

Ratio Working Paper No. 237

# *How policy could handle workplace digitization*

Andreas Bergström  
Karl Wennberg  
Evelina Stadin

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**Forthcoming in K. Wennberg & G. Ehrling. *Inclusive Growth in Europe*.  
Stockholm: Bertil Ohlin Institute.**

Andreas Bergström, FORES

Karl Wennberg, Stockholm School of Economics & Ratio \*\*

Evelina Stadin, Ratio

*Abstract:* While the brave new world of digital technology is delivering intensive growth to some companies and individuals, the question remains whether that growth ‘trickles down’ or ‘spills over’ to other sectors of the economy rapidly enough to avoid the massive social disruptions seen in earlier historical periods of economic transformation. In this short paper we discuss the potential labour market consequences of automation based on digital technology.

*Keywords:* Digitization, Labour Markets, Active Labour Market Policy.

*JEL Codes:* J24, J68, O38

\* Communicating author. Contact details. E-mail: [Karl.Wennberg@hhs.se](mailto:Karl.Wennberg@hhs.se)

\*\* We are grateful for financial support from the European Liberal Forum.

The rise of mobile communications, robotics, the internet of things, and computer programs providing services are transforming production, consumption, and the labour market. While as consumers most individuals benefit from these changes, as employees many have a hard time catching up. Jobs that are easy to outsource or can be automated by computers and robots are rapidly disappearing from mature economies. Global markets combined with products that can be manufactured at practically zero marginal cost (e.g. software) mean that the “superstars” effect first described by Rosen (1981) has become even more conspicuous. A small fraction of the labour market – for example consultants and engineers – exhibit increasingly rapid wage development. The “superstar” effect is also evident among companies, where today’s digital start-ups are able to grow rapidly in users and sales and reach billions in market capitalization after a few years – yet still often creating few jobs. One example is Instagram, which quickly reached over 130 million customers. Yet only 15 persons worked at the company when it was sold to Facebook for over USD1 billion (Brynjolfsson and McAfee, 2014: 126). We here discuss the potential labour market consequences of automation based on digital technology. We call this type of automation ‘digitization’. We discuss potential policy responses in the form of active labour market programs, potential changes in labour taxation, and the way in which education and training is conducted and funded. We conclude with some reflections for the future.

*“You can make an internet company with 10 people and it can have billions of users. It doesn’t take much capital and it makes a lot of money – a really, really lot of money – so it’s natural for everyone to focus on those kinds of things.”*

-Google CEO Larry Page

Worries about disappearing jobs are nothing new. The labour market has been tough in Europe for the last decade and in some countries for longer than this. It has previously always been the case that the old jobs that have disappeared due to automation and foreign competition have been replaced by new ones. The standard answer from economists is that

increased productivity leads to profits and lower prices, and therefore a demand for more and new types of products (Brynjolfsson and Hitt, 2000; Caroli and Van Reenen, 2001). The jobs that disappear lead to new jobs somewhere else in the labour market, and what society needs to do is to ease this process by not supporting stagnant sectors, but support workers' training and transition to other parts of the labour market. What – if anything – is different this time around? Tasks that cannot be easily automatized are those that require more creativity, social skills, and human-to-human interaction (Levy and Murnane, 2005). From this follows two interesting predictions for the future: (1) the wage rate for jobs that require more creativity, social skills, and human-to-human interaction will go up, and: (2) most type of jobs will rely more and more on computers to facilitate overview of processes and tasks, providing decision-support, and instead the individuals working in those jobs will rely more on creativity, social skills, and human-to-human interaction to complement the tasks not handled as productively by the computer.

