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## INNOVATIONS AS A KEY ELEMENT OF ECONOMIC SECURITY FOR LABOR MARKET BALANCING (BY EXAMPLE OF GERMANY)

*The most important topics in Europe nowadays are economic security and competitiveness of labor market. They depend on innovations. Country's economic stability depends on innovation on a global market. Often such sentences as "we always did it this way" or "we are doing it traditionally" show limits for implementation of innovations. Everything what is new is difficult to realize and we don't want to change anything. Innovation often fails because we don't want to leave convenience. In this article author analyzed the innovative potential of a country, its society and its enterprises by example of Germany. Also the article compares innovative practices of Germany and Ukraine in order to show the reality in everyday life, especially into the labor attitudes. The main ideas referring to innovation won't come from the side of government or top-management of enterprises; it comes from each person that in turn depends on educational level of personality. Educational institutions have a great responsibility to prepare youth for future working life that will define their successful job and then, will develop domestic labor market. Economic security in the country and labor market security need a stable and fundamental educational system. Obviously, Ukraine is on its way to European integration. Therefore, the main task is to find ways to increase the interest of Ukrainian youth in the work IN and FOR the benefit of Ukraine in parallel attracting young "creative brains" from the EU to improve the quality of the domestic labor market. In comparison with Germany, Ukraine is rich on labor resources, but they have a low quality that is exacerbating the labor market imbalance. Therefore, lighting and adaptive implementation of the "German innovative model" to ensure the safety of the national labor market is interesting for us.*

**Keywords:** education, globalization, innovative methods, innovative concepts, competitiveness, labor market, labor market security.

**Introduction.** The economic growth in Germany is likely to be significantly weaker in 2016 than last year. Also, the longer-term trend growth will slow down, because the shrinking and aging of the resident population in Germany and the necessary consolidation of public finances expect a slower potential growth in the next years. Nowadays it becomes more important to move product and process of innovations in the center of economic growth in a resource-poor country such as Germany. With innovative products companies can explore new markets or market niches and develop long pioneer profits unless their competitors have caught up. New production processes lead to technological progress which increases the productivity of the factors of production used in an economy and hence also competitiveness. That is why is it very important to study foreign experience in order to use the correct way for rising competitiveness of own economy by straightening its infrastructure.

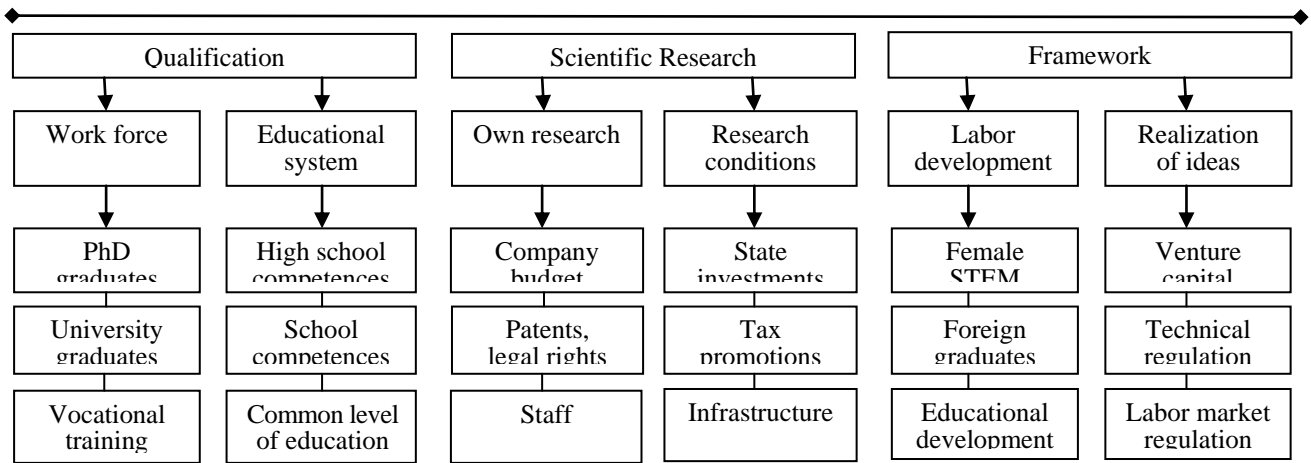
**Materials and methods.** Theoretical base of our research is presented by prior scientific papers of famous German researchers on the labor market security such as Susanne Seyda, Dirk Werner, Michael Hüther [1], as well as OECD practitioners such as P. Conway, D. De Rosa, G. Nicoletti, F. Steiner, J. Sheehan and A. Wyckoff [2]. Their R&D have opened a new way of creating organizational mechanism, which is directed for securing of the

