DRAFT* - Jobless growth – the new norm in the developed markets - *DRAFT

According to the United States Census Bureau, mean US household income was $54,244 in 1975 (in 2013 dollars). In 2013 (the most recent year with data) this reached $72,641. Broadly read, this means that the average US resident is 34 percent richer (in real terms) now (more or less) than compared with 38 years ago. However, has this really been the case? Another measure of the average financial well-being is median income. When looking at this metric (income increased from $46,453 to $51,939, i.e. by 12 percent) much of the apparent gains in the market wealth of households disappear. The difference between the two measures is that, mathematically speaking, the median is more robust to outliers.[1] Digging into the technical details of the numbers, even the gain of 12 percent might be an overstatement of the rise in living standards of the average household: When the urban CPI, rather than the "researcher series" CPI, is used to deflate prices,[2] the gain in median household income is just 1 percent.

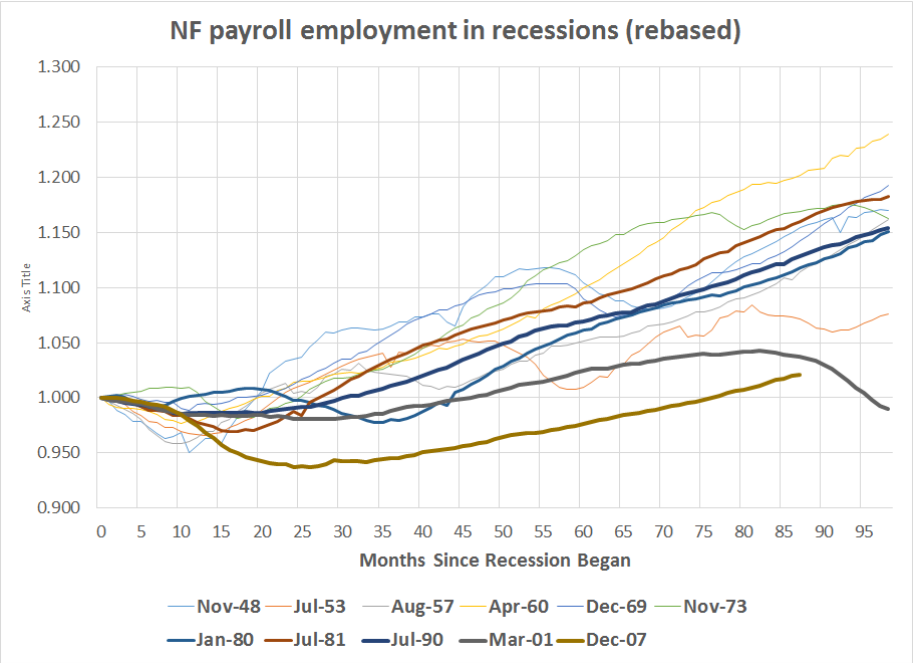
A rise in the mean and a stagnation in the median suggests that incomes in the top half have grown relative to the bottom half. Indeed, this has certainly been the case as income inequality has, by most standard measures, grown significantly over the past 40 years. By several widely reported measures – such as the Gini coefficient and the share of income going to the top 1 percent – income inequality in present-day United States is as stark as it was in the Robber Baron days before the country introduced the modern welfare state in the wake of the Great Depression (Piketty, 2013).[3]

Economists and policy makers have debated the causes of the rising inequality without resolution. But one argument that has gained traction as a likely factor (amongst others) is that technological changes have favoured the capitalist class – giving rise to the so-called "one percenters".[4] Indeed, the returns to education (and the know-how of how to exploit modern technology) have increased dramatically (i.e. earnings of those with tertiary vs secondary schooling has grown a lot) concomitant with the global deregulation of markets (especially in the financial services industry) that began in the 1980s. More recently, the information technology revolution that began in the 1990s, has created a schism between knowledge and low-skilled workers.

The Great Divide – the phenomenon whereby the outcomes (financial and social) of the capitalist and labourer classes have significantly diverged – has seen the decline of labour's share in the economy (Karabarbounis & Neiman, 2013). This has also manifested itself in the declining rates of labour participation in some developed (i.e. OECD) economies, as labour-intensive jobs have shifted to lower-cost centres (e.g. China) or have been replaced or made redundant by automation and/or information-technology services (e.g. phone operators). Indeed, new technologies and processes have created core-periphery models of production where some countries have become the knowledge core base, while others have grown as low-skilled peripheries. This phenomenon works at local, regional and international levels, with the changing paradigm creating knowledge cities,

[1] The mean is the sum of a set of values divided by the number of observations; the median is the value at the midpoint of the distribution of a set of values.
[2] The Census Bureau calibrates values to 2013 dollars using the "researchers series CPI".
[3] The US Gini coefficient (gross) has grown from 0.38 in 1975 to 0.48 in 2013 (Census Bureau); while the share of income earned by the top 1 percent stood at around 20 percent in 2013 (Piketty, 2013), its highest level since the 1930s.
[4] Although the anti-inequality movement has taken up the slogan of the "one percenters" as the embodiment of inequality, the gains to the top one percent are highly non-linear, with the top 0.1 and 0.01 percent amassing the lion's share of the gains.

countries and regions; as a corollary, it too has given rise to low-skilled cities, countries and regions for the globalised economy.



