

**UNIVERSITY OF SZEGED**  
**FACULTY OF ECONOMICS AND BUSINESS ADMINISTRATION**  
**DOCTORAL SCHOOL OF ECONOMICS**

**Creating jobs or boost economic growth?**  
The examination of jobless growth in the OECD countries  
Theses of the dissertation

Supervisors:

**PROF. DR. FARKAS BEÁTA, PH.D.**  
professor  
University of Szeged  
Faculty of Economics and Business Administration

**DR. KOVÁCS PÉTER, PH.D.**  
associate professor  
University of Szeged  
Faculty of Economics and Business Administration

Author:

**MARTUS BETTINA SZANDRA**  
University of Szeged  
Doctoral School of Economics

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## **1. Justification of the topic**

The 21st century is seeing an increasing volume in automation with the evolution of the technological changes that have strong effects both in economic and social terms. On the verge of the Fourth Industrial Revolution (Bloem 2014, Schwab 2016), the question arises: Will there be need for manpower, and if not, how should we ensure the livelihood of millions of people? Brynjólfsson and McAfee (2014) presented one of the most threatening problems in society as a result of acceleration of technological change, which in turn can raise a great opportunity for us: growth without job creation. It is difficult to decide whether the studied phenomenon signifies actually a negative or positive process. The topic is current because the economic and social (as well as environmental) processes have become increasingly global, generating changes of rapid pace, which are difficult to adapt to. In the United States, employment started to decline after the 2007/2008's economic crisis, then stagnated, economic growth, however, showed only minor setback, and then the trend restored in a short period (Rajan 2010, Botos 2013).

Looking at the economic and social trends, it is clear that over the past decades, jobs requiring medium skills and involving physical, mental or even routine tasks gradually disappear (Jaimovich-Siu 2012, McAfee Brynjólfsson-2014). The problem so far is that these jobs meant the moderate wages and the economic system does not ensure that the resulting assets of automation benefit everyone, in other words, inequalities appear in income and social status. Although the phenomenon poses a major problem in the United States again and again, manufacturing jobs, or even analyst or similarly skilled jobs existing in Hungary might be in danger during the adaptation of technologies, just as in any other country of the world.

In Europe, growth without job creation (jobless growth) has not meant a problem in recent years, but this is due to the different economic and social characteristics and stricter regulations. The phenomenon can be observed in times of recession, crisis, and it causes a serious problem primarily in the United States among the developed countries. Developing countries are also concerned; we may examine the economic data of India or Sub-Saharan Africa in recent years (Jha 2002). The really significant problem is that the movement of these two factors (employment and GDP growth) is separated from each other for increasingly longer periods (Bivens 2011), and thinking in short-term solutions does not suffice any more. It is not only the recovery period that has changed, but also the level of employment. As per the labor market data of 2008, the net employment balance in the worst performing quarter was -750 thousand pieces in the US (Magas 2011).

The appearance and impact of growth without job creation before the 2001 recession could be considered as cyclical, that is it only appeared when the recessions have ended. However, nowadays a number of structural changes determine the phenomenon that makes the problem itself structural in nature. From the point of view Hungary and the member states of the European Union, the process is important also because looking at the 2005-2014 data; we can see that the employment rate generally lags behind the figures of the United States of America, while the hub of growth without job creation is in the US. Here GDP growth has decreased after the crisis and the subsequent years, however, it has not caused high fluctuations and it shows a stable growth compared to the GDP growth of other groups of countries and of Hungary. Although the study is primarily focused on the phenomenon of jobless growth in the United States, it is worth drawing conclusions based on these also for the countries of the European Union, since the US is still performing better in terms of employment than Europe. Of course, this does not mean that growth without job creation should appear as an objective in European economic policy programs, but rather that using the US as an example, we can examine what factors reduce employment and we may try to avoid these by avoiding the growth without job creation phenomenon.

## **2. The objectives and hypotheses of the research**

The central question of my paper is what factors may play a role in the fact that growth without job creation occurs in the US within shorter and shorter periods of time, while in Europe it is not typical. To analyze this, I will examine the economic and social characteristics of the OECD countries (Europe and the United States). To examine the research question, it is crucial to make a thorough analysis of the phenomenon of growth without job creation, to examine the causes contributing to its development and maintenance and to perform the related empirical research.

The hypotheses of my paper are as follows:

**H1: It is mainly the structural effects or changes that play a role in the development of the growth without job creation in the United States.**

Although the simultaneous movement of several impacts forms the phenomenon of growth without job creation, I examine based on the literature and the empirical data how much the

structural impacts affect the studied process or whether the cyclical factors also have a significant impact on the relationship between economic growth and employment. My assumptions are mainly based on the literature and empirical research (principal component analysis and regression).

**H2: The structural effects basically help in achieving economic growth, but they do not contribute to enhancing the level of employment and the phenomenon of growth without job creation in itself is a structural effect.**

Since technological processes, changes and human capital all play an increasingly important role in economic growth, it can be assumed that these factors induce structural processes; therefore growth without job creation itself, by the development of the economic and social processes of a structural nature, becomes a structural phenomenon which will be more and more difficult to eliminate. I aim to support this hypothesis based on the literature.

