EMPLOYMENT PROSPECTS FOR MANUFACTURING AND SERVICE ENTERPRISES IN THE EUROPEAN UNION

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Abstract. *Analysis implemented in the article allows concluding that the high-tech manufacturing industries do not play a significant role in solving the problems of employment. They are capable for only partial compensation for the loss of jobs in labor-intensive sectors of the economy. Accumulation of knowledge of the population in industrialized countries together with high levels of computer literacy contributes to the revitalization of business services sellers. The authors proceed from the assumption that service sector, and business services in particular, to a certain extent are capable of absorbing of the workforce. This article argues that employment in the service sector in the European Union is still largely focused on traditional sectors of activity. The purpose of the paper is to investigate latest trends of employment in the world and the European Union and the role of the service sector in balancing labor market. Knowledge-intensive services that are important from the point of view of economic dynamics, only start to concur positions in the EU single market.*

Keywords: *employment; manufacturing; knowledge-intensive business services; small and medium enterprises.*

Introduction

Employment is considered one of the most important economic indicators when analyzing the country's economic prospects. Aging of the population, deteriorating birth rates and growing mortality rates are common in most parts of the European Union. Recently another wave of immigration from developing countries of Western Asia and North Africa has occurred and will continue. As a result, European Union is facing labor deficit and structural problems in labor market in coming years.

In 2010, the European Union approved document called "Europe 2020" which was the EU's growth strategy for the coming decade. The strategy contains five targets, one of them being employment, and aims at 75% of the 20-64 year-olds to be employed by

2020. Striving for inclusive growth the strategy contains flagship initiative "An Agenda for New Skills and Jobs" that calls for modernizing labor markets by facilitating labor mobility and the development of skills throughout the lifecycle with a view to increasing labor participation and better matching labor supply and demand.

The balance between labor supply and demand on the labor market is achieved not only through employers and employees consensus but also through thoroughly sustainable employment policy developed by the government. The article aims to investigate the latest global employment trends and service sector contribution to labor market development.

Qualitative methods are used for theoretical overview and analysis of labor economy and employment. Personal observations of the authors are used to reveal the problems in the current labor market and employment situation in the EU. Quantitative research methods: statistical data analysis, forecasting and other financial calculations are used to analyses trends and structural problems in labor markets. Authors provide several recommendations on possible incentives to stabilize and develop labor markets in the European Union.

Theoretical aspects of employment

The complex of relationships, most adequately characterizing the principles, the content and form of participation of the working population in production, in science, is identified with employment as the economic category. The Economic dimension of employment is mainly the labor market.

Encyclopedia Britannica (2016) defines "*Labor economics*, study of the labor force as an element in the process of production. The labor force comprises all those who work for gain, whether as employees, employers, or as self-employed, and it includes the unemployed who are seeking work". Labor economics includes the factors affecting the efficiency of the workers, their deployment between different industries and occupations, modern labor economics especially deals with the labor force of contemporary industrialized economies.

Theory of economics emphasizes the importance of labor productivity as one of the core indicators of efficiency of the labor market and economy in general. In the European Union labor productivity per hour worked is calculated as real output (deflated GDP measured in chain-linked volumes, the reference year 2010) per unit of labor input (measured by the total number of hours worked). Measuring labor productivity per hour worked provides a better picture of productivity developments in the economy than labor productivity per person employed, as it eliminates differences in the full time/part time composition of the workforce across countries and years (Eurostat, 2016). Labor productivity depends on such factors as an investment and saving in physical capital, new technologies, and human capital.

Demography, urbanization, globalization, technology, and macroeconomic crises bring, as the World Bank experts (World Bank, 2013) believe, about formidable jobs challenges. Countries that fail to address them may fall into vicious circles of slow growth in labor earnings and job-related dissatisfaction affecting a sizable portion of

the labor force. Youth unemployment and idleness may be high, and women may have fewer job opportunities, leaving potential economic and social gains untapped. A repeating pattern of small gains in living standards, slow productivity growth, and eroding social cohesion can set in. In contrast, countries that address these jobs challenges can develop virtuous circles. The results—prosperous populations, a growing middle class, increased productivity, and improved opportunities for women and youth—may then be self-reinforcing.

