+++ Jobs, productivity - and artificial Intelligence

++ The social benefits of jobs

Work is good for society - apart from its role of providing income. Martin Luther King emphasised that being in work has a value, to the individual and society, beyond its role in providing incomes:

> So often we overlook the work and the significance of those who are not in professional jobs, of those who are not in the so-called big jobs. But let me say to you tonight, that whenever you are engaged in work that serves humanity and is for the building of humanity, it has dignity, and it has worth.
> Dr. Martin Luther King, Jr. on Labor

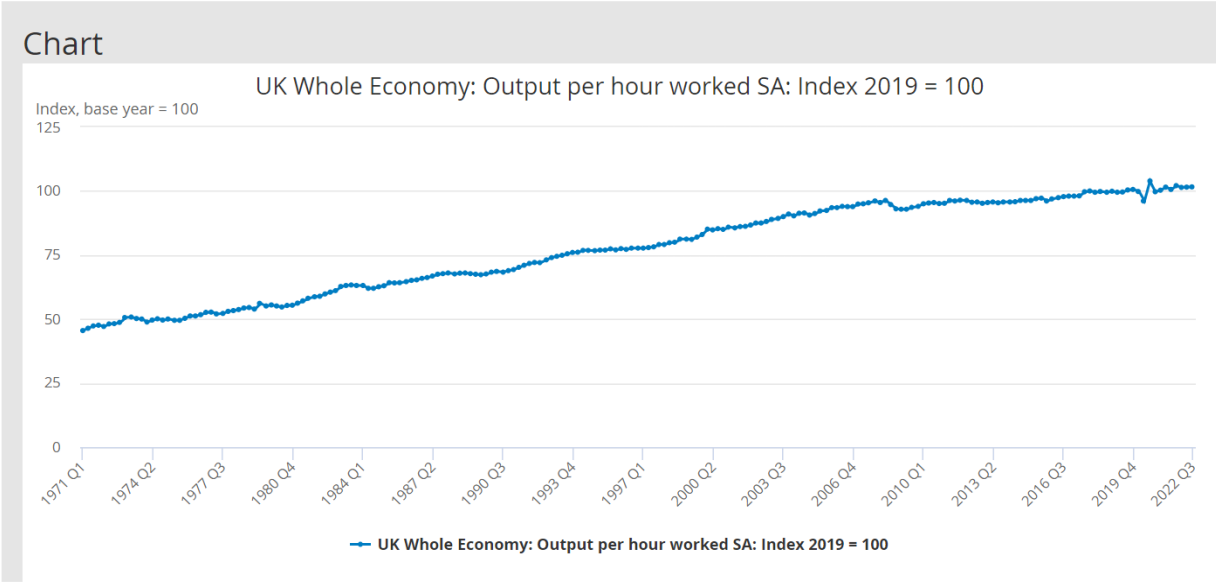
Others discuss the positive "social externalities" of jobs. Romero & Pela from the World Bank write:

> The effects of poor employment outcomes are not limited to those experiencing them directly. There is growing evidence of substantial benefits to broader society from the creation of better jobs.
> What we're reading about the social externalities from jobs

Romero & Pela discuss social cohesion, crime and violence, terrorism, subjective well-being, and parenting but point out that, at present, studies tend to be tend to be disparate and loosely connected - but they also say "watch this space".

++ Increasing productivity

Human development has seen more output being produced for each hour of work. For example, the UK Office of National Statistics has calculated that, since 1970, twice as much output is created for each hour worked.



https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/labourproductivity/timeseries/lzvb/prdy

Figure 8: UK Whole Economy: Output per hour worked

Since 1970 UK GDP per person has increased about 2.3 times. Workers have been paid extra for some of this increase but Labour's share of production has decreased. According to the UK Office of National Statistics:

> The labour share fell between 1955 and 2019, down from an average of 69.9% over 1955 to 1969, to an average of 59.9% over 1970 to 2019.
> Labour costs and labour income, UK: 2021

More of the benefits from increased productivity has gone to capital than has gone to labour. In this period, consumption per person has increased 2.6 times.

++ The AI revolution

Will Artificial Intelligence (AI) increase emissions by increasing consumption or decrease the emissions associated with each unit of production? This balance of good and bad will depends on policies selected for managing the change that AI will bring.

