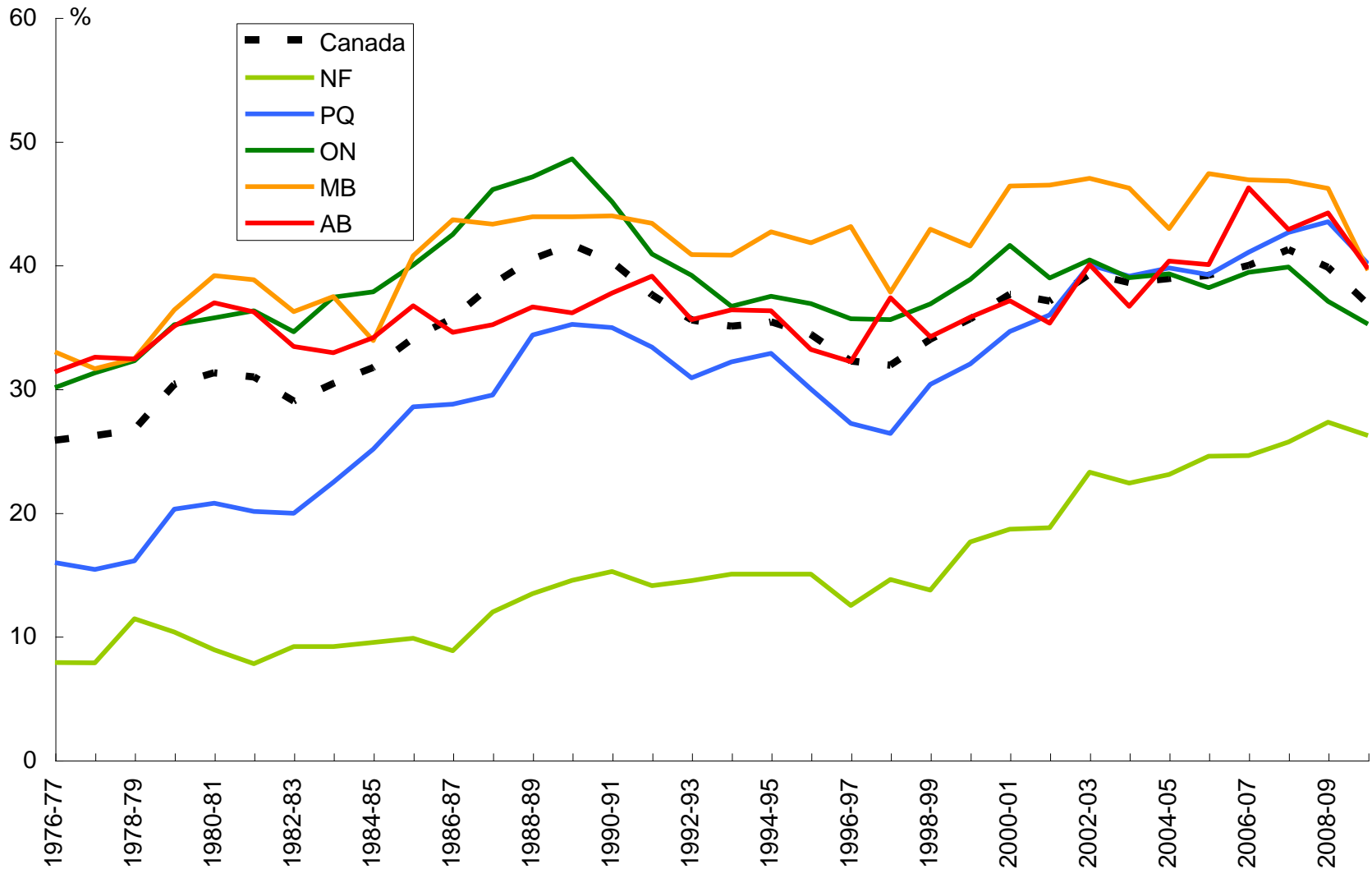
Source: LFS

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# The labour market for current students