Employment is the result of equilibrium determined by labor market: a working-age population that has been able to carry out activities that can generate income in the form of wages or profits. Sloman and Hinde (2007) refer to a Keynesian theory in which it is assumed that there is a maximum level of GDP that can be obtained at any one time, and if equilibrium GDP is at this level, there will be no deficiency of aggregate demand and hence no disequilibrium unemployment. Employment is one of the most important factors of economic growth (traditional, approved by the practice of management in the period of domination of automatic production and occupying its rightful place in all economic growth models). Therefore, the risk of a slowdown in productivity because of the unsolved problems of employment is taken as a threat signal of economic slowdown. To reduce the risk of a slowdown, it is necessary to improve the use of available labor force and to accelerate structural reforms in the economy.

Employment is multifaceted socio-economic phenomenon having a content, form, structure, and organization. Therefore, authors of the article limit their research of employment to the framework of normative perception about employees and employers:
- Employees, who get a basic remuneration not directly dependent the revenue of the employer.
- Employers, who hold self-employment jobs (i.e. whose remuneration depends directly on the (expectation of) profits derived from the goods and services produced) and engage one or more person to work for them as 'employees', on a continuous basis (International Labour Organization, 1993).

A characteristic feature of modern understanding of employment is the uncertainty of the status of employee and employer. In other words, a person may be an employer and employee at the same time or may regularly switch from the status of self-employed to employee and vice versa. In addition, there is a myriad of options how a person may simultaneously represent himself in the status of employer and employee. The choice of status, in this case, is largely determined by the level of motivation of individual who must decide on its own employment dilemma:
- Guided by information about supply and demand in the labor market and based on its own view on the prospects of the functioning of given industry - to choose the employee status.
- Assessing its own intellectual capital, social networks, financial possibilities, the level of the market competition, business risks etc. - to try out his own business.

By signing a contract of employment with an employer, individual expresses his readiness to work for certain material rewards that depend on the results of his work.

The literature presents quite a number of approaches to the justification of the reasons for qualitative changes in employment. Thus, Manuel Castells (2009), considering the economic development of industrialized countries, has formulated factors determining the nature and dynamics of employment evolution. From the standpoint of the subject of this research, the most interesting are the following trends (Castells, 2007):
- the phasing out of agricultural employment;
- the steady decline of traditional manufacturing employment;
- the rise of both producer services and social services, with the emphasis on business services in the first category, and health services in the second group;
- the increasing diversification of service activities as sources of jobs;
- the rapid rise of managerial, professional, and technical jobs;
- the formation of a "white-collar" proletariat, made up of clerical and sales workers;
- the relative stability of a substantial share of employment in retail trade;
- the simultaneous increase of the upper and lower levels of the occupational structure;
- the relative upgrading of the occupational structure over time, with an increasing share of those occupations that require higher skills and advanced education proportionally higher than the increase of the lower-level categories.

Labor economics covers a range of issues related to the market of wage labor and that are fundamental to understand how the world of work is connected to wage formation, employment and economic growth, the importance of demographic issues, human capital, and labor market regulations. These topics have been described and analyzed thoroughly in academic literature, providing for extensive debates on a number of issues, including the impact of labor market institutions, such as minimum wages and employment protection legislation, trade unions and employers' organizations (International Labour Office, 2013).

The decline in manufacturing employment in the industrialized world is not a new phenomenon and there is a raft of potential explanations ranging from productivity to globalization. Therefore, Rowthorn and Ramaswamy (1999) argue that deindustrialization is explained by developments that are internal to an advanced economy stimulated primarily by faster growth in manufacturing productivity, which, in turn, leads to relative price changes and shifts in the structure of the economy. An alternate hypothesis is that the manufacturing employment decline is primarily due to globalization and the rise of manufacturing in developing economies. Several recent contributions relate the decline of manufacturing employment to episodes of globalization and in particular the rise of China in the global economy. Pierce and Schott (2012) document the "swift decline" of US manufacturing after China's entry into WTO and link the decline to changes in US trade policy that eliminated the threat of tariff hikes.

