Подытоживая отметим, что повышение устойчивости национальных финансово-кредитных систем к кризисным явлениям должно опираться не только на защитный механизм, создаваемый международными финансовыми институтами, но и на стратегически выверенные действия самих государств.

Список литературы

1. Выступление Кристин Лагард перед Исполнительным советом МВФ // Международный Валютный Фонд. – Пресс-релиз. – 2011. – № 11/253(R). – 23 июня. – 6 с.
2. Как преодолеть системную часть риска ликвидности. Доклад по вопросам глобальной финансовой стабильности // Международный Валютный Фонд. – 2011. – Апрель. – 7 с.
3. Перспективы развития мировой экономики. Противоречия двух темпов подъема. Безработица, биржевые товары и потоки капитала // Международный Валютный Фонд. – 2011. – Апрель. – 234 с.

УДК 338.1

ACCELERTING AND LIMITING FACTORS OF MODERN GROWTH

Y.V. Khomenko, *Doctor of Economics, Professor*
Donetsk National Technical University, Donetsk, DPR
I.A. Khomenko, *undergraduate*
Otto-von-Guericke University Magdeburg, Magdeburg, Germany

Summary. This paper is to prove the idea that correct determination of key factors of green growth and their impact allows create favorable conditions for green growth strategy implementation. In this connection, key factors of green growth are determined, a set of basic indicators for their measurement is provided. Primary directions of green growth strategy implementation and measures to control factors impact are justified.

Key words: green growth, growth factors, environment, technology, innovation, green investment.

Аннотация. В статье культивируется тезис о том, что правильное определение ключевых факторов зеленого роста и характера их влияния позволяет создать благоприятные условия для реализации стратегии зеленого роста. В связи с чем, определены ключевые факторы зеленого роста, предложена группа индикаторов их оценки. Рассмотрены приоритеты стратегии зеленого роста и меры, предназначенные для оказания влияния на факторы роста.

Ключевые слова: зеленый рост, факторы роста, окружающая среда, технологии, инновации, зеленые инвестиции.

Problem identification. Nowadays, the basic purpose for different stakeholders is to find a way of growth that "can generate both wealth and well-being for all citizens of current and future generations, while at the same respecting the environment" [1, p.3]. From this point of view, the green growth approach might become a good solution for this problem.

Literature overview. The idea of the greening growth appeared in the 1970s alongside with the concept of ecodevelopment, which united economic and ecological approaches to growth. This area was thoroughly investigated by scientists Fritsch, Schmidheiny and Seifritz [2]. However, in their research, this type of growth was named as "ecologically sustainable growth". The idea has become well-known today. Furthermore, a number of researchers and applied research institutions follow the idea of global transformation towards ecologically sustainable economic growth. Such institutions as the Organization for Economic Co-operation and Development (OECD) have become highly interested in this topic. A number of publications with a deep investigation of the area were released by the organization. The OECD interprets green growth as "the pursuit of economic growth and development, while preventing costly environmental degradation, climate change, biodiversity loss, and unsustainable natural resource use" [3, p.1].

Goal and tasks. This research will support the idea that correct determination of key factors of green growth and their impact allows to create favorable conditions for green growth strategy implementation. In order to explore this issue, the paper will first examine growth theory determining key factors of green growth, then basic indicators of green growth and its factors and also measurement of the impact of factors on growth will be regarded, and finally, the paper will conclude with a justification of a set of measures to control factors impact in the frame of the green growth strategy strategy.

Green growth factors are the events which make significant impact on the growth of production output by increasing its qualitative and quantitative characteristics in the long run. Correct determination of factors power and direction is essential for green growth model constructing. In this connection, it is proposed to take into consideration the direction of factors influence and divide them into two categories: factors limiting and factors accelerating green growth (see Table 1).