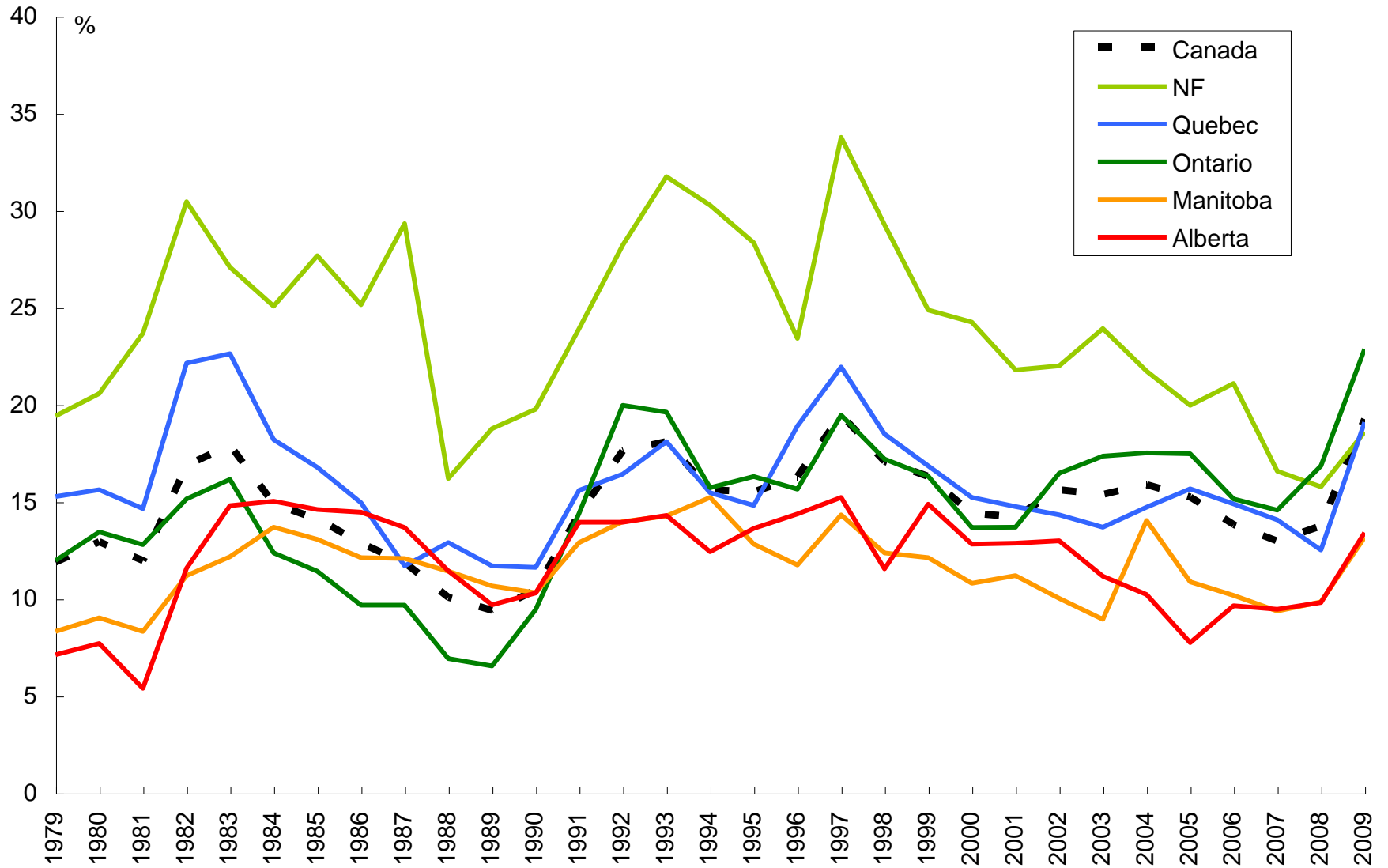
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# Student in-semester employment rate



Source: LFS

# Student summertime unemployment rate



Source: LFS

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# Implications for students

- Lost income during last summer wasn't easily made up
    - Employment in-semester was also weak
    - Especially tough for those on student loans
  - Typically this means students continue on, but struggle, and may borrow more
  - On the basis of past experiences, would be unlikely to see a strong pickup in student employment this summer either
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# Future Trends in the Labour Market

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# The big trends

- Ageing of the population
    - Health services, financial services, leisure services
    - Retirement – but age of retirement has been increasing
  - Continuing pressure on goods-producing sectors
    - Manufacturing
  - Attempt to increase PSE/university attendance (Ontario)?
    - Feasibility in the short run?
    - Long-run may contribute to further declines in wages and employment gap between those with and without PSE
  - Commodity price increases?
    - Mining/oil/gas
    - Agriculture and related industries
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# HRSDC identified growth jobs (projections from 2005 out to 2015)

- Health services
- Computer system design
- Professional services
- Construction
- Oil and gas related industries
- Managers generally
- Registered nurses
- Public sector, especially managers (retirement)
- Elementary/secondary school teachers ?? (potentially lots of retirements – but supply likely to outpace demand?)
- Drivers (slow growth in supply of drivers?)

