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INNOVATION STRATEGIES FOR THE NATIONAL ECONOMIES' DEVELOPMENT

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Purpose of the article: The paper aims to assess the interrelations between economic growth, competition, and innovation and to conceptualize the economic policy's measures for stimulating innovative development

Methodology: We focused on a sample of national economies that made their transition from centralized planning to the market in the 1990s, and later either joined or declared their intentions to join the EU. We decomposed the national economies elements interconnection's emergent potential and refined the economic growth-friendly public policy mix. We applied statistical methods and comparative analysis to investigate the indicators dynamics' peculiarities.

Conclusions: Businesses, institutions of higher education, and scientific centers should cooperate intensively to create a new growth-friendly economic paradigm. That cooperation could include support of scientific and pedagogical personnel participation in international conferences and symposia, direct business financing of applied studies and co-financing of fundamental research. The practices of registration, promotion, protection, and support of intellectual property rights should be enriched.

Originality: We pointed out that a prudent cooperation of public authorities, civil society and business could contribute to sustainable economic growth. In contrast to rather selfish concept of Homo oeconomicus, the rational idea of mutually beneficial agents' cooperation should form the basis for the modern economic paradigm.

Keywords: competition, economic growth, high-tech economy, innovation, sustainable development.

Introduction

As economic phenomena, both competition and innovation determine and shape the business entities' modus operandi. Theoretically, in the long run, market competition could be and should be capable of maximizing the respective economic agents' benefits. Meanwhile, the aforementioned agents' anti-competitive intentions and unfair practices prompt respective institutional counteractions. In the most radical cases, competition forces authorities to impose anti-monopoly policies (aimed to ensure general fairness and optimal economic performance as well). Thus, the competition's ontological aspects form an essential object for investigation. Moreover, its initial idea derives from the architectonics of public production and innovation par excellence. Innovation is commonly considered as a trigger for both market competition and sustainable development. However, the exact model of strategic interconnection between competition and innovation depends on the national economy's institutional peculiarities and is determined historically.

Due to the indisputable relevance of the aforementioned scientific issue, it is vital to systematize and deepen the methodological bases of fair competition, considering both advanced and emerging markets' innovation experience. Specific attention should be paid to the innovation's effect on the global competitive doctrine. This scientific investigation aims to evaluate the interconnections between economic growth, competition and innovation, and to propose the complex measures for the innovative development stimulation.

Literature review

Pol (2020) reconciled the Schumpeterian innovation theory as well as the Porter model of development and competition by an introduction of the 'innovatory discontinuity' concept and separation between formal and narrative economic models. Highlighting the Visegrad 4 countries' experience, Ivanová & Čepel (2018) assumed that the innovation performance of the enterprises has been the national economies' key factor in increasing competitiveness. Ungerman et al. (2018) investigated the areas of marketing in the context of Industry 4.0 and their subsequent impacts. The scholars highlighted innovation as the main factor in competitiveness. Marincean (2019) pointed out that innovation provisions should be formulated according to the competition rules. The author argued that public regulation of innovative processes could contribute to economic development.

Meanwhile, the internal essence of the mutual relationship between innovation, competition, and economic growth remains undisclosed. This study aims to highlight the above interrelation.

Materials and methods

We focused on a sample of countries that started their market transformations in the 1990s, and subsequently joined or declared their intentions to join the EU (e.g., Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Slovakia, Slovenia, and Ukraine). We considered the time interval from 2007 to 2022. The statistics and forecasts of the World Bank and the International Monetary Fund formed the information base of this study. We used theoretical generalization to systematize the factors determining competition and innovation, and applied statistical methods and comparative analysis to investigate the indicators dynamics' peculiarities.

According to the Wicksell / Cobb–Douglas productive function, labor and physical capital are imperfect substitutes. Meanwhile, synergy matters essentially. Pasichnyi & Nepytaliuk (2021) pointed out that not only positive, but also negative and neutral synergistic effect should be considered while preparing public regulation measures. To determine total factor productivity, we applied a function of the interconnection' between the basic public production elements arithmetic sum (model 1):

$$A = f\left(\sum_{i=1}^{n} EP_i\right), \tag{1}$$

where EP_i – emergent potential of the i-th interconnection between the basic public production elements.

