

Copenhagen Economics Discussion note

- ▶ Trends in income inequality: What do we know looking at the US?

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Introduction

The financial crisis of 2008 has triggered a wide ranging discussion not the least in advanced economies on income equality. Is there a risk that economic growth mainly will benefit the "rich", i.e. high-net-worth individuals and persons in the upper end of the income scale and with high educational attainment? Are there some seculars, nearly natural laws of the market economy that leave persons with low skills and savings behind, generally leaving them with a smaller "slice" of the pie? Will skill-biased technological progress and globalisation create yet more inequality in the absence of substantial changes in economic policies?

In his book 'Capital', Thomas Piketty claims just that. This is the trend that we have witnessed in the US and to a certain extent the UK, and this pattern will spread to other countries in the coming decades¹. Organisations such as IMF, ILO and OECD has also raised the issue of increasing inequality as a concern for the society in many aspects.

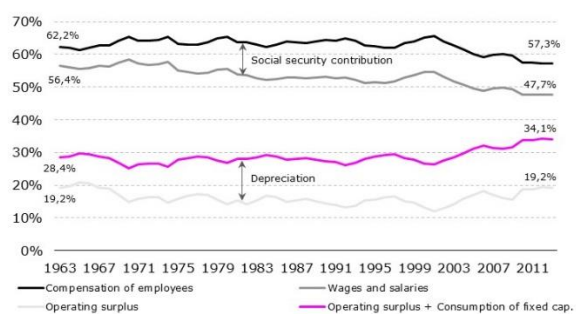
This note addresses this discussion, focusing on the US. It focuses both on some mundane measurement issues which turn out to be crucial and questions the conventional wisdom related to the role that new technology play for demand for different labour-skills and the effects of trade on wages.

¹ Piketty(2013), "Capital"

Split between capital and labour income

Is it true that the labour share of total value added in the US is falling? Indeed it has fallen from 58% in 1960 to 47% in 2012 in the private, non- financial sector, cf. figure 1. As the US economy in real terms has grown by nearly 400 per cent over the same period, US workers seem to have missed out on a major increase in real wages.

Figure 1 Distribution of the pie in the non-financial business sector in the United States, 1963-2013



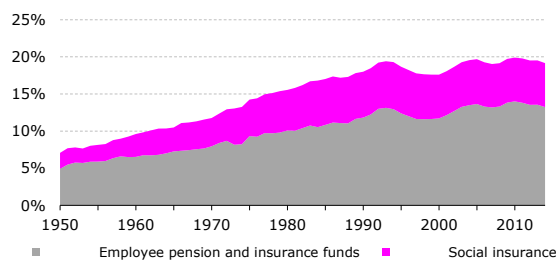
Source: Bureau of Economic Analysis (BEA)

However, the share going as net profits to the owners of capital in the non-financial sector has not increased. It has remained remarkably constant at around 20% per cent for nearly five decades!

So what became of the missing 10 percentage points? Well, a sizeable chunk has been eaten up by increasing social security contributions: they constituted 6 per cent of GDP in 1960 against 10 per cent in 2012. Seen over the last decade, health insurance premiums have arisen with over 70 per cent widely outstripping the growth rates of inflation and, hence, also leaving less room for wage increase, cf. figure 2. Here we just assume, following standard theoretical and empirical evaluation, that the incidence of higher non-wage costs results in lower wages over time. Also, depreciation as a share of GDP has grown².

² This is partly technical as the US have adopted a convention of counting IT-software not as a current

Figure 2 Employee non-wage labour costs, 1950-2010



Source: Bureau of Economic Analysis (BEA), Burtless & Milosheva (2013) Chart 1

Another issue is accounting for the sharp increase in financial liabilities linked to future pension benefits that companies and governments face in defined-benefit schemes. Ideally, employers and national account statistics should count employee benefits as a part of gross wage compensation in the year that the benefit is accrued at a net-present value. This also implies that discount rates are paramount: nominal pension promises made historically when inflation and nominal interests rates were much higher than today are extremely expensive in the current low interest rate environment.

Only recently have national account officials started to work on the implications. In a study on implication for US and France, US households' net yearly income and savings rate was revised upwards by 2,5 percentage points in recent years³. Essentially, this also implies that employers' net savings rate goes down as the share of GDP going to labour compensation goes up. This just proves that making long time robust time series analysis requires a lot of attention to the finer details.

