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Habti, Driss

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The Bologna Process and the Economic Impacts of R&D within the Context of Europeanization: the case of Finland

Driss Habti

Abstract:
Higher Education and Public research play important role in economic development mainly industrial R&D and innovation through the manufacturing sector. Finland has undertaken great strides in this regard as it represents an Europeanization of a knowledge system in the EU, being relevant at the international scale for the outstanding development the economy has witnessed through R&D sector while facing international challenges. Database provided records the development of the sector over time and across various parts and levels of national knowledge system. The paper does not describe major policy measures of the BP but rather attempts to consider the economic rationale of R&D development and its economic impacts in Finland within BP framework. The paper is concerned with the ways in which Finnish R&D under specific conditions has given results at the economic level with the Europeanization process and its subsequent policies. A synoptic view will be given of HE research strategies in terms of R&D and then touch on the issue of the general effects of the development of R&D and its economic relevance in the light of the Bologna Reforms.

Introduction: the importance of Europeanization in R&D sector in the EU
The developments of knowledge economy, mobility of knowledge and globalization have greatly influenced the character and functions of Higher Education (HE) in different countries. Internationalization policy is one prominent trend that many universities have pursued as a result and use it in various ways. Its conceptualization can be restricted to academic use (educational and academic rationale) or seen from global market standpoint as a commodity (economic rationale). We can underline two main strategies of Higher Education Research organizations: the majority takes it along the academic line, based on networking and exchanges. Others take it from competitive approach by enhancing strong academic presence and demands. Cohen, Nelson & Walsh (2002:31) argue that public research play important role in economic development mainly industrial R&D and innovation through the manufacturing sector. The aim is to develop relation between research and economic growth so that universities respond to the increasing demands of industry in a global economy and fierce competitiveness. This involvement is done in a form of seeking problem-solving research from academia to industry and business, as well as through funding resources to university research from major industries (Maassen 2006:214).
Finland represents an Europeanization of a knowledge system in the EU, being relevant at the international scale for the outstanding development the economy has witnessed through R&D sector while facing the international challenges and tensions other EU nations have faced. Database provided records the development of the sector over time and across various parts and levels of national knowledge system. In this regard, Finland would be a wide field for research study on internationalisation and Europeanization of R&D and its effects on society and economy owing to the easy access to the rich register and informational data available. Despite its typical characteristics under specific geographical, economic and political conditions, it represents a Nordic model combining economic competitiveness with social welfare and strong public institutions. Finland strives to enhance further its knowledge and innovative system and the perspective of wealth creation. Being a Nordic case, the process of Europeanization in HE has gradually influenced the role of the state in maintaining a national knowledge system while opening arms to Europeanization and internationalisation of the sector. The effects and changes represent a subtle transformation of national HE and R&D.

The paper does not describe major policy measures of the BP but rather attempts to consider the economic rationale of R&D development and its economic impacts in Finland within BP framework. The paper is concerned with the ways in which Finnish R&D under specific conditions has given results at the economic level with the Europeanization process and its subsequent policies. The processes of R&D development and changes involve different forms, levels, and territorial patterns of connectivity. The implications of the changes are significant for national knowledge and innovation systems and their actors, as well as for the role of R&D in society and economy. The paper tries to provide the possible impacts of these changes in the R&D sector, knowing the relatively small knowledge system set in an open society, economy and political system. Throughout the discussion, a synoptic view will be given of HE research strategies in terms of R&D and then touch on the issue of the general effects of the development of R&D and its economic relevance in the light of the Bologna Reforms.