Regarding the scientific investigations addressing the problem, the system elements interconnection's emergent potential (model 2) has its origin in innovation and competition potentials:

$$EP_i = f\left(IP_i, CP_i\right), \tag{2}$$

where IP_i and CP_i – the investigated economic system elements interconnections' innovation and competition potentials, respectively.

We examined the above potentials to refine the growth-friendly policy profile.

Results and discussions

We compared the real GDP per capita growth rates in the sampled countries and the structure of public production. Regarding the real GDP per capita growth rates, the entire sample could be divided into three sub-samples. Firstly, the sub-sample of the countries with a low indicator ranged from –0.55% in Ukraine to 1.87% in Estonia (the group included the Czech Republic and Slovenia). Secondly, the sub-sample of the countries with a medium indicator ranged from 2.12% in Croatia to 2.73% in Slovakia (the group included Hungary and Latvia). Finally, the sub-sample of the countries with a high indicator ranged from 3.38% in Bulgaria to 3.91% in Poland (the group included Lithuania, Moldova, and

Romania). The average proportion of medium and high-tech industry value added in the total value added of manufacturing varied significantly from 14.80% in Moldova to 54.87% in Hungary. Moreover, considering the entire time interval, the average economic growth rate in Moldova equaled to 3.62% and has been significantly higher than in Hungary (with the indicator equaled to 1.87%). The stochastic interrelation between the above two indicators was rather ambiguous. Thus, the proportion of medium and high-tech industry value added in the total value added of manufacturing was quite important, yet not the ultimate criterion for ensuring high economic growth rates and sustainable development.

The average proportion of the firms that have spent on R&D in 2013–2014 equaled to 11.08%, while in 2019–2020 the mentioned indicator equaled to 9.25%. In 2013–2014, Romania (11.30%), Estonia (12.30%), Slovenia (17.40%), the Czech Republic (21.30%), and Croatia (22.10%) appeared to be the most innovative. In 2019–2020, the most innovative economies were Ukraine (9.90%), Moldova (10.40%), Latvia (11.40%), Estonia (14.50%), the Czech Republic (20.40%), and Slovenia (20.60%). To boost competitiveness, national governments should encourage business innovation, applying the appropriate fiscal and investment policy mix.

We assessed the tax burden as an integral characteristic of the national economy's competitiveness, considering the globalization's implications. Regarding the sample, the lowest tax burden (equaled to 2.69% of GDP) was identified in Croatia. Meanwhile, in Hungary, the average tax burden has been the highest and equaled to 22.58% of GDP. The sample mean equaled to 17.23% of GDP. Additionally, the actual average tax burden has been lower than the sample mean in the Czech Republic (14.45% of GDP), Romania (16.29% of GDP), and Poland (16.93% of GDP). The national economy's competitive position could be depreciated by an expansion in the tax burden. Moreover, its unjustified increase often forces the economic agents to change fiscal jurisdiction. Regarding the time interval from 2007 to 2022, a decrease in the tax burden by more than 2.00 percentage points has been recorded in Romania and Moldova. Meanwhile, in Slovenia, the Czech Republic, Bulgaria and Croatia, the examined indicator has declined slightly. The other sampled countries were characterized by an increase in the tax burden.

The measures aimed to eliminate bureaucratic procedures and to ensure maximum transparency of business registration, reorganization, and liquidation processes seem logical and actual. To ensure economic sustainability, the non-critical public regulatory powers should be reduced essentially. National governments should promote registration and the existence of innovative businesses and directly support the firms implementing revolutionary ideas. A stable, understandable and transparent tax policy should ensure the protection of investors' property rights. The above should be carried out simultaneously with a system of total anti-corruption measures, aimed to prevent the practices of receiving undue benefits. The business sector should take complex measures to improve both environmental and social responsibility, introducing resource-saving, a green and circular economy.

Conclusions

1. Combined efforts of public institutions, civil society and business community could contribute to economic development. Instead of rather selfish theory of Homo oeconomicus, the concept of generally beneficial agents' cooperation should mark the modern economic paradigm.

2. To promote innovative business, prudent administrative deregulation should be exercised consistent and systematically. Hence, creation of a stable, predictable and transparent tax legislation, improvement in public administration and protection of the economic agents' property rights form the core tasks aimed to boost national economies' competitive positions.

3. A prudent reduction in the overall tax burden could generally improve the emerging markets' performance through the business entities' reactivation.

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