HIGHER EDUCATION INTERVENTIONS IN THE EU FUNDING CONTEXT DURING 2007 – 2013 PROGRAMING PERIOD IN BULGARIA

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Abstract: This article presents an analysis of the interventions supporting specific public policies, in the field of higher education, in Bulgaria. These fall within the framework of the European Union structural funds of the 2007 – 2013 program. The paper identifies the types of operations and financial allocations according to their mode of intervention, and reports on the impact of their implementation. It concludes with recommendations for the new operational program, "Science and education for smart growth 2014 – 2020."

Introduction

The first programing period for Bulgaria as a member of the European Union (EU) has ended with real payments amounting to 78.17% of the overall allocation for all operational programs[2]. This was a public resource, considered extremely beneficial for all economic and social sectors, and in recent years was the basic source of fresh capital.

During the reviewed period (2007–2013), Bulgaria received support for educational development from public policies, funded predominantly by European Social Fund through Operational program "Human resources development" (OPHRD). The European Regional Development Fund through Operational program "Development of the competitiveness of the Bulgarian economy" (OPC) and the Operational program "Regional development" (OPRD) provided support to a lesser degree. However, the problems and issues related to the technical implementation of such operational programs, and their overall impact on the education in Bulgaria, are not the main subject of this paper. However, these will be included generally, because their implementation continues until the end of 2015. The main subject of this paper pertains to the interventions in the higher education sector. The criteria assessed include the types, the ratio of the different types, funding, and the impact of the interventions. The type of intervention is determined according to the taxonomy of economic growth factors, and their impact is analyzed using the SIBILA method (Council of Ministers, 2011). This method was developed especially for evaluating the impact of the EU Structural and Cohesion Funds on the Bulgarian economy. The basic source of data and calculations for the OPHRD and OPC higher education impact analysis was the official Unified Management Information System for the EU Structural Instruments in Bulgaria[3]. The second part of the paper contains the review of the amount of funding, as well as the typology and assessment of the interventions. The paper concludes with recommendations.

Amount of funding

The basic resources for educational policies in Bulgaria were channeled through two priority axes of OPHRD. At the beginning of 2015, a large percent of the contracted resources were paid, with 87.59% paid to priority axis 3, "Quality improvement of the education", and 91.53% to priority axis 4, "Improving access to education"[4]. The OPHRD has had two specific objectives related to education. For the priority axis 3, this was "Human resources development and adaptation to the labor market through providing quality education, effective educational institutions and stable relations with business" (Ministry of Labour and Social Policy, 2007, p. 96). The objective of the priority axis 4 was defined as

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"Successful social and labor market realization of the people through improving access to education and training and lifelong learning" (Ministry of Labour and Social Policy, 2007, p. 106).

In the 2007 – 2013 period, the OPHRD budget, designated for higher education policies, was 322 777 795 BGN[5]. The main beneficiaries of the OPHRD were the Ministry of Education and Science, government agencies, institutes of Bulgarian Academy of Sciences, higher education institutions, schools, municipalities, and NGOs. In the framework of OPC, only 24 contracts with higher education institutions were signed, with an overall budget of 33 887 793 BGN[6]. Within the OPRD, contracts with universities were signed, mainly for infrastructure improvements, and the budget was 33 954 716 BGN[7].

In other words, at the end of the 2007 – 2013 framework, higher education policies were funded by national operational programs to the value of 390 620 304 BGN. Indeed, this figure is just indicative, because not all contracted budgets were implemented thoroughly. However, at the end of 2015, when all projects from the previous period need finalization, the absorbed amount will likely meet the assigned figure.

Operations analysis

This study aims to analyze two important aspects related to identifying operations relevant to the impact exerted on the higher education system in Bulgaria.

The classification of the operations was performed in view of the main theories of the economic growth factors. According to the neoclassic model (Solow, 1956), direct investments and bank lending are the main factors influencing short term economic growth. In this model, technological progress and high-tech development is reviewed, as an external factor with no special importance.

However, in other theories, internal technological development is the key for economic growth. These endogenous theories state that knowledge, innovations, education, and technological advancements lead to self-sustainable growth. In this context, there are three main sources of growth – new knowledge, innovations, and public infrastructure (Romer, 1986; Lucas, 1988).

The study examines other concepts in terms of the keys for economic growth. According to the cumulative causation (Myrdal, 1957), certain initial conditions lead to different accumulations and economic disparities. Accordingly, the economic geography (Krugman, 1991) stipulates that the economic process is an imbalanced one, and that economies that have been favored from the very beginning have the best chance for growth. On the other hand, other theories underline the importance of social and cultural influences as well as political, institutional, and other non-economic factors (Granovetter, 1985; Lipset, 1959; Matthews, 1986).

