

International Competitiveness through Innovation and Entrepreneurship *The case of Greece*

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Abstract

One of the five key targets of the Europe 2020 growth strategy of the European Commission consists in fostering research and innovation across Europe. Within this frame, by 2020 it is expected 3% of the EU's GDP to be invested in Research and Development in order to support innovation, education and ultimately economic growth and development (European Commission, 2012a). The targets though, differ across countries depending on the size and specific characteristics of each economy.

In the case of Greece, this is expected to be accompanied by an employment rate of around 70%, an increase in the share of renewable energy to the total national energy production to 18% and many other developments and beneficial economic consequences for the country (European Commission, 2012b). International competitiveness, which is one of the current fiddly areas of the Greek economy, is expected to be enhanced as well, especially through innovation and entrepreneurial initiatives. However, as it has been suggested by recent studies (Foundation for Economic and Industrial Research (IOBE), 2013; Stournaras, 2010a), the factors that have historically impeded the innovative and entrepreneurial behaviour in the country are not the inputs in the innovation and the development process (as measured by the number of doctorate degrees, scientific publications, public funding on R&D or the percentage of tertiary education graduates), but rather the implementation difficulties leading to poor outputs. Therefore, rather than focusing solely on a quantitative analysis of the phenomenon, the purpose of this paper is to shed light into the specific characteristics of the Greek socio-economic environment and development of the last three decades, attempting to explain some of the implications, and draw policy relevant conclusions focusing on the impact of innovation and entrepreneurship on international competitiveness and economic prosperity.

Keywords: Competitiveness, innovation, entrepreneurship, incentives, investments.

JEL classifications: O38, O31, O39,

Introduction

The earliest known use of the word "innovation", according to D'Angour (2011), dates back to 422 BC, when the equivalent Greek term "kainotomia" (καινοτομία) was used in a comedy of the Athenian playwright Aristophanes. As the same author points out in an earlier article (D'Angour, 2000) "Greeks might reasonably lay claim to having discovered innovation, since they were not only conspicuously innovative but (having invented the world's first true alphabet) were the first people to write about it". Since that time, Greeks' key innovations arose in thought and culture rather than in science and technology and different philosophers had different perceptions of it. While for Plato for example, "innovation should be no more than a

variation or recombination of familiar elements", for Aristotle, it had "different meanings depending on the area in which it is applied"; hence, innovation seekers should decide what kind of innovation they need every time. Hippocrates and other ancient Greek physicians, by "advocating the empirical investigation of disease and cure - rather than, say, magical or arbitrary methods of treatment" are considered to be innovators in medical theory. Beside those examples, as D'Angour (2000) advocates, ancient Greeks, being the first to apply democratic politics and the earliest large-scale monetary system, recognised the importance of freedom, competition and incentives as crucial for "cultures of innovation". Another relatively newer aspect of innovation comes from the Schumpeterian notion of "constructive destruction" which identifies innovation as the critical dimension of economic change, a change which, as Pol and Carroll (2006) citing Schumpeter state "could provide better results than the invisible hand and price competition".

However, from ancient times to the present many things have changed and nowadays, due to several causes, Greece is confronted with serious economic problems. Two possible ones, this study is focused on, are considered to be innovation and entrepreneurship on national scale performance. According to the most recent Innovation Union Scoreboard of the European Commission (2013) Greece belongs to the category of "Moderate Innovators", and is ranked 9th among the EU member countries, but its innovation performance has declined during the last five years more rapidly than any other EU member country (annual average rate of -1.7%). On the other hand, the Doing Business Report 2013 ranked the country 78th globally (out of 185 countries) regarding the easiness of doing business, which places Greece last among EU countries (World Bank, 2013a). In the same report, judging from the international rankings, various areas of entrepreneurship activities are considered to be more problematic than other ones. The three topics in which Greece seems to be lagging behind mostly are: the easiness of registering a property, starting a business and investors' protection. In these three areas the country is ranked 150th, 146th and 117th globally respectively.

The six consequent years of recession of the Greek economy have caused a considerable shrinking of domestic demand. Therefore, Greek enterprises, especially the newly created ones, have sought to expand their exports and do business abroad. However, many of them have not been very successful. In 2011, 44.8% of newly established Greek businesses reported to have only domestic clients, while the average reported in other high-income countries was 39.8% (IOBE, 2013). Given that one of the most important sectors of the Greek economy is tourism, which is mainly extroversive, this difference could be considered significant. This reflects the problems in international competitiveness for the country.