In economies, or parts thereof, that have shed low-skilled jobs with each successive recession since the 1990s, the ability to regenerate the lost jobs during the economic recovery has grown successively more febrile. Indeed, the phenomenon of the "jobless recovery" – whereby economic growth in the wake of a recession has regenerated jobs at an anemic rate – has become the new norm as many of the jobs lost in the preceding downturn (due to automation, technology or offshoring, etc.) have permanently retreated due to structural changes in the economy.

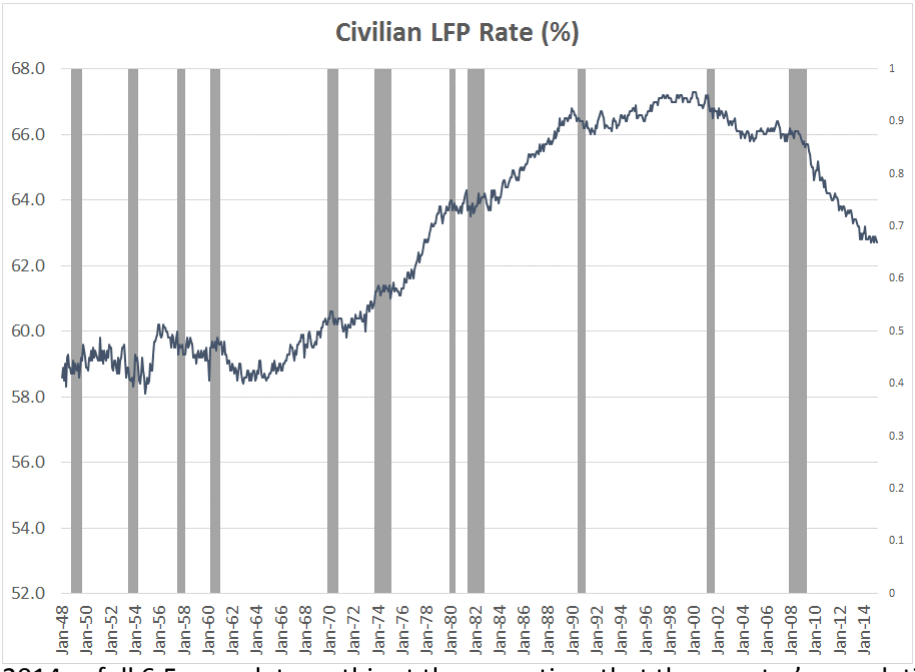
The United States has undergone five[5] recessions since the 1980s, the most recent was the Great Recession which the NBER Dating Committee deemed to have commenced in December 2007 and with the ensuing recovery beginning in July 2009 (18 months in duration, and the longest post-Depression recession). In that recession, unemployment ballooned from 4.7 percent pre-recession to 10.0 percent at its nadir.[6] Although the jobless rate has now fallen below 6 percent – and prompting officials at the US Federal Reserve to contemplate raising interest rates to keep the economy from overheating[7] – the low rate of joblessness[8] is, in fact, an artifact of a smaller labour force. That is, the number of people in the labour market has contracted with many being discouraged and shunning the formal labour market. (Some of the "missing" labour force is due, in part, to those taking early or earlier-than-planned retirement on account of the economy. The share of prime working-age (25-54) adults has also declined as the baby boomer cohort begins to retire.)

[5] Some economists argue that the double-dip recession of the early 1980s was, in fact, one downturn, rather than two distinct contractions.

[6] Most countries define a recession as two consecutive quarters of economic contraction. However, in the United States a recession is defined as "a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real GDP, real income, employment, industrial production, and wholesale-retail sales."

[7] The estimated NAIRU (non-accelerating inflation rate of unemployment) is currently 5.39 percent.

[8] As measured by the U3 measure of unemployment – a.k.a. the "headline" rate of unemployment.



One striking fact is that total (non-farm payroll) employment in the United States stood at 138.4 million at its peak just as the economy slipped into a recession (January 2008) and shed 8.716 million jobs (through February 2010) at its depth. Tellingly, the United States economy only rebounded to its pre-recession level of employment in May 2014, a full 6.5 years later -- this at the same time that the country's population grew by over 15.5 million.