According to some endogenous models, the human capital is the main resource for growth, and is defined by way of acquiring knowledge, skills, and expertise, through education and learning. Many researchers measure the quality of human capital using surrogate parameters, like those relevant to education such as the percentages of children attending school, people with secondary or tertiary school education, people covered by educational and qualification programs, or statistics from educational test results. Based on such data, many researchers state that a well-educated labor force (human capital) is the key factor for the economic growth (Barro, 1991; Mankiw, Romer, & Weil, 1992; Hanushek & Kimko, 2000).

The main theories of neoclassic and endogenous emphasize that investments are the next source for growth, but not in terms of importance. Different studies review other growth factors, such as the

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[5] http://umispublic.government.bg/opOPProfileFinExec.aspx?op=1
[6] http://umispublic.government.bg/opOPProfileFinExec.aspx?op=5
[7] http://umispublic.government.bg/opOPProfileFinExec.aspx?op=3

technological capital (comprising managerial and entrepreneurial skills, innovations, R&D, and ICT), physical infrastructure (e.g. production resources, manufacturing installations, and hardware), economic policies, macroeconomic environment, trade openness, foreign direct investments, the state of institutional development and framework, and political, socio-cultural, geographical and demographic factors (Petrakos & Arvanitidis, 2008, p. 56).

A review of the funding policies for higher education in Bulgaria during 2007 – 2013, within the context of the above, provided the following outline of the operations that channeled the financial resources:

- Operations / projects for human capital development
    - These interventions include the following operations/projects
        - Raising the qualification of the higher education institutional staff;
        - Development of mechanisms for school and university internships;
        - Support for doctor and postdoctoral students, young scientists;
        - School and higher education internships;
        - Higher education internships;
        - Student scholarships for equal access to education, and raising motivation for better educational results;
        - Student scholarships and awards; and
        - Student scholarships.
    Total amount: 248 715 114 BGN
- Operations / projects for technological capital development
    - Including the following operations/projects
        - Actualization of the higher education curricula in accordance with the labor market;
        - Improvement of the higher education management systems;
        - Development of the systems for qualification and career development of the higher education institutions staff;
        - Development of a higher education institutions ranking;
        - Development of a higher education institutions ranking system;
        - "Science and business" project;
        - Development of digital forms of distance learning in the higher education;
        - Establishment of new, and development of existing offices for technology transfer;
        - Development of the applied research in the research organizations; and
        - Development of the higher education institutional infrastructure.
    Total amount: 141 905 190 BGN

The immediate notion is that the resources distributed between operations, aimed at development of human and technological capital, are disproportional. The ratio of 60:40 favors the development of human capital.

The typologization of the second category needs further explanation in that "technological capital" entails funding operations with only some of the characteristics of this term. For example, some OPHRD operations aim to develop management skills through schemes to improve universities' management

systems; entrepreneurial skills through the "Science and business" project, and operations for synchronizing the higher education curricula with the labor market; and ICT through distance learning operations. These operations promote the development of new skills and knowledge, which create new opportunities for developing curricula or management of the higher education institutions themselves.

Impact assessment

The SIBILA provided the methods for the impact assessment of the operations related to the higher education. These methods have been developed especially for impact assessments of the SCF on Bulgarian economy (Council of Ministers, 2011). The model uses the European practice of impact assessment of the structural instruments (e.g. HERMIN, QUEST, and ECOMOD), as well as the contemporary macroeconomic theory. It is thoroughly adapted to the specifics of Bulgarian economy.

The methods of SIBILA provided an assessment tool for the impact evaluation of the 2007 – 2013 EU investments in education and science in Bulgaria through the national operational programs (Simeonova-Ganeva & Ganev, 2013). This study evaluated the impact of all absorbed investments in human and technological capital, and underlined the importance of OPHRD for human capital development as well as the role of OPC and OPRD in improving the technological capital.

The assessment involved a comparison of two scenarios, one with full absence of investments, and the other with funding from operational programs. Simeonova-Ganeva & Ganev (2013, p. 5) reported that the EU investments have had a progressively positive impact on the development of human and technological capital in Bulgaria, with the net impact of the resources absorbed in 2012, and provision made for further absorption until 2015. Simeonova-Ganeva & Ganev (2013) states, "The short term effect on GDP reveals that in the result of these investments we could expect GDP growth by 2% higher than one without any investments. The mid-term effect (up till 2020) would be 4% growth of GDP."(p. 6).