Table 1

Factors limiting and accelerating green growth

	Green growth factors	
	Limiting factors	**Accelerating factors**
1.	Natural assets availability	Investment
2.	Food and energy consumption	Innovation
3.	Poverty	Technology
4.	Increasing population	Research and Development
5.	Pollution and wastes	Knowledge

Factors limiting green growth are those, which make negative influence on growth by restraining it due to their availability, quality or quantity. For instance, increasing demand for natural resources, global greenhouse gas emissions, depletion and pollution of water resources intensify environmental risks and make negative

impact on growth. In this case additional government spending is streamed on tackling environmental issues instead of having been invested in research and development. As Luc Eyraud and Benedict Clements have noted, «costly policies needed to mitigate climate change and adapt behavior and production to new environment…disrupt government fiscal positions» [4, p.34]. Moreover, increasing population and extremely growing poverty can also accelerate environmental degradation and make additional pressure on environment. Thus, natural assets availability, food and energy consumption, poverty, increasing population, pollution and wastes are considered to be factors limiting green growth.

Factors accelerating green growth are those, which make positive influence on growth by intensifying it due to their specific and unique characteristics of improving production process with mutual effects for all economic agents. Naturally, investment, innovation, technology, knowledge, research and development (R&D) relate to accelerating factors. Investment and innovation are accepted to be the most significant among them [5]. In recent researches OECD highlights the critical role of innovation in fast-growing emerging economies [6]. By observing industry level date for about 30 industries in China, India, Korea and Brazil Organization came up to conclusion that «innovation is the cornerstone of sustained economic growth and prosperity» [6, p.3].

Above proposed factors classification is extremely important for setting up green growth strategy goal, tasks and policy. The most influential factors have to be considered as a basis for selecting policy tools and will be analyzed in more details.

Most official economic organizations and applied research institutions consider green growth indicators as «markers or milestones on a path of greening growth» [7, p.9] and propose their own approaches for measuring. This research follows OECD's approach as it is one of the most comprehensive in this area. OECD recommends use a set of indicators covering main aspects of growth: socio-economic, environmental and technological, rely on available and applicable for research date and stick the main subject of green growth concept [7].

Although the OECD's approach is complete it can not be used in a full frame as to a large number of indicators. In this connection, it is proposed to eliminate the number of indicators up to five. «Waste generation» and «CO_2 emissions from energy use» will be used for shining the state of limiting growth factors, «gross domestic expenditure on R&D» and «gross fixed capital formation» for accelerating factors measuring and «gross domestic product» for growth estimating. Further research will be conducted by comparing developed countries indicators.

Mostly all OECD countries take environmental risks due to high level of pollution. Especially it is concerned municipal waste generation (figure 1) [8, p. 228]. Even the leading countries face these pressing challengers. Figure 2 clarifies CO_2 emissions from energy use among countries [9, p. 23], which are extremely high in the USA, Australia and Luxembourg.