First conclusion: US profits as a share of GDP has not increased, but a larger chunk of the pie has been paid to workers as health care and other social security benefits in lieu of wages⁴.

expenditure in national accounts but as investments leading to higher GDP levels but also higher depreciation levels.

³ Durant et al.(2012)

⁴ Sherk(2013) and Rupert(2015) confirms this finding while Pessoa and Reenen(2012) comes to the same

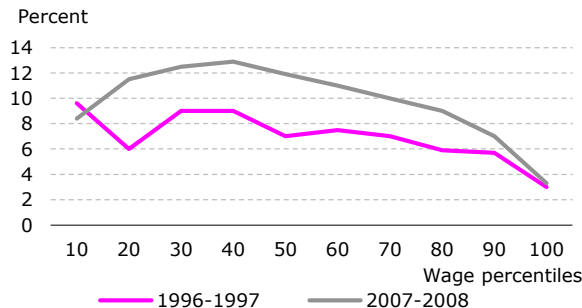
Social security and the wage distribution

The higher costs of paying for expanded social security benefits has not only reduce the total wage bill, it has also affected the evolution of the distribution of wages. In essence, it has significantly decreased the wage growth for mid-incomes workers, while the relative effect on high-income wages has been much smaller.

The reason is very straightforward. First, low-wage earners typically do not receive the same health benefits from employers as offered to mid- and high-income workers. So when employer costs associated with these programmes increase over time, this mainly affects mid- and high-income workers. For persons with top incomes, they also tend be less important: a CEO may have a better and more expensive health package than his/her staff, but the costs of health insurances increases less then proportional to the income. This factor is clearly evident in newer US data. While costs of health insurances back in the early 1960 was negligible for all wage groups, it now represents above 12% of the wage for wage groups in the middle, 9% in the bottom and just 5% for the 90 wage percentile.

conclusion reviewing both US and UK trends. In addition they find that in market bases sectors, overall compensation has tended to “outstrip productivity growth”, i.e. worker compensation consuming a larger share of the economic pie.

Figure 3 Employer costs of providing health insurance as a percentage of average annual wage



Note: By wage percentile.

Source: Burtless (2013), chart 7

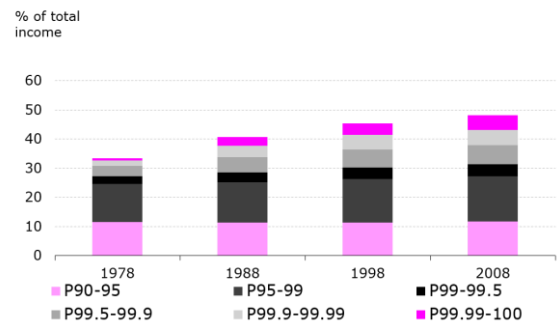
Key trends in the wage distribution

From the conclusion above, we should take note that changes in the wage distribution over the last decades are not only a function of the demand for different type of skills, globalisation and other trend drivers. We can safely conclude that growth in mid-income wages all else being equal has been held back by the increases in social security cost, relatively speaking.

Let us now in turn look at the distribution of money wages. We split our discussion into two: i) what has happened for top income and ii) what has happened for groups with lower than top incomes?

Our first conclusion is a well-known fact, namely that – seen from a long-term perspective – it is at the very top of the income distribution that changes have taken place. Indeed, for the income group between the 90 and 95 percentile the income share has remained steady at around 12% from 1978 to 2008, cf. figure 4. If we look at the group with incomes in 90 to 99 percentile the increase over the same period is also relatively modest, from 24 to 27% of all incomes. What is particularly striking is that persons in the top 0,001 per cent of incomes now account for a much higher share all income in the US compared to the late 1970s.

Figure 4 Income distribution for the most wealthy, 1978-2008

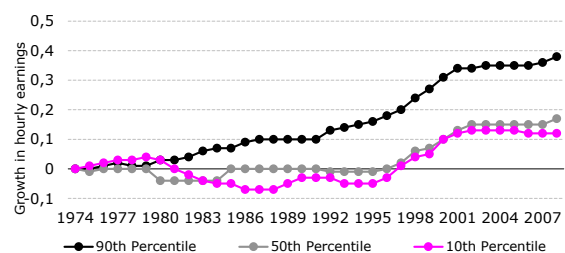


Source: Saez Global Income Data base:

<http://topincomes.parisschoolofeconomics.eu/>

When we look at earnings below the top level, the striking issue is that wages has remained relative stable since the mid-1990s. This is a well-documented fact, which is also clear from figure 5 below: while workers at the 10th wage percentile experienced a fall in measured real hourly earnings from 1974 to 1995, they have kept pace with workers in the 90th percentile since then and even caught up with workers in the 50th wage percentile.

