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THE ROLE OF MEASUREMENTS OF OP INNOVATIONS AND COMPETITIVENESS (OPIC) FOR THE INTELLIGENT GROWTH OF BULGARIAN ECONOMY

ROLA POMIARÓW BULGARSKIEGO PROGRAMU OPERACYJNEGO INNOWACJE I KONKURENCYJNOŚĆ (OPIC) W INTELIGENTNYM WZROŚCIE BULGARSKIEJ GOSPODARKI

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Summary: The Bulgarian Competitiveness Strategy 2020 by the Bulgarian Operational Program Innovations and Competitiveness (OPIC) is closely linked to the smart growth and effective jobs objectives through investments in intellectual property. The national measures, financing projects under the OPIC are create to boost Bulgarian business to be a part of Industry 4.0 as well as to enforce the industrial renaissance. So, the paper aims to discuss the problem of how to measure the results of the implementation of Competitiveness Strategy 2020 and the economic growth in Bulgaria.

Keywords: innovations and competitiveness, industrial policy, Bulgarian economy, competitiveness policy measures.

Streszczenie: Bułgarska Strategia na rzecz konkurencyjności 2020 przez bułgarski program operacyjny Innowacje i konkurencyjność (OPIC) jest ściśle powiązana z inteligentnym wzrostem i efektywnymi celami w zakresie zatrudnienia poprzez inwestycje we własność intelektualną. Finansowanie projektów w ramach OPIC zostało stworzone w celu wzmocnienia bułgarskiego biznesu, aby stać się częścią przemysłu 4.0, a także dla wzmocnienia renesansu przemysłowego. Celem tego artykułu jest omówienie sposobu mierzenia wyników Strategii konkurencyjności 2020 i wzrostu gospodarczego w Bułgarii.

Słowa kluczowe: innowacyjność i konkurencyjność, polityka przemysłowa, bułgarska gospodarka, środki polityki konkurencyjności.

1. Introduction

Economic development is a priority of the European Union set EU policies and strategies to governance the growth and development of European business. The EU targets for innovations and competitiveness are directly set as milestones for the National 2020 Strategy for growth and development.

Besides the public discussion on the role of the EU and of the national governance and their impact on the economy, the 2020 Strategy tries to encourage EU business to invest in innovative product and technology development. The basics of the need of business environment improvement can be found in two trends and in two types of policy documents:

- First: there is a lot of evidence that the EU economy has been lagging behind the US economy, as well as the economies of the such developing countries as: China, India, Brazil, Saudi Arabia, Russia and Turkey. The EU economy looks too “old and tired” to fight for a better position in the global competition. As a response to the economic cooling of the EU, the EC accepted the Lisbon Agenda in 2000.¹ Furthermore, the development of the strategy is given in the Revision of the Lisbon Strategy in 2005² after the report on “Facing the challenge: The Lisbon strategy for growth and employment”.³ The last generation of the economic strategy documents is Strategy 2020⁴ that puts strong emphasis on growth where three types of growth are set as goals: smart, sustainable and inclusive.
- Second: the current EU economic growth has been achieved by the growth of industrial services and industrial outsourcing since 2008. The 2008 economic crises shrank the internal EU markets and led the economic crisis not just because the banking problems but because there were no significant mechanisms to resist economic uncertainty. At policy governance level, the EU response to the EU economic default was the approval of the strategy document: Reindustrializing Europe to promote competitiveness and sustainability in 2014.⁵

As these strategy documents are approved not just at EU but also on the national governance level, the implementation of the EU economic policies and strategies is enforced by different operational programs. The main programs that the Bulgarian government use to participate in the EU's economy recovery are:

¹ http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/00100-r1.en0.htm.

² EC, Common Actions for Growth and Employment: The Community Lisbon Programme, COM(2005) 330 final of 2005-07-20.

³ http://ec.europa.eu/research/evaluations/pdf/archive/fp6-evidence-base/evaluation_studies_and_reports/evaluation_studies_and_reports_2004/the_lisbon_strategy_for_growth_and_employment_report_from_the_high_level_group.pdf.

⁴ <http://ec.europa.eu/eu2020/pdf/COMPLET%20EN%20BARROSO%20%20%20007%20-%20Europe%202020%20-%20EN%20version.pdf>.

⁵ <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014IP0032&from=EN>.

- Operational Programme “Development of Competitiveness of Bulgarian Economy” (2007-2013).
- Operational Programme “Innovation and Competitiveness” (2014-2020).
- Operational Programme “Small and Medium Enterprises Initiative” (2014-2020).