The Bologna Process and the Europeanization of a market driven HEIs

The European research sector and HE have been developed through the European territorial framework linked with nation-building and market-building. Knowledge creation and diffusion take lieu within national systems and institutions reflecting the needs of the nation-state. Europeanization can be contrasted to internationality and universality of knowledge since the produced and disseminated knowledge can be valid internationally due to the fast global dynamics of research and scholarship crossing borders. The Europeanization of research and knowledge systems is multifaceted and characterised by multiple dynamics in various institutions. R&D and HE development can be understood as a process of change through supra-national cross-border activities linked with R&D systems following various patterns and the dynamics of knowledge creation when these cross-border activities burgeon (Gornitzka 2008:1). Knowledge systems and R&D structures beside the academic activities are a duality between being contained and shaped within national confines while constantly crossing them. An important question the paper discusses here is what have been the economic effects of the changes in R&D sector in Finland?
The emphasis of a European perspective on HE governance is entrenched within a number of national, supranational and intergovernmental processes of collaboration and policy-making. The EC still stresses the importance of developing HEIs for a more dynamic knowledge-based economy and society (2006b) as the political interest in HE has increased and more reforms required. R&D sector is crucial for economic performance and growth and for global competition. The policy has been to create a single market for research, the production, dissemination, and exploitation of scientific and technical knowledge (Potocnik 2006b). Trust in S&T is to be reinforced among the public which is more concerned about socio-economic impact of S&T development, as we will see later on in the instance of Finland. The Bologna Process has given a framework for achieving an efficiency of European HE system. Increasing the efficiency and attractiveness of HE as a whole could therefore make a significant development of R&D sector. These changes would enhance competitiveness and ability to boost economic growth in public and private sectors. The endeavour to see the effects of the changes going on in HEIs in Europe and interpret them in a meaningful way is deemed hard due to the increasing complexity of governance mode which is multi-level (Maassen 2006:3).

The organizational and governance structures, funding system and the socio-economic and political conditions where universities function have witnessed some considerable changes. As such, HE institutions in the EU started to be seen as independent “enterprises” functioning as a service industry beside the traditional view of university as a public and social education institution (Maassen & Olsen 2007:199-200). In current discussion and interests, the economic and social developments have been targeted for the crucial role HE plays in globalization of industry and the important role of international mobility of knowledge, academics and students. Europe is today taken as a quality research area, a better environment for mobile researchers through their careers. The major aims are generally to stimulate mobility between R&D and industry, to enhance knowledge base and to develop information and assistance tools. The integration of EHEA and ERA have been considered two ‘pillars of the European knowledge-based society’ (Weber & Zgaga 2004:36; van Vught 2006:366). One of the visible effects of European policy in research and innovation is the strengthening of the capacity for knowledge dissemination. Besides, cooperation networks have been reinforced through ‘the Networks of Excellence and the Integrated Projects’ of FP6 which aimed to develop R&D, which increase knowledge diffusion capacity (van Vught 2006:394).

The multinational cooperative effort to meet the demands of globalization has turned up a means to achieve the aspired changes in European HE, for which legislation alone could not have attained. However, the EU as an institutional body does not have authority to take initiatives at supra-national level for the reform process in HE (Maassen 2006:219) despite the harmonization process taking place now within EU states. The direction of the reforms process seems to lead to a more market driven HE. The Nordic countries represent one leading corps in Europe which has moved slowly into the enhancement of economic performance of HE and the economic rationale for internationalization, evidenced by the healthy situation of R&D in Denmark, Finland and Sweden. The FP7 set in 2007 aims to re-launch the Lisbon process and respond to competitiveness and employment requirements in the EU. R&D and industry have been the focus in the program underlining Technology Platforms, led by industry, and ‘Joint Technology Initiatives’, which aim to develop research projects through interaction.
with industry and the creation of the European Research Council (ERC) to develop new knowledge especially in high technology sectors.

Today, it is thought that the national perspective is still present in the issues of research funding and regulations despite the fact that some major policy measures and reforms are implemented in the education system to enhance efficiency and accountability (see Maassen 2006). If we consider research studies on HE, they have become more focused lately on two major directions: the contributions universities can make to knowledge economy and the pivotal role regions play in determining national economic success. Knowledge accumulation at local scale through knowledge-based businesses culminates in technological innovation, new products and strong local economy, and eventually national productivity and global competitiveness (Geiger 2006). Below is a snapshot of the process which Finland has pursued to fuel economic growth through R&D.

