III. Wage Inequality and Labour Market Institutions

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1. Stylized Facts: Objects of interest

- Why study wage or earnings inequality?

- It is Labour Economics’s equivalent of the ultimate question
  - “Why are some countries rich and other countries poor?”
  - “Why are some countries more unequal than others?”

- What kind of inequality are we concerned about?
  - Hourly wages vs Earnings (Katz and Murphy, 1992; Lemieux, 2006)
  - Total compensation (Pierce, 2001),
  - Total after tax income (Green et al., 2007)
  - Consumption Inequality (Romalis, 2010),
  - Happiness Inequality (Wolfers and Stevenson, 2008)

- In an intertemporal setting, studies have looked at the volatility of wages or wage instability or earnings dynamics (Solon, 2008; Baker and Solon, 2003).

- Cross-sectional wage inequality is the type inequality that we study in this section.
1. **Overall Wage Inequality**

- Overall earnings inequality as measured by the 90-10 rose sharply in the U.S. substantially for both men and women from the end of the 1970s to the mid-1990s. (e.g. CD, fig.2, 3, 4.) (See also Katz and Autor, 1999)

- In many other countries, this began later. This is visible in almost any measure of inequality
  - Hourly and weekly earnings
  - Reinforced by including non-wage compensation
  - Looking at the very top - CEO.s, top 1, 5, 10 percent of earners reinforces this picture
  - Also true in markets for workplace disamenities: non-standard work hours, safety in manufacturing.

- After the 1990s, this monotone rise in overall inequality in the U.S. gave way to a **polarization phenomena** with wage inequality rising in the upper-half of the wage distribution but flattening out or declining in the lower half (AKK 2008, FFL 2013)
• In the U.S., average and median wages stagnated after 1973 and fell considerably in absolute terms for low wage workers. This trend was reversed only after 1995.

• Other OECD countries did not experience this pattern of declining absolute wages, though did experience slowing growth.

• By comparison with other OECD countries (Blau and Kahn, 1996, 2001), there is considerably greater inequality in the United States
  1. In terms of the standard deviation of log wages and the 90-10 percentile log wage differential.
  2. The 50-10 percentile wage differential is much larger in the United States than elsewhere.
  3. The U.S. 90-50 differential is quite similar to that in several other countries.

• The entire distribution of outcomes was shifted far to the right, but experiences varied from large falls to very large growth:
  o Very large increases: US and UK
  o Modest increases: Australia, Canada, Japan, Spain, and Sweden
  o No noticeable changes: France and Italy
  o Modest falls: Netherlands
Large falls: South Korea
German earnings inequality increased rapidly during the 1980s and 1990s
(Dustmann, Ludsteck and Schonberg, 2010)

2. Residual Wage Dispersion expanded within demographic and skill groups

- Residual inequality, that is, the inequality remaining after parceling out the estimated contribution of observables (such as education and potential experience) increased.
  - The exact decomposition of overall inequality into between-group and residual components is inherently arbitrary as it depends on which covariates are included in the regression model.
  - However, it is still meaningful to talk about a rise in residual inequality if we hold the conditioning set of variables fixed across time.

- Because the earnings of older, educated workers are typically more dispersed (as predicted by the lifecycle human capital model), as the U.S. workforce became simultaneously older and more educated during the 1980s and 1990s, and this
phenomenon gives rise to an increase in earnings dispersion without any change in the wage structure (how workers with different characteristics are paid).

3. Returns to Skills/Education

- Returns to education in the U.S. fell during the 1970s when there was a very sharp increase in the supply of educated workers.

- Returns to education then began a sharp rise in the 1980s. But there was a substantial deceleration in the growth the college-high school premium in the 1990s (Fortin, 2006).
  - This conclusion is robust to many sensible ways of measuring education returns.

- In a standard Mincer wage equation, return to year of education rose from about 7.5 percent in 1980 to 10.0 percent in 1990.

- But largest increase is between college and HS grads.

- Many other economies experienced a rise in earnings differentials in the 1980s, but only in the UK was the rise as pronounced as in the U.S. (Acemoglu, 2003)
• Note that all of the countries above saw large falls in differentials in the 1970s (except perhaps Korea, little data.)

• Changes in the growth rate of supply of skills (highly educated workers) will be an important explanatory variable for understanding this particular wage structure change in the context of the theory of the skill premia.

• There has been remarkable growth in the supply of skills among all advanced economies.

• But there are also very large cross-country differences in the timing of acceleration and slowdown in production of skills.
  o U.S. had particularly rapid rise in 70s (partly due to the Vietnam war), slowdown in 80s.
  o UK experienced the slowdown later.
  o Netherlands and North Korea had extremely rapid supply growth during the 1980s, producing a rapid fall in earnings differentials.
  o Slowdown in UK and Canada came later and was not as severe in the 1980s.
In the Netherlands and Korea, supply actually grew faster in the 1980s than the 1970s and the skill premia declined.

4. Wage Differentials

- The wage gap between males and females closed considerably.
  - This was particularly noteworthy given rapidly rising relative female labor supply since 1970.
  - Most other advanced economies also saw a declining gender gap in the 1980s.

- Notably, the gender gap stopped closing in the early 1990s, at a time when female labor supply also stopped rising. (CD, fig 12).
  - This appears a striking coincidence (Fortin and Lemieux, 2000).

- The black-white wage gap, which closed rapidly in the 1970s, stagnated and/or expanded in the 1980s.

