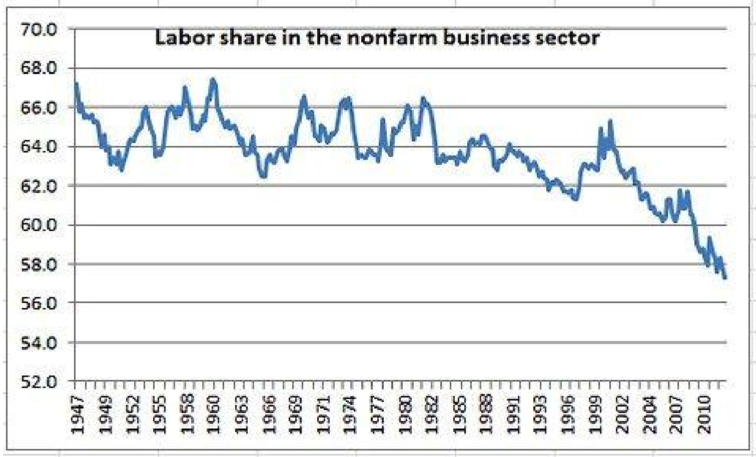
Apples, robots and robber barons

Michael Roberts, 12/12/12

A discussion has broken out among mainstream economists about the long-term future of US capitalism – namely is there any future for manufacturing in the US? Or will US capitalism just fade away as a dynamic productive capitalist economy into a 'rentier' FIRE economy (based on Finance, Insurance and Real Estate). So it survives by driving down the share of labour in the creation of value, both domestically and through investments overseas.

In some ways, it's refreshing that mainstream economists are finally considering some of the underlying contradictions of capitalist accumulation instead of just assuming that the capitalist mode of production is fine and the only problems are in the financial sector (banks and credit) or with monetary and fiscal policy. Keynesian guru, Paul Krugman, has started to 'get it'. In a recent post on his blog (URL), he cited the latest data from the US Bureau of Economic Analysis on labour's share in the gross income of the US capitalist sector.



Wow! exclaimed Krugman, struck by this figure which shows the share of income going to labour at a post-war low. He comments: "*So the story has totally shifted; if you want to understand what's happening to income distribution in the 21st century economy, you need to stop talking so much about skills, and start talking much more about profits and who owns the capital. Mea culpa: I myself didn't grasp this until recently. But it's really crucial."* 11 December.

So we need to start talking about profits and who owns the capital. Yikes! This smacks of Marxist economics. And indeed, in another post, Krugman recognises just that. *"I think our eyes have been averted from the capital/labor dimension of inequality, for several reasons. It didn't seem crucial back in the 1990s, and not enough people (me included!) have looked up to notice that things have changed. It has echoes of old-fashioned Marxism — which shouldn't be a reason to ignore facts, but too often is. And it has really uncomfortable implications."* Indeed, it does.

Krugman considers whether we are reverting to Marxist talk. *"Are we really back to talking about capital versus labor? Isn't that an old-fashioned, almost Marxist sort of discussion, out of date in our modern information economy? Well, that's what many people thought; for the past generation discussions of inequality have focused overwhelmingly not on capital versus labor but on distributional issues between workers, either on the gap between more- and less-educated workers or on the soaring incomes of a handful of superstars in finance and other fields. But that may be yesterday's story. ….the wage gap between workers with a college education and those without, which grew a lot in the 1980s and early 1990s, hasn't changed much since then. Indeed, recent college graduates had stagnant incomes even before the financial crisis struck. Increasingly, profits have been rising at the expense of workers in general, including workers with the skills that were supposed to lead to success in today's economy."*