**H3: The economic and social processes characterizing the United States of America and the European countries of the OECD show significant difference.**

The United States of America has a much more advanced status than the European countries of the OECD in terms of economy, however, Europe, on the whole, protects its population and its livelihood much more on a social level for example by forming the employment protection law. I will gather the economic and social processes characterizing the two regions based on the literature and I will examine my hypothesis using cluster analysis and cross-board analysis.

**H4: Income inequality, and along with it, polarization of the jobs is significant in the United States.**

Testing the hypothesis is based on the literature. In income inequalities, the fact that jobs requiring moderate skills disappear and those requiring low and high skills still remain play an important role. The biggest challenge is that wages are also developed accordingly, that is jobs requiring high skills pay a high wage those requiring low skills pay the wage of the respective category. The group of moderate wages thus disappears, which also supports growth without job creation, as one low-wage job is often not enough to live on, more of them need to be taken.

Of course, this would increase the level of employment, but we need to examine what happens to these employees in times of recession and by which statistics keep a record of the employee (since there are statistics which do not reveal if a person has more than one job).

The paper therefore aims to explore the current economic and social situation, in an analysis comparing Europe and the United States of America, which has been unprecedented in recent years on the basis of the literature reviewed so far.

### **3. The structure of the dissertation and the applied methods**

#### 3.1. The structure of the dissertation

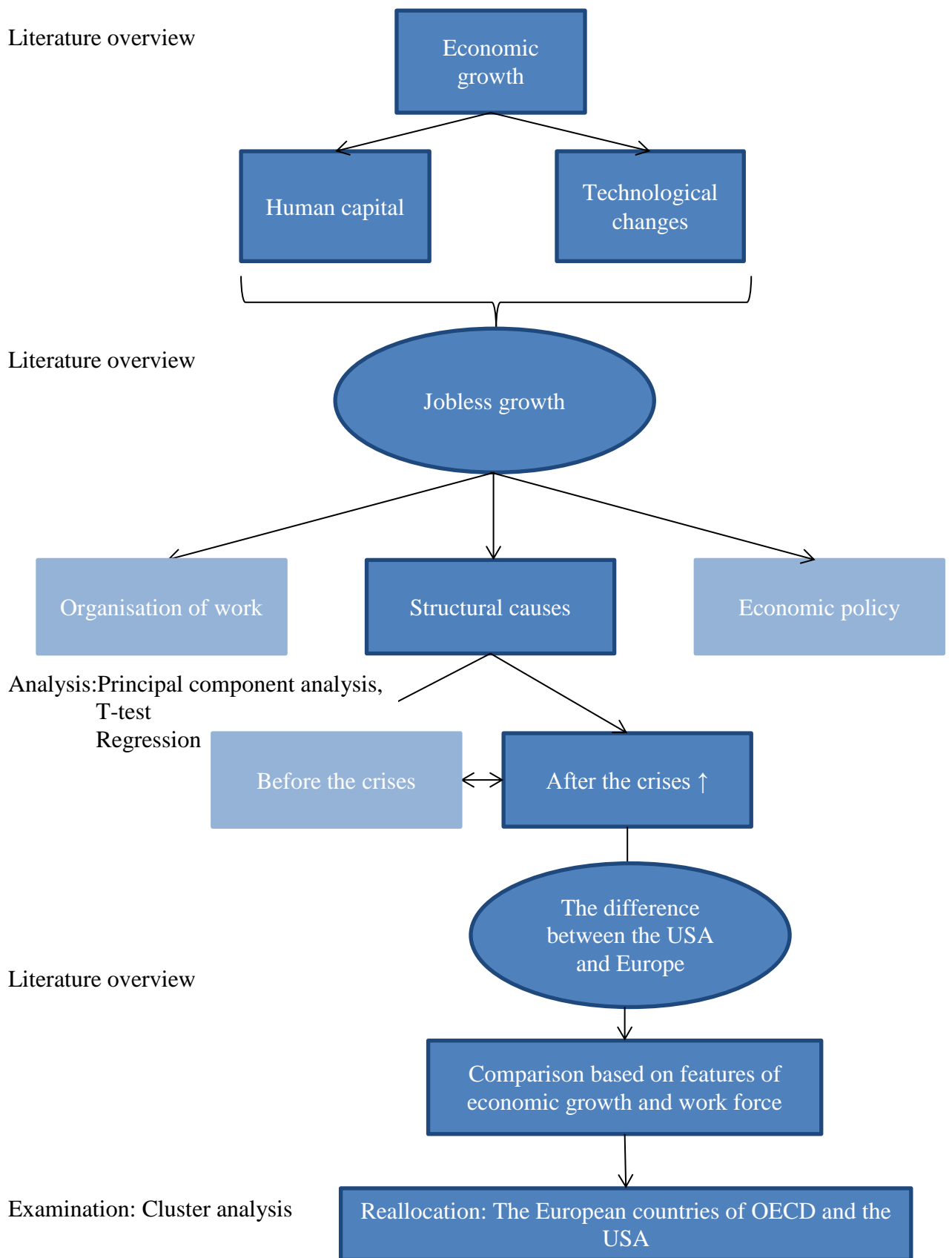
The first figure shows the structure of the dissertation. The first chapter contains the economic growth and the relevant economic growth theories which relates closely to the topic of my dissertation. Through the expoundation of economic growth I will show the evolution of these theories in which the technological changes and the human capital also appears. Afterward the describing of theories, I will expound the most important method of the enumeration of the economic performance, the GDP, which indicator is incapable to show the most important features of economic growth from lots of aspects. It shows only the extent of the growth because we measure only with a statistical data. To avoid this problem, more alternative indicator have established to get more punctual meaning about the progress of our economic performance. It means that more aspects have taken in account in these alternative indicators, e. g.: sustainability, happiness, etc. Multitude of indicators with other aspects are in vain, the biggest tone is still reaching the biggest value of gross domestic product, because the establishing of the objectives of economic policies are mainly based on the GDP. Exactly the importance of the goal of reaching economic growth we can face even bigger inequalities in social and economic levels.