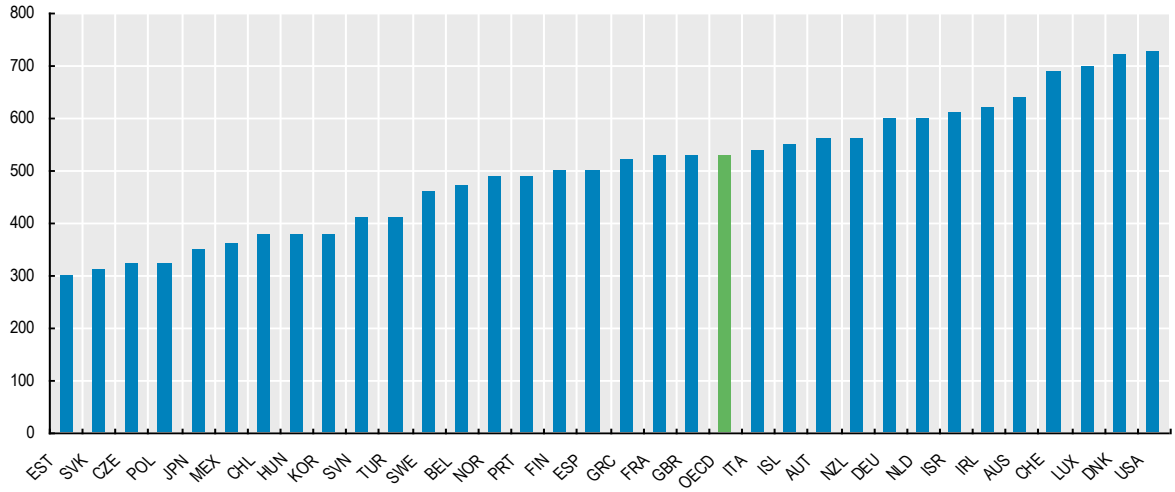

Figure 1- Municipal waste generation, kg per capita, 2011

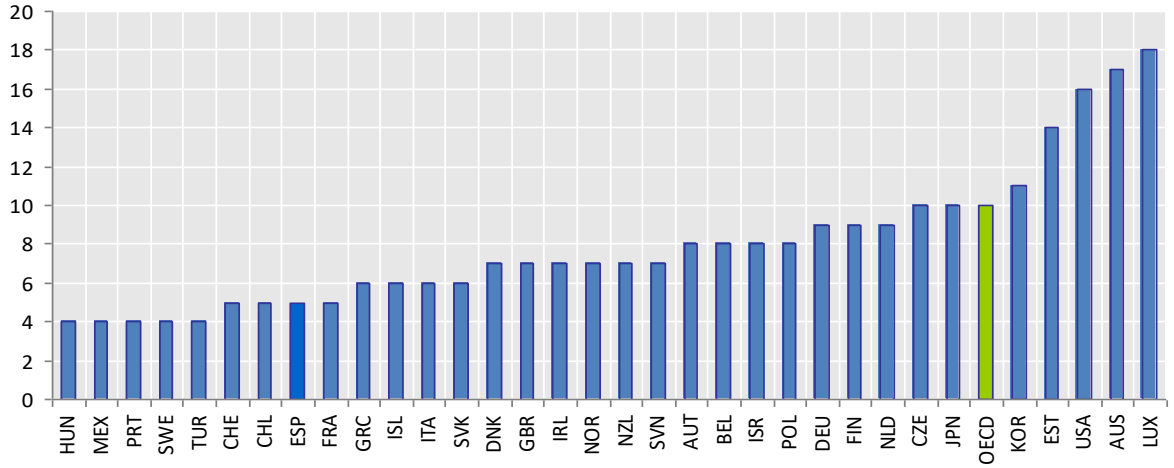

Figure 2 - CO_2 emissions from energy use, tonnes per capita, 2013

Economic opportunities can arise due to new investment and technologies. Thus, related indicators were considered at country level (figure 3 [10, p.15], Figure 4 [11]). It is observable that OECD countries pay more attention to capital formation rather then expenditure on R&D. Gross fixed capital formation rate is more like the same. And vice versa, gross domestic expenditure on R&D rate varies significantly within the countries.