# HRSDC identified jobs with excess supply (projections from 2005 out to 2015)

- Processing/manufacturing/utilities labourers
  - Creative/performing artists
  - Agriculture workers
  - Chefs/cooks
  - Retail sales
  - Child care/home support workers
  - Paralegals/social service workers
  - Auditors/accountants/investment professionals
  - Computer and information systems professionals
  - Mathematicians/scientists/engineers
- Demand high, but supply predicted to more than keep up.

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# Current Labour Market Imbalances by Broad Skill Level (2005)

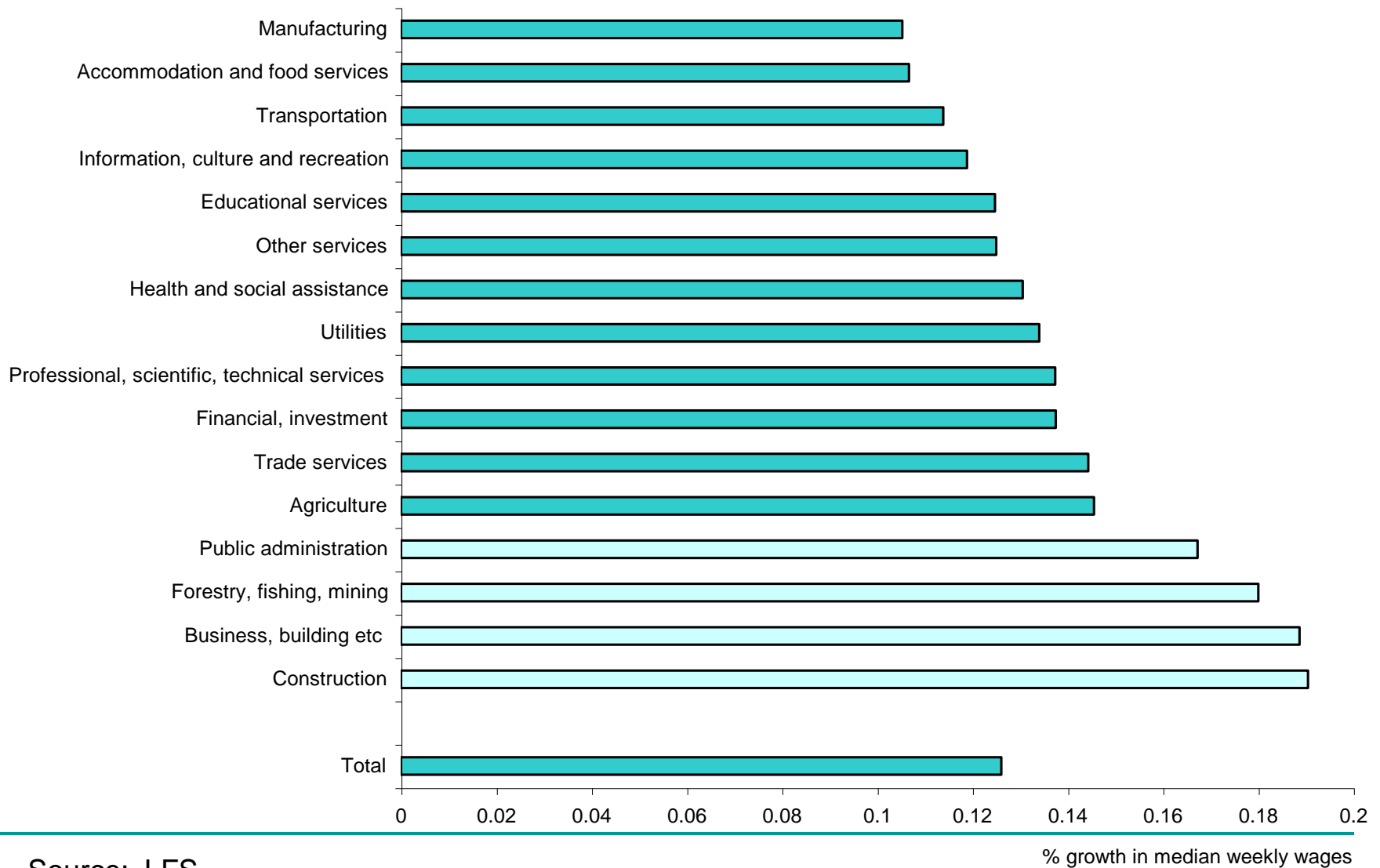
- “Of concern is the relative unemployment rate of university graduates, which rose considerably over the 2001-03 period. This development was accompanied by falling relative wages.”
- “The proportion of university-educated individuals in lower-skilled occupations has risen from 12% in 1990 to about 17% in 2005.”