labor markets by means of effective implementation of innovative policy. These results are interesting to implement in Ukraine in order to develop native labor market and secure employment effectively.

Our research examines the drivers of innovation skills, research and framework, differentiated into six areas of action. A total of 18 indicators from international data sources were evaluated, which are composed of 29 indicators. These figures are converted according to a uniform standardization process in a comparable score.

**The aim of our research** is to define innovative ways for economic security for domestic labor market provision based on the German experience.

**Results of research.** The methodological structure of the Innovation Indicator 2012 as a feature of the Innovation Monitor is additionally subjected on the basis of a survey of 2030 German innovating companies. Each of them used indicators by weighting its importance. The answers of the companies to determine what is important to them in terms of innovative capacity and the potential were analyzed. These features result in a ranking, which take into account the whole breadth of an innovation system in the evaluation and weighting of innovation relevant aspects. The estimations made by the companies have significant differences in the prioritization of different indicators of the innovative capacity. All these indicators depend on whether they are young innovators with advanced technology or industry innovators without their own research and development (*Figure 1*).



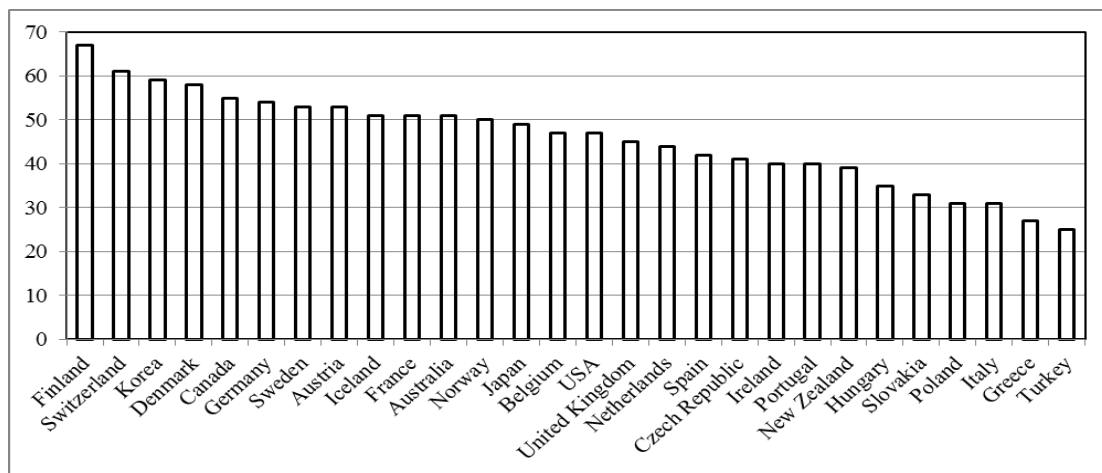
**Figure 1. Methodological structure of the Innovation Indicator\***

\* Created by author according to approved method at the Press-Conference of the Institute of German Economy Cologne, 12, January, 2012, Berlin

If a country is successful in the international innovative competition it means it doesn't depend equally on a whole range of factors. Therefore, the Innovation study investigated 18 internationally comparable indicators, assessed analogy with a company survey in more than 2.000 innovating German companies, the innovative power of Germany with the innovative potential compared with 27 other developed economies.