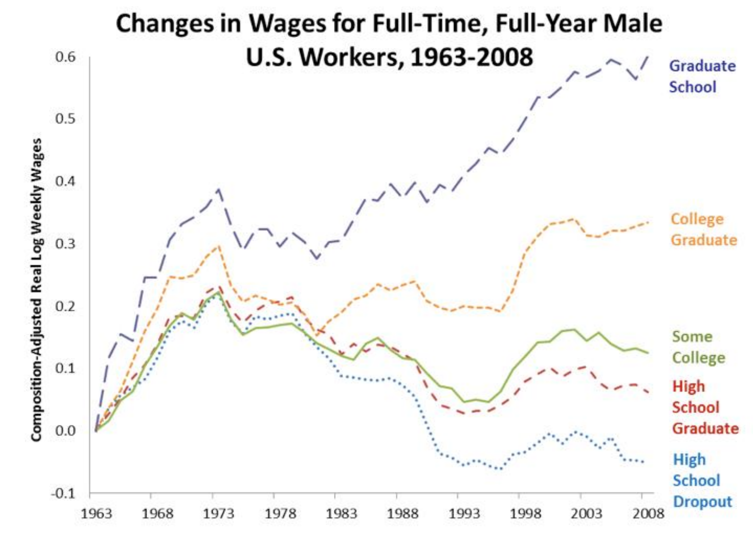


Figure 3.5: Wages have increased for those with the most education, while falling for those with the least. Source: [Acemoglu and Autor](#) analysis of the Current Population Survey for 1963-2008.

It used to be argued in mainstream economics that inequalities were the result of different skills in the workforce and the share going to labour was dependent on the race between workers improving their skills and education and introduction of machines to replace past skills In most of the 19th century, about 25% of all agriculture labor threshed grain. That job was automated in the 1860s. The 20th century was marked by an accelerating mechanization not only of agriculture but also of factory work. Echoing the first Nobel Prize winner in economics, [Jan Tinbergen](#), Harvard economists Claudia Goldin and Larry Katz describe this as a *"race between education and technology."*

But Krugman now recognises that inequalities of income and wealth across US society and the declining share of income going to labour in the capitalist sector are not due to the level of education and skill in the US workforce, but to deeper factors.   He cites two possible explanations: *"One is that technology has taken a turn that places labor at a disadvantage; the other is that we're looking at the effects of a sharp increase in monopoly power. Think of these two stories as emphasizing robots on one side, robber barons on the other."*

Let's consider whether either of these explains what Krugman considers is the dramatic change in the landscape of income and wealth distribution in US society. The first seems to be an argument that modern technology is 'capital-biased', namely it aims to replace labour by machines over time. This has become a mainstream discussion about the introduction of robots. But this too is a Marxist economic insight. One of the basic Marxist theoretical arguments is that the competitive pressure to make profits and maintain profitability forces capitalist producers to find new technologies that save on the overall costs of production.

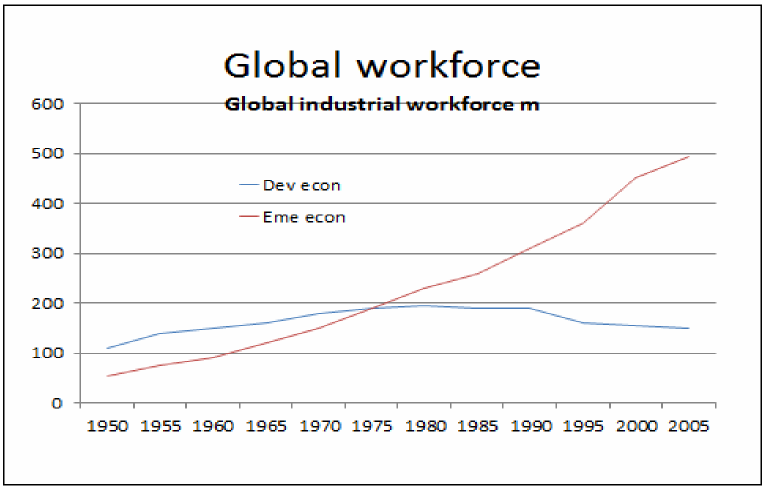
It may be possible for newly expanding capitalist economies to use huge supplies of cheap labour to create surplus value rather than using new technology (or ideally a combination of both, as in China and East Asia). But in more mature (and ageing) economies the supply of cheap labour has run out and capitalists "in the West" can only compete in world markets by either exporting their capital into the emerging economies (imperialism or globalisation) or finding new technologies that raise labour productivity exponentially.