In the second bigger logical part of my dissertation, I examine the economic situation of the United States of America after the financial crises of 2008. After the crises the United States of America has reached a relative good economic growth but in the employment level we experienced a downturn and stagnation. Thanks to several dispatches which were trying to handle the negative effects of the crises, the economic processes seemed to be stabilize but jobless growth is a more often evolved phenomenon in this country. But what kind of factors can lead to the situation, where the economic policy has to face the same problem over and over

again? The main economic problems that contribute to jobless growth have been clustered in three groups and I introduced the factors based on this clustering: processes of organization of work, structural processes and production factors.

The next chapter of my dissertation present the features of the European labor market and economic growth. This chapter answers to the question: why has the phenomenon of jobless growth be formed over and over again in the United States of America by contrast of Europe. In the 1980-1990's jobless growth was also specific in Europe that is why I analyze the economic processes of the 80-90's which were determining in this area and the progresses that has been changed and ended the topic which is analyzed in my dissertation.

Figure 1: The structure of my dissertation





### 3.2. Methodology

During my primer analysis I examined the causes of jobless growth and the possible clusters of these causes based on literature overview. The United States of America continuously suffer from the problem of jobless growth. After the crises of 2001 the employment rate has started to increase but the economic crises of 2008 had set back the increasing rhythm of the employment level moreover it decreased and after some months it started to stagnate then increase but very slowly.

In the beginning of my examination I determined 37 indicators. During the selection of indicators I based my analysis on the study of Bettio-Rosenberg (1999), Bernanke (2003), Schreft-Singh (2003), Corsi (2009), Aronowitz-DiFazio (2010), Rajan (2010), Bivens (2011), Farkas (2011), Krugman (2012), Mulligan (2012), Shimer (2012), Botos (2013), Daly (2013), Ernst-Viegelahn (2014). I tried to involve lots of indicators but reaching some data has hindered this aspiration. There is no indicators that could cover the just-in-time system on the labour market. To get information about offshore and outsourcing I based on the work of Schulz (2004) and Mcivor et al. (2008) from the lots of literatures, but the data were also limited in this topic also. I gathered the statistical data from different databases and reports (International Labour Organization, The World Bank Reserve Economic Data, Bureau of Labor Statistics and Organization of Economic Co-operation and Development), from the literature overview that I used to the theory and the website of [policyuncertainty.com](http://policyuncertainty.com). The main barrier during the data collection is the time series because the most indicator is determined for a one year period and there are lots of new indicators in the database that are not available for the period before 2001 (e.g. the indicator of labour/employment cost index). Through the available data I made principal component analysis and I got five principal component and based on these data I made regression analysis. The results have showed obviously that in the United States of America the structural factors were the most determining economic features.

With the help of cluster analysis I made a comparison between the European territories and the United States of America and I applied multidimensional scaling to the data. the observation units were the European member states of the OECD (Austria, Belgium, Czech Republic, Denmark, United Kingdom, Estonia, Finland, France, Greece, Netherland, Ireland, Iceland, Poland, Luxembourg, Hungary, Germany, Norway, Italy, Portugal, Spain, Switzerland, Sweden, Slovak Republic, Slovenia) and the United States of America then I compared these two territory based on the reallocation processes.

*Table 1: The changes in employment rate (percentage points), GDP per capita (USD, 2010 prices), GDP growth (%), between 2009-2010*