The Finnish R&D system and its funding structure

The sector of R&D in the EU has been granted the target of 3% of GDP investment according to the Barcelona European Council (EC 2002b). The EU research funding tries to advance European’s industrial competitiveness through invention and development of new products and processes or by creating connections between the academic and industrial research groups. The main agents who take decisions on S&T policy in Finland are the parliament and Council of State, but in practice it is the Science and Technology Policy Council of Finland which provides major policies. Yet, the academy of Finland and the National Technology Agency (Tekes) are the main financing bodies for applied R&D. They both have somehow developed a strong R&D system, performance, and research policy. Today, universities play a pivotal role in national innovation system and technology development. Through networks and cooperation within the system, R&D is stronger and more efficient, international competitiveness of economy and knowledge spillovers increase (Miettinen 2002:60-87). Many research and technology programs have been initiated in important sectors (Tuomaala et al. 2001). Moreover, a new approach to governance has been introduced with the state having rather a role of facilitator.

S&T Council of Finland stresses the importance of internationalization policy from the viewpoint of scientific and economic competitiveness. In this regard, the Academy of Finland and Tekes have made efforts to fully implement this policy by providing conditions and opportunities to build research networks and collaboration abroad. Evaluations have been undertaken by international groups of experts as crucial criteria to apply for R&D. The academy of Finland has also promoted internationality as an essential part of research activities to which it gives funding. Europeanization is generally seen as beneficial to S&T and R&D since late 1990s as it reinforced the integration of HE into the European programs and initiatives. More emphasis is put on utility, quality and selective participation rather than quantity of participation, on the basis of national needs and economic priorities. In relation to this, the EU has stirred understanding and tracking the nexus of science and economic policy as innovation and economic activity will be the heart of future economic growth and, as a consequence, affect R&D investment rates. Finland understands that investments in R&D enterprise strengthen the technological base on which economic prosperity increasingly depends at a global scale, and that comparison between major R&D performing countries
enhances the strength of their current and future economy and the specific scientific and technological areas in which they can excel.

In 2008, Tekes invested €516 million in R&D projects by companies, universities, and research institutes. The total volume of the projects was nearly one billion euro (see Tekes, 2009). The majority of Tekes’ impacts on Finnish economy and society revolve around improved productivity and business operations resulting from innovations, increase in the growth of industry and service sectors by technological means. This culminates in renewing the economy, increasing added-value and exports, and enhancing productivity. But its activities also have direct social impacts like improving quality of work-life, employment, and welfare. A broad strategy formulation process in recent years has resulted in new Tekes focus areas for the creation of Finland’s future, which will guide R&D and innovation prioritization for the next decade. Tekes offers a gateway to Finland for foreign companies and research organizations mainly within the EU space in their search for the most suitable R&D partners. In this respect, Finland's success in the first round of applications of the 7th Framework Program for R&D has brought home 96 million euro (ibid.). The number of participants has grown since the last FP and the success rate of Finnish coordinators has improved significantly as well. 

The Finnish investment in R&D amounts to less than 1 % of global investment (ibid.). The chart below shows the development of R&D funding expenditure:

![R&D Funding Expenditure Chart](image)

Table 1: Source: Statistics Finland
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According to Tekes (2009), the total funding of R&D in the Government Budget of 2007 goes up to 1.73 billion euro: funding increases in nominal terms by 3.6 % and in real terms by 1.2 %. Government budget appropriations or outlays on R&D (GBAORD), as a proportion of the general government spending of debt servicing, stands at 4.5 %, where it has not changed during the past few years (ibid.). Tekes invested €465 million in the research and innovation activity of enterprises, universities, and research institutions in 2006. The impacts, as we will see later, can be seen in new enterprises, business functions, services, enterprise growth and internationalization.