Problem Investigation and Analysis

Four crucial factors for the well-functioning of National Systems of Innovation, according to Soete et al. (2010), are: the social and human capital, the research capacity and its links with the higher educational system, the geographical proximity, and the ability to embed innovations in the national economy. The definitions of those factors of course are broad and the ways they impact the performance of the economy numerous. For each country they have to be analysed in greater detail, taking into consideration the specific characteristics and the historical circumstances under which they were created. Moreover, one can distinguish between different kinds of innovation.

Soete et al. (2010) argue that innovation in national level can be incremental or radical. Innovation in firms level, on the other hand, can be achieved through the development of new products and services (technical innovation), or via new organisational and marketing methods (non-technological innovation) (Arundel et al., 2007).

In the following section we analyse some of the most important factors that are likely to have impeded the development of innovation and entrepreneurship to the greatest possible extent in the case of Greece, and try to back up our claims with official facts.

Technology and Financing

The first factor hindering the process could be technology gap. The era of online businesses, unlike other European countries, seems to have not come yet for Greece. In 2012, only 6% of Greek enterprises were purchasing via internet and/or networks other than internet and the value of their purchases and sales corresponded to only 2% of their total turnover, while the averages for the 27 EU countries were 16% and 15% respectively. About 80% of enterprises in the country¹ declared to have access to broadband internet, a figure which ranks Greece 25th among the 27 EU countries, where the average was 92% (Eurostat, 2012a, b, c). A possible improvement that has been suggested and is considered as one of the next steps towards a corporate efficiency state (IOBE, 2012) consists in implementing services like e-invoicing, e-sales or e-auctions. This shift towards electronic transactions requires not only time, but also financing and research. However, according to the European Commission (2012a, p.10), each euro invested in research in the EU, generates between €7 and €14 of added value in industry. The financing of innovative firms in Greece remains one of the major problems. The IUS 2013 shows that Greece has the 3rd lowest score among the 27 EU countries (the same in 2011 as well) regarding the innovation financing and support, and the 5th lowest regarding firm investments. On the other hand, the total R&D national expenditures in 2007 constituted only 0.6% of GDP, and had not varied significantly during the last 15 years, while the EU27 average was 1.85% and the target of EU2020 is 3% (Eurostat, 2012d). In the public sector, R&D expenditures are 43% lower than the EU27 average, whereas in the business sector they are 87% lower than the EU27 average (IUS 2013).

One of the most problematic areas of financing is the venture capital. It has been suggested that the European venture capital performance has been historically poor compared to that of venture in the USA. In the case of Greece, this sector seems to be even more problematic, being ranked in the 4th lowest position among 18 EU countries in 2009 regarding the venture capital investments as a share of GDP (Kelly, 2011). In 2012, the situation was not much better since total venture capital investments were 96% lower than the average figure for the EU27 countries (European Commission, 2013). However, in a recent survey for the Global Entrepreneurship Monitor was found that less than 10% of Greeks entrepreneurs considered liquidity as the most crucial factor impacting their decision to abandon their entrepreneurial activity, while more than 70% did so because of the lack of profitability (IOBE, 2013).

¹ Of those with 10 employees or more, and excluding the financial sector

Educational Issues

In order to deploy better technology or invest more in R&D projects, firms need to collaborate with academic and research institutions. This need has been expressed historically by many researchers of the topic. Soete et al. in the "Systems of Innovation" (2010, p.1161) give credit to Friedrich List as the pioneer in believing and arguing that businesses and industries should be linked to scientific and educational institutions. Citing List, he states that "No progress, no new discoveries and inventions can be made in these sciences by which a hundred industries and processes could not be improved or altered".

Knowledge produced in educational and research institutes in Greece is believed to not being used efficiently. While the inputs in the system are deemed to be relatively sufficient, the outputs are usually not. According to the OECD Education Policy Advice for Greece (2011a, p.63), a major issue related to efficiency is that there are "a comparatively high percentage of upper secondary school graduates entering tertiary education but comparatively low completion rates and an inefficient allocation of students between the university and Technological Educational Institute (TEI) sectors and among academic departments". World Bank data (2013b) show that Greece is ranked among the first countries worldwide regarding the tertiary education enrolment (3rd globally in 2006), an enrolment which increased dramatically during last decades (+52.5% from 1997 to 2007)². Scientific publications (11th among EU 27 countries) and public spending on education (1.48% of GDP in 2005, EU15 average was 1.12%) seem to be at relatively high levels as well (European Commission, 2009; World Bank, 2013c). The areas where the educational system in Greece is lagging are the ratio of students per academic staff, where Greece was ranked second among EU27 countries in 2005, and the graduation rate, where Greece was ranked last. This situation has been unchanged for years.