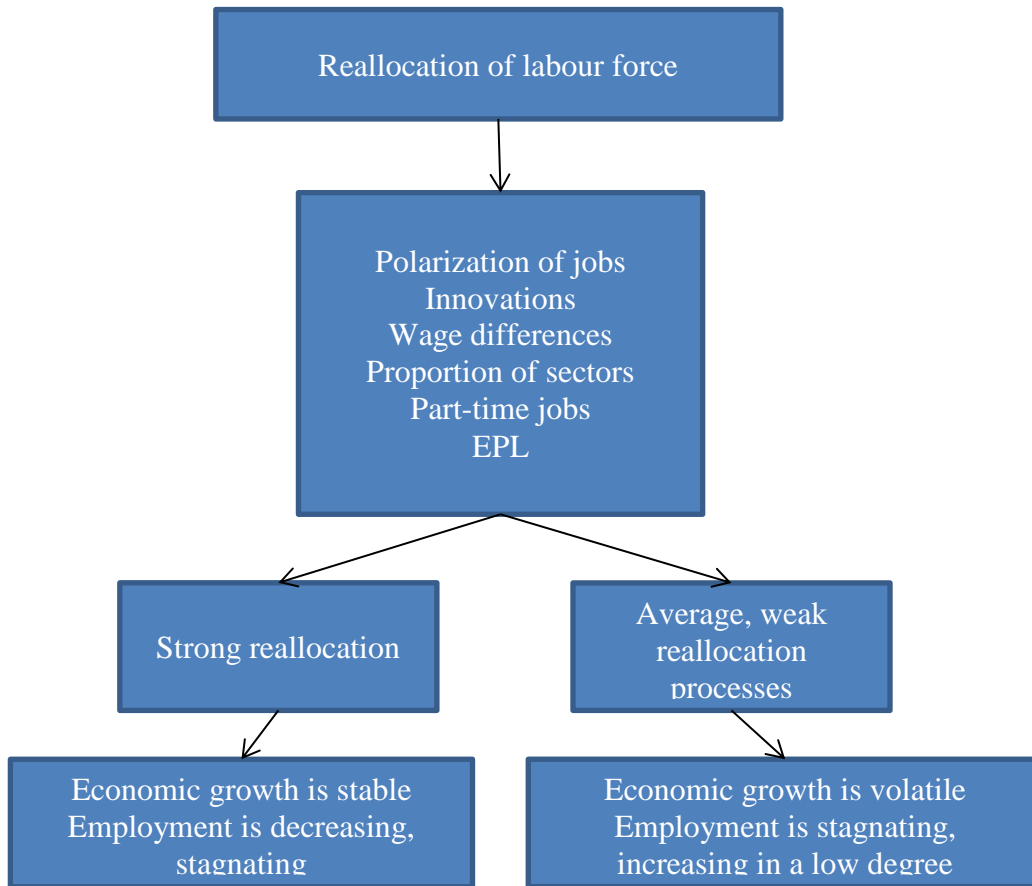
Indicator	Changes in employment rate (percentage points)		GDP per capita, USD, on 2010 prices		GDP growth (%)	
	2009	2010	2009	2010	2009	2010
Countries/Periods	2009	2010	2009	2010	2009	2010
Austria	-0,7	0,7	41 208	41 904	-3,8	1,9
Belgium	-1,3	0,6	38 575	39 276	-2,3	2,7
Czech Republic	-1,8	-0,6	26 419	26 959	-4,8	2,3
Denmark	-3,2	-2,7	41 351	41 841	-5,1	1,6
Estonia	-9,0	-3,9	20 540	21 084	-14,7	2,5
Finland	-3,4	-0,7	37 380	38 323	-8,3	3,0
France	-1,2	-0,2	35 378	35 896	-2,9	2,0
Germany	0,3	1,1	38 698	40 377	-5,6	4,1
Greece	-0,8	-3,0	30 680	28 961	-4,3	-5,5
Hungary	-2,3	-0,2	21 369	21 577	-6,6	0,7
Iceland	-6,3	-0,1	39 901	38 619	-4,7	-3,6
Ireland	-8,2	-3,6	43 247	43 223	-5,6	0,4
Italy	-2,2	-1,0	33 983	34 419	-5,5	1,7
Luxembourg	2,8	0,0	81 396	84 440	-5,4	5,7
Netherlands	-0,3	-3,0	44 393	44 783	-3,8	1,4
Norway	-2,1	-1,4	59 150	58 775	-1,6	0,6
Poland	0,3	-0,7	20 080	20 626	2,6	3,7
Portugal	-2,8	-1,2	26 435	26 924	-3,0	1,9
Slovak Republic	-3,4	-2,3	23 217	24 342	-5,5	5,1
Slovenia	-1,6	-1,9	27 344	27 586	-7,8	1,2
Spain	-7,0	-1,8	32 514	32 383	-3,6	0,0
Sweden	-2,8	0,0	39 707	41 727	-5,2	6,0
Switzerland	-0,6	-0,5	50 207	51 156	-2,1	3,0
United Kingdom	-2,2	-0,7	35 623	35 884	-4,2	1,5
United States of America	-4,7	-1,3	47 503	48 302	-2,8	2,5

Source: OECD (2016)

In respect of some countries not every indicators were available, I had to narrow the sample and at last I examined 20 OECD countries. Estonia, Netherlands, Ireland, Luxembourg and Slovenia are not in the circle of the analyzed countries. The examined year is the year of 2008, the financial crises' year because my research is about the similar economic features of the given countries, were the reallocation's processes significantly different from each other in Europe and the United States of America? How can it be that the economic growth has started to increase from 2010 in the United States of America and in the year of 2008 the relapse was not in high degree compared to the other analyzed countries. The employment level has set back deeply, in contrast of the European OECD countries who experienced the relapse in employment mainly in 2010 (Table 1). The economic downturn showed in the United States of America still in 2011 and it could not reached the level of the employment rate which was specific before the crises.