A recent and widely discussed paper by Frey and Osborne (2013) used US data on 700 types of occupations to forecast which type of jobs that are most and least likely to be replaced by technology in the next two decades. They divided the tasks involved in jobs along two dimensions: cognitive vs. manual and non-routine vs. routine. Drawing upon earlier work on the offshoring of jobs to low-wage countries, Frey and Osborne identified three aspects of a job making it less likely that a computer would be able to replicate the tasks of that job: First, “perception and manipulation” in unpredictable tasks such as handling emergencies, performing medical treatment, and the like. Second, “creative intelligence” such as cooking, drawing, or any other task involving creative values relying on novel combinations of inspiration; Third, “social intelligence”, or the real-time recognition of human emotion. However, Frey and Osborne's paper has been criticized by not accounting for changes in labour or capital prices, nor accounting for political and social resistance in digitization, and the work-leisure trade-off for those workers who could use computers to free up time available for other tasks. This criticism notwithstanding, the core insight that some types of jobs are disappearing more rapidly than others and that the core tasks of jobs are likely to change is widely accepted. In particular, low-wage jobs requiring little or no training, as well as some high-wage jobs that can be standardized are more likely to be replaced.

At this stage, we believe these dire forecasts of the future are too early to be readily understood or dealt with by policy makers. The high unemployment we see in Europe *today* is not primarily the result of digitization. It is the result of the same old reasons, global competition, rigid wage structures and labour markets, over-regulated product markets, generally complicated conditions for starting and running businesses, misguided public support, etc. So while researchers and long-term political planners are and should be thinking about the future labour markets and how this will be impacted by digitization, today's problem are more like yesterday's than tomorrow.

### **Political suggestions to counter permanent structural unemployment**

Several authors in the debate on automation and the labour market consider basic income, negative income tax or other schemes providing everyone with a minimum standard of living. It needs to be highlighted that such a radical reform is somewhat premature – unemployment levels are still high after the financial and Euro crises, and we don't know what levels we'll see in a few years. Unemployment levels in the US are now rapidly decreasing to pre-crisis levels. Secondly, 'providing everyone with a minimum standard of living' does not really provide a solution to the permanent exclusion problem. Not starving is not the same as being included.

Therefore, we think the main challenge for governments in creating truly inclusive growth in the new economic landscape is the fight against structural unemployment. There aren't really any new recipes in the debate. We need education and training fitted to a different labour market, with more focus on creativity, flexibility, social skills and general knowledge (where computers aren't competitive, so far). A nice twist is that the same automation that causes the unemployment might revolutionise the education and training needed to alleviate the problem (Levy and Murnane, 2005).

### **Active labour market programs?**

One frequently heralded solution to the disappearance of jobs from digitization is to considerably expand the set of active labour market programs (ALMPs), for those who can't find a job. ALMPs for unemployed workers and welfare recipients generally include programs such as job search assistance, labour market training, wage subsidies, and direct job creation in the public sector. These are generally seen as important elements of European countries' efforts to combat unemployment. For EU member states, ALMPs constitute a central part of the European Employment Strategy, which defines employment as one key objective of a joint economic policy in the European Union. While such active programs have been in use for many years in most countries, there is a growing awareness of the need to develop scientifically-justified measures of the effectiveness of different ALMPs and that those measures are more rigorously developed and employed in the United States than in Europe, where evaluation spending is scant compared to program spending (Kluve, 2010). Some exceptions do exist: Carling and Richardson (2004) evaluated eight different Swedish ALMPs, one of which was for start-up subsidies. Their study showed that those schemes that —like start-up subsidies —offer on-the-job-training and work-life experience were the most successful. Rodriguez-Planas and Benus (2006) investigated the impacts of four labour market programs in Romania: training and retraining, employment and relocation services, small business assistance to facilitate business start-ups for displaced entrepreneurs, and public employment. Their analysis revealed that the first three programs had positive effects on the labour market outcomes of program participants. In contrast, temporary public employment was found to be detrimental for participants' employment prospects. Consequently, one should be careful not to draw too general conclusions about the efficiency and effectiveness of ALMPs. The relative success of a specific self-employment program is probably context specific and depends on several interacting factors (e.g., applicant screening, eligibility criteria, the type and amount of subsidies or transfers made, the extent to which training/quality of training is provided, and the current unemployment rate).

