

Black swans or creeping normalcy? – An attempt to a holistic crisis analysis

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Abstract

In this article we address the daunting challenge of current economic recovery by contributing to the better understanding of its secular feature. In so doing we devote special attention to the secular decline in innovativeness by raising three interlinked and interrelated explanatory phenomena: (i) lowering productivity in the new techno-economic paradigm; (ii) the effect of the different degree of employment protection; and (iii) the issue of pent up disruptive innovations. We argue that these phenomena are not black swans; however, they have been developing in commonly unnoticed increments by manifesting the so-called 'creeping normalcy' and being endogenous to the market system. The paper draws lessons to be learned for the Central and Eastern European Member States as well.

Keywords: crisis, productivity, innovation, secular deterioration, Europe, Central and Eastern Europe

JEL Classification: O31, O33, O38

1. Introduction

In social sciences, the term 'black swan' is originally used for new and seemingly impossible events that overwrite expectations based on previously obtained knowledge and experiences. The surprising occurrence of a "highly improbable" (Taleb, 2007; 2010) event as such means that our prevailed statistics on economic and social phenomena and ultimately the perceived reality

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derived from their analyses can be proved to be a *cul-de-sac* and thus the effective and efficient economic policy may easily fall short and fail.¹

After few years of fiscal stimuli measures (i.e. raising expenditures to trigger demand) invoked to curb the negative impetus of the crisis, a broad consensus over the necessity of fiscal austerity has gained momentum. The reason is that the stimulus has been proved to be a futile undertaking in the sense that it has merely postponed the inevitable recessionary and depressive impacts of recent global turmoil. Additionally, voices requesting measures geared towards reviving economic growth rather than purely targeting the balance in some macroeconomic indicators (e.g. deficits, debt-to-GDP rates) are increasingly strengthening because stabilising debt-to-GDP ratios seems to entail greater growth loss; hence indebtedness is more likely to grow further.

All of these are directing us towards at least two recognitions: (i) the economic and societal systems should be as adaptable as possible in order to provide their synergic homoeostasis, in other words, their dynamic stability by being permanently capable of adapting to the constantly changing and complex internal and external environments. (ii) The first consequence inherently implies that dynamic stability makes a good framework for innovation which is a key driver of growth in the long run with an appreciating role; moreover, moving towards an innovation based growth model becomes an indispensable prerequisite of modern economic systems. New or significantly improved goods and services, processes and organisational methods both in the public and private sectors are the *de rigueur* aspect of economic development since innovations can improve the innovation eco-system's ability to be more adaptable and flexible for current as well as future challenges (European Commission, 2012a).²

In this article we address the daunting challenge of current economic recovery by contributing to the better understanding of its secular feature. In so doing, we first devote attention to the current status of innovation in Europe and

¹ Taleb (2007) exemplifies this with the case of a turkey living in a farm. The turkey feels that everything is just fine because she is in safe, gets food on a daily basis; therefore she assumes that this trend will just continue in the future. However, when Christmas comes, people cut the turkey. All the turkey's assumptions based on path-experiences and perceptions suddenly fell apart. It turned out that she did not know the reality, but her own perception of it. This type of constraint was also raised by Musto (1984) who emphasized that by analysing and collecting statistical data and information, the observer does nothing, but synthetically manufacturing reality, which does not necessarily equal to the "real" reality.

² In the cited paper, we defined the innovation eco-system in a broader sense including the interactions and collaborations among major communities: research, development, and application - at organisational, national or global levels.

then we illustrate the secular feature of the deteriorating innovation activity that makes the current recovery particularly cumbersome.