The Bureau of Labour Statistics (BLS) in the United States counted 141.8 million jobs as of March 2015. But If the US economy had as many jobs as per its pre-recession labour force participation rate (66.0% of civilian population) the total number of jobs in the US economy would now be on the order of 148.4 million. That is, even though the US economy is now supposedly enjoying a boom to warrant talks of interest rate hikes by the Federal Reserve, the economy has over 7 million fewer jobs than it should relative to its pre-recession trajectory.

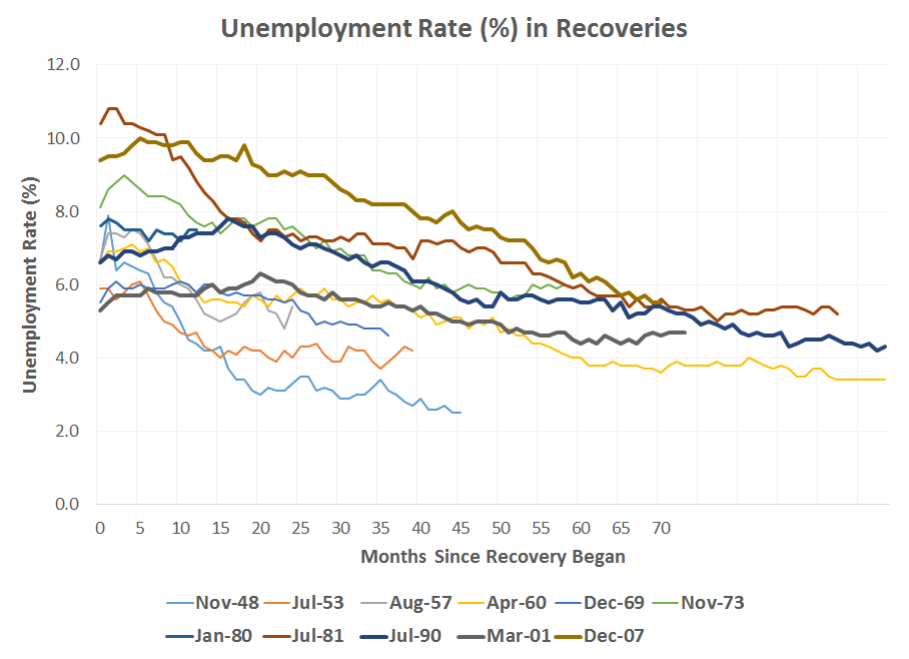
Where have all the jobs gone? Why have they not returned? Is this phenomenon purely an American problem? As the opening of this section alluded, structural changes in the economy have made some forms of labour redundant and/or have geographically displaced them. Machines have crowded out certain forms of labour for which the displaced labour has yet to be absorbed into other parts of the formal labour market.

The economy has undergone structural changes after each recession since the Great Divide. Prior to the Great Divide, most modern American recessions were primarily induced by the Federal Reserve to quell inflation. What has been different since the 1980s is the diminution of labour spurned by growing automation and market deregulation that has favoured the capitalist class. The lethargic pace of job creation after precipitous job losses has clawed back the gains of a generation (many fear that millennials will be the first generation in recent history that will have a lower standard of living than their parents) and risks pushing the country onto a path of wasted or under-utilised human capital.

But jobless recoveries and growth without (or with little) employment gains are not the sole preserve of the United States. The same dynamics that have decimated the American labour market are also playing out in some other developed (i.e. OECD) economies. The symptoms described in the US – growing inequality in the wake of deregulation and increasing returns to capital (and reduced power of labour) – are also issues that concern policy makers elsewhere.

In Europe, the job market has, for some time now, persistently underperformed its cross-Atlantic peer. Beginning in the 1980s, the Continent saw a surge in unemployment which seems permanently

elevated at a level higher than in the United States. Labour economist attribute, *inter alia*, the inflexibility of the European labour market for the higher rates of unemployment. But just as in the United States, there is a catch. Europe does have jobs. Indeed, by some estimates there is a currently a shortage of 200 thousand engineers and that number could grow to 500 thousand by 2025.[9] The fact of the matter is not that there are no jobs, but that students are still graduating from universities with qualifications that do not match the market's needs. And herein lies the conundrum. Repetitive, low-skilled tasks are being displaced by robots are offshored to cheaper cost centres, yet young people are not acquiring (or not capable of) the skills for the knowledge economy.



But the theatre where the effects of machines muscling out mankind is in Asia, most notably Japan. The *Land of the Rising Sun* is, not surprisingly, the country with the most number of robots per capita (295 industrial robots per 10,000 manufacturing workers).[10] Here as well, many low-skilled job have been offshored to developing Asia and if any country is likely to have human labour replaced by machines, it is here. (Vending machines and robots have obviated the necessity of human interaction in many simple transactions.) And perhaps the *Lost Decade* (or more properly now "Lost Decades") that Japan has seen since its economy crashed in the early 1990s should be re-examined from the perspective as a prolonged jobless recovery.