While we see governments expansion of active labour market programs (ALMP:s), for those who can't find a job as an increasingly important task for policy makers to grapple with and for researchers to evaluate, this is not an encompassing solution to the disappearance of jobs from digitization. The same goes here as for basic income: It's too early for any radical

reforms until we see clearer what part of European unemployment is cyclical, what part is structural, and what part of the structural problem that can be attributed to digitization.

### **Subsidies and tax exemptions**

One possible way is to stimulate a low-wage market by extremely low taxes on low incomes, or other remedies. Germany has experimented with this in terms of ‘the Hartz initiative’. The initiative is based on the concepts of ‘marginal employment’ or ‘minor employment’, i.e. providing a source of income at or above the subsistence level for those currently out of the labour force. Minor employment is defined by German social security as ‘a low absolute level of earnings’ and can both be seen as short-term salaried employment that is possible to combine with social security support in order to provide a foothold on the labour market for those currently on the outside, but avoid the problem of high reservation wages for those currently receiving social security benefits. In popular jargon and media these types of jobs have been called ‘mini-jobs’ or ‘400-euro jobs’.

The Hartz initiative first came into place in 2003, and included support for vocational further education from the German Federal Labour Agency, subsistence payments by the Federal Labour Agency, and administration of jobs provided by public ‘Staff Services agencies’ – in German called ‘Personal-Service-Agenturen’ or simply ‘PSAs’. This was later expanded with new types of employment exempt from social security tax (Mini-jobs, 400 Euro per month), or with gradually rising social security tax (Midi-jobs, 400–800 Euro per month). The Hartz initiative also included a grant for people outside the labour market seeking to transfer to self-employment, known as the "Ich-AG" (Me, Inc.). These different initiatives were expanded in 2004 when the German states brought together the former unemployment benefits for long-term unemployed ('Arbeitslosenhilfe') and the welfare benefits ('Sozialhilfe'), which resulted approximately in a lower level of the former social assistance.

To receive payments, claimants must agree to a contract subject to public law that states that they are obligated to improve their job situation, which may involve accepting any kind of legal job. Whether or not a claimant is eligible for the benefits (called ‘Arbeitslosengeld II’) depends on his or her savings, life insurance and the income of spouse or partner. If these

assets are below a threshold level, a claimant can get money from the state to do the job allocated by PSA. The state covers the health insurance of the unemployed, and provided payments towards their pension scheme. Since it is possible to receive Arbeitslosengeld II benefits and to have a job at the same time, Arbeitslosengeld II can be regarded as a minimum wage floor for employees without assets. In German media and evaluations made, the initiative has been received some praise but mainly criticism.

The Hartz reforms in 2003-2005 have been among the most controversial labour market reforms in Germany, frequently criticized both by media and the public as 'the end of the welfare state'. At the same time, the unemployment rate in Germany has been radically reduced. After the initiative was implemented, the German unemployment rate has fallen from almost 11 per cent in 2005 to 5.5 per cent in the end of 2012. It is still much debated whether this reduction can be attributed to the Hartz reforms or something else.

For example, Hertweck and Sigrist, (2012) show that since the implementation of the reforms in the mid-2000s, the importance of the outflow from the unemployment (job finding) has been steadily increasing, indicating that labour matching efficiency has improved substantially in the years since the initiative was launched. Another study by Krebs and Scheffel (2013) argues that the Hartz IV reform, i.e. reduced benefits level and duration, have reduced the non-cyclical component of unemployment rate in Germany by 1.4 percentage points. Their analysis also finds that the three previous reforms Hartz I-III, e.g. Mini-jobs, Midi-jobs, reduced taxes for firms hiring older workers and restructuring of the Federal Employment Agency, have decreased the non-cyclical unemployment rate by 1.5 percentage points. In conclusion the authors claim that the entire Hartz reforms have resulted in a reduced unemployment rate by almost 3 percent in Germany, quite a substantial effect.