2. The innovation performance of Europe

In the recent decade, numerous authoritative studies called our attention to the fact that Europe has been performing relatively worse in terms of innovation as compared to its main global competitors - Japan, the United States.³ Additionally, it was also shown that developing countries like China, Brazil and India have been rapidly bridging the gaping gap with Europe. In this regard, alluding to the main messages of the latest Innovation Union Scoreboard 2011 would be instructive:

- Comparing the EU27 with a selected group of major global competitors shows that the US, Japan and South Korea have a performance lead over the EU27. This lead has been increasing for South Korea, has remained stable for the US and has been decreasing for Japan. The global innovation leaders US and Japan are particularly dominating the EU27 in indicators capturing business activity and public-private cooperation: “R&D expenditure in the business sector”, “Public-private co-publications”, “License and patent revenues from abroad” and “PCT patent applications”. South Korea which is increasingly outperforming the EU27 is again having its biggest lead in R&D expenditures in the business sector.
- The EU27 has a performance lead over Australia, Canada and all BRICS countries (Brazil, Russia, India, China and South Africa). This lead has been increasing as compared to Canada, Russia and South Africa, has remained stable as compared to Australia and has been decreasing as compared to Brazil and in particular to China and India. China has been continuously closing the innovation gap to Europe in the last few years (IUS, 2011).

If we take a mere glimpse into the innovation and R&D performance of Europe by incorporating the microsphere in a more emphatic way (i.e. companies’ R&D and innovation investment behaviour of recent years), at least two conclusions arise.

³ As the European Innovation Scoreboard (2007) has already illustrated: “The EU-US gap has dropped significantly [4], particularly between 2005 and 2006 although the relative progress of the EU appears to have slowed down since then. The EU-Japan gap at first increased but has been declining at a steady rate in the last 4 years. [...] An EU innovation gap of e.g. -40 means that the US or Japan is performing at a level of 140, or 40% above that of the EU”. See: <http://www.proinno-europe.eu/page/innovation-gap-us-japan-1>, accessed on: 20.12.2012.

First, EU-based companies increased R&D investments by almost 9% – which is neatly above the world average. This increase is similar to that of the US companies; however, European companies are still lagging behind their US competitors in terms of sales and profits growth by conveying the messages that the economic realisation of innovations suffers from certain shortcomings and confirms that the EU is specialised primarily in sectors with low or medium R&D intensity, while the US counterparts are operating mainly in higher R&D intensive sectors.⁴ *Second*, there are at least three groups of EU member states decipherable on the basis of their industrial performances (European Commission, 2012b). (i) Consistent performers such as Germany, Denmark, Finland, Sweden, Austria, Ireland, the Netherlands, the United Kingdom, Belgium and France whose innovation eco-systems can be treated as the most developed as compared to that of the rest of EU member states. Germany, Denmark, Finland, and Sweden seem to possess the most competitive industrial economies in the EU. (ii) Uneven performers are Estonia, Slovenia, Spain, Italy, Portugal, and Greece, along with Malta, Cyprus and Luxembourg. Most countries in this group have weaker R&D&I systems and some severe constraints related to the business environment. And last but not least, there are (iii) the catching-up countries such as Bulgaria, Romania, the Czech Republic, Poland, Hungary, Slovakia, Latvia and Lithuania. In this group, significant challenges can be registered, as their move towards more knowledge - and skills - oriented industries is hampered by weak innovation capacity and knowledge transfer.

One of the most pertinent realisations of the above mentioned R&D and innovation related facts is the dispiriting growth performance of the EU27 relative for instance to the United States and Japan. In 2005, while the EU27 (2.1%) outperformed the Japanese real GDP growth rate (1.3%), it was far below that of the United States (3.1%). Five years later, the US real GDP growth rate showed a significant deterioration by plummeting to 2.4%, while EU27 data reached 2.1% again (Japan's growth rate was 4.7%). Forecasts for 2012 envision conspicuous shrinkage in the European field by anticipating 0.3% negative growth; while the data for the US and Japan are 2.1% and 2%, respectively.⁵

⁴ See more on this in the 2012 "EU Industrial R&D Scoreboard" which contains economic and financial data of the world's top 1500 companies ranked by their investments in research and development (R&D). The sample consists of 405 companies based in the EU and 1095 companies based elsewhere. The Scoreboard data are drawn from the latest available company accounts, i.e. the fiscal year 2011. Available: http://iri.jrc.ec.europa.eu/research/docs/2012/SB2012_final_draft.pdf Accessed on: 20.12.2012. And see the R&D intensity related analysis by Stancik and Biagi (2012).

