# Capitalism and human welfare in the hi-tech/hi-touch world

Developed economies in the modern era are driven by information and communications technology (ICT). This has shaped what Lord Adair Turner calls our hi-tech hi-touch world and has, he believes, profound consequences for capitalism and for human welfare.

In the fifth lecture of the Capitalism on the Edge series, the academic, businessman and former Chairman of the Financial Services Authority presents trends, arguments and observations which have persuaded him that ICT has undermined the orthodox justification that free market capitalism necessarily increases welfare in developed countries.

## Close to magic

Just imagine, says Lord Turner, that thirty years ago someone had invented a magic word enabling friends to talk with each other from anywhere in the world. Then, consider the economic consequences of this discovery: provided the discoverer had filed an intellectual property right, they would now be supremely rich; their intellectual property lawyers would have earned considerable sums, and their estate agents would have raked in fees for several high value properties.

The lucky discoverer would no doubt also have spent large amounts on fashion and parties. Yet, as Turner points out, in this scenario nobody has yet been employed in the "magic word company" that has generated so much wealth.

Of course, the magic word is a thinly veiled comparison to the mobile phone, or to Facebook. And Turner is arguing that the technology behind it has features which seem a lot closer to magic in their economic consequences than previous technologies, such as those of the electromechanical age.

## The orthodox case for capitalism

To explain, Turner outlines the orthodox case for capitalism which justifies the free market as a superior system to deliver growth and increases in welfare. This so-called instrumental argument is based on four assumptions:

1. Technical progress drives productivity which drives growth (measured by GDP/capita) which leads to increased welfare

2. Market competition maximises efficient allocation and growth

3. Wealth reflects efficient capital accumulation because high savings leads to high investment which leads to growth which delivers wealth

4. Inequality is acceptable because over time, the rising tide of wealth floats all boats

In the ICT era, says Turner, this orthodoxy is being shaken. "There are changes going on in the nature of our economy which challenge every one of these assumptions," he says.

Turner acknowledges that the financial crisis of 2008 and its aftermath have struck a body blow to confidence in the ability of capitalism to deliver growth and then welfare. Yet moving beyond well-versed explanations for the slow and difficult recovery, Turner cites American economist Robert Gordon, who raises a more fundamental question: "Are we running out of opportunities to improve GDP per capita and thus to improve human welfare?"

Personally, Turner doubts that we are, but he is emphatic in agreeing with Gordon's related argument; that even if we are making productivity improvements, they are simply less important to human welfare than the productivity and income improvements of a previous era.

By comparing what happened to standards of living in developed economies between 1870-1970 and between 1970-2015, Gordon argues that the earlier century is far more transformational for human welfare than the subsequent 45 years; that welfare gains during the first period were substantially greater.

**Technological progress 1850 – 2015**

| 1870 – 1970 | 1970 – 2015 |
|---|---|
| Running water and piped sewage | Computers |
| Vacuum cleaners and washing machines | Mobile phones |
| Railways, autos, aeroplanes | Internet |
| Safe, unadulterated food | Social media and search engines |
| Film, radio, television, telephones | Apps and bots |
| Vaccination against childhood and other diseases | Statins |

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Turner believes that most people would agree, which leads him to suggest that "even if we *do* go on improving measured GDP per capita, its impact on human welfare – on happiness – will have diminishing returns."