However, Krebs and Scheffel also state that these reforms have created winners and losers, which can explain the vast unpopularity towards these reforms in Germany. While a median employed household gained from the Hartz IV reform by an overall reduced tax burden, the Hartz IV reform also resulted in a significant cut in unemployment benefits that mostly affected the long-term unemployed. To some extent this negative effect also resulted in

increased resistance among short-term unemployed who are considered at risk of to become long-term unemployed. The lessons drawn from the German experience is that even well implemented reforms are likely to meet resistance when most people are risk-averse and gains and losses are unevenly distributed on the labour market. Krebs and Scheffel also emphasizes that such reforms are most likely to work for countries with relatively generous unemployment-insurance systems.

A more critical study by Launov and Wälde (2013) argues that only a 0.07 per cent reduction of the unemployment rate can be explained by the Hartz IV reform, i.e. the reduction in benefit levels and shorter duration of entitlement. They argue that Hartz IV has little effect on high and medium wages since the threat of ending up with lower unemployment assistance benefits once unemployment insurance expires, remains low. They also argue that the reform's effect on the benefit-level for low-wage and low-skilled earners is too small to make a real change for these individuals. Instead, in their model the increase in total factor productivity explains 80 per cent of the decrease in unemployment during the model period. The Hartz I-III reforms are not examined in this study.

While the German initiative is one sort of inspiration for how to solve the permanent exclusion of some parts of the labour force, it is hard to adopt any such system without increasing progressivity in the tax system. It is simply too expensive to let tax exemptions cover the whole labour market, and the income span where they are phased out will have a higher progressive tax. Highly progressive taxation often leads to distortion effects such as people dropping out of the labour market or cutting down on their working hours, which may lead to overall loss in productivity (Ljungqvist and Sargent, 1995; Røed and Strøm, 2002). Further, in today's highly specialized labour market, some people may very well have negative productivity and if that is the case, their work needs to be subsidized rather than taxed at all (Cowen, 2013: 27-30).

### **Lower or no minimum wages?**

In economic theory, a minimum wage is expected to have a limited effect on total employment given that a relatively low proportion of those who are employed have a salary

near minimum wage. Earlier research has focused on groups with weaker ties to the labour market, particularly young people and women (Neumark and Wascher, 2008). Previous studies strongly support the notion that the existence of – or increase in a minimum wage rate – tends to decrease employment overall, especially for youths. In a recent report Spector (2014) emphasizes that higher required starting salaries tend to inhibit the lifetime career opportunities for those not yet established on the labour market. She notes that if minimum wages are lowered, employment for young people increases both for the low-wage sector and the high-wage sector. Spector emphasizes that this results indicates that there is an inverted U-shaped relationship between minimum wages and employment. When the minimum wage is low it tends to lie below the workers' expected productivity. In such cases, an increase in minimum wages can increase employment by increasing the labour supply. As the minimum wage increases, it becomes increasingly fewer workers who have a productivity that matches the minimum wage.

Addressing the specific case of Sweden where minimum wages are negotiated between labour unions and enterprise federations, Spector suggests that Sweden lies significantly beyond the point where higher minimum wages result in increasing employment. Studies on the Swedish labour market confirm that companies tend to replace workers with low productivity with new people with a higher productivity after an increase in the minimum wages, and also, an older generation is often replaced by a younger one. Egebark and Kaunitz (2014) shows that when payroll taxes (Swe: 'arbetsgivaravgifter') for young people were reduced in Sweden it increased the employment among young people but did not affect the wage rates. Spector conclude that given the uneven distribution of unemployment this could be an indication that there is a wage floor in Sweden that excludes certain groups from the labour market. Long-term studies suggest that high minimum wages complicate labour market entry and have impact on employment and wages later in life as well.

### **Negative income tax?**

One popular idea to counter the unemployment effects of digitization is to provide a guaranteed income or a negative income tax. A citizen salary, non-significant but still too low for individual subsistence, is currently in place in among other places Alaska (derived from