Figure 5 Growth in hourly real earnings, 1974-2008



Note: Data includes both males and females

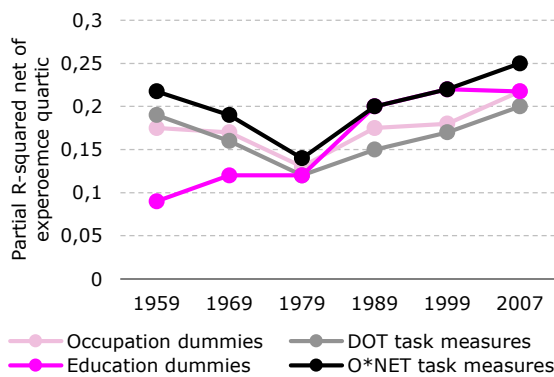
Source: Current Population Service (CPS), Acemoglu and Autor (2011) Figure 8 (a)

What we also see is that traditional models which have been used to explain the fall in wages for low(er) skilled workers are having trouble with explaining the evolution over the last 20 years. One example is models where the changes in the relative wages between groups with different levels of education are explained as a joint function of relative supply and skill-bias. For example, if persons with a college degree do

not see a fall in their wage premium compared to groups with lower educational attainment levels despite an increase in their share of total working population, then we have skill-bias: more relative supply do not led to lower relative wages.

The breakdown is for example apparent in a number of US studies⁵. In a study of relative wages for female workers since 1959, the importance of education for relative wages was just growing until 1999 as indicated by the growing value of education dummy. But since 1999 it has fallen. The opposite holds true for dummies explaining the actual occupation: it fell towards 1979, but has been increasing since⁶. Another study concluded that increased wage dispersion has mainly been driven by increased wage dispersion within the group of persons with high educational attainment as compared to differences between groups with different occupations⁷.

Figure 5 Females: Partial R-squared net of experience quartic, 1959-2007



Source: Acemoglu and Autor(2012)

The breakdown can be attributed to at least three supplementary factors:

⁵ Lemieux has published a number of papers, by and large all challenging conventional skill-bias as a driver of changes in relative wages in the most recent years. A number of these papers are included in the reference list.

⁶ The study from Acemoglu and Autor(2012) indeed does a more formal test showing how a classical skill-bias based relative wage equation is relatively poor in explaining relative wages in most recent years.

⁷ Lemieux(2011).

- Trade affect a wide groups of workers in the US, not just low skilled manufacturing.
- It is not what you have learned at school which determines your wage, but what you do afterwards.
- Increased supply of certain skill groups drives its own demand.

The last factor is the most fundamental critique of the "relative supply school". The argument is fundamentally that the development of new technology and the speed of its adoption is highly dependent on the skill set in the population. It sounds obvious: if you landed a few Apple software engineers in the stone age, the survival time would likely be limited: they would be clobbered by more muscular types quickly as their ability to develop and use modern technology would have little application value 5000 years ago.

This relatively intuitive story has in fact been tested in a range of models⁸. A cross-country study covering the years 1970-1990 finds that adoption of computer technology is strongly correlated to educational attainment⁹. A study of US cities in the period 1980-2000 finds that differences in technology use is linked to differences in skills¹⁰. So when cities with more rapid relative expansion in the use of skilled labour do not see a relative decline of wages of skilled labour, this is not the result of some exogenous, and very difficult to understand, differences in skill-bias across US cities. It is result of more skilled labour making economic structures more depending on skilled labour more viable: increased supply then feeds its own demand for more skilled labour.

⁸ Acemoglu has, occasionally with other economists, been one of the most vocal proponents of the school of direct technological change where the supply of different types of labour determines the optimal supply and demand structure of an economy, creating a clear causal link between the supply and demand of labour. The literature list contains a number of the most recent articles.