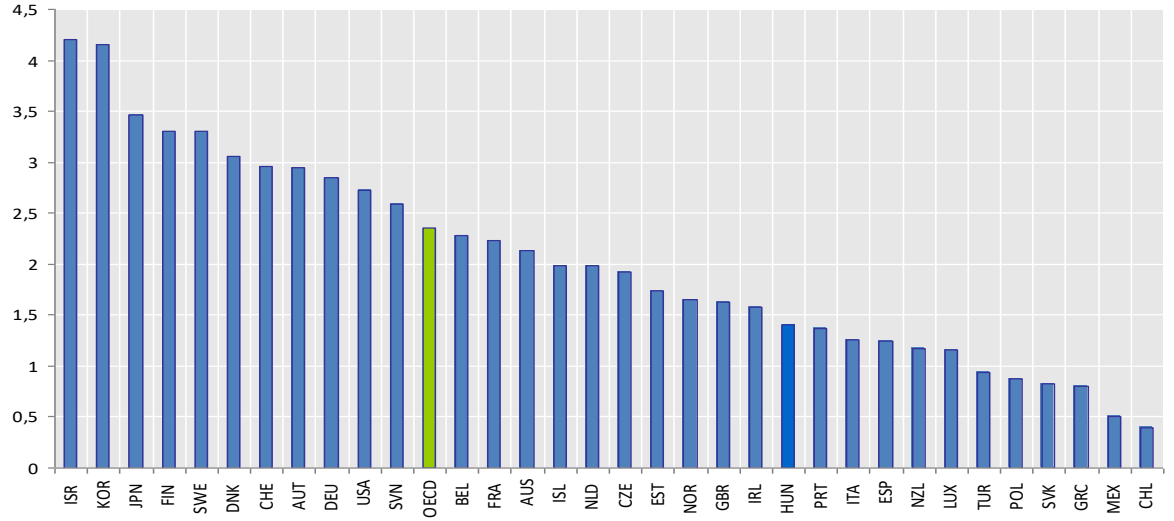

Figure 3 - Gross domestic expenditure on R&D as a percentage of GDP, 2013

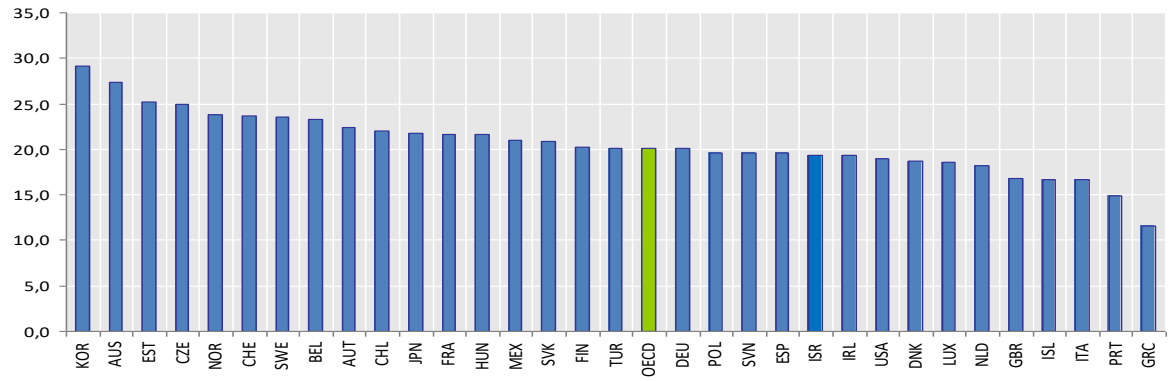

Figure 4 - Gross fixed capital formation as a percentage of GDP, 2014

Finally, gross domestic product per capita can be observed (figure 5) [12, p.19]. The highest rate of GDP, almost two times bigger than the OECD's average, has been recorded in Luxembourg, which evidences at the same time the highest level of CO_2 emissions from energy use and municipal waste. It is also worth mentioning Korea's indicators. Making every effort to improve technology and increase investment and spending the most on R&D and gross fixed capital formation, the country cannot reach even the OECD's average. Nevertheless, not all the countries have such ratios. For instance, Germany, Finland, France and Belgium demonstrate stable positions in ranking lists, their long-term sustainable development seems to be assured. The countries tend to control the impact of accelerating and limiting factors through certain policy measures and government incentives.

