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**Universities, Regional Development  
and Economic Competitiveness:  
The Polish Case**

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## **Universities, Regional Development and Economic Competitiveness: The Polish Case**

### **1. Introduction**

The paper explores the regional engagement of Polish universities and shows that the links between universities, their regions, and economic competitiveness taken for granted in the knowledge-economy policy discourse in advanced Western European economies may not fit Poland today.<sup>1</sup> Universities in Poland matter but numerous other activators for economic growth are non-existent, and numerous inhibitors of economic growth, already overcome in knowledge-intensive economies, are still in force. Two decades of social and economic transformations (often referred to as “catching up with the West”, or “postcommunist transition” and “EU accession” periods) are not long enough to bridge the gap between two parts of Europe, and convergence processes between Poland and Western European economies may last much longer than initially assumed following the collapse of communism in 1989 (as in Barr 1994, Goodin 2003, Elster et al. 1998).

Polish universities in official policy documents are strongly criticized for their low research performance and their low regional engagement, both in teaching and research. The present chapter shows that in less knowledge-intensive economies (and Poland was ranked only 39<sup>th</sup> in the Global Competitive Index in

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<sup>1</sup> The paper will be published in Pinheiro, R., Benneworth, P. and Jones, G.A. (eds.) *Higher Education and Regional Development: A Critical Assessment of Tensions and Contradictions*, New York: Routledge, 2012.

2010, which we will discuss in detail below), universities' regional engagement generally occurs in teaching rather than in research and the role of universities for economic growth can be considerably lower than it is assumed in the knowledge-economy discourse used to support Polish higher education reforms. There are many other external factors limiting the role of universities in regional and national competitiveness which need to be taken into account.

While the policy discourse in Poland already stresses the fundamental role of universities' regional engagement in research, it is hard to assess how long the development of strong links between universities and their regions can take. The strongest links are already clearly seen in the teaching dimension of regional engagement, especially in the private sector competing for students from lower socioeconomic strata who are traditionally focused on more labor-market related areas of studies. The regional engagement in research is a much more distant goal: it clearly needs more public resources invested in joint programs for universities and companies, deeper changes in current individual and institutional research assessment formulas and in academic promotion requirements. But the major complexity is that the regional engagement in research needs more research-intensive regional economies, parts of more research-intensive national economy – the emergence of which will take years. Simplified comparisons of the level of universities' regional engagement between countries and regions do not take into account a significant difference between knowledge-driven economies and economies which still aspire to become knowledge-driven. In the latter, Poland being a good case, many other factors, external to universities, matter substantially more for regional and national competitiveness than the factors linked directly to higher education and innovation systems.

In Polish higher education policy discourse, knowledge production as an activator for economic growth in regions does not seem to be sufficiently complemented with the emphasis on major inhibitors to economic growth, exogenous to higher education and innovation systems. Most powerful inhibitors to regional economic growth in Poland are not related to universities, either directly or indirectly. In a specific Polish context, the role of higher education and innovation systems in economic competitiveness needs to be balanced with, and assessed in the context of, the role of all (Michael E. Porter's) "pillars of competitiveness" (Porter et al. 2008). Any fair assessment of knowledge production in Poland, including fair assessment of contribution of Polish universities to economic growth of regions, needs to see a fundamental role of the continuing East/West divide within the enlarged European Union. The divide continues both in the economy and in its regulatory frameworks (as viewed, for instance, as here, through the proxy of the World Bank's "ease of doing business" index, published annually), as well as in higher education and innovation systems (as viewed, for instance, as here, through two selected pillars of the Global Competitiveness Index, GCI, "higher education and training" and "innovation", directly assessing the performance of the university sector and its knowledge production). The paper is intended to explore the tensions in the actual regional engagement of Polish universities in the context of the knowledge economy policy discourse which has provided intellectual foundations to a recent wave (2008-2011) of higher education reforms.

From global and European perspectives, research and teaching, as the two major traditional university missions, are being increasingly complemented with the "third" mission, often defined in policy contexts as the regional mission. European universities were mostly teaching institutions until Humboldt's reforms in Germany in the early 19<sup>th</sup> century which produced an alternative model, focusing on research alongside teaching. The regional mission reflects

the change in attitude of universities' external stakeholders: national and local governments, local businesses and industry, as well as, finally, students and their parents. Higher education is also increasingly conceived as a vehicle for economic development of the nation and of the region in whose social and economic fabric it is embedded (see Goddard 2000, OECD 1999). The regional mission means opening up of universities to the regions in which they are located; interactions may differ from cultural to social to economic (Arbo and Benneworth 2006). The regional engagement of universities studied recently by the OECD (OECD 2007a) on the basis of case studies available from regions in Europe and beyond show that both monetary and non-monetary dimensions can be included as universities are reaching out to the region in several dimensions, from cultural interactions with citizens to economic interactions with local enterprises.