The comparison takes place through the reallocation of the labor force (Figure 2), because several economic and social processes hint to the factor, that the economies need to reallocate the labour force in even bigger extent and then we generate structural effects in the world. While the cyclical effects can be reversible and they fit to the changes in demand, until then by the structural effects the companies and the sectors reallocate their workforce and the capital. By the cyclical job losses the cessation of the jobs are just temporary, while the structural unemployment is permanent, the jobs disappear for a long-term period or forever, the employment ceases absolutely and sectoral changes occur. By the structural changes, a long period elapses to establish new jobs. By the temporary suspension, the employee and employer adapt to the decrease in demand. The employment restores again when the economic conditions start to improve and until this, the employer can help to their employees to receive unemployment support (Groschen-Potter 2003). Innovation, sectoral changes, R+D, migration, wage inequalities, the polarization in jobs and part time jobs can cause structural changes, while changes in monetary policy and the effects of recession cause cyclical effects. Since the reallocation of labour force is strongly correlate to the phenomenon of jobless growth, I started with the collection of structural and cyclical factors based on the literature and the indicators which relate to the factors.

Figure 2: The logic of the examination



The selection of the indicators based on the literature overview. Table 2 shows the variables and the related indicators. The polarization of jobs is one of the variables where the availability of the data is a problem. Since Jaimovics and Siu (2012), and Beck (2009) associated the polarization to the wages<sup>1</sup>, I collected the data to my examination from the OECD database related to the wages. The wage differences and inequalities are strongly related to this factor but I emphasize separately, and the data have been collected to the wage differences between genders. This factor shows even bigger differences in the different countries so we need the reallocation of labour force. The numbers of innovations and the development of technologies can determine each countries development and economic growth and can decrease the rate of employment (Conti-Sulis 2015), so I used the indicator called technological development that means the number of patents.<sup>2</sup> Conti and Sulis (2015) measured the technological development

<sup>1</sup> The jobs with high skills means high wages while the jobs with low skills relates to low wages.

<sup>2</sup> The number of patents a measure the technological changes is not the best method. The problem is: what should we measure: the patents per 1000 people or the total number of patent sin the economies, because these indicators do not show the value what really measure the effectiveness of technological development.

with the help of the internet usage but this data can be misleading since it does not really measure the development and the availability of data are restricted. To this factor I use the revenue on R+D activities in the per cent of GDP to get more punctual information. The rate of sectors also contribute to the economic growth and to the decrease of employment (Baumol 1967, Hartwig 2015, Anxo-Storrie 2000), and the changes in sectors causes structural changes in the given economies. I measure this factor with the help of the proportion of the sectors in the rate of GDP. The proportion of part-time employment hint also to structural changes since the people work in part-time jobs to increase their income or they could not find better jobs or they would like to choose this type of jobs. We facet hat the part time jobs are more common in the analysed economies (Sciarra 2004). The measure the Employment Protection Law (EPL) (Montuenga et al. 2006, Tangian 2008) I use the strength of firing employees.

Based on the listed indicators I made cluster analysis and I classified the examined countries. The list of the indicators can be expanded of course but the main goal is to determine the processes of reallocation of labour force and to crawl the effects or make a classification.

*Table 2: The involved economic phenomenon and the related indicators*

<b>Economic phenomenon</b>	<b>Indicator</b>
Polarization of jobs	Rate of low wages (OECD 2016)
Innovation, technological development	Number of patents per thousand people (OECD 2016) Revenues on R+D in proportion of GDP (KSH 2016)
Differences in wages	Wage differences between genders (OECD 2016)
Changes in sectoral proportions	Rate of agriculture in the proportion of GDP (OECD 2016)
	Rate of industry in the proportion of GDP (OECD 2016)
	Rate of service in the proportion of GDP (OECD 2016)
Part-time jobs	Rate of part-tim jobs (OECD 2016)
EPL	Strength of firing employees (OECD 2016)

Source: own editing

#### **4. The main results of the dissertation, theses**

Europe and the United States of America differ in respect of employment and GDP growth. While overall, employees in Europe were not so wrongly affected by the 2008 economic crisis - although it is a lower-level of employment -, while in the United States of America the GDP growth stabilized more quickly. If the European countries are analyzed separately, you can see

that a heterogeneous picture is also provided (Table 1), as in the Nordic countries the employment decreased significantly.

The economic growth theories of an ever-expanding system became clear that the human capital and technological changes can replace more people's work that has a negative impact as regards the employment data. However the GDP takes advantage of these factors and it seeks to obtain greater profit thereby it generates economic and social inequalities. The Meadows couple's question becomes more interesting not only in environmental but also in social aspects. How far do we want to grow and where does it lead? Do we or have we already reached the „overshoot“ phase? How long can this kind of exponential growth be sustainable which shows this trend in numerous factor cases? Can we do anything with the help of pro-poor growth concept? My thesis is closely related to these issues as I examine the decrease in employment.