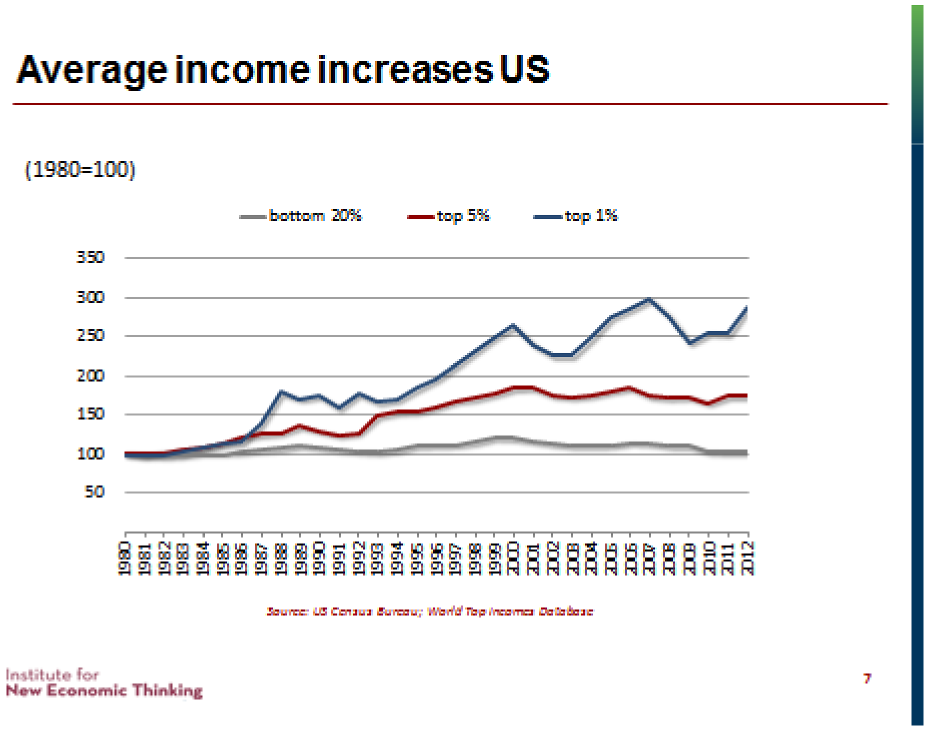
"I am not saying that growth is a bad thing," he adds, "but when economies get to our levels of development, further increases are just not that important."

Turner suggests that when raising productivity to increase welfare starts hitting declining marginal returns, then happiness is perhaps more determined by other factors, such as finding the right partner, the success of one's children, or *relative* status.

## A long wait for benefits

This observation leads into Turner's next point: that compounding his belief that further growth is no longer delivering significant welfare improvements in the developed world, we are also seeing dramatic differences in inequality in modern economies.

Nowhere is this more extreme than in the United States, where over the past 35 years the bottom 20% of workers have received no real wage increase whatsoever, while pay has risen by 3 times (i.e. plus 200%) for the top 1% of workers and more than double that again for the top 0.1%.




Some defenders of the free market might find nothing concerning about that. Of course inequality goes up and down, they say, but that's acceptable because in the long term everyone benefits. That may be, says Turner, but the long term can be a very long time. Just look at what happened during the Industrial revolution in England, when there was a half-century delay before the working classes benefitted from the wealth being created.

The crucial point is that the relationship between technological growth and the relative dispersion of GDP/capita depends on the *nature* of that technology.

Lord Turner argues that the ICT era has three distinct features which set it apart from previous waves of improvement, such as those driven by the steam engine, electrification and electro-mechanisation:

- collapsing cost of hardware (driven by Moore's Law) - so that every 2 years you get roughly twice as much computing power for the same price,
- zero marginal cost of replication - once you copy one bit of software, the next billion copies cost next to nothing,
- network externality - the phenomenon by which everybody uses Facebook because everybody uses Facebook

The combination of these factors helps to explain the success of companies like Google, Microsoft and Facebook. Each of these modern giants has a very different ratio between investment and wealth created, compared to, say, Henry Ford's General Motors.

To illustrate his point, Turner does a rough calculation of investment in Facebook based on 5,000 software engineers for five years before the company floated for $bn104; in other words, an equity market value of around $21m of equity value per engineer. Subsequently indeed the equity value – with only minimal further investment – rose to over $200bn.Two years after floatation, the company claimed to have over one million users for every engineer employed.

“We have here an extraordinary ability at the top end of the income distribution to create enormous wealth with very few employees and very little investment,” says Turner.