The fundamental role of knowledge production in economic growth of knowledge-driven economies puts universities and outcomes of their teaching and research increasingly in the public spotlight (Foray 2006, Leydesdorff 2006, Etzkowitz 2008). Universities are increasingly measured, compared and ranked both internationally and nationally; rankings and comparisons are publicly debated (King 2009). The "economic relevance" of universities links, directly or indirectly, university activities with innovations in the private sector (Geiger and Sà 2011). Links between higher education and the economy are tightening throughout Europe. There are increasing policy pressures, accompanied by new national and European-level funding mechanisms, to link university missions much closer to the economy (Maassen and Olsen 2007). Teaching is expected to be linked more closely to the labor market needs, avoiding the mismatch between higher education offer and labor market needs, and research is expected to be more easily commercialized; the third mission in general, and the regional engagement in particular, is expected to create new revenue streams for

educational institutions. Economic competitiveness of nations and regions is increasingly linked to national and regional knowledge production, including knowledge production in universities. Recent reforms of Polish higher education and research systems (2008-2011) are also based on these premises.

## **2. Regional engagement: the national policy level and the institutional level**

High levels of regional engagement of higher education institutions are taken for granted in knowledge-driven economies, and the graduate labor market is analyzed in detail in many European higher education systems. Systematic quantitative analyses of the regional engagement (or of its lack) of higher education institutions, including its support for the local labor market, are routinely performed. Methodologies and good practices for assessing the impact of particular educational institutions and regional educational systems on particular regions are available. There are standards of how to compare the performance of educational institutions in regions and for regions, based on benchmarks and good practices. Both internal institutional management and governance mechanisms in institutions and external pressures and financial incentives are important to support their regional mission.

In Poland, following the new law on higher education of March 2011, these mechanisms include additional state funding for university partnerships with businesses, especially through public and private science and technology parks, new incentives for universities' regional initiatives, including new study programs prepared with the assistance of local and regional companies, modified requirements for academic career ladder, and increased cooperation with the local industry in university governance e.g. via the presence of its representatives in universities' boards of trustees. The crucial role of the regional engagement of universities was stressed by two competing Polish

strategies for the development of higher education produced in 2010 (one produced by Polish rectors' conference and the other by the consortium of consulting firms and funded by the Ministry of Science and Higher Education). As the latter strategy put it, the openness of higher education institutions to their social and economic environments should serve the purpose of "continuously adjusting degree courses and curricula to the needs of the labor market. The element combining research activities of higher education institutions with practice is the transfer of knowledge and innovation between institutions and the business sector. Their important task related to educational and research activities includes building links to the region and their social environment" (EY 2010: 65).

Overall, the institutional responsiveness of universities to the labor market needs is low in Poland. The level of cooperation with the business sector is also low. As a ministerial report on the barriers of cooperation between research centers and companies explained, Polish companies should be made more aware of the possibility of cooperation with universities because as much as 20% of them do not know that possibilities of cooperation with the academic community exist, and 40% of them have never tried to get in touch with universities. Also 40% of companies surveyed do not know how to reach research centers potentially interested in the commercialization of research. At the same time, surprisingly, almost half of those companies surveyed which actually got in touch with scientists (45%) declare that the initiative of cooperation came from scientists. Companies involved in partnerships with universities are generally satisfied (effects of cooperation with scientists are rated as rather positive by 51% and definitely positive by 17%. The combined rather negative and definitely negative assessment was given by only 3% of surveyed companies, MNISW 2006: 4-10).



The links between Polish universities and their social and economic environments, from an international comparative perspective, are weak, and all major international reports on Polish higher education from the last few years stress their exceptionally academic character, and their engagement with their own (academic) issues rather than issues of interest to, or relevant for, the society and the economy. The links between educational offer (of especially public institutions) and labor market needs are very weak. As an OECD report stressed, “it is not clear how far the current offerings do in fact respond to actual labour market needs. ... the whole tertiary education system, and not only the academic sector, is academically driven. The effect is a set of institutions that are typically – though not always – strongly inward-looking in focus, rather than facing outward toward the wider society, including working life” (OECD 2007b: 77). A World Bank report does not differ much in its conclusions about Polish universities’ links to the economy: “The combination of academic traditions with an autonomous legal and financial framework has encouraged a relatively inward looking and independent academic culture, which tends to show little interest in either the labour market or the business and innovation environment. Most higher education institutions lack a clear focus on the needs of high technology companies or societal needs in general” (World Bank/EIB 2004: ix). The academic drift is prevalent throughout the system, and Poland does not seem to be an exception in Central Europe.