⁵ Data are stemming from Eurostat.

3. A flock of black swans or “creeping normalcy”?

Let us note that this growth development is linked to the impact of recent economic downturn which was commonly referred to as a black swan event; however, it cannot be considered as a highly improbable and unpredictable event because of at least two things: (i) there were undeservingly neglected voices before 2008 calling the public’s attention to the potential detrimental effect of the series of interacting factors by leading to a more dramatic outcome (e.g. credit boom due to the low interest rate policy; the problematic role of rating agencies etc);⁶ (ii) although there were scholars advocating the crisis in economics with the purpose of explaining the eruption and escalation of the financial and economic downturn as a black swan, the evolving crisis can still be understood by incorporating the lessons taught by economic history (Csaba, 2009; 2011).

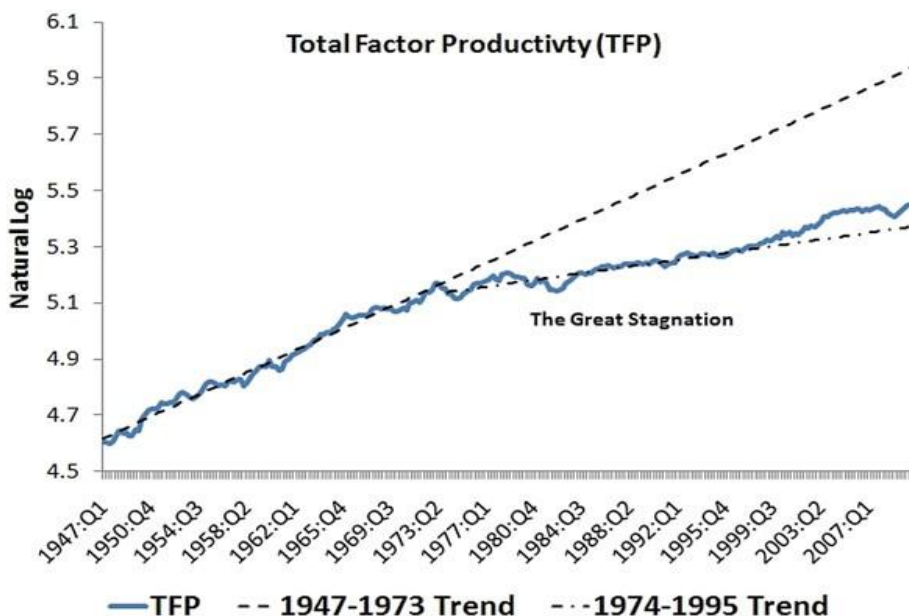
Needless to say that reinvigorating growth depends heavily on whether countries can improve their innovation capacities efficiently. Another equally important consideration is that: although Europe has been seemingly catching-up with the main global competitors (e.g. US) in terms of innovation performance, one can even raise the question whether we are living under a delusion when we analyse the process of ‘closing-the-gap’ by building on to somewhat wrongly interpreted reality due to the constraint being embedded into every statistical data and information? When looking at the closing-gap process, we can also pose the issue whether we are facing a more hidden, secular phenomenon happening in the manner of ‘creeping normalcy’ behind the surface, leading presumably to the misinterpretation of *scoreboard-reality* built on statistical dataset.