The innovative strength of Germany is among the upper third. Finland and Switzerland are at the top of the Innovation Monitor. Germany has achieved a strong sixth position mainly because of the strengths in the field of vocational training. Above the average

are also the scientific literacy level of students and the research efforts of the company, both expenditure as well as the patents. Germany has "weaknesses" only by a few individual indicators, e.g. venture capital availability. However, venture capital has a subordinate significance for innovators outside the cutting-edge technology, which doesn't affect innovations seriously. Italy, Greece and Turkey occupy the ending positions of the overall rankings. The strong countries in Europe surpass the US in ranking. Eight European economies are located at the first ten positions next to Canada and Korea, where favorable conditions for innovation can be mentioned first of all (Figure 2).



**Figure 2. The Innovation Ranking and scores of countries in the Innovation Monitor 2012 weighting base: innovating companies in Germany\***

\* Created by author according to analytic data approved at the Press-Conference of the Institute of German Economy Cologne, 12, January, 2012, Berlin

All indicators are scaled and comparable to a points scale (0-100). The requests included in the Innovation Monitor 2012 indicators are weighted on the basis of a survey of innovating companies and form the years 2009 and 2010.

Reasons for the mediocre performance of the USA are that the country has "weaknesses" in innovatively related labor, e.g. a low number of graduates in the STEM subjects, an average quality of the educational system (poor skills of students in

mathematics and science) and a small development of young-professionals potentials.

The particular strength of the US, however, is still the innovatively prepared for the implementation of new ideas in comparison with Germany, which is somehow less favorable. Having looked at the indicators and categories from the perspective of young high-tech companies Germany will fall back to the eighth position, but remains just ahead of the United States. In high technology ranking particular

highlighted are the "weaknesses" of Germany in the availability of venture capital.

From the business perspective there are shown significant differences according to type of innovations. With the help of the survey, different types of companies could be pictured: on one hand, young high-tech companies with advanced

technologies and on the other hand, innovators without own research and development activities. It turned out that young high-tech companies without R&D have shown significantly different priorities when weighing up innovation-related indicators (Table 1).

**Table 1**

**Average ranking of individual indicators of the entrepreneurial innovation capacity from 0 (not important) to 100 (very important)\***

Fields of Action / Partial Indicators	Single Indicators	Total Rank	Young High-Tech Innovators (HITS)	Industry Innovators without own R&D
Innovation relevant Workforce	PhD in STEM subjects	21,0	41,5	10,5
	Graduates in STEM subjects	50,9	64,0	33,0
	Vocational Training	52,8	42,8	59,5
Quality of Educational System	High School STEM Competencies	44,7	67,7	26,6
	School STEM Competencies	45,8	55,3	37,6
	STEM Risk Group	51,3	48,7	50,3
Own Research Efforts	Company R&D Investments	33,3	58,8	14,4
	Patents/Utility Models	24,5	49,6	10,5
	Research Staff	24,2	47,5	6,1
Research Conditions	State R&D Investments	19,8	33,0	8,5
	R&D Tax Funding	25,7	42,1	15,6
	ICT Infrastructure	40,6	64,9	31,8
Development of Skilled Labor Potentials	Female STEM Graduates	25,3	34,1	12,6
	Foreign Students	16,2	26,8	8,4
	Educational Development	23,5	31,6	21,5
Framework for realizing New Ideas	Venture Capital	29,9	49,8	27,5
	Technological Regulations	33,5	67,5	18,6
	Labor Market Regulations	37,8	68,3	30,6

\* Created by author according to the analytic data, which have been presented at the Press-Conference of the Institute of German Economy Cologne, 12, January, 2012, Berlin

As a result in high-tech companies, primarily issues on regulation of labor and technology markets, the availability of academic, STEM

knowledge and the budget for ICT and R&D were very important (Table 2).