## What about jobs?

If this is happening at the top end of income distribution, what about the other end? And what is going to happen to jobs?

For many jobs in the ICT era, it’s a question of when, not if, robots take over. There is no shortage of recent reports and books, such as Erik Brynjolfsson and Andrew McAfee’s The Second Machine Age, which have reinforced Turner’s view. “As we apply a computing power which is relentlessly increasing, we will create robots which can do more and more functions; capable of more and more sophisticated man-machine interfaces, and capable of relentlessly better understanding of the context in which they are operating, and therefore more efficient.”

**Probability that computerisation will lead to job losses 2010 – 2030**

| OCCUPATION | PROBABILITY (1=certain) |
|---|---|
| Recreational Therapists | 0.003 |
| Personal Trainers | 0.007 |
| Firefighters | 0.17 |
| Economists | 0.43 |
| Machinists | 0.65 |
| Retail salesperson | 0.92 |
| Accountants & auditors | 0.94 |
| Telemarketers | 0.99 |

Source: The Future of Employment: How Susceptible are Jobs to Computerisation? C. Frey and M. Osborne (2013)

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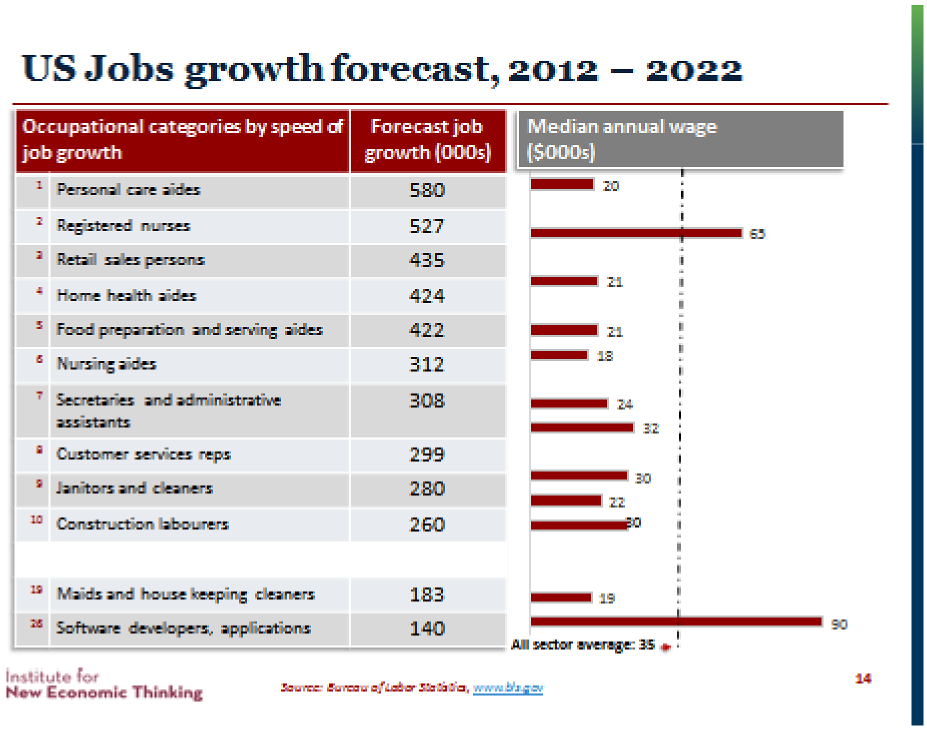
Topping the list for the jobs likely to disappear in the next 15 years are tele-marketeers. Construction and retail jobs are increasingly shifting to robotisation and automisation. Further down the line, Turner sees driverless vehicles leading to the demise of truck-driving.

However, while some jobs will disappear, others will emerge. Yet Turner is worried that most of these new jobs will be low paid. Regularly updated statistics from the US show that in 9 of the top 10 job creation sectors, the median wage is well below the all average for all sectors.