'Globalisation' was the story of the period from the late 1970s to early 2000s as the 'solution' to falling profitability in the major capitalist economies. But a new downturn in profitability in the late 1990s and the recessions of 2001 and the Great Recession of 2008-9 has put that solution in jeopardy. Indeed, now it is being argued that it is that it is no longer cheaper to build factories and expand business in emerging economies because wages there are rising fast.   According to the International Labour Organisation in its World of Work report, inflation-adjusted average wages in China more than tripled over the decade from 2000 to 2010. And in Asia as a whole, they have doubled. In Eastern Europe and Central Asia, average wages almost tripled. Yet, in the developed world, wages are just barely higher than they were in 2000.

This has led some to argue that after its 60-year decline, manufacturing may start to return to the advanced capitalist economies. Then profitability will rise again in the major capitalist economies through a new manufacturing revolution. Much is being made of the likes of Apple opening up factories in the US rather than Asia. Apple says it will invest $100 million in producing some of its Mac computers in the United States, beyond the assembly work it already does in the United States. Over the last few years, companies across various industries, including electronics, automotive and medical devices, have announced that they are "reshoring" jobs after decades of shipping them abroad. In October, Lenovo, the computer giant based in China, said it would begin making its Think-branded computers, including notebooks, desktops and some tablets in the US.

But this is really so much wishful thinking in the US media. General Electric has hired American workers to build water heaters, refrigerators, dishwashers and high-efficiency top-load washers, but continues to add more jobs overseas as well. Apple's iPad and iPhone products, which amount to nearly 70% of its sales, will continue to be made in low-cost centres of manufacturing like China, mostly on contract with outside companies like Foxconn. American manufacturing has been growing in the last two years, but the sector still has two million fewer jobs than it had when the recession began in December 2007. Worldwide manufacturing is growing much faster, even for many of the American-owned companies that are expanding at home. Wage levels may have risen in emerging economies and stagnated in the advanced economies, but the gap is still huge. As of 2010 (the latest year available), hourly compensation costs for manufacturing in the US were about four times those in Taiwan and 20 times those in the Philippines.

And while some manufacturing may return to the US, it will not bring jobs with it – on the contrary. A new study by McKinsey, the management consultants (URL), finds that manufacturing now contributes 20% of global economic output and 37% of global productivity growth since 1995. But because investment in manufacturing is 'capital-biased', it does not create jobs and is designed to avoid raising wages. Indeed, according to McKinsey, manufacturing employment fell 24% in the advanced economies between 1995 and 2005. The wider global story is revealed by the rise in the industrial workforce in emerging economies and the fall in advanced economies in a graph originally constructed by John Smith in his excellent *Imperialism and the globalisation of production* paper. [Imperialism & the Globalisation of Production]



In the advanced economies, higher profits can only come from raising the productivity of labour or by a reduction in raw material (energy) costs, rather than lowering or holding wages down through the use of more cheap labour. The shale oil and gas revolution in North America and parts of Europe may help reduce energy costs over the next decade (maybe). But getting overall costs down depends very much on the new technologies.

That brings me to the issue of robots, something that is being raised as the imminent way out for advanced capitalist economies to compete in world manufacturing markets. If manufacturers increasingly use robots, they can do away with expensive labour and all will be well for capitalism.

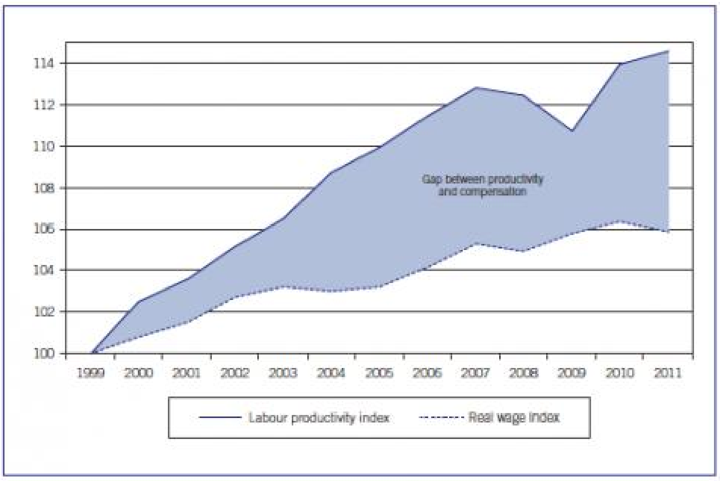
In some high-profile industries, technology is displacing workers of all, or almost all, kinds. For example, one of the reasons some high-technology manufacturing has lately been moving back to the US is that these days the most valuable piece of a computer, the motherboard, is basically made by robots, so cheap Asian labour is no longer a reason to produce them abroad. Robots mean that labour costs don't matter so much and capitalists can then locate in advanced countries with large markets and better infrastructure. Even the low wages earned by factory workers in China have not insulated them from being undercut by new machinery. Terry Gou, the founder of Foxconn, announced this year a plan to purchase 1 million robots over the next three years to replace much of his workforce. The robots will take over routine jobs like spraying paint, welding, and basic assembly.