Finnish science ranks among top OECD countries by number of publications and citations: The number of publications by Finnish researchers in internationally respected scientific journals has increased 2.5-fold during the past two decades (ibid.).
In 2005, Finnish researchers produced 8,300 publications, the highest figure on record. This rise was fastest in the early 1990s, when the number of publications increased at around 8% per year. Several Finnish and foreign studies show that public R&D funding for companies serves to boost the companies’ own R&D investments. The research findings show that R&D investments substantially increase corporate expertise and networking. They generate patents and new products, processes, and services. Expertise and new procedures manifest themselves as a growth of turnover, productivity, and employment. The results of Tekes funding and expert services bear fruit in businesses as new expertise and innovations. Their impacts are distributed far and wide through networking and through innovative companies, boosting productivity and economic growth. Ultimately, the innovations funded by Tekes contribute to the well-being of citizens and of environment (ibid.).

**Tekes strategy and the Finnish National innovation Strategy**

In October 2008, the Government approved the proposal for the National Innovation Strategy. It stated that the development of innovation activities needs large innovation policy that makes use of global competence networks effectively. In its policies, Tekes defined the nationally important areas for building the future of Finland and has taken the policies of the National Innovation Strategy into consideration. Emphasis was laid on R&D and innovation activities to increase the well-being of people, enable the utilization of opportunities provided by technology and the economy, and ensure that society works in a sustainable way for environment. These choices are based on the programs to be launched and those of the *Strategic Centres for Science, Technology, and Innovation*. The latter, launched in 2008, offer research units and enterprises a new operating model for directing research and applying the results in the innovation activities of the enterprises, improve cooperation between various agents, and create international visibility to attract top competence. The first research programs of the centres started in 2008 (ibid. 8). They are the largest reform in the Finnish innovation environment in 25 years, inspired by the Europeanization process of R&D and innovation.

In 2008, one phase of the strategy has been fulfilled within the confines set by the EU framework legislation. The legislation defined the content of the R&D activities of enterprises as well as the R&D activities eligible for public funding (see Tekes, 2008). In 2003, Tekes began cooperating with similar European funding organizations to set up common objectives of the EU framework legislation. The majority of Tekes’ goals were included in the new legislation that frames the funding targets in R&D sector and innovation activities of enterprises. In 2004, Tekes started financing similar research in Finland, with the results currently available. The scientific evidence offered by the research regarding the impact of non-scientific innovations strongly supports the view that combining technical R&D activities and non-technical innovations significantly increases enterprises’ turnover and employment generation (ibid. 3). Tekes’ programs intend to develop R&D areas that are crucial to Finland in the long run and their functions are to develop cooperation between research and business and to accelerate new innovations (ibid. 14).

In relation to the new EU framework legislation, which was completed in 2007, national legislation was completed in January 2008. In March 2008, the opportunities provided by the new legislation had been aligned with Tekes’ strategy, processes, organizational structure, financial instruments and criteria, guidelines, information
systems and practices. This made the funding of non-technical content and innovations possible and attainable for enterprises. The change is also supported by the transfer of the funding of workplace development to Tekes during 2008. In 2008, 37% of funding by Tekes was already directed to non-technical content and 23% to service innovations.

The EU research collaboration and expansion of Finnish R&D in a nutshell

Membership to EU has marked tremendous transformations in the policymaking at the international level. The ministry of education and the ministry of Industry & Trade both have played the greatest role in policy-making, but the EU remains a major player in R&D and S&T policy as well because the EU guides Finnish HE policies that are overall in accord with the perspective and goals of Finland. EU membership has enhanced policy collaboration and organization, and the condition developed further with the EU research integrated projects like FP6 showed positive stand towards ERA-NET scheme of the EC in 2000. As mentioned before, the Academy of Finland and Tekes have set up some research programs with international partners and increase networking and open R&D programs to international participation (Suomen Akatemia & Tekes 2001). Empirical data reveal little about the effects of EU research collaboration on the Finnish research universities and academia. Yet, it can be said that this collaboration has become a crucial tool for university units’ activities in Finland.

