Earnings dynamics in the UK 1975 to today

Jack Blundell*, Brian Bell**, Nick Bloom*** and Luigi Pistaferri***

November 23, 2020

* Stanford, CEP
** King's Business School, CEP
*** Stanford

The New Earnings Survey Panel Dataset

- 1% random sample of all employees 1975-2016
  - 140,000 - 180,000 employees each year
  - Mandatory for employers to complete
- Variables:
  - Weekly earnings and hours worked in April reference week
  - Gender, age, industry, occupation
  - Firm identifiers (from 2002)
- Missing data
  - Unobserved if move firm between January and April

Office for National Statistics. (2017). New Earnings Survey Panel Dataset, 1975-2016: Secure Access. [data collection]. 7th Edition. UK Data Service. SN: 6706, http://doi.org/10.5255/UKDA-SN-6706-7
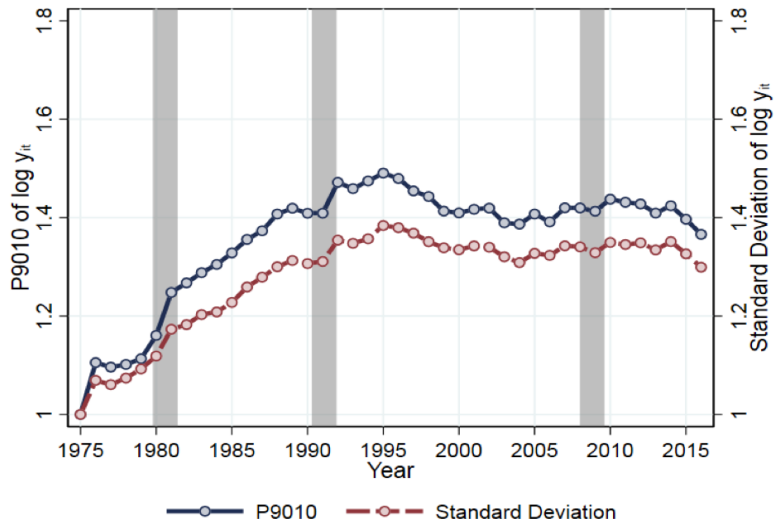
Male earnings inequality
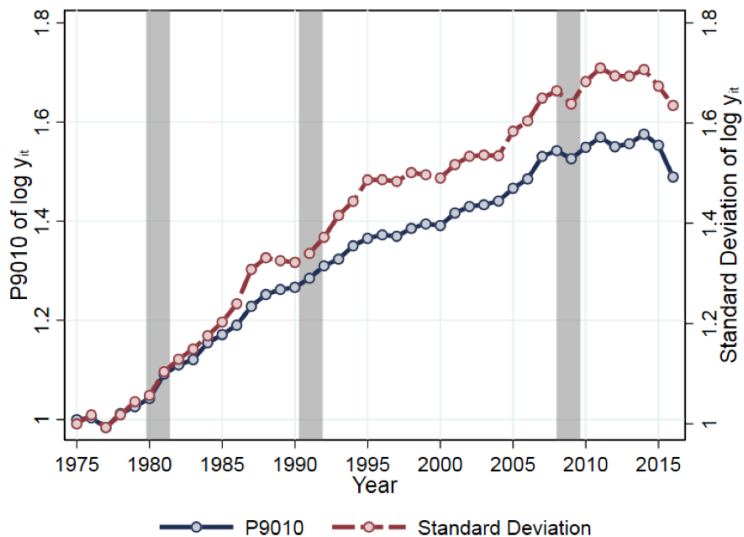
Source: NESPD

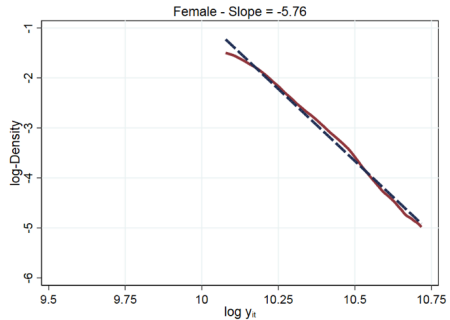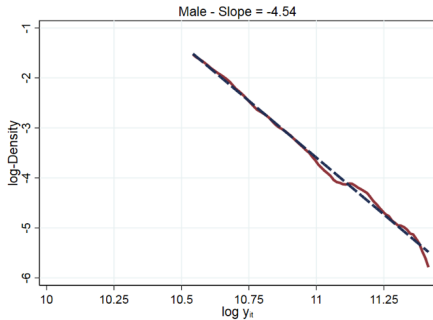▸ Male log earnings percentiles