Baumol (1967) identified the key theoretical foundation for the expansion of service sector employment - the slower productivity growth in services compared to manufacturing. According to what became later known as "Baumol's disease", the expansion of the employment share in services relative to industry is the direct consequence of services' lower productivity performance (Baumol, 2001).

Accumulated volume and quality of knowledge by the population of industrialized countries coupled with the relatively high level of computer literacy has contributed to the revitalization of the business services vendors. Internet technologies have pushed

the boundaries of business making it attractive to almost every educated person. The result is that economists and lawyers, engineers and programmers have rushed into providing services. SMEs today not only demonstrate the strong sales growth, but also the ability to create and use innovations. That is why the giving rationale to providing favorable conditions for fast growing SMEs based on sales of services has become an actual problem of modern economic science.

Manufacturing as an engine of economic growth

Modern industrial entrepreneurs are not active players in the labor market. The main reason for that is a significant decrease in the prevalence of textile, clothing, and footwear producing enterprises in industrialized countries. Moving labor-intensive industrial production to Southeast Asia has strengthened the position of shadow economy built on informal employment, i.e. on the use of statistically unregistered labor that is not subject to taxation. The total number of employees in manufacturing enterprises, according to United Nations Industrial Development Organization (United Nations Industrial Development Organization, 2013), accounted for 388 million persons worldwide in 2009, of which 200.3 million officially registered.

Formal and informal components of labor demand and supply create difficulties to assess the actual size of employment in the manufacturing industry. Due to this, it is reasonable to carry out analysis of the dynamics and structure of the employment in the manufacturing industry based on sufficiently reliable statistical information on informal employment. Thus, the number of people employed in the manufacturing industry in the world has increased by 43.4% in 2010 compared to 1970 (see Table 1).

Table 1. Structure and dynamics of formal employment in the world manufacturing industry, as a percentage (United Nations Industrial Development Organization, 2013, p.41)

Ranking , 2010	Country	The share of employment in the world			Growth rate, $\frac{2010}{1970}$
		1970	1990	2010	
1	China	10.13	23.53	34.34	484.5
2	United States	13.03	9.71	6.36	69.8
3	India	3.40	3.98	5.88	251.1
4	Russian (USSR)	19.41	16.83	3.90	.....
5	Brazil	1.48	2.32	3.84	366.7
6	Japan	7.79	6.2	3.63	67.0
7	Germany (FRG)	5.87	3.95	3.10	.....
8	Bangladesh	0.15	0.57	2.53	2550.0
9	Viet Nam	0.03	0.12	2.20	.....
10	Indonesia	0.35	1.47	2.11	840.0
number of employees in the world (millions of people)		139.7	180.3	200.3	14 3.4

The resulting vector of formal employment dynamics in the global manufacturing industry for the period 1970-2010 was formed based on two divergent trends - the growth and decline:

- more than a three-fold increase occurred in Southeast Asia, the Pacific, South Asia, Latin America, and the Caribbean;

- the decline occurred in the industrialized countries of Europe- by 77.5%, and in North America- by 70% (United Nations Industrial Development Organization, 2013).

Top rated in 2010 became „world factory" – China: 34.34% of all employees in the global manufacturing industry were inhabitants of China. However, it is interesting to note the fact that the US became second in that rating. This happened despite the fact that from 1970 until 2010 the employment in the US manufacturing industry decreased by 30.2%. The only representative of Europe in the top ten in 2010 was Germany, occupying the seventh position. The manufacturers of Germany, whose economy is considered the "locomotive" of EU, make a worthy contribution to the economic growth of the country. In 2012, the share of processing industry was 22.4% of gross domestic product in Germany. For comparison, the value of this indicator on the average in EU-27 was 15.2%, in Finland 10%, United Kingdom 10.3%, Italy 15.6% (European Commission, 2014).

