

Olli Rehn: Technological upheaval and labour markets

Opening remarks by Mr Olli Rehn, Governor of the Bank of Finland, at the Bank of Finland Seminar on “Technological Upheaval and Labour Markets”, Helsinki, 2 September 2019.

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Ladies and Gentlemen,

It is a great pleasure to welcome all of you to this seminar at the Bank of Finland. Today we are addressing a very timely subject: technological upheaval and the labour markets.

Let me point out that this seminar has two parallel origins: popular demand and substantive importance. By popular demand I am referring to our seminar last December with trade unions and employers’ associations, when these issues were raised in many interventions, calling for further research and dialogue on them – rightly so. So we are now responding to this well-justified popular demand.

By substantive importance I am referring to the fact that these issues are indeed at the heart of the ongoing transformation of work and the labor markets. They have a profound impact on the everyday lives of our citizens – thus, what could more important than studying them?

Against this backdrop, let me outline a few questions I hope and trust that this seminar will be analyzing and even providing some answers.

First of all, in recent years it seems that technological change has shifted gears. Many of our daily activities have moved online, we are talking about the platform economy, while artificial intelligence and robotics seem to be on the minds and agendas of companies and policymakers.

Digitalization and automation have been around for decades, and there have been many waves of technological change that have caused disruptions in various industries and professions. Nevertheless, it seems that there are some important differences between what has happened in the past and what is happening today.

Most importantly, it would appear that information technology is having a more widespread effect across all sectors of the economy. Also, the ongoing process of digitalization may be affecting a larger share of jobs than the general purpose technologies of the past.

This has also raised ‘automation anxiety’, with predictions that machines will displace jobs and cause mass unemployment. However, there is a long history of such predictions. Let me give you a few examples.

Already 25 years ago, in 1995, American economic and social theorist Jeremy Rifkin warned “Now for the first time, human labor is being systematically eliminated from the production process. Intelligent machines are replacing human beings in countless tasks, forcing millions of blue and white collar workers into unemployment, or worse still, breadlines.”¹

A few decades earlier, in 1962, President John F. Kennedy declared that “the major domestic challenge of the sixties” was to “maintain full employment at a time when automation is replacing men.”² President Lyndon B. Johnson followed in his footsteps by appointing a national commission to assess these issues in 1964.

Even before that, in 1930, John Maynard Keynes declared that the world was suffering from “technological unemployment”, meaning “unemployment due to our discovery of means of economizing the use of labor outrunning the pace at which we can find new uses for labor”.

Well... as history tells us, none of these predictions turned out to be accurate. Employment as a share of population has remained remarkably stable in the long run. I think it is important to keep this sober, perhaps 'structurally optimistic' fact in mind.

But it won't happen automatically. Policy choices do matter, and in order to make right choices from the public policy standpoint – I am thinking of high level of employment and sustained, inclusive growth of real incomes – we need solid evidence-based analysis.

That is one main reason, why we are here today. In other words, we need research-based answers to the question, should we expect – in the era of digitalization, robotics and artificial intelligence – that machines will displace jobs on a massive scale?

In the academic literature on the effect of technological change on the labour markets, the hypothesis of skill-biased technological change dominated the scene for a long time.³

In recent decades, however, employment growth has not been concentrated only on the highly skilled, but also on the least skilled workers, while employment has declined among middle-skilled workers. This phenomenon has been referred to as job polarization.⁴⁵

Job polarization arises from the development of information and communication technologies and their ability to replace tasks formerly performed by human labour. The key issue is that all tasks are not equally prone to computerization.

Computers have increasingly displaced workers in 'routine' tasks that are characteristic of many middle-skilled activities, such as clerical and administrative work, and repetitive production tasks.

But as David Autor, one of the leading scholars in this field, importantly points out, the fact that a task cannot be computerized does not imply that computerization has no effect on that task. On the contrary: tasks that cannot be substituted by computerization are generally complemented by it. This is evident in many highly skilled jobs where information technologies increase the productivity of workers.

But this may also be the case in many manual jobs. David Autor uses the example of contemporary construction workers, who by historical standards are akin to cyborgs. Augmented by cranes, excavators, power tools and pneumatic nail guns, there has been a staggering increase in the output of these workers. Many tasks of both high- and low skilled-workers have been complemented by automation, which has resulted in strong employment growth for both groups of workers.⁶

There is also a close interaction between technological change, globalization and the polarized job structure of developed countries.⁷ Today, many mid-level tasks are most prone to relocation (e.g. programming, accounting or payroll services). In contrast, many other jobs cannot be offshored because they require personal contact (e.g. elderly care, security, public transport).⁸

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With the reduction of middle-paid jobs, the second key question is what kind of jobs those workers can move to and what kind of frictions are involved. The prerequisite for the growth of a highly educated and knowledge-intensive economy, such as that of Finland, can be improved, especially by supporting the creation of highly-skilled jobs.