There are quite many advantages of EU collaboration mainly research funding and acquisition of experience in international collaboration and increase of the visibility of the unit, research training and mobility, and knowledge acquisition and dissemination. Research funded by EU generally does not conflict with national interests and does not diverge with the Finnish priorities and agenda of R&D policy as units’ research activities are gradually in the rise. The 7th FP commenced by the end of 2006 and, after the first two years, the activity of Finns has remained at the same level compared to the previous program periods. Finland has been particularly active in the ICT program, and researchers have succeeded in competing for funding offered by the European Research Council (ERC) to research groups. By autumn 2008, the FP had funded 321 Finnish proposals with approximately EUR 119 million (Tekes, 2008:9). The success rate of the Finnish participants is 23%, whereas that of all EU member states is slightly less than 22%. The program finances the international R&D and networking of universities, research organizations, and enterprises, as well as researcher training and mobility (ibid.).

Another program Finland is involved in is the FiDiPro (the Finland Distinguished Professor Program). In 2008, Tekes provided funding for five new research projects and the Academy of Finland funded projects of 12 FiDiPro professors. Tekes piloted the expansion of the program to attract talented researchers to Finland, and opened call for proposals to include the FiDiPro Fellow projects. Besides, two new extensive cooperation programs of European national program funders were started: the Eurostars program for innovative small and medium-sized enterprises; and the Ambient Assisted Living program for the needs of the aging and disabled section of population (ibid.).

The impacts of R&D funding from Tekes organisation

According to Tekes surveys (2008, see Impacts), some research findings on the impacts of R&D funding from Tekes on companies’ own investments in R&D have shown that public R&D funding in Finland increases the private innovation activities of the funded
companies in both nominal and real terms. Results from public R&D funding show a strong additionality to companies’ own R&D investment. Receipt of public R&D funding increases the following year’s R&D activities financed by the company itself (ibid.). Furthermore, research findings on the impacts of R&D funding on business models and competence have demonstrated that public R&D funding has a fairly positive impact on the innovation activeness, independence and cooperation of companies in Finland as the public subsidies to the cooperation of universities and SMEs generates substantial added value and entices closer cooperation between companies. A study on cooperation between traditional industry and knowledge-intensive service companies showed public funding to stimulate industry into cooperation with more service companies of different types (ibid.).

At the level of outputs and financial performance, according to Tekes (Impacts 2008), research findings on the impacts of R&D funding depicted their clients have experienced more rapid growth than companies in the business register (Business Aid Database Creation: Final Report by the Working Group, 2006). R&D funding increases growth, activeness in seeking patents and demand for labour of companies and reduces the likelihood of business closures and mergers. Besides, it has raised growth of productivity and improved employment in companies with well compensated R&D staff. Thus, Tekes funding can be said to have a positive impact on growth in the number of R&D personnel at the companies (ibid.). Public innovation subsidies have a positive impact on the growth of employment in companies. Nearly two in three companies perceived Tekes funding to have helped the company increase its net sales. The study supports the hypothesis of public R&D funding having a positive impact on the generation of innovations in companies (ibid.).

The impact of Finnish R&D on productivity and its performance in Finnish HEIs

Following the lines of BP scheme, R&D intensity indicators show the advantages of developed rich economies in the global economy. Finland is the only EU country where business and industry accounted for a larger proportion of R&D than in the United States, and only slightly less than in Japan (see PhDs in Finland 5/03, 8). The goal was formulated against the background of the Lisbon objective of March 2000 to make the EU by 2010 ‘the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion.’ In the evaluation of the government spending program, Prihti et al. (2000) concluded that the rise in public spending had had a positive impact on both public and private research investment. Data reveal EU has a larger total number of patents generated mainly by HT businesses and individuals in the five EU great economies (Fontana et. al 2005). Combined with economic and structural investments in research during the 1990s, the pro-research climate in Finland led to a sharp increase in the number of workers in R&D. Over the period 1991-2001, the numbers of employed in R&D increased by more than 50 % from 46,181 to 69,788. Over half of the workers in research were engaged in business and industry. The number of R&D staff in companies went up by 53 % (see PhDs in Finland 5/03, 8). Below is a sketch of completed projects in various areas linked to HEIs:

Results of completed projects
Some broader studies on the subject at the European scale in relation to the BP consider effects of patenting and the ongoing changes in public research. Some apparent assumed outcomes of academic patenting can be: growing financial incomes, growing contract research funding to develop the IPR into a product, building spin-offs owned by university, commercial use of new inventions. It is empirically evidenced that a strong link between increased industrial funding and academic research can positively enhance university patenting activity (Gulbrandsen & Smeby 2005). Further, university patents ease knowledge transfer and increase innovation potential of an economy, but some empirical evidence shows that university patenting enhances commercialization (Geuna et al. 2006:794).

Yet, the increase in university patenting would not be beneficial for most universities as they will get sparse resources, and thus research output would be unequal between universities. Geuna & Nesta (2006) discuss the existing data on the development of university-owned patents and university-invented patents (patents with at least one inventor working in a university) in European countries. The main features is that university licensing is profitable for some countries like Finland in attracting substantial additional revenues as patents and publications are usually concomitant and overlapping (see Meyer 2003). There is empirical evidence that the number of university-invented patents is higher than the number of patents owned by universities. Thus, we may notice a growth in financial incomes and research outcomes. The figure below gives a comparative picture of the applications for patents in Europe and US, with the position of Finland among the first three in patenting within and outside Europe:

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<th>Source, DM 447586 and 218475, 01-2009 Copyright © Tekes</th>
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<td>Public research projects</td>
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<td>Corporate R&amp;D projects</td>
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<td>Feasibility studies or innovation services</td>
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According to Tekes (2009), R&D enhances productivity of Finnish companies and in the years 1995-2001, productivity growth in Finland has been 2.5 percentage units and the influence of ICT has been 1.1 percentage units. In the features of ICT equipment, there has been a rise in labour in productivity (e.g. mobility, wireless and wire communications, processing, and data recording. The main reason for the increase in R&D and productivity growth in Finland seems to be competitive pressure through internationalization (ibid.). ICT improves the labour productivity of employees around 8-12 %, the effect is the fastest in new firms. In global production sharing, those industries that have high labour productivity survive better than those of low labour productivity. Due to the breakthrough of the telecommunication industry in the last decade, Finnish manufacturing is among the leaders in the international productivity comparisons. The private service sector is small in Finland, but it has big potential and productivity is gradually increased in financial and insurance activities as well as in telecommunication (ibid.). When compared at an international scale, productivity is relatively high in communications services and transport but low in the retail trade as well as in hotel and catering services (ibid.). The annual productivity growth in public services has been 0.4 % on average in 1980-2001 (ibid).

**Evaluation of the Finnish science, technology, and innovation environment**

The rationale for Finnish national innovation system approach is to turn Finland into an economically competitive country at the international scale. The major policies pursued such as increase in efficiency, accountability and relevance of research, plus competitive funding mechanisms and performance agreements have remained the same as one of the main goals to make Finnish R&D more international through enhancing national and sectoral R&D collaboration. The policy followed has given its fruits since the development of national innovation system and success in making Finland a knowledge economy was introduced before EU membership. This improvement has triggered a sort of constructive dialogue between various actors of the system (Lemola 2002) to reach a more coherent policy of internationalization of S&T and R&D for economic growth. According to WEF (Tekes 2009), Finland was the sixth most competitive country in the world in 2008 (see chart below). The three most competitive countries were USA, Switzerland and Denmark. Finland's strengths are the efficiency

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**Table 3**: source, calculated from USPTO-(patents) and EPO-(applications) figures and number of inhabitants in average from Statistics Finland.
of public institutions and the educational system. Finland's weaknesses are tax rates and restrictive labour regulations.