Therefore, it can be argued that Germany's way of overcoming from the engine to the high-tech manufacturing is fairly painless. The successes of German manufacturers are predetermined:
- firstly, because of the fact that the leading subsectors of the manufacturing industry in Germany is dominated by multinational corporations (Siemens AG, Volkswagen, BASF AG, Deutsche Telekom AG, Leica Microsystems). Huge investment by corporations in the development and implementation of innovation is an effective tool for the formation of high-tech manufacturing.
- secondly, because of the officials forming the industrial policy on the federal and state levels, and actively lobbying the interests of German manufacturers in governing institutions of the EU.

Experts have formulated the most important preconditions to ensure a competitive advantage for German manufacturers:
- successful operation of small and medium-sized enterprises in Germany, which provide jobs for about 70% of the workforce of the country and produce complicated, difficult to imitate production;
- highly skilled workforce;
- High-quality infrastructure.

Experts (Deloitte, 2013) have concluded that Germany has concentrated its efforts on the development of new technologies and innovative capabilities.

The ability of entrepreneurs of US, Germany, Italy (11th position in rating of 2010), France (14th position), United Kingdom (16th position) to maintain the competitiveness of the national manufacturing industry may be proof to the fact that these countries possess strong enough position in high-tech manufacturing and knowledge-intensive services ensuring these activities. Authors take into account that Eurostat in the high-tech manufacturing includes manufacturing of pharmaceuticals; manufacturing of computer, electronic and optical products, manufacturing of machinery and equipment; and manufacturing of aircraft. According to statistical information provided by Eurostat, the activity of manufacturing enterprises in Germany is characterized as following for the year 2011:

- the share of high-tech enterprises in the total number of manufacturing enterprises was 4.2%, but the number of working for them - 7.1% of total employment in the manufacturing industry of Germany;
- on average, one high-tech enterprise in manufacturing sector employed 57 workers, while in the manufacturing industry in Germany as a whole the respective number was 34 workers;
- the largest share in high-tech manufacturing in 2011 belonged to manufacturers of electrical machinery and optical instruments, office machinery and computers – 91.3% of all enterprises and 62.3% of employed. It is noteworthy that the workforce in the industry is concentrated mainly in medium and large enterprises - 81.7% (Eurostat, 2015b).

Fast growing high-tech enterprises in Germany are able to solve the employment problem in the industry only in some cases, as evidenced by the information in Figure 1.

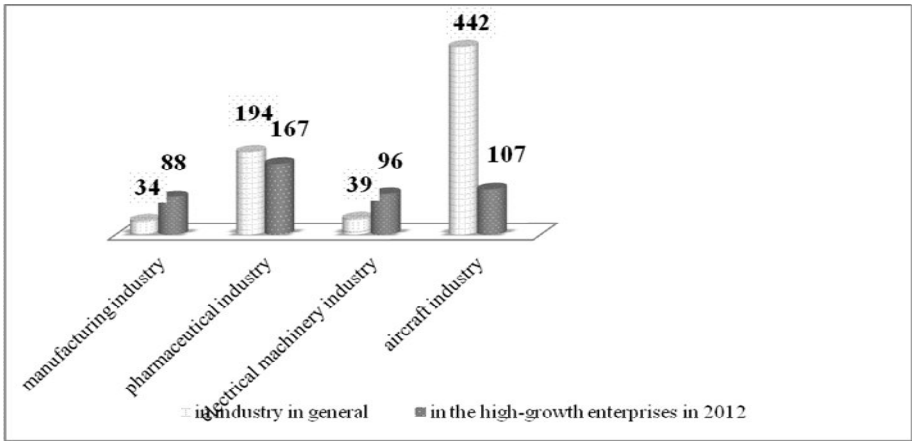

Figure 1. The average number of employees in one Germany manufacturing enterprise (Eurostat, 2015a,c)

In 2012, an average number of employees in the fast growing company (88 people) was 2.6 times higher than in the whole manufacturing industry in Germany in 2011. However, among high-tech companies growth was observed only in the manufacturing of electrical machinery and optical instruments, office machinery, and computers. Moreover, fast-growing manufacturers of aircraft companies have been significantly lagging behind in the number of employees compared to enterprises that had the standard rates of growth.