Although occasionally omitted by contemporary analyses, let us underline that the observable weakening of economic growth has been an accompanying phenomenon in the world economy prior to the crisis erupted in 2008. Hence, studies inclining to attribute recent anaemically performing growth to the recent crisis are not equipped with a holistic approach. This weakening is more and more often attributed by scholars, having a holistic approach, to the secular withering of innovations (Cowen, 2011; Atkinson – Ezell, 2012; Gordon, 2012; Kasparov et al., 2013) contributing therefore not so spectacularly and

⁶ Apart from the ubiquitously cited names (e.g. Warren Buffet), William White, chief economist of the Bank for International Settlements, was to warn everybody in 2003 about the imminent crisis. See more on William White’s alarming role in Balzli and Schiessl (2009): The Man Nobody Wanted to Hear. Global Banking Economist Warned of Coming Crisis. Spiegel Online. Available: <http://www.spiegel.de/international/business/the-man-nobody-wanted-to-hear-global-banking-economist-warned-of-coming-crisis-a-635051.html>, accessed on: 12.12.2012.

intensively to the improvement of well-being and welfare.⁷ In the case of the US, Laura Tyson, a former chair of the US President's Council of Economic Advisors, considers that “the economy is still operating far below its potential: GDP is about 6% below what the economy is capable of producing at full capacity without higher inflation” (Tyson, 2012). As *Graph 1* shows, total factor productivity, which captures innovation dynamics, has been deteriorating since the midst of the 1970s in the US.

Graph 1. The Great Stagnation in the US since the midst 1970s



Source: Cowen (2011)

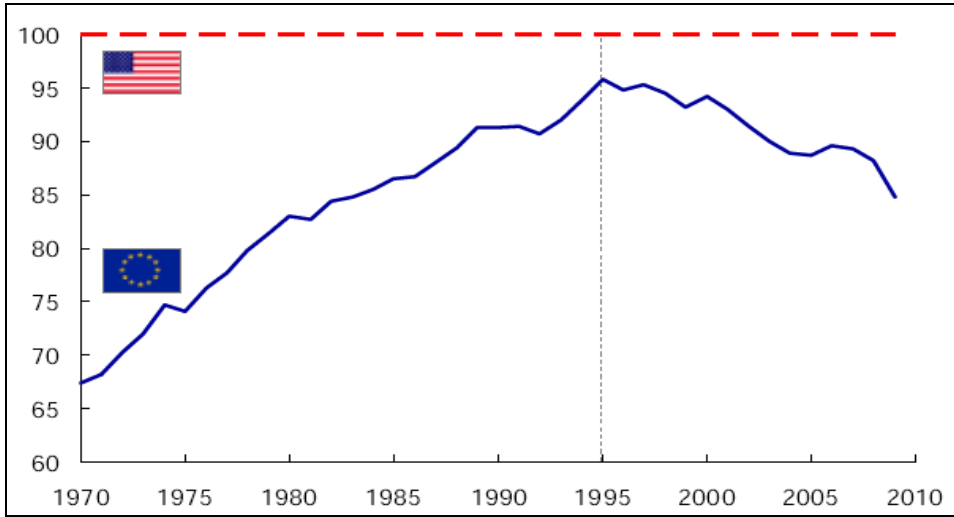
In this respect, the 'bridging-the-gap' phenomenon can be reinterpreted by nourishing that the European performance is catching up⁸ and associated with the fact that the global innovation performance has been undergoing a deterioration phase (i.e. Europe closes the gap more vehemently when the US

⁷ Robert J. Gordon emphasises that modern innovations are not so impressive and the information revolution does not seem to be so conducive to economic development and growth (measured in GDP per capita) compared to earlier waves of innovation, such as the internal combustion engine, electrification or the telephone. See: Gordon (2012).

⁸ „Since 2008, the EU has improved its innovation performance and it has closed almost half of the innovation gap with the US and Japan.” (European Commission, 2013, p. 4)

economy is suffering from worsening innovation and thus productivity, hence growth performance) (See *Graph 2*).

Graph 2. Declining European labour productivity (US dollar, PPP)



Source: McKinsey Global Institute (2010)

Although the eruption of the crisis does not seem to be a black swan event, its *long-lasting persistence* (Papell – Proden, 2011; Reinhart – Rogoff, 2012; Csaba, 2013) – meaning that there is no growth miracle (Rodrik, 2012) – points to a large extent to the still unravelled phenomenon (i.e. the secular weakening of innovation) working behind the yet inadequately addressed scene.