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# Industries under pressure

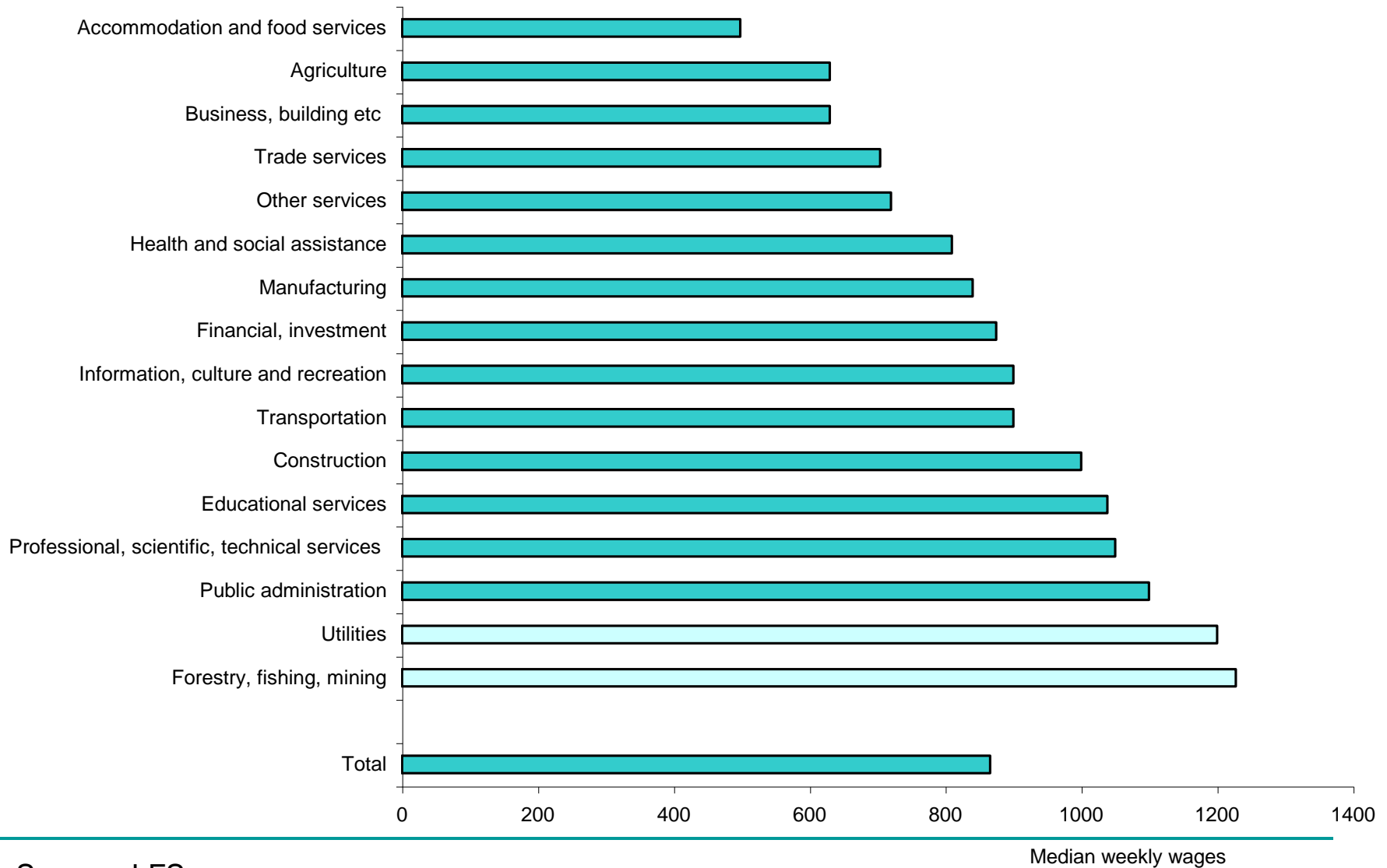
- “According to the U.S. Bureau of Labor Statistics (BLS) methodology, an occupation is considered to be under pressure if its employment growth rate is at least 50% faster than the average, wage increases are at least 30% faster than average and the unemployment rate is at least 30% below average.”
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# Wage growth by NAICS sector, 2005-2009