**Table 2**

**The importance of indicators from the perspective of innovators and the ranking of the importance of the indicators by type of innovations\***

Rank	Total Ranking of all Innovators	Young Innovators of High Technology (HITS)	Industrial Innovators without own R&D
1	Labor with highest qualified vocational training	Innovation friendly labor market regulations	Labor with highest qualified vocational training
2	High competences of scholars in mathematics and natural science for most part of scholars	High math and natural sciences competencies for High School graduates	High competences of scholars in mathematics and natural science for most part of scholars
3	Labor with highest qualified university's degree	Innovation friendly technology regulations	High competences of math and natural sciences of scholars in average
4	High competences of math and natural sciences of scholars in average	Infrastructure in the sphere of ICT	Labor with highest qualified university degree
5	High competences of math and natural sciences for graduates	Labor with high qualified university's degree	Infrastructure in the sphere of ICT
6	Infrastructure in the sphere of ICT	Investment budget for research and innovative activities	Innovation friendly labor market regulations

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In contrast, industry innovators without own R&D (approximately 40% of all industrial innovators in Germany) highly appreciate, in addition to STEM skills and the availability of academics, the importance of highly-qualified

professionals. Highly-qualified labor is available for this type of innovations; even it is the most important of all 18 innovative indicators in average. This image can also be seen in the standard criticism report of the OECD to the low academic rates in

Germany ("Education at a Glance"), because for a large part of the German innovators not only academic qualifications for innovation and competitiveness of a country are important.

The ranking shows that there is an apparently fairly close relation between the country credit rating and its innovative strength. Among the top eight countries in the innovation ranking, seven of them have reached an AAA ranking of country's credit worthiness by Standard & Poor's (2011). There is no single country with such credit worthiness at all among the last eleven positions.

The Euro-crisis countries have common weaknesses in research conditions, research efforts as well as conditions for the implementation of new ideas. Even in the quality of the education system is a clearly need for improvement. On progress in innovation, the Euro-crisis countries can improve their growth prospects and thus, support the need consolidation course. An additionally performed Press Conference on January, 12, 2012 ("Innovation Monitor 2012") of a cluster analysis showed clearly that Greece and Italy are similar to Turkey in terms of their driving innovation rather than to Spain and Portugal. After all, progress could be reported in some crisis-countries for quite some time, which in a few years is likely to be reflected in an improved innovation itself. For instance, the average skills of pupils in Portugal have improved, the number of graduates per one thousand employed workers has

increased and at the research expenditure of the company were a significant increase between 2005 and 2009. However, the existing unfavorable conditions for the implementation of new ideas continue to pose a major constraint, which prevents a greater innovativeness.

In common, the innovative policy in Germany is good to satisfactory. Among all 28 member states of the EU, Germany has the most similar evaluation of the six areas of action. Therefore, a necked based innovative policy in Germany is less useful as a broad package of measures that equal consideration of all six action areas. However, selected measures of the policy for driver qualifications, research and environment in the Innovation Monitor are assessed (Table 3).

When looking at the measures to promote innovation driver qualifications, first important impulses have been reached in Germany already. The measures are described as "good to satisfactory". For example, positive measures are: to evaluate training and the higher education agreement. However, the expansion of early childhood infrastructure is not progressing rapidly enough and the guidelines are not reached. Even with the all-day schools there is further need for expansion. In addition, further measures aimed at long-term strengthening of the quality of the educational system must be implemented (autonomy of schools and colleges, goal-oriented remuneration of teachers).