Given information can serve as an argument in support of the conclusions of UNIDO experts (United Nations Industrial Development Organization, 2013) that industries that are classified as high-tech, do not play a significant role in solving the employment problems. However, they are crucial in the accumulation of capital, development of skills and increase the level of knowledge in the economy, that is, they are crucial in the formation of productivity growth conditions. Manufacturing industry in the developed countries keeps the motor function of economic growth, as is the main source of capital, knowledge, and (to some extent) jobs.

Service sector business and employment

The attractiveness of the service sector in the labor market is confirmed by the employment statistics. According to experts of the International Labour Organization (ILO), 45.1% of all employees in the world were employed in the service sector in 2013. Moreover, in the past two decades, the proportion of service sector workers in total employment in the world increased by 10.1 percentage points. Overall, slightly below 32% of the global labor force was employed in agriculture in 2013 - a decline of 11.7 percentage points compared with the previous two decades. Employment in the manufacturing now accounts for about 23% of global employment at a growth rate of only 1.6 percentage points (International Labour Organization, 2014).

In the economies of industrialized countries, the dominance of the service sector in the labor market looks even more impressive. In the US, for example, 80.1% of all workers in 2011 were employed in the service sector – see Figure 2.

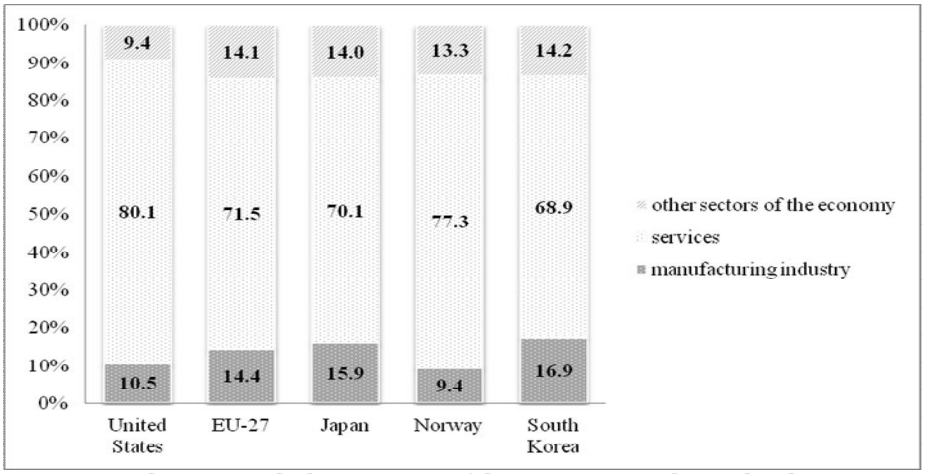

Figure 2. Employment in the basic sectors of the economy in industrialized countries in 2011, as a percentage (European Commission, 2013, p.230).

The service sector is the determining factor in shaping the demand in the labor market in other industrialized countries too. It should be noticed that the share of service sector employment amounted to 71.5% in the EU-27.

A crucial role in addressing employment problems in the service sector is provided by traditional activities - hotel services and public catering, wholesale and retail trade, repair of motor vehicles and motorcycles, real estate activities. In other words, those activities, which, according to European Classification of Economic Activities (NACE Rev. 2), are not included in knowledge-intensive, services (KIS).