If the Programme measures work positively, the assessment is needed at the mid-term of the programme period.

2. Literature review

As a requirement of EU economic and political cohesion, the Bulgarian National Innovation Strategy for Smart Specialization (2014-2020) accepted the milestones of the EU Strategy 2020. So the Bulgarian strategy, as well as the European Union's, introduces the connection between business governance and business performance as a set of governance mechanisms following the three most important economic pillars:

- transitioning to a knowledge-based economy by better business management and developing R&D networking;
- encouraging private research investment and R&D partnerships;
- modernizing the European social model by investing in people.

Thus Bulgarian economic development is based on the same EU's growth driven factors: innovations, business actors' networking and development, and the inter-linkages between them. However, the national adjustment of the EU Strategy 2020 has to be based on the following economic threats:

- Bulgaria is highly dependent on foreign markets and foreign investment as a very small economy with a euro-fixed currency;
- The competitive advantage of a national economy has been formed on the basis of the low prices of the basic factors – labor, natural resources and energy;
- The share of highly innovative business based on technology innovation, productivity improvement, research and technological development is very low.

Therefore, to strengthen the long-term competitiveness of the Bulgarian economy by introducing European industrial policy in business governance, it is highly recommended to set as core pillars of Bulgarian Strategy 2020 as well as to be supported by the national operational framework.

As the EU economy governance is accepted by the Bulgarian Government, the main objectives of the Operational Programme Innovations and Competitiveness: 2014-2020 (OPIC) under the 2014-2020 Partnership Agreement signed in the mid-2015 are closely linked to the Economic Growth and Labor Development:⁶

⁶ OPIC 2014-2020, 2014BG16RFOP002 – March 2015, http://www.opcompetitiveness.bg/images/filerepository/3733_OPIC_2014_2020_adopted_by_EC_16.03.2015_EN.pdf.

- Smart growth: developing the Bulgarian economy based on knowledge transfer and product, and technology innovations;
- Sustainable growth: promoting a greener Bulgarian economy and the more efficient use of limited natural resources such as water, soil and minerals;
- Inclusive growth: fostering a high-employment Bulgarian economy based on higher value added by the labor force through social and regional cohesion.

The expected result of the implementation of the OPIC 2014-2020 and financing the measures through European State Fund mechanisms can be summarized as follows:

- establishment of an innovation-friendly business environment;
- modernizing the business infrastructure for sustainable and competitive growth and labor improvement;
- establishment of the basis for innovation-driven and resource-efficient restorative economy;
- introduction of successful instruments for effective cooperation between business, academia and universities;
- accelerate the access to finance, especially for SMEs and start-ups.

To elaborate the given results of OPIC 2014-2020 the Bulgarian Government has adopted two main strategies:

- National Strategy for Promotion of Small and Medium-Sized Enterprises 2014-2020: it presents the vision of the Bulgarian Government on the needed state policy support in the field of the establishment SMEs as well as the development of SMEs' networking and the involvement of SMEs in international consortia of production chains. In addition to OPIC results, under the measures of the strategy, there will be support for the establishment of nearly 12 000 new SMEs allocated to the relevant sectors of the economy, particularly in the area of industry and knowledge intensive services. The Strategy for Promotion of SMEs contributes additional measurements in order to provide the achievement of some of the objectives of OPIC 2014-2020 in five priority areas:
 1. Entrepreneurship.
 2. Access to Finance.
 3. Skills and Innovation.
 4. Environment.
 5. Internationalization.
- Innovative Strategy for Intelligent Specialization of the Republic of Bulgaria until 2020: it presents the environmental conditions that will help to ensure the achievement of OPIC 2014-2020 objectives. The main areas of Innovative Strategy establish and manage the coordination of innovations; national innovation system and scientific infrastructure; specific financial support instruments for product and technology innovations; support for digital growth and e-Government.

In conclusion, OPIC 2014-2020 is focused on increasing the productivity, efficiency and innovativeness of Bulgarian enterprises. The operational programme

provides measures for stable growth through establishing the support, development and cooperation between export-oriented and/or knowledge-based high innovation SMEs with high added value production.

3. Methodological approach

The OPIC 2014-2020 Guidelines refer the appropriate instruments and measures for implementation the Bulgarian National Strategies for innovative growth and sustainable development as well as for achieving the projected goals and objectives of the operational programme.