Female earnings inequality
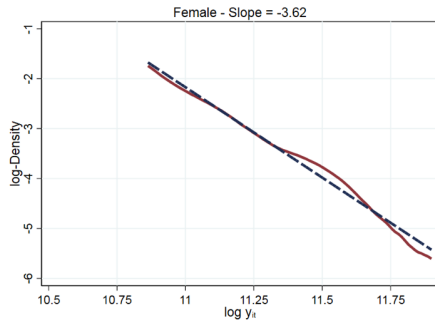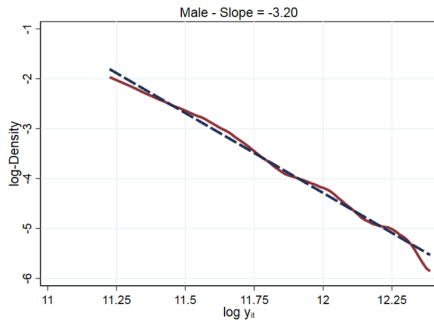

Source: NESPD

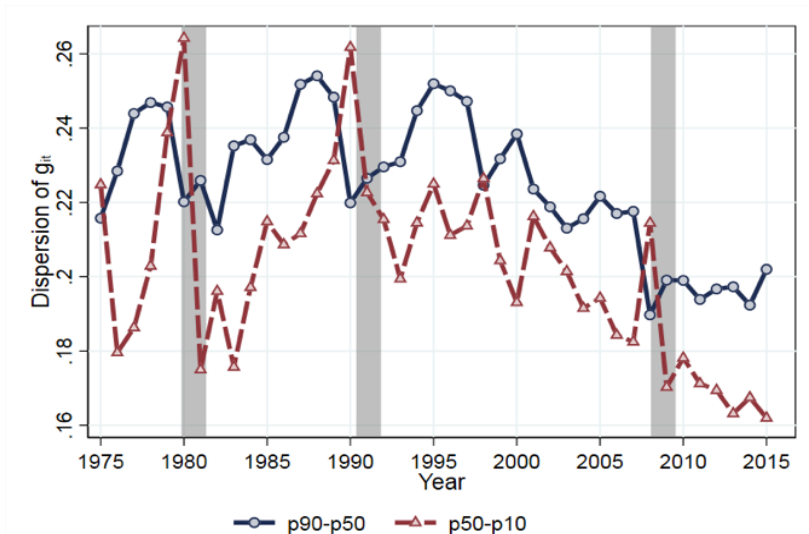Female log earnings percentiles

Top tail inequality (1975)

Source: NESPD

Top tail inequality (2015)

Source: NESPD

P9050 and P5010 of 1-year log earnings changes (male)

Skewness of 1-year log earnings changes (Male)
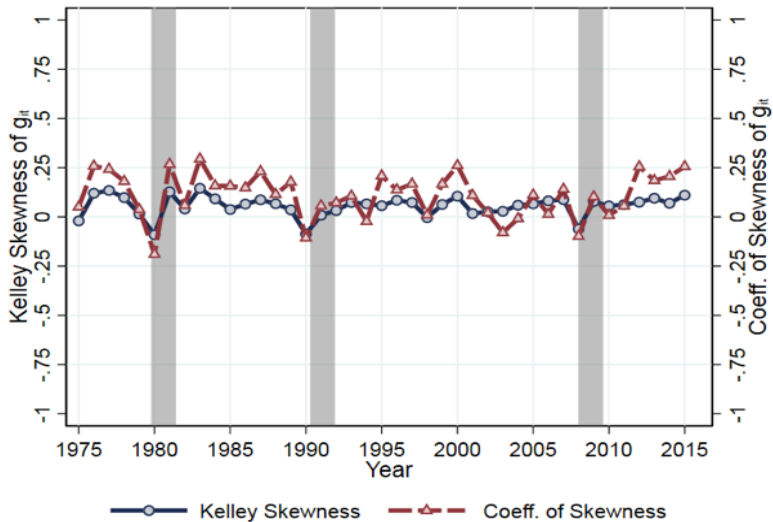
Kurtosis of 1-year log earnings changes (Male)
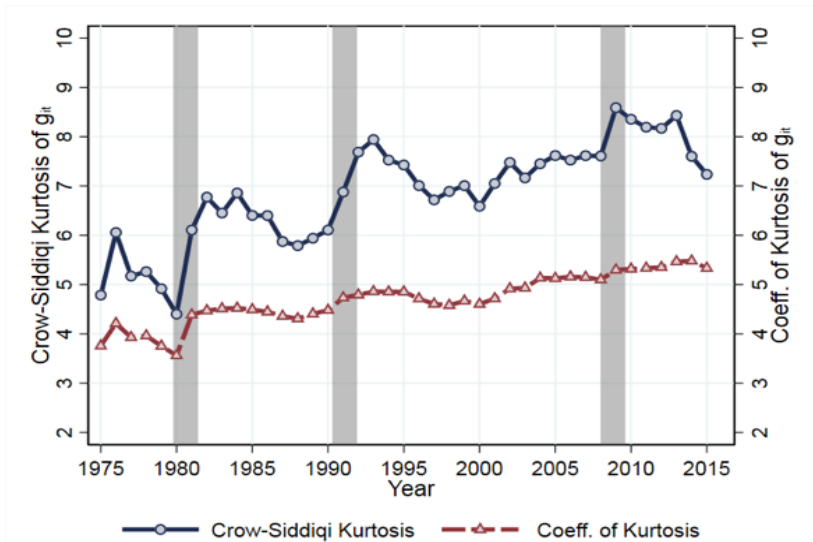
P9010 by permanent earnings (5-year changes)