The share of employees in the Knowledge Intensive Business Services in 2004 was 4.5% of total employment, which ranked the country 14th among the 25 EU countries it was compared with, but they accounted for only 2.2% of the added value (average EU25 was 6.6%), which ranked Greece last (Arundel et al., 2007), evidence of another inefficiency in the system.

Given all those facts one can conclude that the transformation of academic knowledge to business practices is insufficient, while the further research leading to scientific publications has been relatively successful. Many young people are lately leaving the country and seek their future abroad. Characteristic is the case of doctors. In 2007, 1.554 Greek doctors were working in German hospitals and the number has been quadrupled within five years, reaching almost 6.000 in 2012 (Lakasa, 2013). According to the OECD country note for Greece, it has the highest unemployment rate among 25-29 year-olds with a tertiary degree (13.2%) compared to all other OECD countries (OECD average is 5.7%). The same report concludes that "the Greek economy has not yet shifted towards a knowledge-based model. An important share of the economic output still comes from the agricultural and industrial sectors, both of which largely require medium- to low-skilled individuals." (OECD, 2011b, p.3).

² OECD (2011a)

There has been suggested (European Commission, 2009) that inefficiency decreases when "funding to institutions depends more on outputs and less on historical attributions or inputs". However, as Janeway (2012, p.257) argues, efficiency can be a "two-edged sword". A more economically "efficient" funding in this case might lead to deterioration in the innovative nature of research and a loss in outputs. During the last 22 years (1980-2012), Greece's Human Development Index, as measured by the UNDP rose by 18.5% (from 0.726 to 0.860). At the same time, the HDI of OECD as a region increased by 17.5% (from 0.756 to 0.888). This shows a convergence. However, Greece is still placed below the regional average. To explain the abovementioned, possible frictions in the process of knowledge application and implementation in the current situation renders imperative to be investigated.

Public Sector Implications

Largely because of the weaknesses of the public sector, Greece has been often called "the last Soviet-type economy of Europe" (Stournaras, 2010b). According to the views of Nelson and Winter (1982) the public sector, governments, and even the broadly defined habits and routines, all constitute institutions that affect the way innovation is perceived. Hence, they are crucial factors to the national systems of innovation.

The Greek public sector has historically posed barriers to the development of entrepreneurship and innovation in the country. Among others, one can mention recent facts from various surveys and data from international organisations to prove that claim. Bureaucracy has been pointed out in the OECD Country Note (2012) as one of the factors that hinders competition in professional activities and network industries. Among other problems that it causes, we focus here only on some of those which are related to the business expansion and mainly the extraversion of the Greek economy. The Hellenic Federation of Enterprises (SEV), in a study published in 2010, identified 250 barriers to entrepreneurship posed by the state in Greece. What was claimed to have created some of the most important problems to free trade and competition (internal and external) consisted in the barriers to exports (including complicated documentation procedures and high taxes), difficulties in transactions with the public sector (inefficient public administration, technical difficulties caused by old, not properly educated staff, delays in many procedures, etc.). The Doing Business Reports of the World Bank have ranked Greece 79th globally in 2012 and 62nd in 2013 regarding the easiness of trading across borders. Despite the improvement, the country remains ranked below OECD High-Income countries average in most of the areas of trading. It takes for example 19 days and \$1,115 per container to export goods, when at the same time it takes 10 days, less documents and \$1,080 on average for other High-Income OECD countries. On the other hand, the stimulus to innovation and entrepreneurship, which could be given through public R&D for example, is 43% lower than the EU27 average.

Taxation and the continuous variability for many years in the economic and taxation policy in the country are considered to be a counterincentive as well. 80% of participants in a survey of the Athens Chamber of Commerce and Industry (2011) considered the non-stable tax, social security and labour environment and regulations as a prominent problem impeding entrepreneurship. Only during the last four years the tax regime has changed over 70 times (Naftemporiki, 2013), causing instability and posing unexpected risk to investors.

The solution that new entrepreneurs have found to tackle this problem consists in registering their companies abroad. Another reason many start-ups have chosen to "emigrate" is because of the prospects of funding. As Besant (2013) claims, they do it "for its ease and because they think legally affiliating their business with Greece might harm funding prospects".