⁹ Caselli and Colemann II(2001)

¹⁰ Beadry et all(2006)

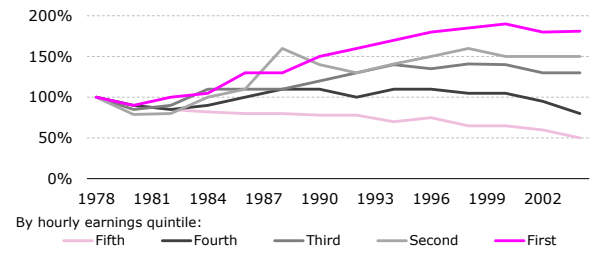
So what explains what we have seen in the US beyond theories and facts about the interplay between labour markets, trade and technology?

Without being exhaustive it is important to underline both tax policies and corporate governance.

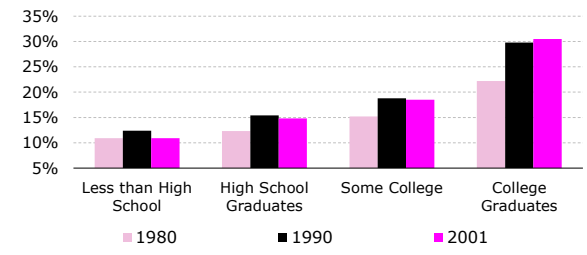
With the so-called Reagan tax reform from the mid-1980s, marginal tax rates were reduced radically, inducing a wide impact on both recorded and real yearly earnings. Recorded taxable salaries went up because it became less attractive to take out gross income in different forms of tax-shelters while it also became more attractive to create more real income by working smarter and harder. As the reduction in marginal tax rates were much higher at the top, this may have been one important driver of tendency for high-income earners and high-skilled workers in the US to increase their working hours over the last five decades, while persons with low skills and earnings have reduced their work efforts, cf. figure 6. Bearing in mind that the split between hours worked and hour earnings is difficult (particularly for high earners in managerial positions) this may also pollute the hour earnings data. While top income tax rates were lifted again under the Clinton administration, they still remain well below levels before 1985.

Figure 6

a) Fraction of men working long hours



b) Fraction of men working +49 hours



Note: Both samples consist of employed, non-self-employed males, age 25-64. Values in a) are standardized to year 1978.

Source: Current Population Service (CPS), Kuhn & Lozano (2006) Table 1 and Figure 3

For top income earners, tax policies have certainly played a large role, but here other factors probably play a much larger role. Not only US, but a number of other countries also initiated tax reforms from the 1980s and onwards, cutting top marginal income taxes. However, only UK has seen the same kind of large rise in top incomes. So we need to look at factors that are more US specific: in this context the US corporate system stands out by having a relative weak independence of the boards, often with the CEO and the Chairman of the Board being the same person. Corporate law and practice have tended to protect management vis-à-vis shareholders including on top pay arrangement. Finally, a very large and global financial sector, characterised by high salaries globally and with the US firms in particularly strong positions to provide top remunerations to star performers, etc.¹¹.

¹¹ Gordon(2008) provides a relatively strong endorsement of this factor.

Conclusions

There is no conclusive evidence that the share of total labour remuneration has gone down in the US over the last five decades. But the financing of the US welfare system through employer and employee contributions to health and pension plans have reduced the share of GDP going to “money” wages.

Relative wages has remained more stable over the last 20 years, following relative wage losses for low and middle income age groups the preceding two decades. Mid-level wages have though grown slower than at the bottom and the top at least partly as a consequence of increases in higher employer costs weighing more heavily for this wage group.

Further, the old rules of thumb linking relative supply of workers with different skills to relative wage developments for the same groups have broken down. It is as much what you do, as what you learned back at the school. This is reflected in increased wage dispersion within groups with the same educational attainment.

The old rules also fails to capture the two-way street between supply of skills and demand for skills. Both common sense and empirical evidence suggest that the skillset in the population is also driving the economic structure in the country. In countries/regions/cities with increasing/high skill attainment levels, the ability to develop and adapt advanced production methods also goes up, hence also boosting demand for (high)skilled labour.

The trick is then to develop skills that really have a high potential for developing and adapting new technologies. This may ultimately be the most important lesson in the literature on links between education and wages: it is not by raising educational attainment per se that economies grow or inequality falls: it is by increasing the skills de facto in demand recognizing feedbacks between supply and demand.

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