Analyzing the United States, the jobless growth raises a more pressing question: are the applied economic policy programs good, can we access the economic growth and employment through measures? The effects of replies to crisis management are not clear since investments and projects started to increase again but the rise in employment levels lagged. In the next chapter, I tried to find the answer to whether only these factors can be attributed to the failure in the context of employment. Based on the examination of literature, it was clearly shown that major problems were generated by extraordinarily high levels of structural economic and social processes. With the help of an independent two-sample test we could define that the analyzed mostly structural factors significantly increased in the following year of crisis compared to pre-crisis growth. This could help to promote economic growth.

Europe is below the American flexibility which is favorable for the employees during economic crises and recessions because it is more difficult for the employer to start dismissal by reason of high costs. In the Chapter 4, thanks to the literature related to the labor market and economic performance, I analyzed the significant differences between Europe and the United States of America. The role of trade unions in Europe is becoming smaller and fewer full-time employment, well-paid work, but the security is higher level than in the United States of America. Although the role of producer services within the services is lower than in the United States of America, the situation is more balanced in terms of economic growth in most European countries. Flexibility can easily lead to the development of the honeymoon effect which causes the increase in employment rate but it only lasts until the companies receive subsidies, are given to favorable interest terms for the creation of a new investments, or until a new recession throws back their performance. The United States of America is in a favorable position in terms of

flexibility and investments. There is a significant FDI inflow which could also have a positive impact on employment, however, thanks to globalization and accelerated processes taking into account the productivity, the FDI moves more likely to investments into machinery. Among other things, this is one of the problems of the US economy which is difficult to treat properly. The negative investment effects of monetary policy make things worse, so it may occur again and again the phenomenon of jobless growth. In the cluster analysis, differences specific to the two regions are clearly outlined. The analyzed European OECD countries are not homogeneous in terms of reallocation of labor but do not have as significant values for the variables as the United States of America.

It is a big challenge to find solution for the ever-changing needs and processes. Structural problems should be overcome after which a new problem always appears. However, based on Beck's proposal (2009), sustainable condition related to growth and employment would be available if unconditional basic income would be provided to the citizens. In this case, a number of new questions arise - on one hand the feasibility, on the other hand the recent problems<sup>3</sup> - but it would ensure that a high-quality jobs are available to people up to work, which would ensure growth and employment would not to be a „red-hot problem”. Brynjólfsson and McAfee (2014) do not advise the unconditional income for solving the problem, since it is basically a pretty expensive method and often not effective. Instead, it encourages the development of systems for supporting the income, which means less tax for citizens, considered as an in-work benefits, so people do not feel useless. They consider that the basis of tax assessment of support can be taxation of polluting technologies or greater tax burden of capital.

As practical side, an international regulation may help to some extent in solving the problem. On 13 February 2013, the United States of America and the European Union began negotiations on the establishing of Trans-Atlantic Trade and Investment Partnership (Schott Cimino 2013). The trial would support the increasing of more growth and more employment through trade.

The research topic of my dissertation is that *in the analyzed OECD countries (Europe and the United States of America), whether the economic or social differences cause the fact that jobless growth occurs within shorter periods in the United States of America while in Europe it is not that case.* On the basis of literature and statistical data, we can declare that the

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<sup>3</sup> further social and economic inequalities, question of minimum basic income, under which conditions would be proceeded, etc.

structural reasons play a significant role in the development of jobless growth but we must also remember that adequate policy actions can contribute to that.

The findings demonstrate (Table 3) that Europe is not threaten by the jobless growth because there are significant differences between the two examined regions, the Fourth Industrial Revolution gives further opportunity that overall effects of technological change and human capital overshadow social interests in order to achieve economic interests. My research is not considered closed because nowadays fast-paced globalization, technological change raise new problems and questions to be solved but my thesis helps to better understand the topic and to exchange „best practice” for these years or just to raise awareness by avoiding wrong processes. Of course, a whole range of issues was not discussed which is closely related to the examined phenomenon, since the Fourth Industrial Revolution and its impacts could have been analyzed in the research and also the impacts of TTIP.

*Table 3: Results of my dissertation*

<b>Theses</b>	<b>Base of examination</b>
It is mainly the structural effects or changes that play a role in the development of the growth without job creation in the United States.	Literature, empirics
The structural effects basically help in achieving economic growth, but they do not contribute to enhancing the level of employment and the phenomenon of growth without job creation in itself is a structural effect.	Literature
The economic and social processes characterizing the United States of America and the European countries of the OECD show significant difference.	Literature, empirics
Income inequality, and along with it, polarization of the jobs is significant in the United States.	Literature

On the one hand, my research would presents a more accurate picture if all European countries have been examined separately, however, so I created a homogeneous group of European



OECD countries because the comparison with the United States of America could carry out in adequate quality.

## **5. The limits of the research, possible research directions in the future**

This research has lots of limits and lots of open questions are expected. Economic growth and the related topics to economic growth can also be a subject of a dissertation, but the explanation of these topics were limited because the topic of this dissertation. The labour market and the related subject matters are also a base of a wide analysis.

The analysis of the economic growth without creating new jobs does not face any problems in the United States because it is a subject of several articles and literatures since decades. Unlike this, there are not so many articles about jobless growth in Europe, so the base of the comparison is the United States and the literature about this phenomenon. Collecting statistical indicators meant permanent problems because lots of indicators are available just for the United States of America.