Now mainstream economics has noticed that this is not good news for labour and have suggested that 'capital bias' in technology could explain the falling labour share and growing inequalities. As Krugman put it: *"The effect of technological progress on wages depends on the bias of the progress; if it's capital-biased, workers won't share fully in productivity gains, and if it's strongly enough capital-biased, they can actually be made worse off. So it's wrong to assume, as many people on the right seem to, that gains from technology always trickle down to workers; not necessarily. It's also wrong to assume, as some (but not all) on the left sometimes seem to that rapid productivity growth is necessarily jobs- or wage-destroying. It all depends."*

Yes, it does all depend on the class struggle between labour and capital over the appropriation of the value created by the productivity of labour. And clearly labour has been losing that battle, particularly in recent decades, under the pressure of anti-trade union laws, ending of employment protection and tenure, the reduction of benefits, a growing reserve army of unemployed and underemployed and through the globalisation of manufacturing.

According to the ILO report, in 16 developed economies, labour took a 75% share of national income in the mid-1970s, but this dropped to 65% in the years just before the economic crisis. It rose in 2008 and 2009 – but only because national income itself shrank in those years – before resuming its downward course. Even in China, where wages have tripled over the past decade, workers' share of the national income has gone down.

Trends in growth in average wages and labour productivity in developed economies (index: 1999 = 100)



Note: Since the indices refer to a weighted average, developments in the three largest developed economies (United States, Japan and Germany) have a particular impact on this outcome. Labour productivity is measured as output per worker.
Sources: ILO Global Wage Database; ILO Trends Econometric Model, March 2012.

But this is not new in economic theory. Marx explained in detail in Capital that this is one of the key features in capitalist accumulation – the capital-bias of technology – something continually ignored by mainstream economics,until now it seems. Marx put it differently to the mainstream. Investment under capitalism takes place for profit only, not to raise output or productivity as such. If profit cannot be sufficiently raised through more labour hours (ie.e more workers and longer hours) or by intensifying efforts (speed and efficiency – time and motion), then the productivity of labour can only be increased by better technology. So, in Marxist terms, the organic composition of capital (the amount of machinery and plant relative to the number of workers) will rise secularly. Workers can fight to keep as much of the new value that they have created as part of their 'compensation' but capitalism will only invest for growth if that share does not rise so much that it causes profitability to decline. So capitalist accumulation implies a falling share to labour over time or what Marx would call a rising rate of exploitation (or surplus value).

In a previous post, *Crisis or breakdown*, (https://thenextrecession.wordpress.com/2012/09/12/crisis-or-breakdown/), I raised the big issue of whether US capitalism is heading downwards because it can no longer develop sufficiently productive new technology. Indeed, new investment and thus US economic growth is set to remain at its lowest ever. This was the thesis of Robert Kurz, Robert Gordon and David Graeber, among others.