The main targets for the evaluation of the effectiveness of the measures of the OPIC 2014-2020 are given below:

- increasing private R&D investment from 0.6% of GDP in 2012 to 1.5% of GDP by 2020;
- strengthening the entrepreneurial activity of 10% in 2012 to at least 12% by 2020;
- increasing the share of Bulgarian SMEs that export goods and services to other EU Member States from 3.15% in 2012 up to 7% in 2020;
- increasing the share of Bulgarian SMEs that export goods and services outside the EU from 1.76 % in 2012 up to 3.06% in 2020;
- increasing energy efficiency by 25% by 2020;
- increasing the share of Bulgarian SMEs with measures of resource efficiency from 85% in 2012 to more than 93% in 2020;

According to the target results of the operational program a set of indicators are given below:

- share of innovative enterprises;
- number of enterprises' survival up to two years;
- non-R&D innovation expenditures;
- export volume of goods and services achieved by SMEs;
- productivity of SMEs;
- energy intensity;
- share of SMEs with measures of resource efficiency

The basic values and their target values are given at Table 1.

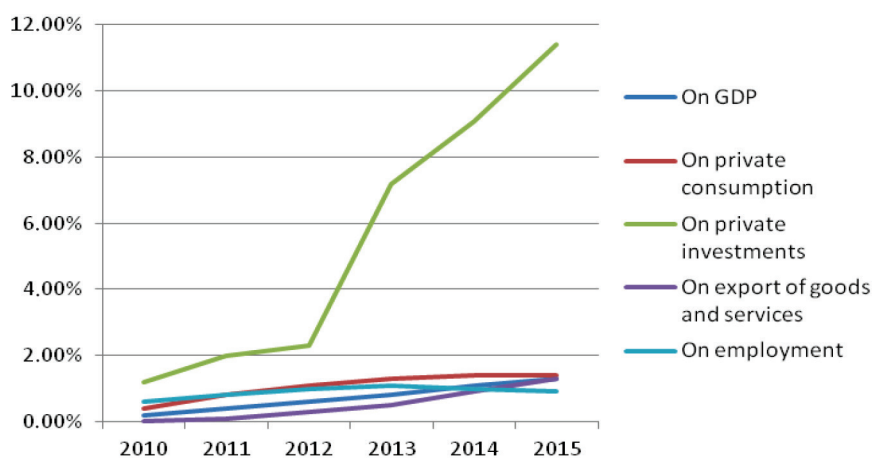
The projected values are based on the results of the operational programme of Development of the Competitiveness of the Bulgarian Economy 2007-2013 (Figure 1).

According to Figure 1 there is a positive effect of the operational program 2007-2013 measures on five of the main macroeconomic indicators (GDP, employment rate, growth in private consumption and exports of goods and services), as the most positive impact is on the growth of private investment.

Table 1. Basic and projected values of OPIC 2014-2020 indices

Indices	Basic value (2015)	Projected value (2023)
Share of innovative enterprise (%)	27.4	30.4
Innovation costs (% of GDP)	0.49	0.63
Value of export of SME	8.1	8.99
Energy intensity of the economy	0.604	0.671
Share of SMEs with resource efficiency measures (%)	83	95

Source: Report of implementation of OPIC 2020, <http://opic.bg/uploads/2017/10/peto-ofitsialno-zasedanie-na-komiteta-za-nablyudenie-na-opik-i-na-opimsp-1.pdf>.

**Fig. 1.** Effects from the OPDCBE 2007-2013, SIBILA database 1

Source: OPIC 2014-2020 Agreement, http://www.opcompetitiveness.bg/images/filerepository/3733_OPIC_2014_2020_adopted_by_EC_16.03.2015_EN.pdf.

The effect of OPIC 2014-2020 can be calculated in order to achieve sustainable growth.⁷ Thus, the total effect of the implementation of the operational programme measures can be calculated by the following formula:

$$(A^* - A) = \sum_{t=1}^n \frac{(A^*_t - F_t) - A_t}{A^*_{t-1} - (A_{t-1} + F_{t-1})}$$

⁷ See N. Sterev et al., *Does business cycle have an impact on entrants and exits?*, Ijebesar Journal, 2017, vol. 10, Issue 1, pp. 49-54, http://ijebesar.teiemt.gr/docs/volume10_issue1/business_cycle_impact.pdf; N. Sterev et al., *Does Newborn Business do Matters to the Industrial Growth?*, Summer Global Business Conference 2015 – GBC, 30 Sept – 03 Oct 2015, Sibenik, Croatia.

where: A – projected macroeconomic indices without financing of measures, A^* – macroeconomic indices for projected year with financing measures, F – added value of financed measures to the projected macroeconomic indices, n – number of years of calculated effect.