oil exports). Norway and other countries with significant natural resources could easily introduce similar provisions, and theoretically any state or region could introduce a negative income tax or guaranteed income. The effects of these are however not well studied. Some different experiments have been made with negative income tax (NIT) in the United States. Burtless and Hausman (1978) evaluated the effects of a NIT experiment in Gary, Indiana, the Gary Income Maintenance Experiment conducted between 1971 and 1974. The experiment was based on a labour-supply model that estimated a structural model of labour for adult males in low-income neighbourhoods in Gary, Indiana. Participants were randomly assigned to one of four NIT plans or to a control group. In two of the plans, wage and nonwage income was subject to a 40 per cent tax rate; in the remaining two, income was taxed at a 60 per cent rate. Two of the Gary NIT plans offered basic income supports, scaled according to family size, that were equal to slightly more than the poverty level. The other two plans offered basic supports, also scaled to family size, which were one-quarter lower. The result shows that poor health and high age reduces expected labour supply in the group on the NIT plan, i.e. that older workers and workers that were often ill reduced their labour force participation. Conversely, workers with larger families increased their labour supply when the NIT was introduced. Burtless and Hausman concluded that individuals seem to take an increased amount of time in-between jobs if they have an income guarantee, and argued that the most important factors in designing a NIT are considerations of how individuals response to the level of the income guarantee and to the marginal tax rate. Their findings indicates that the lack of a perceptible effect on labour supply of variations in the NIT tax rate. Overall, the effect of the NIT in Gary on general employment and earning was quite weak. Similar studies were later conducted in New Jersey and in Pennsylvania 1968-1972, in Iowa and North Carolina 1969-1973 and in Seattle and Denver 1971-1982, with similar weak effects. The economist L.F.M. Groot (2004) emphasizes that some lessons can be learned from the American experiment. However, he points out that the context was quite different in the United States during the 1960s and 1970s compared to today's Europe, and notes that the result must not be overinterpreted.

A guaranteed income is a radical reform for at least three reasons. First, it requires significant adjustments to current social and economic systems, especially in the European economies. Second, it will require a lot of funding to work in practice. Third, a negative income tax may

have unproductive consequences for the incentive to work among individuals currently positioned in the middle- and top-of the income distribution. Certainly, many people with high incomes may think negative incomes taxes to be an unacceptable political suggestion.

As suggested earlier, it can also be questioned to what extent a guaranteed income solves potential exclusion problems in the digital economy. Work provides much more than an income – a feeling of inclusion and purpose, social contacts, status and identity. Some might be happy to do voluntary work and spend more time with friends and family, but probably not everyone. Even if no one would need to starve, income differences would be huge. The social implications of such a radical reform would be hard to predict.

We thus hardly see negative income tax as the first option to counter the transition to a digital economy. It may be worthwhile to continue a debate about it and follow any trials that come up.

### **Educational advancement?**

In a series of articles, Andrei Shleifer and his colleagues has investigated productivity and growth across countries, regions, and sectors in the modern world. Their generalized stylized findings are that to an increasing extent, it is primarily societies' investment in human capital in the first place, and ability to produce entrepreneurship in the second place, that drives productivity and consequently growth (Gennaioli et al., 2013). A natural conclusion to combat the labour market disruptions of skill-biased technological change would thus be for governments to invest increasingly in education and training. A problem is that many education systems in the developed worlds are under severe stress from different stakeholder requirements, institutional change, underfunding or inefficient organization, etc.

Another way would be to educate people in new ways, with more focus on creativity and less on rote learning, for example by using massive open online courses (so-called MOOCs). This part of technology-driven change in the education system is part of a movement where education is moving towards the development of a greater recognition of practical knowledge and informal learning channels where self-learning, peer-learning, coaching and tutorship

seems to become more prevalent. To some extent this represents a return to the renowned Oxford/Cambridge tutorship system, but with more flexibility and higher resource efficiency.

This development has gone hand in hand with the technological development and the increasing use of media where concepts such as "e-learning", "blended learning" and "flipped-classrooms" models (use of online teaching for lectures and exploits instruction in place of seminars) are suggested as ways to use technology to *enhance* education, not merely to automatize it. A proponent for this view is Iosifescu (2014) who advocates a transformational educational system that goes away from the traditional type of incremental education where individuals move up gradually as they age and pass certain education goals, towards a system which is participatory-driven and more flexibly adapted to individuals' needs. It is too early to see how technology may impact the education system (for better or worse) although it is possible to see tendencies in the US towards the labour market providing more opportunities for individuals to become more involved in the educational process with an increased cooperation between individuals, employers and the education system. Ideally, this type of development *could* help improve the match between individuals and jobs (see e.g. the Apollo Lightspeeds Balloon project, a labour platform providing free training for individuals already established on the job market (Cappelli, 2014)).