Skewness by permanent earnings (5-year changes)

Kurtosis by permanent earnings (5-year changes)

Source: NESPD

5-year permanent earnings mobility 1985

Source: NESPD

5-year permanent earnings mobility 2005
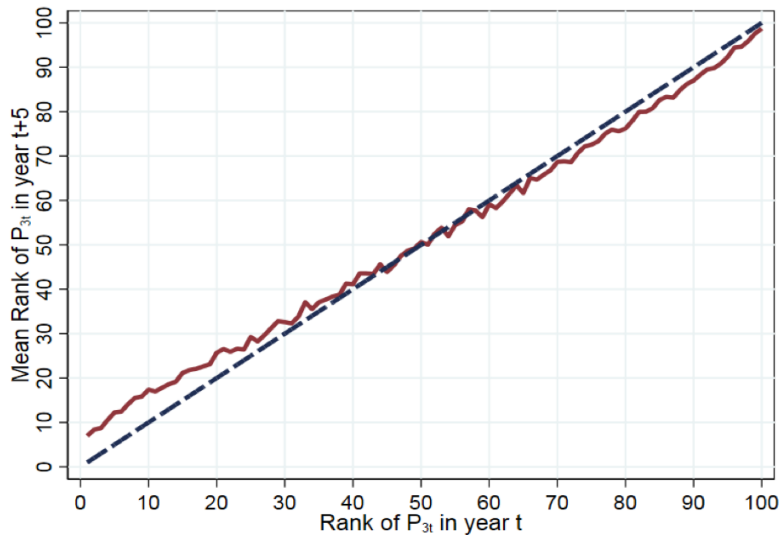
Source: NESPD

Inequality aged 25 (Male)
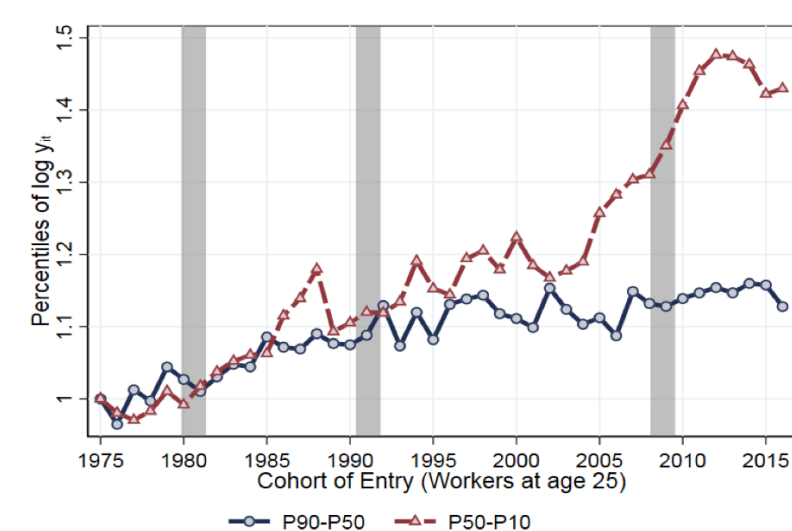
Source: NESPD

GDP beta: Earnings (1)