4. Data analysis

The need of the assessment of the operational program at mid-term (2018) is based on the analysis of the projected values of the given programme indices (Table 1). The overall impact on the projected macroeconomic indicators could not be done at this moment because the national statistics cover 2015 and the beginning of 2016 but the OPIC Agreement was signed in 2015, and the first awarded projects have not been not finished yet in 2017.

Nevertheless, there are some preliminary results that are summarized below:

- **8** tender procedures for project awarding and **7** tender procedures for direct project contracting in **4** budget lines are finished in 2017;
- Contracted projects at the amount of **1.570 bln BGN (0.800 bln EUR)** that is 63% of the total budget of OPIC;
- A total of **1461** contracts have been signed with a total amount of **1.32 bln BGN (0.675 bln EUR)**;
- The authorized payments amounted to **0.493 bln BGN (0.252 bln EUR)**.
The division of awarded projects by the priority axis are given in the Table 2.

Table 2. Authorized payment of OPIC 2014-2020 measures by priority axis (mln EUR)

Priority axis	2015	2016	2017	TOTAL
PA 1: Technological Development and Innovation	0	15.001	12.343	27.344
PA 2: Entrepreneurship and Capacity for Growth of SMEs	0	97.089	106.763	203.852
PA 3: Energy and resource efficiency	0	10.001	0.22	10.221
PA 4: Removing bottlenecks in security of gas supplies	0	0	0	0
PA 5: Technical Assistance	4.218	2.863	3.814	10.896
TOTAL	4.218	124.955	55.511	252.312

Source: Report of implementation of OPIC 2020, <http://opic.bg/uploads/2017/10/peto-ofitsialno-zasedanie-na-komiteta-za-nablyudenie-na-opik-i-na-opimsp-1.pdf>.

The figures in Table 2 show that 80% of financial support is for achieving priority axis 2: Entrepreneurship and the capacity for Growth of the SMEs. Thus there could

be insufficient implication of some of the projected indices. In addition, just 16.29% of projects budgeted are certified at the mid-term of OPIC.

The achievement of the single project indices can be found in Table 3.

Table 3. Achieved projected indices by OPIC 2014-2020's measures

	Intermediate value (2018)	Result at 12.10.2017
Certified costs for technology development (mln EUR)	20.87	10.40
Number of beneficiaries for technology development and innovative growth	57	3
Certified costs for Entrepreneurship and development of SMEs (mln EUR)	96.56	87.53
Private investments of R&D (mln EUR)	32.26	50.26
Certified costs for energy efficiency (mln EUR)	34.98	5.11
Number of beneficiaries for energy efficiency	185	231 (ongoing)
Private investments complementing public support (bln BGN)	63	35

Source: Report of implementation of OPIC 2020, <http://opic.bg/uploads/2017/10/peto-ofitsialno-zasedanie-na-komiteta-za-nablyudenie-na-opik-i-na-opimsp-1.pdf>.

The progress of the implementation of the measures of OPIC 2014-2020 has been insufficient for now, but some of the procedures have been ongoing. Nevertheless, according to the figures, there is a need for the reinforcement of the measures, especially under Priority Axis 1: Technological Development and Innovation; and axis 4: Removing bottlenecks in security of gas supplies.

5. Conclusions

The Bulgarian Governance of innovation development and economic growth is executed well enough. The legislation of the National Strategy for innovations and development is approved and in accordance with the main priorities of European legislation.

In addition, the Bulgarian innovation development and growth is supported by the Operational Programme Innovations and Competitiveness 2014-2020 that is additionally reinforced by two strategic documents: Innovative Strategy for Intelligent Specialization and Strategy for Promotion of SMEs.

Although the OPIC 2014-2020 measures give the opportunity for technical and regional cohesion within the EU Member States the projected OPIC's indices are also good enough to boost an innovative and competitive growth, the reported mid-term results are insufficient. The total lag behind the projected values is high, as just 16% of financial support is approved and the results of three of the five priority axes are under 15% of the projected value.

Thus, there could be defined the need for the modification of the OPIC's measures as follows:

- modify the priority projects in priority axes: more evidence for growth potential;
- modify the financial schemes and instruments more directly to the SME: increase the share of financing SMEs;
- modify the methodology and criteria for the selection of awarded projects under the procedures.

In conclusion, in 2018 an analysis of the real impact of OPIC measures is needed in accordance with the reported indices as well as to the projected values of the macroeconomic indices.

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