- The declining labor force participation of black males (combined with a severe rise in the rate of incarceration) probably masks an even larger decline in earnings capacity (Chandra, 2003, Bayer and Charles, 2016).
5. Top Incomes

- In the US, top income shares dropped dramatically from 1929 to 1950 and increased dramatically from 1980 to 2007 [Piketty and Saez]

- Top incomes used to be primarily capital income. Now, top incomes are divided 50/50 between labor and capital income (due to explosion of top labor incomes with stock-options, bonuses, etc.)

- Fall in top income shares from 1900-1950 happened in most OECD countries.

- Surge in top income shares has happened primarily in English speaking countries, not as much in Continental Europe and Japan [Atkinson, Piketty, Saez JEL'11]

- Increases in inequality at the very top of the U.S. income distribution (1% and higher) has been particularly sizeable since the 1970s: the share of total wages and salaries earned by the top 1 percent wage income earners has jumped from 5.1 percent in 1970 to 12.0 percent in 2006. development (Piketty and Saez, 2003, 2006)
• See http://g-mond.parisschoolofeconomics.eu/topincomes/

Mitigating Factors? To the contrary

• Increased cross-section inequality has not been offset by increased year-to-year earnings mobility.
  o Permanent and transitory components of earnings variation have risen by similar amounts (Gottschalk and Moffitt, 1994).

• Rising earnings inequality has the dominant contributor to a substantial increase in family income inequality, although increased assortative mating (in education) is also an important contributor (Fortin and Schirle, 2006).
2. **Leading Explanations:**
   a. **Supply and demand factors**

1. **Steady demand.** One possibility motivated by an “education race” hypothesis advanced by Tinbergen (1975) when thinking about the demand for skills throughout this century:
   
   "The two preponderant forces at work are technological development, which made for a relative increase in demand and hence in the income ratio... and increased access to schooling, which made for a relative decrease.”

   is that for unspecified (and perhaps exogenous) reasons, there has been a steady rise in demand for skills throughout the 20th century (see also Goldin and Katz, 2008).

   - Hence, movements in the wage premium reflect changes in the trend growth of supply, when supply lags demand, the premium rises (and vice versa).

2. **Accelerating demand.** This hypothesis posits a discontinuous increase in the trend rate of demand growth, perhaps occurring in the 1970s or 1980s, that, coupled with the slowdown in supply, caused inequality to rise.
What initially gave this hypothesis added plausibility to many economists is the coincidence of the “computer revolution” with the rise in inequality in advanced countries. Skill-biased technological change (SBTC) increases the rate of growth of the relative demand for higher educated workers (e.g. Krueger, 1993; Berman, Bound and Griliches, 1994; Autor, Krueger and Katz, 1998).

Issues with this hypothesis arise post-1990s, when the growth in returns to skill began to decelerate as the “internet” revolution took hold. Refinements to the early SBTC hypothesis arguing for a differential impact of computerization on routine tasks vs. non-routine tasks were proposed (Autor, Levy and Murnane, 2003; Autor, Katz and Kearney, 2008a; Autor and Dorn, 2013)).

3. Changes in the organization of production. Technical change is often conceived of as improvements in capital. But changes in work organization (such as the factory system) can potentially affect skill demand even without a corresponding advance in physical capital (though some types of capital and organizational structures may be complementary).

4. Market structure and returns to talent. The 1981 paper by Sherwin Rosen on “The Economics of Superstars” is often cited as prescient harbinger of the rise in returns to skills experienced by many developed economies in the subsequent decades.

This paper offers a fascinating insight that has considerable currency with many economists as an explanation for why wages of CEOs, Hedge Fund managers, entertainers and athletes are incomparably higher than for other occupations. Variations (Terviö, 2008) on the original paper are interesting.

5. Rising globalization pressures (increased trade with less-developed countries and greater foreign outsourcing) reduce manufacturing production employment. (e.g. Wood 1994; Borjas and Ramey, 1995; Feenstra and Hanson, 1996, Krugman, 2000; Autor, Dorn, and Hanson, 2013a, b)
There was substantial growth in world trade flows across the world, especially in the United States. However, the most rapid growth is during the 1970s, not the 1980s.

Trade between countries with different factor endowments will change relative prices and will therefore raise or lower inequality among owners of those factors.

International outsourcing is subtly different from trade. Rather than opening factor markets to trade, you simply purchase certain factor-intensive inputs from overseas and turn them into final products in your own country.

6. Labour Force Composition. Although we often think of prices and quantities only interacting through supply and demand, the discussion about the growth of residual earnings inequality had opening a debate on whether the dispersion of wages can in part be explained by the dispersion of skill characteristics of the labor force.
o Slowdown in the rate of growth of the supply of skills because of a decline in the size of the cohort entering the labor market and an increased rate of unskilled immigration (e.g. Katz and Murphy, 1992; Murphy and Welch, 1992; Borjas et al. 1997; Card and Lemieux, 2001)

b. Labor market institutions and social norms

1. Changes in labor market institutions including the decline in unionization, erosion of the real and relative value of the minimum wage, changes in wage setting norms, deregulation. (e.g. DiNardo, Fortin and Lemieux, 1996; Freeman, 1996; Blau and Kahn, 1996; Lee, 1999; Autor, Manning and Smith, 2015)

o Declining union penetration and falling minimum wages are a major feature of the U.S. and U.K. labor markets during the period of inequality growth.

o In other countries, these institutional changes have been far more moderate.
2. Changes in social norms regarding pay inequality, that include redistributive policies, such progressive tax policies, corporate provision of health and retirement benefits, acceptability of very high wages, through the development of stock options and other performance pay schemes, (Piketty and Saez, 2003; Lemieux, MacLeod and Parent, 2009; Kaplan and Rauh, 2007).