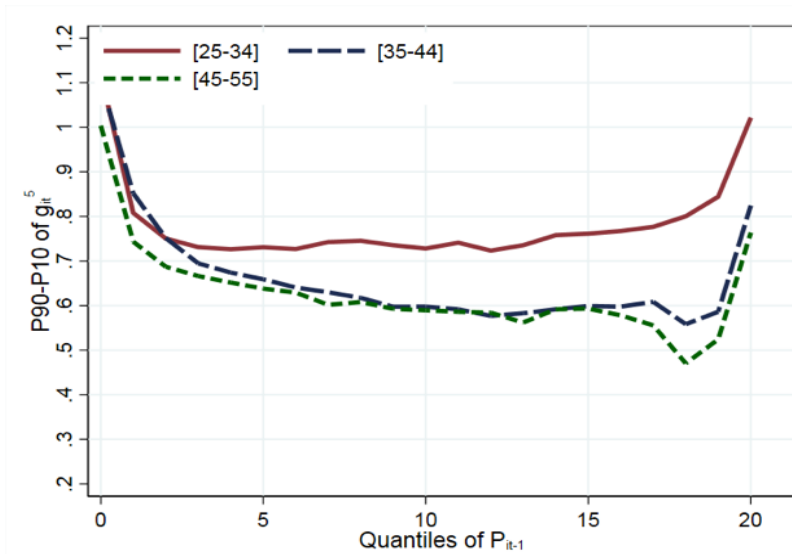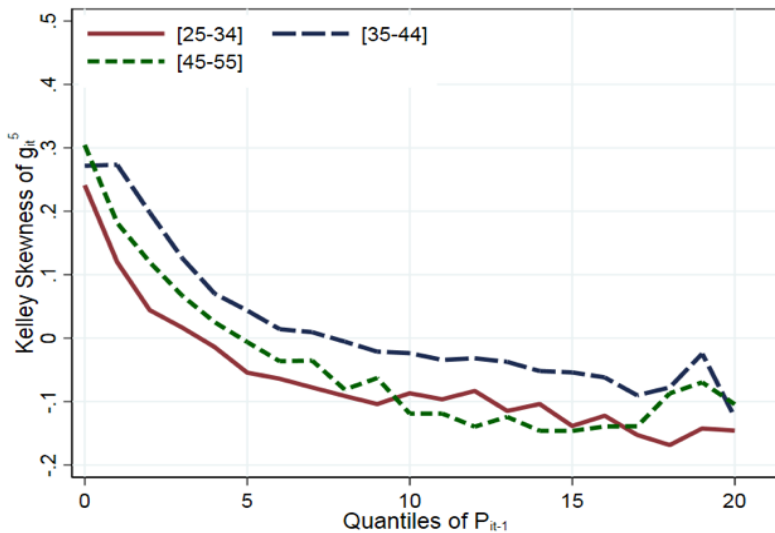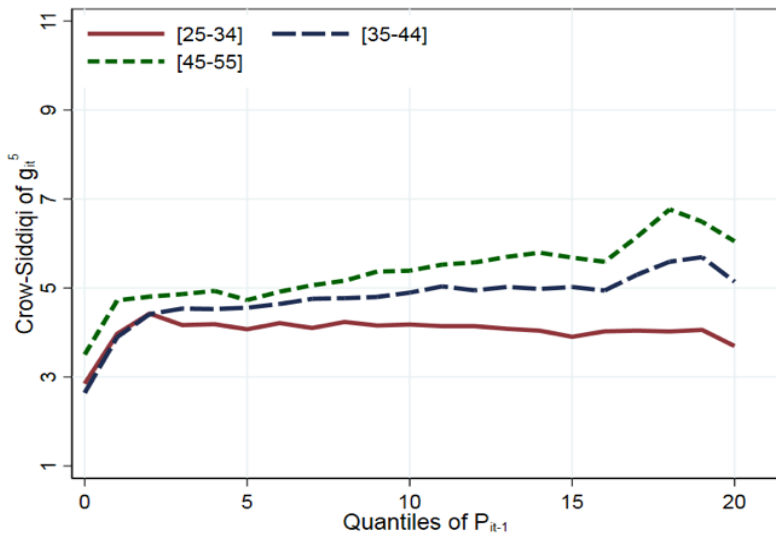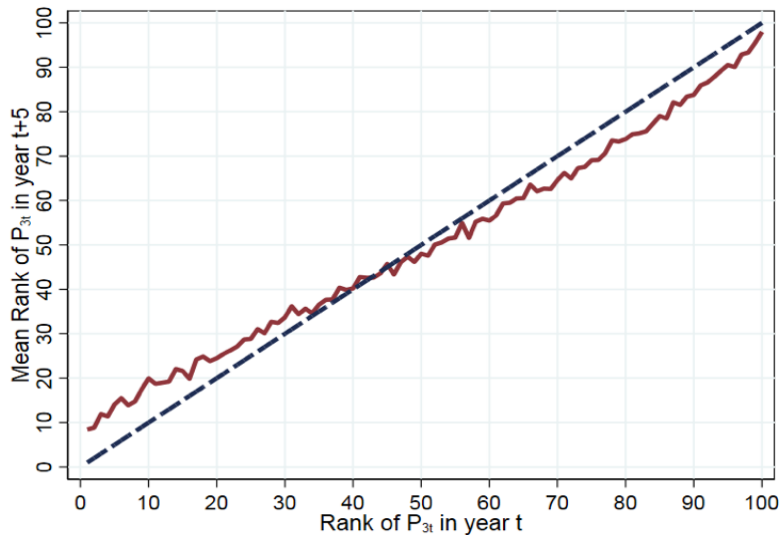|	(1)	(2)	(3)	(4)
Δ Log GDP	0.294***	0.388***	0.321***	0.548***
	(0.005)	(0.006)	(0.009)	(0.017)
*Female		-0.211***		
		(0.009)		
*Age 35-44			-0.021*	
			(0.012)	
*Age 45-55			-0.07***	
			(0.011)	
*Medium Size				-0.113***
				(0.028)
*Large Size				-0.24***
				(0.028)
*V Large Size				-0.381***
				(0.02)
Sample Size	3,306,849	3,306,849	3,306,849	1,659,906
No of Workers	413,689	413,689	413,689	277,759