Mentality and other Social Factors

Beside public institutions and governments, Nelson and Winter (1982), under the notion "institutions" include also the habits, practices and routines as factors that affect the way innovation is perceived in a country. Soete et al. (2010, p.1167), referring to Nelson and Winter (1982), state that, those factors "shape the way things are done" and "how agents act and interact".

The problems the Hellenic economy faces can not be claimed to be originated solely from the inefficiencies of the public administration. In this context, politicians are not deemed to be the only culprits. Yet, as Knapp (2013) has argued, even without any state barriers, entrepreneurs would require time to come up with and implement new innovative investments. Besides, there are many social, psychological and mentality factors that prevent the expansion of entrepreneurship culture and innovation practices as well. It has been suggested that the main professional aspiration of young people in Greece, unlike most of other developed countries, was, for many decades, a job in the public sector. This career track would lead to professional stagnation, but guarantee a secure job position and a relatively high salary (Besant, 2013). At the same time, about 40% of new entrepreneurs in the country declare that the fear of failure constitutes a big issue preventing them during their first steps. Meanwhile, paradoxically, they seem to be self-confident and almost 50% of them (record among innovation countries) claim to be equipped with the necessary knowledge, skills and experience for entrepreneurship activities (IOBE, 2013).

The inclination towards the public sector rather than to business-oriented activities and innovative enterprises could be partly explained by the fact that this culture is missing in the Greek society. In 2012, the lowest score for the index of public recognition and promotion by the media of successful entrepreneurs of the Global Entrepreneurship Monitor was reported in Greece (IOBE, 2013).

The education system, the centralised planning in many aspects of the economy and the lack of entrepreneurial initiatives in the last decades has shifted the democratic, creative and innovative Ancient Greece into a country where endless regulations, outdated laws, pressure and interest group protections have impeded the market powers and the capitalistic initiatives of potential entrepreneurs. Instead of facilitating the clearing of the markets and the correction of inefficiencies, governments have often been accused to have provided shelter to specific interests and social groups and impair the inefficiencies for many decades.

Outcomes, Possible Improvements and Policy Indications

The abovementioned analysed factors are deemed to be among the most important ones and have played a seminal role in shaping the current economic model of Greece. The relatively weak performance of the Greek economy in the international arena has been influenced by their historical trend and evolution. However, the international

competitiveness loss, combined with the huge potentials our analysis revealed, provide a good reason for Greece to invest more in the triangle of knowledge and emphasise its efficient deployment. As Soete et al. suggest for the case of policies focused on innovation "...there is a broader justification of the use of policy instruments as compared to market failure-based policies" (2010, p.1169). The effective coordination and the targeted intervention, combined with proper scientific analysis are expected to generate desired outcomes. Furthermore, the opening of the economy to the forces of the "creative destruction" processes of capitalism is deemed to foster the economic growth and development, mainly through the support of the extroverted sectors (Stournaras, 2010b). As Dosi et al. (2011, p.20) argued on the macroeconomic effects of the removal of barriers and competitions, "other things being equal, the easiness of entry and competence of entrants bears a positive impact upon long-term growth, mitigates business cycles fluctuations and reduces average unemployment".

As mentioned previously, according to the European Commission (2012a, p.10), each euro invested in innovation increases GDP by 7 to 14 euro. Literature suggests that the social welfare will improve. Income per capita³, national employment⁴ and labour productivity⁵ are all positively correlated with the level of innovativeness. Competition in the innovation market among countries and potential international initiatives constitute an incentive to promote excellence and new ideas. Therefore, it is deemed to be in the favour of Greece, and any other country facing similar problems, to emphasise innovation and entrepreneurship as drivers of growth, economic prosperity and better terms of competition in the international goods and services markets. That in turn would also improve the current account balance of Greece, which has a deficit at the moment.

On the other hand though, as it has been argued by Krugman (1994) considering international competition among countries for economic goods just like the competition among firms might turn out to be dangerous. As he mentions in his article, "a trade surplus may be a sign of national weakness, a deficit a sign of strength" (Krugman, 1994, p.31). Therefore, along with the reforms aiming at the fostering of export-oriented products and services, the government should seek to rationalise the fiscal parameters in the country and render the public debt sustainable. One can not talk about extraversion without a consolidated and healthy internal market and domestic economy.