Software and app developers lie in 26th place in the job creation charts, because, says Turner: “to create all the software apps that the world could possibly need, you don’t need that many coders.” And of those, only a small number of the best will earn high incomes.

What all this means, says Turner, is that we will see real productivity improvements but also widening levels of inequality. This might be acceptable if the explosion in productivity was accompanied by rising welfare. However, if ever-cheaper smart phones are not *that* important, then increasing *average* prosperity is not going to offset the harmful increase in inequality.

### Soaring returns - for a few

A paradox here is that although ICT is driving inequality, a lot of that inequality is measured in very “non-ICT” items. In a modern economy much wealth resides in luxury brands, such as Hermes or David and Victoria Beckham, and returns for sporting or artistic stardom have soared.

“As we get richer we can afford to spend more on branded, celebrity goods which deliver huge celebrity rents.” says Turner. Yet those rents are subjected to a strong “winner takes all” effect; the dominance of a few in an increasingly concentrated arena.

Another area of rising inequality is pay. The ratio between the pay of CEOs and average workers has soared in the past 20 years. Turner says this is not just a simple failing of remuneration committees. He argues that if you believe top management should be paid more if they make a bigger contribution to society, you must believe two things:

- rational competition in labour markets means CEOs get paid in relation to the extent to which they make the company richer (marginal private product)
- rational competition in product and capital markets means that marginal private product equals the increase in social value (marginal social product).

Concerns about remuneration committees focus on whether the first of these assumptions is true. But the fundamental problem today, says Turner, is an increasing divergence between marginal private product and marginal social product. The reason, he suggests, is that a lot of functions in modern economies are distributive, not socially creative.

## A zero sum distributive game

Turner looks at artistic and sporting stars, lawyers, fashion designers, computer game inventors and concludes that for the top people in all these fields, increasing skills changes their relative ranking - and therefore earns them a bigger slice of the available winnings. Yet while many others benefit from the entertainment, inspiration, services and products that these top "stars" provide, does welfare change with every incremental increase in skill?

No, says Turner, and he maintains the same is true for a lot of commercial and financial service activity. "We need certain amount of these things, but a lot is essentially distributive; a lot of this competition goes round in circles.

Courting controversy, Turner suggests that even universities may be caught up in the system. Yes, they are building skills which contribute to welfare and a stronger economy… to a degree. But he suggests they are also playing a role in job market signaling. "Achieving a high degree from a good university signals to employers that you are high talent person. The university is playing a part in providing skills to compete in a somewhat zero sum distributive game."

More significant than the problem of paying CEOs extreme salaries, Turner thinks increasingly that pay levels just aren't related to social value. "It can be absolutely sensible for remuneration committees to pay huge amounts for activities where marginal social product is small," he says.

That is nothing new in itself, says Turner, but he sees a trend for developed economies: "As we get richer, an *increasing* proportion of economic activity - particularly by high talent people - involves distributive competition for existing resources rather than new social value creation."

In parallel to this hypothesis, Turner observes that much of the social value creation that *does* occur, is due to general progress in science, and the activities of a very small proportion of people.

## Wealth isn't what it used to be

The shifting nature of wealth accumulation is another feature of the Hi-tech, Hi-touch era. In the basic capitalism orthodoxy, wealth reflects an accumulation of investment which in turn reflects income. Yet in rich economies, the ratio between wealth and income has risen dramatically in the last 50 years.

The reason, it seems, is largely due to rising property values; more specifically, land value. It is something of an irony, says Turner, that in an increasingly software intensive distance-less economy, "the biggest increase in wealth is occurring in the most physical thing of all; plain old fashioned, irreproducible land."

Why? Because where you live has a huge impact on your standard of living. So as we get richer we spend more of our total income competing with one another for a limited available pie.