The different methodology of the statistical variables between both areas caused also some difficulties, so I reduced the quantity of the involved indicators in the analysis. According to this problem, my analysis cannot be considered as comprehensive because I could not analyze all of the necessary data in every cases in this topic. Determine the time period can be also an object of a discussion. Although the last economic growth without creating new jobs was in connection with the crisis of 2007/2008, it is an interesting question, how long should we need to analyze the data: until the period, when the employment rate does not decrease but increase in the United States or until it does reach the employment level before the crisis.

The importance of this topic is unquestionable. In my opinion the base of a future discussion will give the beginning of the fourth industrial revolution because we can expect for the further decreasing level of employment. Furthermore, after Trump became a president, a new period have begun which can lead to lots of changes. The prognosis regarding China is also an interesting question, it also predicts a crisis, which may involves the economy of the whole world, including the United States of America and ceases more jobs.

## References of my theses

- Anxo, D. – Storrie, D. (2000): The job creation potential of the service sector: General consideration. In: Anxo, D. – Storrie, D. (eds): The job creation potential of the service sector in Europe. Employment Observatory Research Network, EC., pp. 33-64
- Aronowitz, S. – DiFazio, W. (2010): *The Jobless Future (2nd edition)*. University of Minnesota Press, Minneapolis
- Baumol, W. J. (1967): Macroeconomics of Unbalanced Growth: The Anatomy of Urban Crisis. *The American Economic Review*. 57 (3), pp. 415-426
- Beck, U. (2009): A munka szép új világa. Belvedere Meridionale, Szeged
- Bernanke, B. S. (2003): Remarks by Governor Ben S. Bernanke. Global Economic and Investment Outlook Conference, Carnegie Mellon University, Pittsburgh, Pennsylvania
- Bettio, F. – Rosenberg, S. (1999): Labour Market and Flexibility in the 1990s.: The Europe-USA opposition revisited. *International Review of Applied Economics*, 13 (3), pp. 269-276
- Bivens, J. (2011): *Failure by Design. The Story behind the America's Broken Economy*. Cornell University Press. Ithaca and London.
- Bloem, J. – van Doorn, M. – Duivestijn, S. – Excoffier, D. – Maas, R. – van Ommeren, E. (2014): The Fourth Industrial Revolution. Things to tighten the link between IT and OT. VINT Research Report 3. SOGETI
- BLS adatbázis (2015)
- Botos K. (2013): Gazdasági növekedés munkahelyek nélkül? *Pénzügyi Szemle Online*, online: <http://www.penzugyiszemle.hu/fokuszban/gazdasagi-novekedes-munkahelyek-nelkul>
- Brynjolfsson, E. – McAfee, A. (2014): *The Second Machine Age: Work Progress, and Prosperity in a Time of Brilliant Technologies*. New York: W. W. Norton & Company
- Conti, M. – Sulis, G. (2015): Human capital, employment protection and growth in Europe. *Journal of Comparative Economics* (forthcoming)
- Corsi, J. R. (2009): *America for Sale. Fighting the New Global Order, Surviving a Global Depression, and Preserving U.S.A. Sovereignty*. Threshold Edition. New York.
- Daly, H. (2013): Full Employment Versus Jobless Growth. The Daly News
- Ernst, E. – Viegelahn, C. (2014): Hiring uncertainty: a new labour market indicator., online: <http://www.policyuncertainty.com/media/HiringUncertainty.pdf>
- Farkas B. (2011): A piacgazdaság intézményrendszere az Európai Unió új tagállamaiban. *Statisztikai Szemle* 89:(1) pp. 50-76.
- Groshen, E. L. – Potter, S. (2003): Has Structural Change Contributed to a Jobless growth? *Current Issues in Economics and Finance*. Federal Reserve Bank of New York, Vol. 9, Number 8
- Hartwig, J. (2015): Structural change, aggregate demand and employment dynamics in the OECD, 1970-2010. Structural change and economic dynamics. (In press)
- ILO adatbázis (2015)
- Jaimovich, N. – Siu, H. E. (2012): The trend is the cycle: job polarization and jobless recoveries. NBER Working Paper 18334, Cambridge, MA
- Jha, P. S. (2002): *A Jobless Future. Political Causes of Economic Crisis*. Rupa&Co, New Delhi.
- Krugman, P. (2012): *Not Enough Inflation*. The New York Times, April 5.