Note: * = 10%, ** = 5%, *** = 1%. Dependent variable is change in log weekly earnings. Omitted categories are male (2), age 25-34 (3) and small firms (4). Firm size categories are less than 100 (small), 100-499 (medium), 500-1999 (large) and 2000+ (very large). Standard errors clustered at worker level. Source: NESPD

GDP beta: Earnings (2)

	(1)	(2)
Δ Log GDP	0.166***	0.555***
	(0.008)	(0.009)
*1986-1995	0.329***	
	(0.012)	
*1996-2005	-0.249***	
	(0.03)	
*2006-2016	-0.129***	
	(0.012)	
*Recession		-0.436***
		(0.018)
Sample Size	3,306,849	3,306,849
No of Workers	413,689	413,689

Note: * = 10%, ** = 5%, *** = 1%. Dependent variable is change in log weekly earnings. Omitted categories are 1975-1985 (1) and no recession (2). Recession defined as a year with negative GDP growth. Standard errors clustered at the worker level. Source: NESPD

GDP beta: Hours (1)

	(1)	(2)	(3)	(4)
Δ GDP	0.133***	0.16***	0.13***	0.101***
	(0.005)	(0.006)	(0.009)	(0.022)
*Female		-0.057***		
		(0.01)		
*Age 35-44			0.019	
			(0.013)	
*Age 45-55			-0.007	
			(0.012)	
*Medium Size				0.017
				(0.034)
*Large Size				0.01
				(0.033)
*V Large Size				-0.029
				(0.025)
Sample Size	3,188,366	3,188,366	3,188,366	1,694,947
No of Workers	411,116	411,116	411,116	281,651

Note: * = 10%, ** = 5%, *** = 1%. Dependent variable is change in log weekly hours. Omitted categories are male (2), age 25-34 (3), small firms with employment less than 100 (4). Firm size categories are less than 100 (small), 100-499 (medium), 500-1999 (large) and 2000+ (very large). Standard errors clustered at worker level. Source: NESPD

GDP beta: Hours (2)

	(1)	(2)
△ GDP	0.155***	0.095***
	(0.007)	(0.009)
*1986-1995	0.024**	
	(0.011)	
*1996-2005	-0.064**	
	(0.032)	
*2006-2016	-0.046***	
	(0.014)	
*Recession		-0.052***
		(0.019)
Sample Size	3,188,366	3,188,366
No of Workers	411,116	411,116