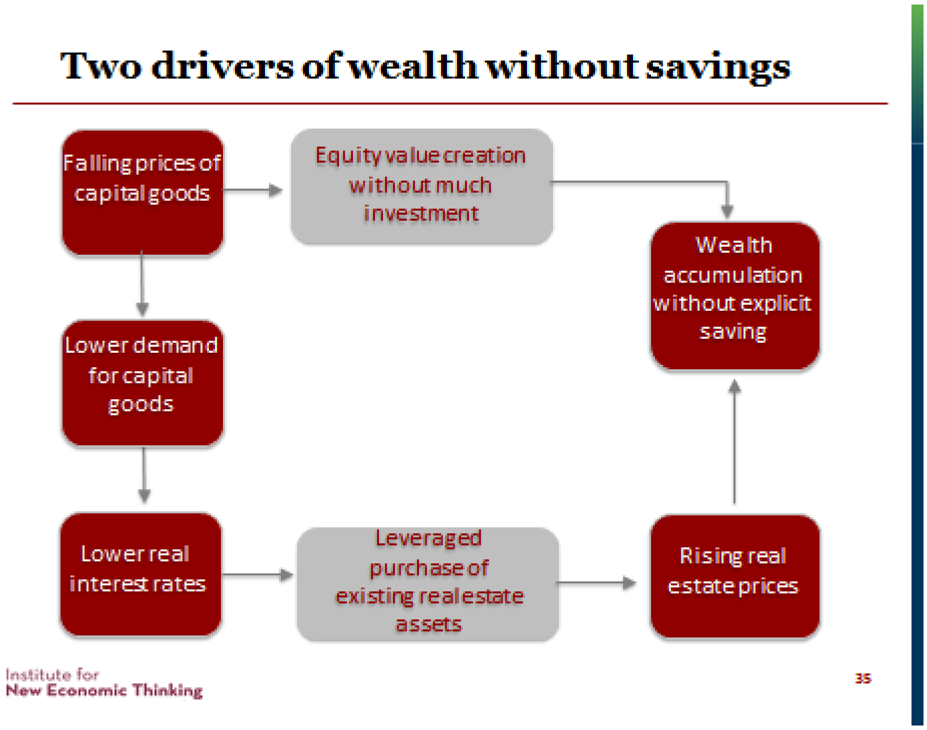
The net effect of this is changing the nature of where wealth and capital stock come from, uprooting a whole series of economic models which assume that wealth is a product of savings and income.

Today, argues Turner, most wealth creation in modern societies and economies is somewhat disconnected from the process of investment. And if that's the case, then the textbooks need re-writing.

Similarly, the textbook definition of the role of banks in modern economies also needs updating. "Banks don't take existing money and pass it on; they create money and purchasing power that didn't previously exist," says Turner.

So it matters to whom banks give that purchasing power to. They can and do lend some to entrepreneurs and businesses but most of what they do is lend money against existing real estate. Indeed, bank lending against real estate has risen from around 35% in 1960 to around 65% today.

And when you extend more credit by creating money and purchasing power for something that is limited (such as houses in central Cambridge) the only thing that can give is the value of the real estate; implicitly, the price of the land.




"A very large proportion of banking activity is funding competition between people for the ownership of an asset that already exists; for irreproducible land." says Turner, and it is driving instability and the post-crisis malaise in which we now find ourselves.

### How can we live well in our era?

So, if growth no longer necessarily gives higher welfare, and if ICT may be creating inherently more unequal society, what do we do?

Neo-liberal calls to give more people skills for the modern economy is laudable and desirable, says Turner, but not enough of an answer. "If my analysis of the changing nature of our economy is true, increasing everybody's skills is not going to solve the problem of rising inequality, because, as economies get richer, what matters in many functions is the relative, not absolute skill ranking."

To some extent, Turner thinks that we are fulfilling predictions made by John Maynard Keynes in the 1930s. Keynes envisaged that society would eventually solve the economic problem of production, leaving what he called its "real *permanent* problem": how to use our freedom from pressing cares to occupy a leisure which return on investment and compound interest will have won us, to live wisely and agreeably and well?