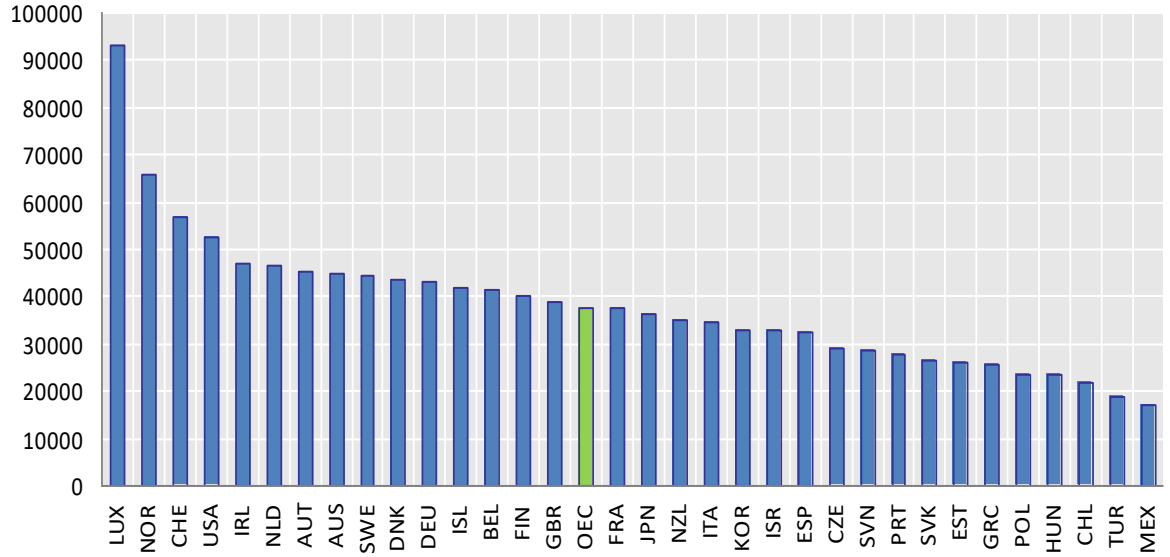

Figure 5 - Gross domestic product per capita, 2013

Measures restraining limiting factors impact mostly relate to climate change and changers in land consequences prevention. Recognizing the fact that environmental degradation is "one of the most pressing challengers facing the planet" [4, p.34] most national governments introduce a wide range of measures to reduce

greenhouse gas emission, decrease air pollution and control wastes from production and consumption. Some of them are the subject of this section.

Environmentally related taxation

Taxation is a good tool for reducing environmental burden. By raising tax revenues government provides financial support to the poorest citizens and guaranty the access to water, sanitation and electricity services. Environmental taxes like indirect incentives encourage producers to adapt the production to new environmental standards. They include user chargers for water supply services and waste management, taxes and royalties on natural resources extraction and schemes to trade pollution licences [1]. In this connection, one of the best UE practices in this area is demonstrated by Germany. Since 1999 it made significant steps in extending tax framework to overcome some environmental difficulties. The starting point was ecological tax reform in 1999 followed by restructuring of vehicle taxation in 2009 and participation in the EU Emission Trading System (EU ETS). These measures resulted in increasing environmentally related tax revenue in 2009 up to 2% of GDP and 6% of total tax revenue [13]. The largest part of this revenue (84.5%) was accumulated from energy taxation, 15% came from motor vehicle tax and about 0.5% from other taxes [13]. These taxation measures can be seen as a good start on the path to green growth.

Energy subsidy reform

Energy subsidy reform relates to energy resources utilization. By its implementing national governments intend to decrease the amount of energy required for production goods and services by encouraging energy resources substituting. The subject of its concern is a set of incentives for reducing prices for end users, supporting poor households and promoting certain industry sectors development. They include preferential tax treatment, provision of services at lower cost and direct financial transfers [1]. In EU countries incentives are mostly used for shifting production from fossil fuel based technologies to the new ones based on renewable alternatives such as solar, wind, hydropower, nuclear. Removing fossil fuel subsidies governments intend to reduce greenhouse gas and other harmful emissions. OECD empirically shows that it is possible to reduce world green house gas emission by 6% by 2050 only by removing fossil fuel subsidies in a number of emerging and developing countries [1].

Measures forcing accelerating factors impact mostly developed for promoting technological changes, encouraging innovations, shifting to alternative energy sources and designing new financial vehicles. They can vary depending on the level of government expenditures, public sector investment, infrastructure development, energy productivity and pollution stock.

Technology-forcing environmental policies

Technology-forcing environmental policies are needed to generate green goods and services by introducing new environmental friendly technologies. They include fiscal incentives, tax allowances and government subsidies. Most of EU countries have already implemented these policies into practice. For instance, in Germany technology-forcing environmental policy helped to extend environmental goods and services sector turnover at about 2% of GDP in 2009 [13]. Most of environmental

goods produced as export-oriented were released in domestic market. In this sense, the country has a great potential for increasing export of environmental goods and services in the long run and strengthen its competitive advantages in the EGS sector of the world market.

Green investments

Green investment is a new financial vehicle designed for reducing greenhouse gas and air pollutant emissions. Over the past decade, many official institutions came up with initiatives fostering green e investments. For instance, Green Growth Action Alliance has brought together the efforts of more than 50 leading corporations, financial institutions, governments and non-governmental organizations for the sake of new green investment opportunities [14]. It is also in charged to collaborate with national governments for working out policy options and tools to create favorable conditions for green investments. Recently the Alliance introduced a Policy Risk Insurance Mechanism for small- and medium-sized enterprises to reduce the risks of new entrepreneurship [14]. Evident progress in this sector has been made by European Investment Bank managed to accumulate 85% of the EU's renewable energy investments [15]. As it is seen, most green investment initiatives came up as a result of fruitful collaborating of leading corporations, national governments and financial institution.