It remains to be seen whether new innovative types of education may contribute to enhance the 'non-cognitive abilities' such as self-motivation, persistence, and creativity, which are the skills seen as most important on the future labour market (Heckman and Krueger, 2005). One hope is that automation can make really good education accessible to many more in the future (Levy and Murnane, 2004: 99-148). This could free up resources needed to spend on enhancing non-cognitive abilities, such as good kindergartens. As Frey and Osborne (2013) emphasized in their paper on the disappearance of jobs, certain features related to non-cognitive skills such as creative intelligence and social intelligence make it less likely that a computer would be able to replicate the tasks of that job. The future for education may thus lie in the combination of technology and human-to-human interaction in problem solving. As Brynjolfsson and Hitt (2014) exemplifies, while today's chess computers are advanced enough to beat any human chess expert, a team of individual chess experts working together

with chess computer programs have higher chess playing ability than any computer program or individual expert by themselves. So for the computer literate part of the workforce, digitization comes with a potential for increased productivity and earnings. For the non-computer literate part of the workforce, on the other hand, individuals may be increasingly confined to non-repetitive service jobs such as janitors, waiters, and cleaners, or be in need of training and education.

## **Conclusions**

The exponential development of mobile communications, robotics, the internet of things, and computer programs is increasingly transforming production, consumption, and the labour market. Many people today feel they are living in a brave new world providing endless opportunities for new types of interaction with people through digital tools, new ways of working, and new forms of leisure. Warning signs have been raised that the rapid spread of digitization will also affect labour markets in ways not seen before. How serious should we take such warning signs? From the industrial revolution in the 18<sup>th</sup> century and onwards, it has previously always been the case that jobs that have disappeared due to automation and foreign competition, but new types of jobs have been replacing the old jobs. This type of shift does not have to be an eternal truth. As computers and robots take over even the most advanced tasks, the demand for human labour will be more and more geared towards tasks that require advanced dexterity, leadership, social skills and creativity. Will there be a room on the labour market for those who are not good at such skills? Without government investment in training and education, and a social safety net facilitating transition from disappearing jobs and sectors to new and emerging sectors, we may see significant social and economic inequality in the years to come.

In this short paper we have outlined potential labour market consequences of automation based on digital technology – digitization. We discussed the potential roles of active labour market programs, potential changes in labour taxation, and the way in which education and training is conducted and funded. As we have shown, there are no easy solutions or ‘quick fixes’ to the challenges of modern labour markets affected by digitization. In many cases, the attempts to radically change income taxation, such as regulated minimum wages, may provide

negative rather than positive outcomes since those individuals with lower productivity than a computer will be permanently banned from the labour market. Subsidized wages or lower taxation on lower income levels has received more positive support in the economic literature, but there is little support for the gainfulness of negative income taxes. A potentially more productive way for governments to support the future labour market may be to shift taxes from income to other tax bases. In the short- to medium time horizon, these problems are likely premature for policy makers to tamper with. Instead, the problems of today are more similar to the problem of yesterday or the last few decades. How could we facilitate the creation of new businesses when the old collapse, and create new jobs as old ones disappear? If the US economy was able to generate one Google and one Wal-Mart a year, or the European Economy was able to generate one Vodafone and one Zara a year, the disappearing jobs would soon be replaced by new types of jobs. So perhaps it is more imperative to look at the regulation and incentives hampering the creation of new and growing businesses than to focus solely on the labour market.