Next, we shall try to contribute to the better understanding of this phenomenon by addressing the question of whether this secular decline in innovativeness could be seen as a series of black swan events or it can be explained by economics and can rather be regarded as a phenomenon evolving in a way of creeping normalcy, instead.

In so doing, we argue that at least three considerations are worth taking into account in a more emphatic way: (i) there is a new techno-economic paradigm which is more likely to predestine lower productivity and incremental (smaller-scale) innovations over time; (ii) distinguishing between employment protection regulations is of key importance because regulation exerts influence on labour market flexibilities which in turn affects innovation performance of the microsphere; (iii) and last but not at all least, there is a paradox between the suggestions of earlier empirical findings and the economic performance of Europe.

3.1. New techno-economic paradigm

Regarding the *first* consideration, we can claim with reasonable certainty that the Lundvallian (2002) term of “learning economy” is a resulting condition of the new techno-economic paradigm (ICT-based, service sector dominant) requiring higher skills and quality as well as permanent knowledge-development. This new paradigm places innovation and its main barriers and drivers under a different light. As we indicated in our earlier paper (European Commission, 2011, p. 27), studying innovation in services is becoming more and more important as the world has now arrived at a new techno-economic paradigm, exhaustively described by Perez (2009). This concept converges on the thinking of Kondratiev (1935) and Rennstich (2002), who claim that, beginning with the Industrial Revolution in England at the very end of the 18th century, the world economy has experienced technological revolutions every 40-60 years. Each technological revolution employs new or relatively new technologies *via* the method of smart combination. The new ICT-based techno-economic paradigm that emerged in the early 1990s not only provoked profound changes in the production process, but also tailored them to a more service-oriented economy.

Now, the service industry represents typically about 70-80% of GDP in developed countries (World Bank, 2008; WTO, 2010) and 40-50% of GDP in the developing world (Glushko, 2008). In terms of employment, only the service sector has exhibited a permanent rise since 1999, reaching 70% of total employment in the EU in 2009 (European Commission, 2010).

What is especially important from our viewpoint is that, as services’ dominance increases with the sophistication of services innovation, the labour productivity becomes significantly lower than in the manufacturing sector. In short, some pivotal differences can be deciphered along at least the following four dimensions in explaining how the non-technological innovation (mainly service innovation) differs from technological innovation taking place dominantly in the manufacturing sector:

(i) Outcome: In the case of service innovation, there is a more qualitative outcome. Many studies have emphasized that services innovation has a significant emotional effect, as well, i.e. it generates changes in consumer perceptions on services offered by the given firm. It implies that measuring the outcome is even more problematic than in the case of product innovation.

(ii) Profitability: Numerous empirical studies argued that most leading manufacturing firms implemented service innovation by adding it to their existing product offerings. Recent studies have also pointed out that service innovation increases sales revenues in service firms; however, these additional revenues seem to be neutralised by increased costs, i.e. the financial resources available for service innovation are not able to overcompensate the service innovation related costs (Schmidt – Rammer, 2007).

(iii) Diffusion: as far as the diffusion of services innovation is concerned, it is quite often hampered. At this point we should recall the issue of a firm's future expectations (European Commission, 2011). Firms are often able to predict the time when a given and easily adoptable service innovation will be presumably outdated. Accordingly, if the life-cycle of the given service innovation is relatively short and predictable, there is no incentive to adopt that service innovation.

(iv) Protection: the issue of diffusion leads us to a large extent to the question of protection in the case of non-technological innovations. Patents are by no means applicable in each case of new services, tacit (Polányi, 1958) or even codifiable knowledge; therefore, we often see informal or to a certain extent strategic methods in support of protection (e.g. secrecy, confidentiality agreements etc). The significance of traditional protecting schemes seems to be even less important if we consider open service innovation when the outcome is not possessed exclusively by one entity.