The use of R&D results suffers from a lack of private venture capital. Tax incentives to innovative start-ups and venture capital are necessary. Tekes (2009) states IMD ranks Finland 15th in competitiveness in 2008 while the three most competitive countries were USA, Singapore and Hong Kong. Based on the Lisbon Review, Finland was third in competitiveness comparison in the EU in 2008 after Sweden and Denmark. Finland was on top of the comparison in innovation and R&D, in enterprise environment and in sustainable development. Based on the EC comparison in 2005, Finland was among the leading countries in investing into knowledge-based economy and performance of the economy. (Sources: WEF, The Global Competitiveness Report 2008-2009; IMD World Competitiveness Yearbook 2008; The Lisbon Review 2008; EU, Key Figures 2005 on Science, Technology and Innovation).

Table 4: Source, European Innovation Scoreboard 2006

Table 5: Source, WEF, The Global Competitiveness Report 2007-2008
According to the European Innovation Scoreboard 2008 (Tekes 2009), Finland still is one of the leading innovative countries in Europe, beside Switzerland and Sweden. In the Canadian Performance and Potential 2005-2006 comparison, Finland was among the four gold medallist countries when OECD countries were compared in light of a large set of economic, societal and environmental indicators. In a comparison made by the University of United Nations, Finland was ranked second in overall ranking and second in education, technology and information indices. According to the OECD PISA 2006 study, young Finns were first in the OECD in sciences, second in mathematics and reading. This position in competitiveness comparisons has been good, but these comparisons also show some weaknesses in competitiveness as in the case of GDP per capita in Finland which is average among developed countries.

Table 6: Source, Eurostat, Community Innovation Survey (CIS4)

Conclusion

The Nordic model followed in HE as in the instance of Finland can be an alternative in making a balance between the production of wealth and its redistribution which is largely driven by government and public sectors. The state plays a direct role in funding innovation and R&D in non-bureaucratic and more effective way and stressing the public nature of HE. The changes and reforms reached so far within the European systems have come about chiefly with the new perception of the European political leaders and policy-makers on HE from an ideological to a more pragmatic one. Ase Gornitzka (2008:8) discusses the implications of the Europeanization process which represents ‘mutually reinforcing change processes’ and ‘fertile ground for dilemmas and tensions to emerge’ mainly between modes of internationalization. He asks, how can market-oriented competition in R&D coexist with organized and routinised international collaboration? Is it possible for R&D and HE to develop trans-national economic-based activities with new international units without weakening the relations with other national connections?

In Finland, despite the intra-system diversity of European HE, the process has benefited HE system and provisions since the spirit of Europeanization process is generally in tune with the overall strategic goals of Finnish HE and especially the R&D area as set by policy-makers and stakeholders. In order to face the challenges and pressures of globalization, HE can enhance economic growth and at the same time assert traditional
academic values and form human capital important to knowledge society and economy. Investment in HE and R&D produce the wealth of a country and there is still much more to go through in the face of accelerating globalization of economy and education. HEIs in Europe still hold its public nature though its marketization can have positive effects on growth and innovation. The Bologna Process with the harmonization of the HE sector has been a crucial incentive for that. Has the Finnish R&D sector achieved a balance between various roles of HEIs? The question still remains unanswerable for the long-term, but, at least, it is positive in the short run.

References


**DRISS HABTI** is a PhD candidate in the Department of Sociology and Social Policy at the University of Eastern Finland, Joensuu. He is currently working on a research project on highly skilled mobility in the Nordic countries (mainly Finland). His research interests lie within international skilled mobility, the internationalization of
higher education and cultural diversity. *Correspondence:* Driss Habti, Department of Sociology and Social Policy, University of Eastern Finland, PO Box 111 (Metria Building, Room 247), FIN-80101 Joensuu, Finland (driss.habti@joensuu.fi).