Thus, having all measures regarded it is worth to conclude that they can be effectively implemented only in terms of directing stakeholders mutual efforts to one goal – transition to green growth.

Conclusion. On the way to green growth, the EU requires complete transformation into a resource efficient, knowledge-based and low-carbon economy. It is recommended to adapt advanced practices of certain European countries starting with policy options accelerating the most influential growth factors and restraining the limiting ones. In this sense, green investment and technology-forcing environmental policies seem to be the topical question for further research.

References

1. Putting Green Growth at the Heart of Development. OECD Green Growth Studies. [OECD], 2013. URL: http://dx.doi.org/10.1787/9789264181144-en
2. Fritsch B., Schmidheiny S., Seifritz W. Towards the ecologically sustainable growth society: physical foundations, economic transitions, and political constraints. Berlin: Springer-Verlag, 1994. – 198 p.
3. Green Growth Strategy: How can we get to a greener economy? [OECD], 2010. URL: http://www.oecd.org/greengrowth/46141709.pdf
4. Eyraud L., Clements B. Going green // Finance & Development. 2012. №49(2). – P. 34-37.
5. Towards Green Growth. [OECD], 2011. URL: http://dx.doi.org/10.1787/9789264111318-en
6. Innovation and Growth: Chasing a Moving Frontier. [OECD], 2009. URL: http://www.oecd-ilibrary.org/science-and-technology/innovation-and-rowth_9789264073975-en
7. Towards Green Growth: Monitoring Progress: OECD Indicators. [OECD], 2011. URL: //dx.doi.org/10.1787/9789264111356-en

8. OECD Environmental Performance Review: Colombia 2014. [OECD], 2014. URL: http://www.oecd-ilibrary.org/environment/oecd-environmental-performance-reviews-colombia-2014_9789264208292-en
9. Environment at a Glance 2015: OECD Indicators. [OECD], 2015. URL: http://www.keepeek.com/Digital-Asset-Management/oecd/environment/environment-at-a-glance-2015_9789264235199-en#page3
10. Main Science and Technology Indicators Volume 2015 Issue 1. [OECD], 2015. URL: http://www.oecd-ilibrary.org/science-and-technology/main-science-and-technology-indicators/volume-2015/issue-1_msti-v2015-1-en
11. World Bank. GDP per capita. [Data file]. URL: http://data.worldbank.org/indicator/NY.GDP.PCAP.CD/countries?page=2
12. National Accounts at a Glance 2015. [OECD], 2015. URL: http://www.oecd-library.org/docserver/download/3015071e.pdf?expires=1454279619&id=id&accname=guest&checksum=C6C851AF6C44F217DC709E73A76AF121
13. OECD Environmental Performance Reviews: Germany 2012. [OECD], 2012. URL: http://dx.doi.org/10.1787/9789264169302-en
14. The Green Investment Report. The ways and means to unlock private finance foe green growth. [World Economic Forum], 2013. URL: http://www3.weforum.org/docs/WEF_GreenInvestment_Report_2013.pdf
15. The Green Investment Bank: Policy and Finance Context. [Vivid Economics], 2011. URL: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/31757/12-553-green-investment-bank-policy-and-finance-context.pdf

УДК 338.12

К ТЕОРЕТИЧЕСКИМ АСПЕКТАМ ЭКОНОМИЧЕСКОЙ БЕЗОПАСНОСТИ ГОСУДАРСТВА

А.Ю. Чупахин, *студент*
Л.А. Коптева, *д.э.н., профессор*
Санкт-Петербургский государственный университет аэрокосмического приборостроения, г. Санкт-Петербург, Российская Федерация

Аннотация. В данной статье рассмотрена сущность экономической безопасности, проведена аналогия значения термина, приведены основные методы оценки и пороговые значения показателей экономической безопасности, а также их ранжирование на уровне страны.

Ключевые слова: экономическая безопасность, методы оценки экономической безопасности, пороговые значения экономической безопасности страны.

Summary. In this article the essence of economic security, the analogy of the meaning of the term, the basic evaluation methods and threshold values of indicators of economic security and their ranking at the country level.