- Magas, I. (2011): Világgazdasági folyamatok és pénzügyi liberalizáció 1970-2010. MTA Doktori Disszertáció, BCE Világgazdasági Tanszék, Bp.
- Mcivor, R. – Humphreys, P. K. – Wall, A. P. – Mckittrick, A. (2008): A study of performance measurement in the outsourcing decision. Research executive summaries series, Vol 4, Issue 3, letölthető:  
[http://www.cimaglobal.com/Documents/Thought\\_leadership\\_docs/cid\\_ressum\\_a\\_study\\_of\\_performance\\_measurement\\_in\\_the\\_outsourcing\\_decision\\_dec08.pdf](http://www.cimaglobal.com/Documents/Thought_leadership_docs/cid_ressum_a_study_of_performance_measurement_in_the_outsourcing_decision_dec08.pdf)
- Montuenga, V. – Garcia, I. – Fernández, M. (2006): Regional Wage Flexibility: The Wage Curve in Five Countries. In: Caroles, F. E. – Destefanis, S. (eds): The European Labour Market. Regional Dimensions. Physica-Verlag, Germany, pp. 245-266.
- Mulligan, C. B. (2012): Is Macroeconomics Off Track? In: Edlin, A. S. – Stiglitz, J. E. – DeLong, J. B. (eds): The Economists' voice 2.0.: the financial crisis, health care reform, and more. Columbia University Press, New York.
- OECD adatbázis (2015)
- Rajan, R. G. (2010): *Fault Lines. How hidden fractures still threaten the world economy.* Princeton University Press, Princeton and Oxford
- Schreft, S. L. – Singh, A. (2003): A Closer Look at Jobless Recoveries. Federal Reserve Bank of Kansas City, *Economic Review*.
- Schultze, C. L. (2004): Offshoring, Import Competition, and the Jobless growth. The Brookings Institution Policy Brief. 136, Washington
- Schwab, K. (2016): The Fourth Industrial Revolution. WEF, Geneva
- Sciarra, S. (2004): New discourses in labor law: part-time work and the paradigm of flexibility. In: Sciarra, S. – Daries, P. – Freedland, P. (eds): Employment Policy and the Regulation of Part-time Work in the European Union. A Comparative Analysis. Cambridge University Press, Cambridge
- Shimer, R. (2012): Wage Rigidities and Jobless Recoveries (2012) *Journal of Monetary Economics*, 59: S65–S77.
- Tangian, A. (2008): On the European Readiness for Flexicurity: empirical evidence with OECD/HBS Methodologies and Reform Proposals. WSI Diskussionspaper. Düsseldorf
- The World Bank adatbázis (2015)

## **Related publications of the author**

### **Papers in Hungarian peer reviewed journals**

Martus B. – Urbánné M. J. (2016): A munkahelyteremtés nélküli növekedés és az ifjúsági munkanélküliség kapcsolata. *Külgazdaság*, 60:(5-6) pp. 78-105.

Martus B. (2016): Munkahelyteremtés nélküli növekedés: a strukturális változások hatása. *Pénzügyi Szemle*, 61:(2) pp. 248-268. (2016)

Martus B. (2015): Növekedjünk vagy foglalkoztassunk? Az amerikai gazdasági növekedés problémája. *Pénzügyi Szemle*, 2015/2, pp. 254-274.

### **Papers in international, peer reviewed journals on foreign languages**

Martus B. (2014): Life beyond economic growth? Exploring the causes of jobless growth with regression analysis. *Journal of International Business and Economics*, 14, pp. 137-152.

## **Other scientific publications of the author**

### **Papers in Hungarian peer reviewed journals**

Martus B. (2013): Hol van a (kor)határ? A gyermekmunka következményei és megoldási lehetőségei. *Észak-Magyarországi Stratégiai Füzetek*, X. évf, 2., pp. 100-115.

### **Papers in international, peer reviewed conference proceedings on foreign languages**

Martus B. (2013): The Role of Unemployment in the Regional Competitiveness. Lengyel I. - Vas. Zs. (2013) (eds.): *Regional Growth, Competitiveness and Development*. University of Szeged, Faculty of Economics and Business Administration, Doctoral School in Economics, Szeged, pp. 126-142, (ISBN 978-963-306-222-7) <http://www.eco.u-szeged.hu/kutatas-tudomany/workshop/regional-growth>

Czékus Á. – Martus B. (2013): Limitation in the movement of fresh graduates: effects triggered by a binding compensation in the higher education – the case of Hungary. In Bazilevic,

V.D. (ed): XI. International Scientific Conference of Students and Young Scientists «Shevchenkivska Vesna 2013: Economics». University of Kyiv, Kijev, 77-81. (ISBN 978-617-7069-02-6)

### **Papers in Hungarian, peer reviewed conference proceedings on foreign languages**

Martus B. – Savanya P. (n.d.): Intravállalkozói tevékenység - mint a vállalatok versenyképességének egyik lehetséges eszköze. SZTE Gazdaságtudományi Kar Közleményei (Megjelenés alatt)

Martus B. (2013): A technológiai fejlődés/innováció szerepe a gyermekmunkában: probléma vagy megoldás? Bajmócy Zoltán – Elekes Zoltán (szerk.) 2013: Innováció: a vállalati stratégiától a társadalmi stratégiáig, SZTE Gazdaságtudományi Kar Közleményei, JATEPress, Szeged. Pp. 218-241. (ISBN: 978-963-315-121-1) <http://www.eco.u-szeged.hu/karunkrol/regionalis/bz-ez-konyv-vegleges>

### **Research report in Hungarian language**

Németh E. - Martus B. - Szabó Z. Gy. (2016): Integritás felmérés: Közintézmények, 2016. Állami Számvevőszék, 69 p., Budapest