The division of the service sector in the traditional and knowledge-intensive is, as rightly noted by Russian researchers, conditional in its character due to unclear criterions for defining the meaning of "knowledge-intensive". In statistics, this uncertainty is reflected in the expansion of the boundaries of knowledge-intensive services. Thus, Eurostat includes transport services and education, postal services and health care, science and financial activities (Eurostat, 2015e). However, statistics, even

with such expanded approach, do not indicate that knowledge-intensive services currently play a decisive role in shaping labor supply in EU. Even in Germany, United Kingdom, France, Spain, and Italy – countries that employed 65.8% of those employed in the service sector in the EU in 2011, the proportion of workers representing knowledge-intensive services, according to Eurostat classification, did not exceed half of the employed in the economy of EU-27 - see Table 2.

Table 2. Employment in the service sector in 2011, as percentage of employment in the economy of the EU-27 (Eurostat, 2015d)

	Services generally	**Knowledge-intensive services**	**High-technology knowledge-intensive services**
Germany	70.2	40.2	2.7
Spain	74.5	35.6	2.9
France	74.7	44.5	3.0
Italy	67.8	33.8	2.3
United Kingdom	79.6	48.5	3.4
EU-27	65.4	36.7	3.9

As can be seen in Table 2, in the UK, where the vast majority (79.6%) of the working population were employed in the service sector, less than a half (48.5%) of workers were employed in the knowledge-intensive service sector. In the economic areas as information, communications and computer services, as well as scientific research, that is, in those industries that are included in the high-technology knowledge-intensive services, there were occupied only 3.4% of the UK workers in 2011. In the other leading EU countries, the value of given indicator was even smaller.

The data presented in Table 2 shows that employment in the service sector is still largely focused on traditional areas of activity. Knowledge-intensive services are only starting to conquer positions in the EU single market. One of the reasons for such a slow formation of so important sector for the modern industrialized country, which uses skilled labor, is a permissive attitude of politicians, scientists and civil society of EU Member States to the business in the markets of knowledge-intensive services.

Business in the area of knowledge-intensive services is classified by researchers and statisticians as knowledge-intensive business services – KIBS. The OECD includes in the KIBS the following services: IT-consulting; R&D services; legal; accounting; marketing and advertising; business consulting; human resource development (OECD, 2007).

However, it should be noted that the statisticians of the EU and the US have not reached a consensus on the issue of the structure of knowledge-intensive business services. Therefore, cross-country comparisons of the extent and dynamics of this phenomenon require a certain correction.

The largest share (32%) of knowledge-intensive business services (market, financial and ICT) belonged to the US in 2012. EU was the second biggest (23%) provider of knowledge-intensive business services. In recent years, China's share is growing rapidly, reaching 8% of global volume in 2012, thus equaling Japan (World Bank, 2013). In the EU, knowledge-intensive business services contribute 7.6% to the total volume of production and provide jobs for almost 15 million Europeans. What is more,

the sector is dominated by a few multinational corporations, even though the presence of SMEs is quite large. The contribution of enterprises and entrepreneurs of Germany, the UK, France and Italy is approximately ¾ of the total volume of knowledge-intensive services in the EU (Eurostat, 2015e).

US experts, based on the analysis of information on the performance of the US companies in 2009-2012, argue the following: (i) number of fast-growing companies in the reporting period was relatively small (2% of the national average), but they created more jobs than conventional enterprises; (ii) one fast- growing company in the US created 43.3 jobs on average, while companies that do not meet the criteria for fast-growing company- 4.5 times less; (iii) almost ⅔ (62.4%) of new jobs that have emerged during the reporting period in the US labor market due to the growing activity of the fast-growing enterprises, were concentrated in the following five areas:
- administration, support, and waste management – 20.7%;
- professional, scientific, and technical services – 11.5%;
- health care and social assistance – 10.7%;
- wholesale and retail trade – 10.4%;
- manufacturing – 9.1% (Clayton, Sadeghi, Spletzer & Talan, 2013).

The first position in contribution to accelerating the employment growth (38.0% of the total number of surveyed companies) is held by companies with a total staff of 100 or more employees – see Figure 3.