Note: * = 10%, ** = 5%, *** = 1%. Dependent variable is change in log weekly hours. Omitted categories are 1975-1985 (1) and no recession (2). Recession defined as a year with negative GDP growth. Standard errors are clustered at worker level. Source: NESPD

Rent-sharing

|	ln(weekly earnings)		ln(weekly hours)	
	(1)	(2)	(3)	(4)
Panel A: OLS				
ln(gva per worker)	0.0064**	0.0059**	0.0044***	0.0039***
	(0.0027)	(0.0028)	(0.001)	(0.0011)
Panel B: IV				
ln(gva per worker)	0.0654***	0.0575**	0.0201*	0.0104
	(0.022)	(0.0229)	(0.0117)	(0.012)
Instrument F	33.3	30.4	33.2	30.2
Match FE	x		x	
Two-way FE		x		x
# workers		143,105		142,833
# firms	19,831	21,498	19,817	21,475
# observations	606,740	661,510	605,355	659,958

Note: * = 10%, ** = 5%, *** = 1%. Sample restricted to workers reporting only one job, excludes those whose pay was affected by absence. Gross value added per worker windsorized at the 1st and 99th percentile. Instrument in Panel B is ln(gross value added per worker) for all other firms in the same 3-digit SIC code. All regressions include time dummies. Standard errors clustered at the firm-level. Source: NESPD

Thanks

brian.bell@kcl.ac.uk
jack.blundell@stanford.edu
nbloom@stanford.edu
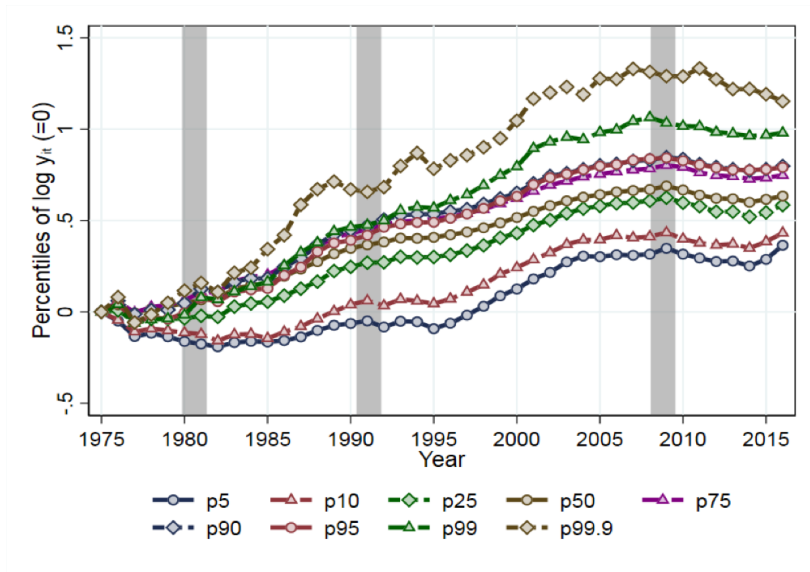**pista@stanford.edu**

Extra slides

Male log earnings percentiles
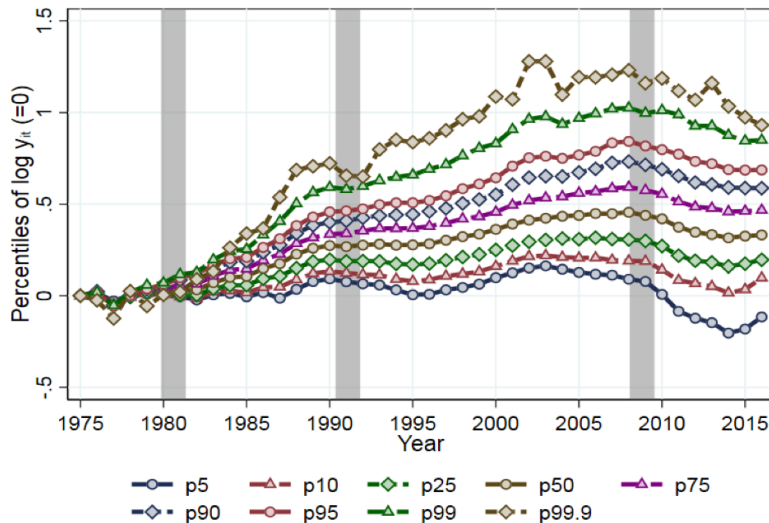
Source: NESPD
▸ Back

Female log earnings percentiles

Source: NESPD

▸ Back