

Labour Market Challenges in Europe: New Technology, Automation and Allocative Efficiency

Sir Christopher Pissarides

London School of Economics and University of Cyprus

Eurogroup informal meeting, Vienna, 7 September 2018

Increasing both labour and total factor productivity in Europe, and especially in the European south, is essential if the European Union is to become a more integrated economy, capable of competing with the United States, China and sooner or later with the other South East Asia countries and India. But we mustn't lose sight of the fact that increasing productivity is a means to an end – the satisfaction of society's consumption needs, employment opportunities, social inclusion and the elimination of poverty. Productivity growth contributes to the satisfaction of these objectives but sometimes the ultimate objectives conflict with it; governments and societies more generally often have to make important choices that strike a balance between productivity growth and other objectives.

I will discuss later examples that illustrate this statement but as a teaser I can suggest now that as our societies grow older there is increasing demand for services that have low – if not zero – productivity growth potential; such as old age care. As demand for these services increases, labour shifts to these sectors of the economy and aggregate productivity growth inevitably suffers. But it is not a movement that we should discourage for the benefit of productivity growth. A good society needs to care for its ageing population even at the expense of productivity growth.

Allocative efficiency, however, is a “free lunch”. It is defined as the most efficient use of resources across the economy, given the overarching objective of satisfying societal needs. Allocative efficiency includes both

the allocation of factors to their most productive use but also the elimination of waste, in the sense of excessive red tape or over-employment in inefficient firms. Inefficiencies of this kind do survive, as the Commission background paper for this meeting made clear. Many gains can be reaped if the labour market environment is such that workers can freely move from inefficient to more efficient firms within or across their sectors.

The circumstances that allow this movement are well set out in the Commission's background note. Let me add that digital technology can have an enormous impact on public sector performance, yet many European governments are still slow at adopting it across the spectrum of public sector services.

Let me now be more specific and briefly address allocative efficiency in connection with the most recent technological innovations – what the World Economic Forum has labelled the Fourth Industrial Revolution, in Germany it was launched as Industry 4.0, and more generally can be referred to as automation and digitalization: the introduction of digital technologies, robotics and artificial intelligence into production. The challenge here is to provide a good answer to the question “what is the future of work?” In my view the future of work is as bright as ever, potentially even brighter, but there is need of urgent policy action and need of new perceptions about work, education and social change. Like other technological innovations of the past, such as the steam engine and electricity, digitalization will require restructuring of jobs. Some jobs will close down and others will be created to take their place.

There are several estimates in the literature about the type and number of jobs that are at risk of destruction in the face of competition from digital technologies. For example, telemarketers, people who sell goods by telephone, have gone, as have bank cashiers and telephone operators. Mental health workers and the clergy are not under threat. The principles used to calculate the probabilities of job destruction are based on the predictability of tasks; if a task operates in predictable

environments, the use of computers to process big data from past experiences removes the need of human decision-making in that task. But tasks like those performed by mental health workers operate in unpredictable environments – how a mentally sick person will respond to a situation – and cannot be automated.

How does policy come into play here to achieve allocative efficiency? Simply by facilitating the reemployment of workers who are engaged in jobs that operate in predictable environments. Plausible estimates in the literature place this number to something between 10 and 30 per cent of the existing labour force. This is commensurate to the impact of the big inventions of the past – although probably not as big as the numbers affected by the very big inventions, like the steam engine and electricity that I have already mentioned.

The main challenge in this connection is where will these workers go, will their compensation be good enough – in other words will there be enough “good jobs” to employ them – and what can government policy do to help in this transition?

In my view the main sources of new jobs will be three.

First, at the top technical end there will be more jobs for engineers, researchers and computer experts, who will develop, implement and maintain the new technologies.

Second, within large companies there will be new tasks and jobs invented to take the place of the ones replaced by machines. The new tasks will improve the service that these companies offer to the public. A good example is in banking: despite the replacement of cashiers by ATMs, the number of front desk employees at bank branches has not declined. But they now do new things, like relationship banking and giving advice about financial products.

Third, the largest number of new jobs will be created in existing or new sectors in the service economy. As societies become wealthier through the productivity enhancements from the new technology, and labour is released to be employed elsewhere, there will be demand for new types of services that improve the quality of life. Primary among these will be jobs in the health and care sector, reinforced by the ageing population, in the leisure and creative industries and in the education sector. But household services and real estate management will also be growth sectors. These are all sectors that cannot be automated on a large scale. They are also sectors that do not have a high productivity growth potential; many jobs are not well paid and not treated with sufficient social respect. This has to change – jobs in these sectors have to become “good jobs” if societies are to win the war against the robots.

How can policy help in the transition to these new jobs? At the top technical level countries will need good universities that teach technical subjects and good collaboration between universities and industry. The most glamorous worldwide example of this type of growth is of course Silicon Valley in California. Less glamorous but almost as effective are collaborations between universities and industry experienced in the Nordic countries and Germany. But the majority of European countries do not have a good record on this issue. Preparation for the growth of good universities needs to start at school, where STEM subjects need to be more widely taught.

For the second type of job creation, the new tasks within large companies, policy does not have a direct input except to provide a flexible environment in collaboration with the social partners. But the initiative for inventing new tasks has to be left to the companies themselves, which, as the Commission note emphasizes, need to operate within a competitive environment.

Finally, for the jobs in the service sectors policy has a big role to play through the high-school curriculum, lifelong learning, helping the transition of workers with active labour market programmes and good

welfare support and ensuring that the new jobs are as good, if not better, as the ones that were taken over by machines.

A common feature of the new jobs is that they involve direct contact with the public – currently our schools do not train pupils how to give good service in social environments. For example, psychology has a lot to teach about social contact yet it is not made routinely part of the curriculum like geography and history. Training and lifelong learning in my view are best left to the private sector, but they need government support, e.g., in the form of subsidies to the firms providing the training. The leisure and creative industries, such as tourism and the arts require public support, in the case of tourism connected with environmental protection, the sustainable use of natural resources such as water and the marine environment and the preservation of Europe's cultural heritage; in the case of the arts and the creative industries in the form of support for new emerging artists and more unconventional forms of creativity that one day might become the new normal.

Finally, a big headache for many governments is the fact that public health and care programmes are likely to become more expensive to fund as demand increases. Since a large part of health and care costs are borne by governments as part of subsidized health services, governments need to consider their financing in relation to budgetary objectives.

Questions/pointers for discussion

- Which barriers to labour reallocation do you consider as most relevant in your country? Can you identify and share any relevant best practice enhancing allocative efficiency in your country?
- Has your country taken recent steps to make sure that active labour market programmes and welfare systems will be able to help workers transition to new jobs in service industries that cannot be automated?

- To what extent do you consider your education systems suitable for the preparation of your labour force for the new challenges in labour markets, including later-career lifelong learning and reskilling?