**Table 3**

**Review of innovative policy impulses in Germany differentiated by innovation drivers qualifications, research and environment<sup>1\*</sup>**

<i>Qualifications</i>	<i>Research</i>	<i>Framework</i>
Educational and training agreement (+)	High-tech-Strategy (+) Agreement for research and innovations (+)	Immigration rules and Recognition Act (+)
High School and Universities agreement (+)	Project funding (o)	BAföG and upgrading training (+)
Early childhood education (o)	Allocation neutral funding (o)	"Girls day" and "take STEM" (+)
All day schools (o)	Excellence initiative (+)	Labor market reforms (+)
Quality orientated framework conditions (o)	Non-university research (+)	EU-patent (o)
Assessment: good to satisfactory	Assessment: still good	Assessment: good

<sup>1</sup> Rating scale: (+) means good; (o) means acceptable

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In the research, the excellence initiative has led to a promotion and profiling of top-level research in Germany. These research projects were able to strengthen their attractiveness in international competition. The measures covered by the high-tech strategy are the implementation of high-tech founder funds to support research-intensive company start-ups financed and implemented by the agreement for research and innovation strengthening the public (co-)research institutes such as Max Planck-Association and Fraunhofer-Institute are relative to

evaluate their impulses for innovations in Germany positively.

With direct research funding, however, the selective individual grants should be dismantled from certain projects and technology areas and for a technology-neutral and distortion-free funding to be envisaged. After all, the state cannot know which technologies will be successful tomorrow.

The recently adopted immigration rules and the recognition act provide significant improvements in the conditions for the use or attracting foreign

professionals' potentials. The measures for advancement through education are positive as well as numerous measures to promote women in STEM professions. Positive are also the changes in labor market regulations (for example Agenda 2010), which offer more flexibility in innovative projects to companies. The immigration potential and recognition act should now be used consistently. Until today it is still missing a more active welcoming culture for foreign professionals and a better financial promotion of employee training.

Having compared above mentioned facts with Ukraine, Ukraine's reality is obviously opposite to Germany. E.g. the vocational training has low level in Ukraine, enterprises demand a master study, but actually they don't need high-qualified labor for the kind of work they do afterwards. It means, that young people studying four years at the university expect a well-paid job, but enterprises don't have huge demand; many young people work at low positions for a low salary. It would be more effective to give people for such occupations an apprenticeship for a short-term and to lower the amount of students, simultaneously increasing the quality of higher education.

Another aspect is corruption. In Ukraine corruption is still on a high level and also in education system. It means, the quality of education will stay low and will neither attract foreign students nor high qualified labor from other countries. That means a low rate of innovations and foreign investment. On the contrary, many young Ukrainians left the country to study abroad and most of them will not come back.

Additionally, Ukraine is a trading country, not producing goods for export. The reasons are different, mainly old technologies. There is neither money nor attractiveness on the side of law for production. In the past, most production was focused on the Russian market and many enterprises closed their production instead of rising quality for producing goods for EU or global markets. Besides venture capital in Ukraine is quite high, but the business

mentality of many managers is not adapted to global markets at all and young students don't get the necessary knowledge from universities yet.

The fourth part of lack of innovation is the actual migration policy in Ukraine. At the actual state it is not possible or rather difficult for foreigners to settle in Ukraine and to open small and medium businesses, it is even more difficult than for domestic citizens. It happens because of actual law and because of high level of corruption.

Advertising of Ukrainian government for example for opening an enterprise in two days is a nice idea, but won't change that fact, that in Germany it needs only 20 minutes. But the hardest is to close company in Ukraine – in Germany it needs 20 minutes. Any tax offices don't advice foreigners to open any business in Ukraine at the moment.

**Conclusion.** Germany is on a good way in overall innovation policy to hedge against the German business model to generate long-term sustainable growth. Undoubtedly the greatest problem arises less in the future in the field of innovation-related expenditure and investment but rather in relation to the importance of innovation professionals. Here the government should respond quickly and with the right mix of measures, education, training, research and development and the implementation of potential and knowledge carriers at the center of a site backed up and growth-oriented policies.

Considering all above mentioned facts, Ukraine needs fast changes in law and anti-corruption measures to attract foreign investments and implement innovations. But still the main problem is not only on the side of law and government; it depends on each citizen to change to think innovatively. All innovation and development starts as a process in families, society, education institutions, enterprises and at least at the governmental level. Everybody needs to take part in this process to make Ukraine a bit better country on its way to Europe.

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