The lower level of productivity observable in the services sector has been long discussed (Clark, 1940; Fourastié, 1949). In this regard, Gordon (2002, p. 45) justified that, by taking into account the long term path of productivity, the European average productivity was below that of the US in the 1870-2000 period; however, Europe has been closing the gap more rapidly in the aftermath of 1955 by reaching almost the US productivity value in 2000. Nonetheless, the US was not able to continue its ameliorating trend – the inflection point can be dated back to the end of the 1970s. Since then, Europe has been able to catch-up at a significantly higher pace.

3.2. The role of employment protection legislation

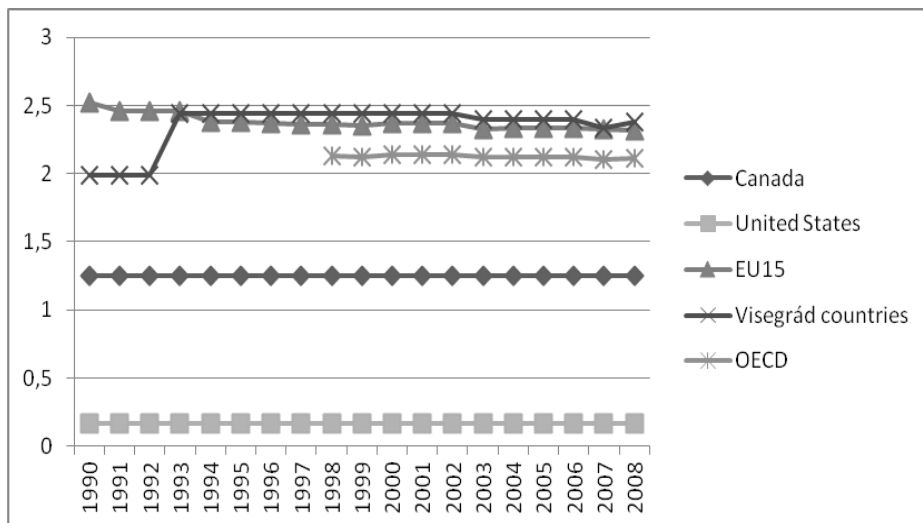
As far as our *second* consideration is concerned, unnecessarily strict employment protection could be problematic, if for no other reason than because employers planning to innovate rely to a large extent on the opportunity to rapidly hire or fire employees before and after the planned innovation.⁹ If the innovation proved profitable, the outcome could potentially be beneficial for both employer and employees. But, if the innovation proved futile, the employer could be forced to reduce employment costs. Firing employees is much more difficult in Europe – where the flexibility of labour markets differs significantly across countries – than for example in the US. Accordingly, the opportunity for experimentation is more flexible in the US marketplace than in Europe.¹⁰

⁹ Companies need both flexibility in employment and stability of employment.

¹⁰ Bartelsman et al. (2010) pointed out that European employment protection is much stricter than in the US. Let us add immediately that policymakers should be aware of the fact that labour policies differ across different European social models. As Sapir noted: “The stricter the employment protection legislation of a model, the lower its employment

Bearing in mind the productivity gap between Europe and the US, some studies suggest that European countries with stricter employment protection are more likely to have less ICT-intensive and ultimately less knowledge-intensive sectors. As it is discernible on *Graph 3*, EU15 as well as Visegrád countries (Hungary, Poland, Slovakia, and the Czech Republic) have stricter employment protection legislation than the OECD average. As noted also by Sapir (2005), the Innovation Union Scoreboard 2010¹¹ also lends support to this argument, demonstrating that Mediterranean countries, which traditionally have stricter employment protection legislation, lag the EU27 in two respects: “Employment in knowledge-intensive activities” and in “Knowledge-intensive services exports”. Consequently, the more protective the labour policy, the lower productivity levels remain (Bartelsman et al. 2010).

Graph 3. Employment protection regulation index



Note: The higher the index value, the stricter the employment protection a country. EU15 does not contain Luxembourg due to lack of data

Source: OECD Dataset: Strictness of employment protection – regular employment

rate” (Sapir, 2005: 8). Plus, flexible labour markets reacted to the recent crisis in a much more vigorous way. In the case of Denmark, see: Andersen (2011), in the case of Germany, see: Möller (2010).