For centuries or longer, technology has advanced and machines have replaced human labour. The next phase is an AI revolution, which is predicted to replace skilled labour as well as the unskilled labour that previous technological revolutions have replaced.

As robots replace more of the workforce, the owners of the robots will receive a greater share of the rewards of production. In the UK, this may continue the trend of increasing inequality of recent decades. Temporarily this has stalled by the disruptions of the Covid pandemic, the Ukraine war and UK's exit from the European Union: Currently the UK is having a shortage of human labour:

> In November 2022, 13.3% of businesses surveyed by the ONS reported experiencing a shortage of workers. The percentage of businesses experiencing a shortage of workers has been between 12.9% and 15.4% since October 2021, with the exception of August 2022, when 16.8% of businesses reported a shortage.

Despite this shortage, wages are rising slower than rises in the cost of living, except in professional and scientific industry. The outlook for the less skilled is poor:

> Those on lower pay will feel the impact of wage growth falling behind inflation and the resulting increased cost of living more acutely.
> Professional and scientific industry the only one where pay continues to match rising prices

In past technological revolutions, workers have been replaced by machines that reduce the need for their labour. Eventually this has been countered by an increase in production that has restored the need for labour - but in future this may be prevented if economic growth is constrained by the need to cut greenhouse emissions.

Recently, the effects of AI on the economy have shown it intensifying. The starkest warning yet has come from of Briggs & Kodnani of Goldman Sachs:

> If generative AI delivers on its promised capabilities, the labor market could face significant disruption. Using data on occupational tasks in both the US and Europe, we find that roughly two-thirds of current jobs are exposed to some degree of AI automation, and that generative AI could substitute up to one-fourth of current work.
> The Potentially Large Effects of Artificial Intelligence on Economic Growth

Many argue that some form of support must be given to those who cannot now earn enough from wages to cover their needs. Universal Basic Income (UBI) is one possible policy.

++ Universal Basic Income

Elon Musk (and many others) have even predicted that intelligent machines and robots will be the workforce of the future. This means that, as more human labour is replaced by technology, people will have less work and ultimately will need to be sustained by payments from the government:

> "There is a pretty good chance we end up with a universal basic income, or something like that, due to automation," says Musk to CNBC. "Yeah, I am not sure what else one would do. "
> **Elon Musk: Robots will take your jobs, government will have to pay your wage**

In the LSE blog, Daniel Sage writes in favour of Universal Basic Income so that people can work less:

> Yet it is possible to imagine policies that are viable within current political, economic and welfare state structures that still hold the radical objective of reconstructing work and the work ethic... UBI could dilute the work ethic by making it easier and more common for people to opt out of the labour market: to retrain, get more education, care or enjoy more leisure.
> **Work and social norms: why we need to challenge the centrality of employment in society**.

++Carbon fee and dividend

Carbon fee and dividend is a form of UBI funded by taxes on greenhouse gas emissions.
It imposes a tax on the sale of fossil fuels, and then distributes the revenue of this tax over the entire population (equally, on a per-person basis) as a monthly income or regular payment.

It is supported by the foremost climate scientist, James Hansen: See A carbon tax is key to addressing the climate crisis — and carbon dividends could get Congress to support one.

++ Labour subsidies

Advocates of UBI often ignore the value of employment outside its role for providing income. Schemes for subsidising labour allow for the "positive social externalities" of jobs by changing the market in labour to create jobs at the bottom of the labour market.

Labour subsidies support employment even when jobs are less productive. They make it cheaper to employ labour - without reducing the workers wages. They preserve at least some of the positive social externalities of jobs.

A simple scheme, that I proposed in the 1970s, was to subsidise labour at a flat rate per worker, paid as a rebate on Value Added Tax. To pay for these rebates the nominal rate of VAT would be raised. This cuts the cost of employing labour, particularly low paid labour, but, at the same time, it increases their take-home wages. It directly biases consumption towards labour intensive goods. (See "A macroprudential proposal for employment")

The scheme was iinitially presented as a way of creating jobs without inflation. It also had a positive effect on economic growth. The link between greenhouse emissions make the supression of economic growth necessary.

The application of this sceme to modify VAT can generate employment even when economic growth is suppressed.