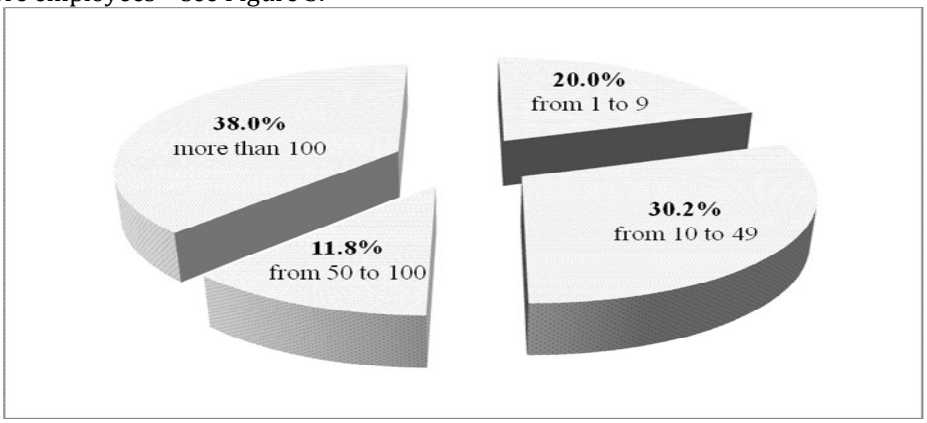

Figure 3. Distribution (in %) of the US high-employment-growth enterprises in 2009-2012 by the number of employees (persons) (Clayton et al., 2013, p.13).

The leadership of large enterprises can be explained by both abundance of resources and the effective functioning of investment attraction model in the US business. It is important to note here that the US statistics show quite a serious contribution of enterprises employing from one to nine employees, that is, the significant role of micro-enterprises to accelerate growth. The significant presence (50.2%) of small (10-49 employees) and micro-enterprises among US high-employment-growth enterprises demonstrates their ability to grow rapidly.

In this regard, the authors conclude:
- In the US, the service sector is dominated by micro-enterprises – 78% out of total in 2010, and together with small enterprises (19%) SME dominance is obvious.

- Despite the impressive scale of the spread of SMEs in the service sector, their role in shaping the demand in the labor market of the country is not a determining. In SMEs that provided services in 2010, there were working only 31.1% of those working in the industry, but in enterprises with 250 or more employees - 52.2% (OECD, 2014).
- The US government orientation to liberal market values, including stimulating entrepreneurship policies, is capable of creating the most favorable conditions for the expansion of the number of entrepreneurs. However, from the standpoint of solving the employment problems of the US economy determining factor remains large enterprises.

The scale of involvement of the US working-age population in service sector indicates that along with the solution to achieve equilibrium in the labor market, it is also solving the problem of social sustainability. Sociology scientists argue that employees in high-tech knowledge-intensive manufacturing and entrepreneurs providing knowledge-intensive business services play a major role in stabilizing society.

Conclusions

Labor economics includes the factors affecting the efficiency of the workers, their deplopment between different industries and occupations, modern labor economics especially deals with the labor force of contemporary industrialized economies. *The* Economic dimension of employment is mainly the labor market. In general, employment is the result of equilibrium determined by labor market: a working-age population that has been able to carry out activities that can generate income in the form of wages or profits.

Accumulated amount and quality of knowledge by the population of industrialized countries coupled with the relatively high level of computer literacy contributed to the revitalization of the business services vendors. The knowledge-intensive business services are the main driving factor of economic development. Development of knowledge-intensive high-tech manufacturing is needed to solve the problems of economic growth.

In European countries, employment in the service sector is still largely focused on traditional areas of activity. Knowledge-intensive business services that are crucially important for the economic development are only starting to conquer positions in the EU single market. One of the reasons for such a slow formation of so important sector for the modern industrialized country, which uses skilled labor, is a permissive attitude of politicians, scientists and civil society of EU Member States to the business in the markets of knowledge-intensive services.

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