¹¹ See: Innovation Union Scoreboard 2010, Annex B. p. 64. Available: http://ec.europa.eu/enterprise/policies/innovation/files/ius-2010_en.pdf Accessed on: 05.01.2013.

3.3. A puzzling issue – missing disruptive innovations?

Our *third* consideration refers eventually to a paradox between theory and empiric in the relationship between competition and innovation. As many theoretical works suggest, intensifying competition tends to have a detrimental effect on innovation activity since more competition may lead to lower prices, hence lower profits realised through innovations.¹² Under this angle, this approach also implies that the Schumpeterian view emerges by stating that a monopolistic market appears to be more efficient with respect to innovation activities because bigger market power entails greater revenues that can be invested in R&D and innovation in a more vigorous way (i.e. risk taking ability – related to R&D and innovation – is greater in a monopolistic market structure).

Despite these arguments, the empiric does not confirm unequivocally this reasoning (Aghion, 2012). If we accept the findings of recent empirical analysis stressing that more competition is associated with an intensified innovation activity (Kawahama, 2012), one can conclude that it is puzzling to experience more innovation documented in scoreboards in the European market associated with worsening productivity.¹³ It is instructive to notice that this issue can be linked to the sporadic emergence of disruptive innovations in recent decades that would have triggered salient productivity leaps.¹⁴ Keeping in mind that service sector dominated economies have a predilection to provide lower productivity levels, and the fact that services innovation is more likely to be an incremental one, the rare occurrence of disruptive innovations in the new

¹² It is important to note this argument is reflected in the papers emphasizing that with increasing competition, the available revenue will dampen for the new entrants on the market. Reducing revenues in turn establishes a solid obstacle against innovation. See: Romer (1990); Aghion and Howitt (1992).

¹³ It resonates to Crafts and Toniolo (2008) who emphasised that not the too much taxation, too much regulation and little competition, but existing policies became more damaging for productivity and growth in the ICT-age.

¹⁴ Firms always have to encounter a choice whether they are following the way of incremental or disruptive innovations (Christensen, 1997). While the term “incremental” means that the basic structure and relations of the company will not change as a result of the innovation, the term “disruptive” refers to a situation when the firm can also take a leap and apply such innovations that are more likely to lend support for successful adaptation to the significantly changed market conditions by leaving behind the former structure and processes of the firm. Among incremental non-technological innovation we can find for example the introduction of project-based management practice, outsourcing, or training and coaching initiatives in fostering the firm’s performance. As for disruptive innovation, for example the issue of Internet or cell phones versus old ones can be mentioned.

techno-economic paradigm seems to be a logical feature.¹⁵ Questioning the fact that every innovation, especially disruptive innovation, has its own costs would be *naïveté*. Disruptive innovation is more likely to serve as a maintainer (and potentially as a heightener) channel of 'job-less growth' (i.e. economic growth with lower and lower level of sustained employment creation). This type of argument has an increasingly growing theoretical and empirical backing since robotics, automation of labour *per se* direct toward fewer jobs.¹⁶ Moreover, new and breakthrough innovations tend to require new skills from the side of end-users as well. The latter is a perplexing issue because the demographic trend conveys the message that the ageing population in Europe will presumably lead to a society having relatively worse adaptive and absorptive capacity concerning the evolution of new services and technologies.

The message of another strand of literature also directs us towards the above mentioned consideration. Even in a monopolistic market, disruptive innovations (i.e. riskier innovations that bring a more spectacular breakthrough on product or service markets by leading to a more substantial productivity) are hampered to arise because firms are tended to introduce incremental innovations along with the previous products and services in smaller amounts and at higher prices and profits.¹⁷ These considerations might be viewed as those dealing with phenomena culminating in a secular deterioration of innovation performance happening in a way of 'creeping normalcy'. We argue that these are not a flock of black swans circling in the sky; instead, they are economic phenomena decipherable according to our economic knowledge.