So do the ideas that US manufacturing could revive under the spread of robotic technologies refute that prognosis? Marco Annunziata, chief economist at General Electric company, reckons it does (http://www.voxeu.org/article/next-productivity-revolution-industrial-internet). He claims that a network of 'intelligent machines', software analytics and sensors that he calls the "industrial internet" can spread through industry, deliver huge gains in productivity and so refute Gordon *et al*. Harvard's leading economist Ken Rogoff also took Gordon's thesis to task: *"There are certainly those who believe that the wellsprings of science are running dry, and that, when one looks closely, the latest gadgets and ideas driving global commerce are essentially derivative. But the vast majority of my scientist colleagues at top universities seem awfully excited about their projects in nanotechnology, neuroscience, and energy, among other cutting-edge fields. They think they are changing the world at a pace as rapid as we have ever seen." (http://www.project-syndicate.org/commentary/technological-stagnation-and-advanced-countries–slow-growth-by-kenneth-rogoff).*

If Annuziata and Rogoff are right and Gordon is wrong, does this mean that all is well with capitalism? Will capitalism be saved by robots, while workers will be able to live the happy life of leisure that John Maynard Keynes in the late 1930s reckoned would be achieved by capitalism round about now? (I'll return to Keynes prognostications for his non-existent grandchildren in a future post.) Well, clearly, past technology did not do the trick. Those predictions of the 1970s that workers would have to worry more about what to do with their leisure time rather than if they could get enough work to make ends meet have not materialised. But would robots now do the trick?

Well, Marxist economics would say no: for two key reasons. First, Marxist economic theory starts from the undeniable fact that only when human beings do any work or perform labour is any thing or service produced, apart from that provided by natural resources. And then, crucially, only labour can create value under capitalism. And value is specific to capitalism. Sure, living labour can create things and do services. But value is the substance of the capitalist mode of producing things. Capital (the owners) controls the means of production created by labour and will only put them to use in order to appropriate value created by labour. Capital does not create value itself.

Now if the whole world of technology, consumer products and services could reproduce itself without living labour going to work and could do so through robots, then things and services would be produced, BUT the creation of value (in particular, profit or surplus value) would not. So accumulation under capitalism would cease well before that robots took over fully, because profitability would disappear under the weight of 'capital-bias'. The most important law of motion under capitalism, as Marx called it, would be in operation, namely the tendency for the rate of profit to fall. As 'capital-biased' technology increases, the organic and value composition of capital would also rise and thus labour would eventually create insufficient value to sustain profitability (i.e. surplus value relative to all costs of capital). We would never get to a robotic society; we would never get to a workless leisure society – not under capitalism. Crises and social explosions would intervene well before that.

This first reason for why robotic technology won't save the day is completely ignored or dismissed by mainstream economics because it has no concept of a law of value under capitalism – and for very good ideological reasons. It thinks only in terms of physical things (with money thrown on top) not in value that needs to appropriated by the owners of capital. That's why Krugman's hint that we should talk about *"profits and who owns capital"* is unusual.

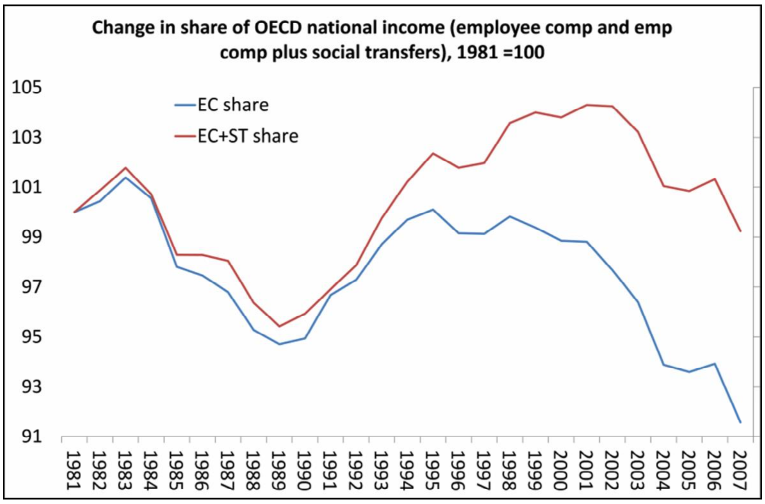
It's the second reason why workers won't get to the leisure society with robots doing the work that has been picked up by mainstream economics. It is the falling share of labour in total value. Apart from capital-bias technology, Krugman considers that this may be caused by 'monopoly power', or the rule of 'robber barons'. Krugman puts it this way. Maybe labour's share of income is falling because *"we don't actually have perfect competition"* under capitalism, *"increasing business concentration could be an important factor in stagnating demand for labor, as corporations use their growing monopoly power to raise prices without passing the gains on to their employees."*