Looking further ahead – perhaps by the year 2050 – we may see intelligent and nimble machines able to out-compete almost any human for any job. What will we do then? Maybe our intelligent computers will be able to help us find a solution. We don't know, and it is likely premature for economists, policy makers and others to worry about this. If we will have a future of leisure and material abundance, the potential for human flourishing may be better than any previous period in history (Norberg, 2014). With less time needed for subsistence labour, more people would be able to spend more time on socializing, traveling, educating themselves, exploring new experiences and enjoying culture. With more and more of the information, education and entertainment offered on the Internet becoming freely available, and necessity goods plummeting in price in many countries, there are positive as well as negative visions about the future that digitization will bring.

## REFERENCES

Brynjolfsson, E., & Hitt, L. M. (2000). Beyond computation: Information technology, organizational transformation and business performance. *The Journal of Economic Perspectives*, 23-48.

- Brynjolfsson, E., & McAfee, A. (2014). *The second machine age: work, progress, and prosperity in a time of brilliant technologies*: WW Norton & Company.
- Burtless, G., & Hausman, J. A. (1978). The effect of taxation on labor supply: Evaluating the Gary negative income tax experiment. *The Journal of Political Economy*, 1103-1130.
- Carling, K., and Richardson, K. (2004). The relative efficiency of labour market programs: Swedish experience from the 1990s. *Labour Economics*, 11(3), 335-354.
- Cappelli, G. W. (2014). Creating the future American workforce. *Apollo Institute.*, <http://www.apollo.edu/content/dam/apolloedu/microsite/workforce/pdf/Creating-the-Future-American-Workforce.pdf>.
- Caroli, E., & Van Reenen, J. (2001). Skill-biased organizational change? Evidence from a panel of British and French establishments. *Quarterly journal of economics*, 1449-1492.
- Egebark, J., & Kaunitz, N. (2014). Do payroll tax cuts raise youth employment? : IFN Working Paper.
- Frey, C. B., & Osborne, M. A. (2013). *The future of employment: how susceptible are jobs to computerisation?* Oxford University.
- Gennaioli, N., La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2013). Human capital and regional development. *The Quarterly Journal of Economics*, 128(1), 105-164.
- Groot, L. (2004). Why Launch a Basic Income Experiment? *Basic Income, Unemployment and Compensatory Justice* (pp. 93-114): Springer.
- Heckman, J. J., & Krueger, A. B. (2005). Inequality in America: What role for human capital policies? *MIT Press Books, 1*.
- Hertweck, M. S., & Sigrist, O. (2012). The aggregate effects of the Hartz Reforms in Germany: SOEPpapers on Multidisciplinary Panel Data Research.
- Iosifescu, C. Ş. (2014). The Foundation of Success in Adult Learning: Dilemmas and Concerns. *Procedia - Social and Behavioral Sciences*, 142(0), 403-409. doi: <http://dx.doi.org/10.1016/j.sbspro.2014.07.700>
- Kluve, J. (2010). The effectiveness of European active labor market programs. *Labour Economics*, 17(6), 904-918.
- Krebs, T., & Scheffel, M. (2013). Macroeconomic evaluation of labor market reform in Germany. *IMF Economic Review*, 61(4), 664-701.
- Levy, F., & Murnane, R. J. (2005). *The New Division of Labor: How Computers are Creating the New Labor Market*. Princeton: Princeton University Press.
- Ljungqvist, L., & Sargent, T. J. (1995). The Swedish unemployment experience. *European Economic Review*, 39(5), 1043-1070.
- Neumark, D., & Wascher, W. L. (2008). *Minimum wages*: MIT Press.
- Norberg, J. *Leva och låta dö*. Stockholm: Hydra Förlag, 2014.
- Rodriguez-Planas, N., and Benus, J. (2007). Evaluating active labour market programs in Romania. *Documentos de trabajo (FEDEA)*(31), 1-44.
- Rosen, S. (1981). The economics of superstars. *The American economic review*, 845-858.
- Røed, K., & Strøm, S. (2002). Progressive Taxes and the Labour Market: Is the Trade-off Between Equality and Efficiency Inevitable? *Journal of economic surveys*, 16(1), 77-110.
- Spector, S. (2014). Lågstalöner och lönespridning - vad säger forskningen? Svensk Näringsliv / Confederation of Swedish Enterprise.