Such conclusions fall thoroughly into the context of other studies that stipulate investments from the SCF of EU support the economies of beneficiary countries, mainly in terms of GDP growth, despite relatively modest growth (Bradley, 2012, p. 21). Hence, the impact assessment of the interventions in higher education could be evaluated by extrapolation of higher education investments, and then comparing these to the impact assessment of all investments in education and science as performed by Simeonova-Ganeva & Ganev (2013). The resources invested in higher education amount to 23.4%[8] of all investment in education and science for 2007 – 2013. Therefore, it could be concluded that impact of higher education operations themselves would barely exceed 23% of the envisaged short-term GDP growth of 2% (and 4% in mid-term).

However, such provisions are relative, to some extent, because not all contracted resources will be absorbed. In this case, it lessens the weight of the impact, but as a whole, preserves the positive effects.

Conclusion

A conclusion of the analysis of higher education processes pertains to policy-making for the higher education sector, which is mirrored in operational programs. The types of operations and the funding amount give a clear picture of the policies planned for implementation during 2007 – 2013 in Bulgaria. In this line of reasoning, the main conclusion is that, at the moment of planning of the operational programs, the higher education management is understood as implementing policies predominantly for acquiring knowledge and skills, and to a lesser extent for R&D, innovations, management skills, and entrepreneurial expertise.

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[8] 13,2% of OPHRD, 6,2% of OPC and 4% of OPRD resources designated for educational policies

Another conclusion entails the newly established operational program, "Science and education for smart growth". This program is important for balance, and to overcome disparity between interventions supporting human capital and those for technological capital. The operational program has already been approved, but such balance could be kept in the planning of operations and schemes. Such approach would increase the impact of the public resources invested in education and science and will multiply the economic benefits for Bulgaria in the next 2014 – 2020 framework period.

References

Barro, R. (1991). Economic Growth in a Cross Section of Countries. *Quarterly Journal of Economics*, *106*(2), 407-443.

Bradley, J. & Untiedt, G. (2012). Assessing the impact of EU Cohesion Policy: What can economic models tell us? *HERMIN Economic Papers*, No 2-2012. Retrieved from http://EconPapers.repec.org/RePEc:hrm:wpaper:2-2012.Granovetter, M. (1985). Economic Action and Social Structure: The Problem of Embeddedness. *American Journal of Sociology. 91*(3), 481-510.

Council of Ministers. (2011). *Model for impact assessment of the structural funds and the cohesion fund of the European Union in Bulgaria. SIBILA: Simulation model of Bulgaria's Investment in Longterm Advance. Technical Documentation*. Sofia: Consortium "ECORYS – CPM – NEW I".

Hanushek, E. & Kimko, D. (2000). Schooling, Labor-Force Quality, and the Growth of Nations. *American Economic Review, 90*, 1184-1200.

Krugman, P. (1991). Increasing returns and economic geography. *Journal of Political Economy, 99*, 183-199.

Lipset, S. M. (1959). Some Social Requisites of Democracy: Economic Development and Political Legitimacy. *American Political Science Review, 53*(1), 69-105.

Lucas, R. (1988). On the Mechanics of Economic Development. *Journal of Monetary Economics, 22, 3-42*.

Mankiw, N., Romer D., & Weil, D., (1992). A Contribution to the Empirics of Economic Growth. *Quarterly Journal of Economics, 107*(2), 407-437.

Matthews, R. (1986). The economics of institutions and the sources of growth. *The Economic Journal, 96,* 903-918.

Myrdal, G. (1957). *Economic theory and underdeveloped regions*. London: Hutchinson.

Ministry of Labour and Social Policy. (2007). *Operational programme "Human resources development" 2007 – 2013*. Republic of Bulgaria: Author.

Petrakos, J. & Arvanitidis, P. (2008). Determinants of economic growth. *Economic alternatives, 1*, 49 – 69.

Romer, P. (1986). Increasing Returns and Long Run Growth. *Journal of Political Economy, 94*(2), 1002-1037.

Simeonova-Ganeva, R. & Ganev, K. (2013). Effects of EU Funded Policies: Net Impact Assessment of Investments in Education and Science in Bulgaria. *MPRA Paper No. 48176,* FEBA, Sofia University St. Kliment Ohridski. Retrieved from: http://mpra.ub.uni-muenchen.de/48176/1/MPRA_paper_48176.pdf.

Solow, R. (1956). A Contribution to the Theory of Economic Growth. *Quarterly Journal of Economics, 70*, 65-94.