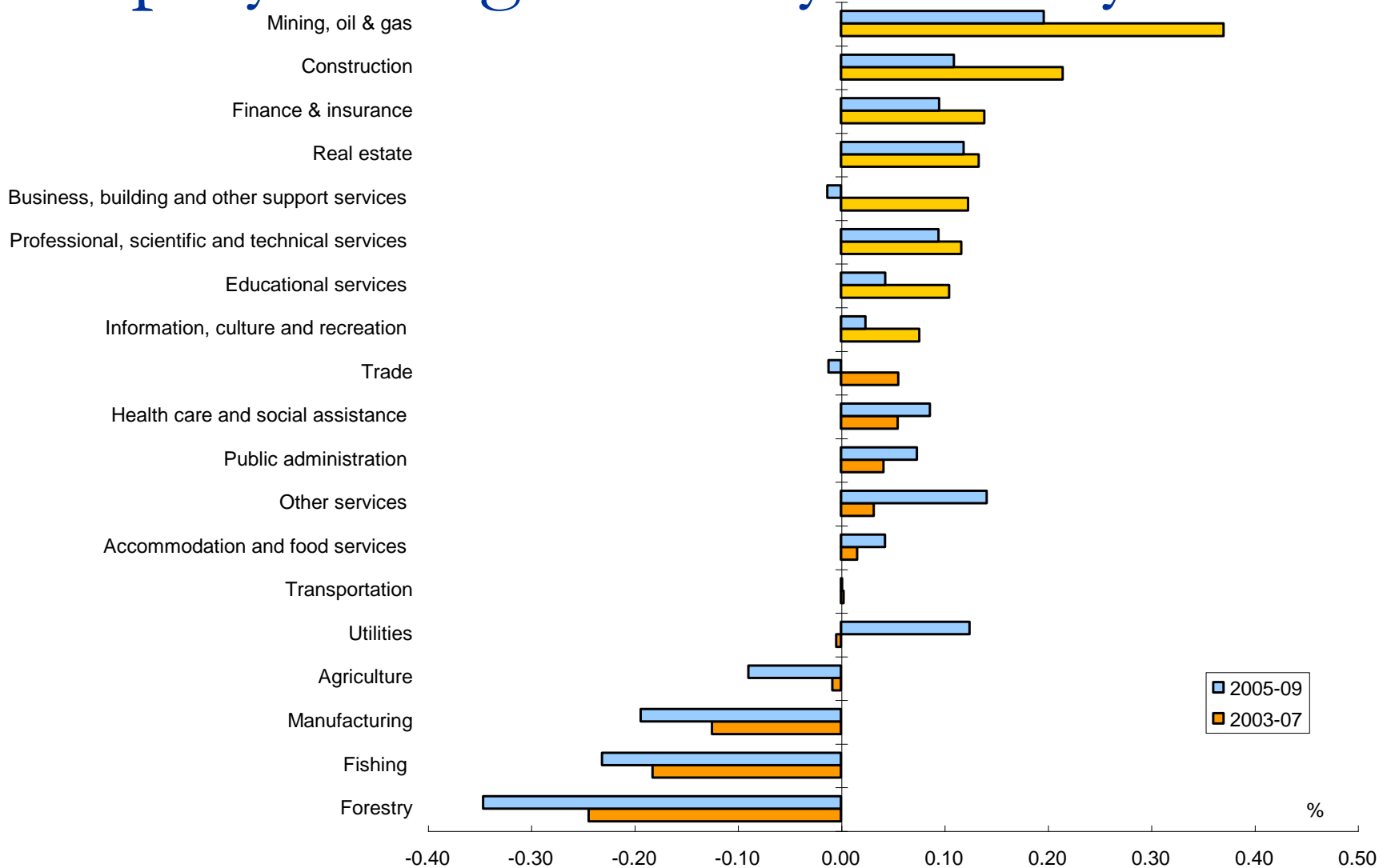
Source: LFS

# Median weekly wages in by industry, 2009



Source: LFS

# Employment growth by industry



Source: LFS

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# Industries that roughly meet the BLS criteria

- Industries that meet the criteria
    - Oil and gas
      - Other mining?
    - Construction
    - Business/building/other support services?
  - Others that are close?
    - Utilities
    - Public administration
  - But sensitive to time period
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# Commodity prices?

- Until the Great Recession, commodity prices had been at historic highs. Most projections suggest they'll recover substantially in coming years and remain high
    - Good news for commodity exporting countries like Canada, and meant higher in employment in resource sector
      - Oil
      - Other mining activities
      - Agriculture?
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*A last bit of data*

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# How do graduates find jobs?