4. Conclusions

In this article we addressed the daunting challenge of current economic recovery by contributing to the better understanding of its secular feature. This secular feature can be seen as a complex set of issues that appreciates the role and quality of governance, institutions and human capital in furnishing fertile framework for innovation that can wreak creative destruction which is inevitable from the perspective of an adaptive innovation-ecosystem. Accepting the real nuances and complexities of our world – including the fact that every innovation

¹⁵ If for no other reason than because the use of patent instruments is different in the case of service innovations, i.e. patent protection is of only minor importance. As several reports reveal, both the propensity to patent and the quantitative volume of patent applications (e.g. registered designs, copyrights, trademarks) are spectacularly low in the service sector compared to the manufacturing sector (Fraunhofer, 2003; OECD, 2008). Service companies are more likely to use systems of protection (i.e. a variety of defensive methods) rather than to stick exclusively to single methods.

¹⁶ See: Krugman (2012).

¹⁷ See the classical work of Swan (1970) on the role of market structure in the technological progress.

may have a Janus-faced characteristic (i.e. being able to generate negative consequences like displacing workers as well) is crucial because as complexity grows, we become an expert who knows more and more about less and less, and phenomena can occur more frequently onto the manner of 'creeping normalcy'.

Beyond this abstract-like conclusion, a more practical consideration is that the longer term trajectories and trends are crucial unlike the short term fresh data. Apart from the analysis of short-term aggregated macro-data, policymakers should always put special attention to the longer trends both at the macro and micro levels especially in an era of knowledge economy interspersed with the dominance of services sector in which measuring the expected outcome of innovations becomes even more problematic. In the light of the secular weakening of innovativeness, there is no need for using the argument that the crisis might be an unforeseeable and singular event rather than a systemic failure of certain politics and mechanisms working below the surface.

Policymakers should pursue micro-realism rather than macro-idealism. Related to this, remembering to the old-findings of Pitirim Sorokin would be of paramount importance. Sorokin criticised 57 years ago the rampant quantification methods/models built on the short term and fresh data in trying to get some predictive considerations. Taking into account the world's nuances and the complexity we live in (Sorokin, 1956) by contemplating longer term socio-economic phenomena arising potentially in a way of 'creeping normalcy' are essential. Since over-quantification, like the blossoming scoreboards, may create "objective" results that can be reinterpreted as well as refined by using a holistic approach, the social-economic learning still remains one of the most pivotal driving forces of progress.

By using this type of holistic approach, policymakers may have a more precise and adequate picture about what is really happening and why in the economies throughout Europe. Importantly, a more prolonged recovery is expected in an era when a lower level of productivity growth, which manifests partly in the dominance of incremental innovations rather than disruptive ones, can be treated as a logical feature of the prevailing new techno-economic paradigm pervaded dominantly by unbalanced labour protection regulation. Our rudimentary analysis gives us an opportunity to formulate the following conclusions relevant not only to Europe as a whole, but especially to the Central and Eastern European Member States cited often as economies having 'premature' welfare (Kornai, 1992), hence unsustainable states.

First, nurturing and cultivating the medium and higher R&D intensive sectors would enhance productivity levels in the long run. *Second*, in so doing CEE policymakers should be engaged in a holistic approach that incorporates various policy fields such as competition and innovation policy, as well as labour market policy in supporting positive framework conditions for innovation by devoting special attention to industries promising disruptive innovations in

the near future in a more vigorous way if regulatory barriers are significantly dampened and diminished.¹⁸ *And third*, apart from these fields, fiscal policy should pursue fiscal stabilisations that are in tandem with these objectives. Importantly, a mix of adjustment measures is needed, for instance reducing expenditures in unproductive fields like social transfers and public sector wages seem to be a good way forward, but potential increases in R&D and education are also important in support of innovation capacity building.

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¹⁸ This is by no means about “picking up the winners”, but incorporating fields that can be portrayed as hotbeds of contemporary innovation activities still facing various kinds of regulatory/legislative barriers and bottlenecks (e.g. chemical industry, automotive industry, tourism and transport & logistics, see: European Commission, 2012c).

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