This has resulted in not just jobless recoveries but more generally jobless growth. That is, economies have been able to, notwithstanding recessionary periods, provide economic growth with a smaller labour force relative to the population than in in the past. Productivity gains have thus allowed certain countries to produce more market goods with less labour. How does this bode for societies? Will it create a class of people trapped in low-skilled and low-paying jobs (which perpetuates itself in an increasingly segregated society)? How much of this apocalyptic scenario is a result of machines replacing humans? Just recently Apple co-founder Steve Wozniak opined that robots (via artificial intelligence (AI)) could threaten the dominance of humans:

> "Computers are going to take over from humans, no question…. Eventually [robots will] think faster than us and they'll get rid of the slow humans to run companies more efficiently."[11]

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[9] "Alarm over skills shortage in Europe" Financial Times 26 May 2013

[10] Sources: International Federation of Robotics; International Labour Organisation

[11] As reported by the *Australian Financial Review* on 23 March 2015.

Society has yet to fully embrace AI or even automation (people still queue to pay for a cinema ticket when automated ticketing machines are available), yet already the destructive reality of machines edging out humans is apparent. Those in the labour market whose tasks are easily replicated will lose their bargaining power in the market place. In fact, as Big Data and AI crest, they will make repetitive and simple labour obsolete (e.g. driverless cars will soon make chauffeurs and taxi drivers a relic of the past).

Yet humans at the same time have remained remarkably resilient to change, and computers and automation will never fully replace the human touch. Indeed, the Swiss watch industry is an interesting case where humans have rejected superior technology in favour of an anachronistic one. But notwithstanding such yearnings for nostalgia – many still enjoy the feel of reading the news on newsprint – the fate of humans without the appropriate skills for the new economy may create a world with many have-nots.

Yet, the past generation has seen unprecedented growth in formerly immature economies (e.g. China), and there have been spectacular gains to certain segments of the population (i.e. the rise of the 1 percent). Some countries have also been, generally speaking, net beneficiaries of the Great Divide. That is, some countries have actually seen economic growth come hand in glove with labour growth. Indeed, whether economies have been net positive or net negative from the changing marketplace depends on their previous/initial labour market conditions/endowments and their pecking order in the new globalised economy – namely whether countries are part of the core (knowledge centres) or the periphery (unskilled-labour centres). The United States is definitely, as a whole, part of the global core, but segments of its population are part of the "periphery class". And herein have been many of the jobs permanently lost.

Economies that are knowledge centres have seen growth propelled by robust labour markets. Whereas low-skilled economic units have been decimated by the new paradigm. In the EU, this has manifested itself in the strong performance of core (northern) countries (e.g. Germany), in contrast to the underperformance of periphery (southern) countries (e.g. Greece). For sure, there are many factors for the divergence in the fates of the north and the south in the EU (and a uniform monetary policy being a big part of that), but surely the growing gap in labour skills and the geographic separation of skilled jobs in the north and less-skilled employment in the south is part and parcel of the explanation.

The Netherlands (a northern EU country), for example, has experienced growth with increasing labour participation. There, robots' impact on the labour force has been more benign, as its workers are amongst the world's most creative and knowledge intensive. Indeed, as a core country (within the EU and globally), it is seeing a growth in its labour market as jobs cluster there to support the periphery economies. Within the United States, core states like Massachusetts have prospered as the country's manufacturing base has shifted to an economy rooted in services; conversely, periphery states like Michigan have withered as manufacturing jobs have been shed.

In the coming years, as the globe rebalances jobs between cores and peripheries (locally, regionally and internationally), the relative mix of labour and the country's relative position in the global paradigm will determine its path for growth. The US is seeing "jobless growth" as it sheds "periphery" jobs to periphery countries. Even as its core status has grown, the core economy employs much fewer people than the periphery or traditional parts of the economy. (For example, Apple, the world's most valuable company (market cap $735 BN), employs 93,000, while Wal-Mart (market cap $253 BN) employs 2.2 million.)

Why has the Netherlands been so successful – "growth for all" – while the United States (on the aggregate) seems to have created a system of growth only for the one percent? *A priori*, the success of the Netherlands appears to be driven by its highly educated workforce and the structure of its economy -- where the traditional sectors are not competing with robots or with the global low-skilled labour glut (induced by the addition of China to the global economy).

The United States, on the other hand, in spite of a nominally educated labour force (i.e. it has one of the highest levels of attainment of tertiary education, but the quality of the educational capital and its appropriateness relative to the population are questionable) has seen growth in favour of the one percent.

Understanding what has made "growth for all" possible for a place like the Netherlands (or a state like Massachusetts), but "jobless growth" a reality for less fortunate jurisdictions is important to help economies make the transition more smooth for the labour market.