What Krugman seems to be suggesting is that it is an imperfection in the market economy that creates this inequality and if we root out this imperfection (monopoly) all will correct itself. So Krugman presents the issue in the terms of neoclassical economics. Marxists would say it is not monopoly rule, but the rule of capital. Sure, capital accumulates through increased centralisation and concentration of the means of production in the hands of a few. This ensures that the value created by labour is appropriated by capital and that the share going to the 99% is minimised. This is not monopoly as an imperfection of perfect competition, as Krugman explains it; it is the monopoly of ownership of the means of production by a few. This is the straight forward functioning of capitalism, warts and all.

As the BEA graph above shows, the falling share going to labour in national income began at just the point when US corporate profitability was at an all-time low in the deep recession of the early 1980s. Capitalism had to restore profitability. It did so partly by raising the rate of surplus value through sacking workers, stopping wage increases and phasing out benefits and pensions. Indeed, it is significant that the collapse in labour's share intensified after 1997 when US profitability again peaked and began to slide again. The counteracting factor under Marx's law of profitability was again applied with a vengeance. According to Emmanuel Saez, the top 1% of U.S. households got 65% of all the growth in the economy since 2002. And the top 0.01% of US households i.e. 14,588 families with income above $11,477,000, saw their share of national income double from 3% to 6% between 1995 and 2007.

It' s not monopoly power or rising rents going to the 'robber barons' of the monopolies that forced down labour's share, it's just capitalism. Labour's share in the capitalist sector in the US and other major capitalist economies is down because of increased technology and 'capital bias', from globalisation and cheap labour abroad; from the destruction of trade unions; from the creation of a larger reserve army of labour (unemployed and underemployed); and from ending of work benefits and secured tenure contracts etc. Companies that are not monopolies in their markets probably did more of this than monopolies. Indeed, this is exactly what Marx meant by the 'immiseration of the working class'.

Moreover, inequality or a falling share of labour is not the cause of crises through a lack of demand, as post-Keynesians and many Marxists argue. Sure, wages as a share of the income is at a post-war low, but total workers incomes are not when social transfers are included. This is a key point (made by Andrew Kliman in his latest book, among others). Household consumption as a share of national income is near its record high. Sure, this is partly due to borrowing to buy homes and big-ticket items on credit. But is also partly due to welfare benefits and tax credits filling in for those whose wages are too low (as we were told by Mitt Romney (who?), 47% of 'tax units' don't pay income tax in the US). On my own calculations, it's the same story in the other major capitalist economies – workers incomes have not fallen as a share of national income since 1981 if social transfers (net benefits and tax credits) are included.



That means that the idea of boosting wages would save capitalism by restoring demand is bogus. It would just add to the burden on profitability. Consumer demand is not the problem; its profitability and investment.

Why is mainstream economics suddenly waking up to these issues? Maybe it is because some mainstream economists have had a revelation about how capitalism really works. Maybe they have a sense of injustice about labour's share. It seems Paul Krugman fits those two explanations. But for others, it is more likely that the mainstream is aware of the social implications of growing inequality and the threat to capitalism itself if things go on the way they have been.

If the advanced capitalist economies remain in a long depression and income inequalities remain, the likelihood of social explosions is going to increase. Faith in capitalism as the only system that works will fade like belief in Christ – but much more quickly. That is the fear for the mainstream. It is the same fear that drove Keynes in the 1930s to look for new and more radical ways to 'save capitalism' from its own flaws. The strategists of capital reluctantly accepted some of his prescriptions for a while as Keynesian prescriptions appeared to offer a way out of slumps within capitalism. But when Marx's law of profitability exerted itself during the 1970s, Keynesianism was dropped for neoliberal (neoclassical) policies that aimed to drive up the share of profit and squeeze social benefits. Now the neoliberal policy has failed and the mainstream (mainly the Keynesians) are issuing an emergency warning.

Yikes – this is the longest post yet! STOP.