At the same time, it is also important for the labour market institutions to support the creation of low-productivity jobs, even if the aim is to keep up the share of high value-added jobs. This is particularly important for young people entering the labour market for the first time. The alternative would seem to be accepting a higher level of unemployment.

Wage formation is a key factor. Job polarization in itself is already widening the pay gap: the rise in the share of low-paid and, above all, high-paid jobs inevitably increases the income gap. However, the absence of wage polarization in Finland suggests that wages have hardly responded to the declining demand for mid-wage labour. This may have further decreased the number of middle-wage tasks. Job polarization will increase the demand for low-wage jobs, like many services, but will only create jobs if they are not priced out of the market.⁹

Last but not least, Nordic comprehensive social security is an important part of our growth policies, since it makes structural change more socially acceptable. It is important to aim for economic growth that is distributed fairly across society and create opportunities for all.

So that's our agenda today. I look very much forward to listening to the presentations and your views about technological upheaval and its impact on the working life and labour markets this afternoon.

With these words, welcome to all of you to this seminar!

Ladies and Gentlemen,

Let me now introduce to you our first key-note speaker, Professor Laura Tyson.

Laura is an influential and well-known scholar of economics and public policy, specializing on trade and competitiveness. Today, Laura Tyson is the Faculty Director of the Berkeley Haas Institute for Business and Social Impact, which she launched in 2013. In addition, she has also served as Dean of London Business School from 2002 until 2006.

As many of you certainly well remember, she has also served as a presidential adviser. She served as Chair of President Clinton's Council of Economic Advisers from 1993 to 1995, and as Director of the White House National Economic Council from 1995 to 1996.

Laura is the author of numerous publications on competitiveness, industrial policy, international trade, and sustainable business practices.

She is also regular contributor to Project Syndicate, and is a frequent media commentator, for instance, on issues of U.S. and global trade and economics, competition, and women's economic empowerment.

Much of Prof. Tyson's recent research focuses on the effects of automation on the future of work. I'm sure we are going to hear more of her thoughts on those issues today.

Without further ado, Prof. Tyson, Dear Laura, the floor is yours, please.

¹ Jeremy Rifkin (1996): *The End of Work: Decline of the Global Labor Force and the Dawn of the Post-market Era*. Warner Books.

² James Bessen (2015): *Learning by Doing, The Real Connection between Innovation, Wages and Wealth*. Yale University Press.

³ E.g. Lawrence F. Katz & David Autor (1999) Changes in the wage structure and earnings inequality, *Handbook of Labor Economics*, in: O. Ashenfelter & D. Card (ed.), *Handbook of Labor Economics*, edition 1, volume 3, chapter 26, 1463–1555 Elsevier., Daron Acemoglu & David Autor (2011): *Skills, Tasks and Technologies: Implications for Employment and Earnings*, *Handbook of Labor Economics*, Elsevier.

⁴ Maarten Goos & Alan Manning, 2007. "Lousy and Lovely Jobs: The Rising Polarization of Work in Britain," *The Review of Economics and Statistics*, vol. 89(1), 118–133.

⁵ Maarten Goos & Alan Manning & Anna Salomons, 2009. "Job Polarization in Europe," *American Economic Review*, vol. 99(2), 58–63, May.

- ⁶ David H. Autor (2015): Polanyi's Paradox and the Shape of Employment Growth. Federal Reserve Bank of Kansas City. Economic Policy Proceedings, Reevaluating Labor Market Dynamics. 2015. 129–177.
- ⁷ Maarten Goos & Alan Manning & Anna Salomons, 2014. "Explaining Job Polarization: Routine-Biased Technological Change and Offshoring," *American Economic Review*, vol. 104(8), 2509–26.
- ⁸ Juuso Vanhala (2008): [Miten globalisaatio näkyy työmarkkinoilla?](#) BoF Online 5/2008, 27 March 2008 (In Finnish)
- ⁹ Meri Obstbaum & Juuso Vanhala (2016): [Työmarkkinoiden polarisaatio Suomessa](#) Euro & Talous 12/2016 (in Finnish).