But we are not there yet.  "We may be cracking the problem of production with fewer and fewer people, but in the society that is emerging, we may naturally have a very high level of wealth relative to income, with huge value residing in some hi-touch assets, like land.

“We will see high inequality at the top with huge returns for relative skill, and high inequality at the bottom. We will continue to create jobs for roles which cannot be automated but which will be accompanied by low equilibrium real wages and, at least for a time, real wages will lag behind productivity.

**“**And I think in finance we will have continual accumulation of debt against existing assets which creates those cycles - like in 2008 - which are immensely difficult to deal with.”

### Implications for policy

In such a situation, a free market non-intervention approach is not, by itself, the solution, says Turner.  “We need to think about a combination of higher minimum wages, in-work benefits, and the provision of high quality public goods paid for by progressive redistributive tax.”

He urges universities to play their part in educating people to live well and as good citizens, rather than just as factor inputs to production.

Finally, if the instrumental argument for capitalism is collapsing, as Turner believes it is, then what is the justification for the system in our era?

Well, perhaps we should hark back to early political economists – such as David Ricardo, David Hulme and Adam Smith – who thought that the process of capitalism was valuable in itself. It’s a view more recently espoused by Indian economist, Amartya Sen; that the freedom to produce and consume what we like, or to be an entrepreneur, is valuable in and of itself, independent of any impact on GDP per capita.

As Sen puts it, the merit of the market does not lie only in its capacity to generate more efficient culmination outcomes, but in the processes by which those outcomes are achieved.

In today’s Hi-tech Hi-touch era, Turner thinks this view is a more fundamental justification for the free market. In which case, he says, we need to find other solutions for welfare: “We need to wrap capitalism around with social interventions to make sure it delivers improvements in human welfare recognizing that the link between rapid productivity growth and increasing human welfare is now less certain that it was between 1870 and 1970. ”

## Questions

Most of the available time for questions continued to explore the increasing inequality within societies. How to respond to a world where industry is being “hollowed out” by robots, leaving so many people without the income to be consumers?

While Lord Turner’s talk focused on rich countries he says that he is deeply concerned about the impact of ICT on the developing countries. If automatisation replaces labour to raise productivity and growth in emerging economies – where a high proportion of the population is young – the implications for inequality and instability are huge.

If rising inequality is linked to debt overhang, and if such a high proportion of individuals, companies and countries are more in debt across the globe than they have ever been, who do we owe the money to?

The problems of inequality are nowhere more visible than in the world’s richest economy, where the response to those with mounting debt seems to be “let them eat credit”. Unless the savings of the rich can be picked up by the system and lent to the poor, the dangers of secular stagnation mount, says Turner.  “An unequal society may only achieve macro-economic demand balance by becoming increasingly credit intensive, and that creates disequilibrium which will eventually blow up.”

Turner touched on another factor driving inequality in developed economies: in addition to the nature of technology, aspects of globalisation played a significant part. He admits that until a decade or so ago, he had been among the global liberal elite who were guilty of asserting that globalisation – free trade, free movement of people, free capital flows – was good for everybody.

That's not how Turner sees things today. Unless free trade is combined with a set of redistributions which takes some of the benefits of the big gainers to give to the losers, inequalities will increase.

So how should government shape policy in response? Turner suggests that finding the right level of minimum wage (too high and jobs are threatened) and in-work benefits is important. If we want people to have a standard of living that is detached from what they are able to earn in the labour market, we might need strategies like citizenship incomes, he says. And that might mean richer people paying higher taxes to finance such schemes.

Finally, in response to a question on climate change, Lord Turner – newly appointed chair of the Energy Transitions Commission – says it is incumbent on rich economies to prioritise building low carbon economies - even if the cost of doing so reduces growth in terms of GDP/capita. "That is where our responsibility lies."

Remember, in our developed societies, the impact of increasing growth on our welfare is so minimal, that Turner says; "we won't even notice."