Recent Developments and Conclusions

Estimations have shown that the aggregate benefit of removing barriers to competition and entrepreneurship in Greece could be about 10% of GDP (Stournaras, 2010b). In 2012, Greece facilitated the process of starting a business by interconnecting several government agencies through an electronic platform. The measures taken recently have been considered positive by international organisations like the OECD, the World Bank and the European Commission. According to the Doing Business Reports (DBR) of the World Bank, Greece is among the 10 economies that improved the most in 2012. The country in 2012 was ranked 22 positions higher than the previous year in the overall score of DBR. Beside the general score, seven out of ten aspects of doing business, as measured by DBR were ranked higher than in 2011 as well.

³ Grossman and Helpman (1991) and Aghion and Howitt (1992)

⁴ IOBE, 2013

⁵ Heimonen (2012)

A new competition law was enacted, a General Commercial Registry (GEMI) was created and one-stop-shops for business start-ups became operational in 2011, while other reforms including simplified licensing procedures, opening of over 150 closed professions, and liberalisation of the energy sector were approved by Parliament (OECD, 2012).

Progress has been made during the last years in the entrepreneurial activities as well. In summer 2011, 8% of Greeks aged between 18 and 64, were engaged in the first stages of establishing a business, a performance which ranked Greece 4th globally among innovation leader countries (IOBE, 2013). Although not many of them were using new and innovative technologies, and most of the newly created businesses are small level firms, good prospects exist. The turnover from innovation in Greece in 2006 accounted for more than 25% of total turnover (ranking the country first in EU), while the EU27 average was 13.7%. In the industrial sector, the Greek and EU27 figures were 30.6% and 18.8%, and in the services sector, 20% and 9.1% respectively (Eurostat, 2013). Those figures show once more the potentials of innovation in the country. This comparative advantage can be exploited in the benefit of local investors and international investors seeking opportunities in new and innovative Greek enterprises. The role of the state in these cases can be no other than supporting. As stated in the previous section, the macroeconomic benefits from innovation and entrepreneurship are significant. The question is how to orientate the businesses and which areas to support primarily. An answer to this question has been suggested by Acs et al. (2008). They support the idea of targeted intervention and cultivation of "gazelles", i.e. high-growth firms by local development officials, instead of an attempt to increase entrepreneurship overall. This could create monopolistic environments. According to Pol and Carroll (2006), Schumpeter argued that technological innovation leads to monopolies. However, he believed that monopolistic profits would be only temporary, since rivals will respond by imitating, but in this process new products will be created, and therefore this kind of innovation constitutes an important factor of economic change.

The idea of following the examples already applied in other countries has been suggested in the literature. Heimonen (2012, p.136) claims that "most entrepreneurs seem to start or grow by imitating or slightly modifying existing products or services, or by acquiring external innovations". However, not all countries and every system is able to adopt the new technological, or social sometimes, innovations of other countries. This leads to the concept of the "absorptive capacity" of latecomers (Abramovitz, 1986). He argued that the usefulness of adopted innovations depends on the specific characteristics of every country and society. Some countries might prove to benefit by imitating what others have already done, while other might find it difficult to catch up. Gerschenkron (1962) puts forward the idea that under certain circumstances, technologically lagging countries might fail to reap the potential benefits of being latecomers.

Given that Greece has proved to have the required human capital, and historically, the ability to undergo structural changes, by feeding technology and innovation it can create the capacities needed to overcome the actual economic, and not only, problems. The initial stock of human capital, as Lucas (1988) and the overview by Jones and Romer (2009) suggest, is capable of generating good, as well as bad, spillovers and externalities. With the proper coordination and good management, those effects can be oriented towards the desired results.

The inputs exist, and in order to produce outputs effectively, one has to shift from the culture of less effort for an easy outcome to that of meritocracy and efficiency. The international competitiveness and the extraversion will follow consequently. The first estimates show that the gap in competitiveness between Greece and the average EU has closed by 75% since the beginning of the crisis (Masourakis, 2013). At the same time, as the Governor of the Central Bank of Greece noted in a recent speech of him, this upturn (in the economy and expectations) has been reflected in the sharp narrowing of the yield spread between Greek and German ten-year government bonds (Provopoulos, 2013).

All that is needed for further steps is political will and social cohesion. Turning once again back to Ancient Greece and namely the philosopher Plato, we re-emphasise the idea that innovation should be no more than a variation or recombination of familiar elements and structures. That is probably what Greece needs most in those tough times, a lesson from the past and a vision for the future. The rest is existent.

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