The remarkable expansion of the Polish tertiary education sector (1,900,000 students in 2010 compared to 404,000 students in 1990) was mainly achieved through privately-funded, part-time higher education at public institutions, and, in particular, through the expansion of the private sector (from 6 institutions in 1990 to 195 institutions in 2000 and 330 institutions in 2010). Most private providers offer higher education in high-fee, low-cost subjects, such as social sciences. Moreover, it is likely that public higher education institutions fill up

their classrooms in subjects that do not require specific equipment and are, as a rule, low cost. The government, however, still needs to consider how to respond to the drift toward low-cost subjects, especially evident in the private sector. Such a response should include the establishment of excellent conditions for teaching, learning, and research, in particular, in priority areas, and might include other forms of “soft steering” (such as the recent introduction of “contracted studies” funded by the Ministry of Science and Higher Education in the strategically important areas of sciences and engineering). The program of “contracted studies” started in 2008 and until 2013 it will have spent 1 billion PLN (about 350 million USD): currently, it includes about 25.000 students, 10.000 of whom receive non-refundable “motivation stipends”, from 57 institutions. The program proved a success: in the 2010/2011 academic year, polytechnics proved more interesting to potential students than universities, having more candidates per vacancy than the latter, for the first time in the last two decades. Among the first twenty most popular areas of studies, there were seven from the list of the ministerial “contracted studies” (see Kwiek and Arnhold 2011).

The contribution of Polish universities (and, generally, of universities from new EU member states) to economic competitiveness of regions in which they are located seems to be generally accepted in policy literature to be the same as the contribution of Western European universities, especially in European Commission’s policy documents and Polish higher education strategies (see e.g. EC 2003, EC 2005, EC 2006). Or, in other words, no major differentiation is made between two parts of Europe in EU-level policy literature on European universities, despite striking differences between their actual research output, public and private research funding levels, as well as (until a recent wave of reforms) management and governance structures. The role of university knowledge production for regional development is widely stressed in Poland,

and universities are often bashed in national policy analyses and new governmental reform strategies for their underperformance in both research missions and regional missions (for instance in the ministerial “Rationale” accompanying assumptions to the most recent changes in the law on higher education, MNiSW 2010). In the overall conceptual framework provided to Polish policy makers by the knowledge economy discourse (widely used by both the European Commission and the OECD in the last decade, see Brown et al. 2011), universities are assessed by the Ministry in its recent attempts to reform Polish higher education system to be neglecting their regional engagement. Also research underperformance of universities is believed to be an important factor of low economic competitiveness of the country. Alternatively, future high research performance of Polish universities, policy makers believe, are one of the keys to economic growth and competitiveness in the years to come.

Universities in Poland are currently (2008-2011) undergoing large-scale reforms, following reforms of their Western European counterparts and wider European processes of transformations of higher education systems in the last two decades (Maassen and Olsen 2007). There is a considerable tension in policy arguments failing to see different economic roles of research-intensive universities in Western Europe in maintaining high levels of economic competitiveness and economic roles of universities in Poland which is only aspiring to become knowledge-driven.

The tension between the national policy as reflected in policy documents produced in the last three years and the institutional practice in universities is clearly discernable. At the policy level which uses a set of standard assumptions about universities’ role in the knowledge economy, the links between academic knowledge production and national (or regional) economic performance are

clear. But universities' responsibilities seem to be defined in Polish public policy in the framework of standard assumptions which do not hold, at least at the moment. Policy assumptions about universities and economic competitiveness are not as relevant in Poland as in more affluent and knowledge-based European economies. Poland does not seem to fit the picture of "knowledge economies", and, consequently, the policy discourse prevalent in Polish public debates and policy documents does not fit Polish universities as centers of knowledge production, including knowledge production for regional development. This is an important tension: while the regional dimension of university knowledge production is powerfully stressed at the national policy level, in university practice – seen through the proxy of the number of projects involving universities and corporate partners, the share of income in university budgets from company-contracted research or the role of enterprises in shaping the educational offers of regionally-oriented universities – it is still marginal.

### **3. Regional engagement: major tensions**

In terms of definitions: "by knowledge-based economies I mean, essentially, economies in which the proportion of knowledge-intensive jobs is high, the economic weight of information sectors is a determining factor, and the share of intangible capital is greater than that of tangible capital in the overall stock of real capital" (Foray 2006: ix; see also Leydesdorff 2006 and Stehr 2002). In Poland, the share of knowledge-intensive jobs is relatively low, by OECD standards, and the structure of the labor market is substantially different from the OECD average. As the World Bank defined it recently, a knowledge economy is one in which "knowledge assets are deliberately accorded more importance than capital and labor assets, and where the quantity and sophistication of the knowledge pervading economic and societal activities

reaches very high levels” (World Bank 2007: 14; see also OECD 1996). Both definitions cannot be easily referred to Poland (unless in very general terms).

Thus tensions appear in Poland between ideal roles of universities in generating economic growth as presented in national policy documents which draw heavily from the European knowledge economy discourse (as well as roles of universities in increasing economic competitiveness of the regions where they are located) – and the practical level of internationally measurable knowledge production and research intensity in Polish universities. (Exaggerated) expectations from Polish universities are combined with harsh criticism of their research underperformance, of strong higher education / labor market mismatch and of their lack of regional engagement.

In most general terms, the source of tensions which result in the non-adequacy of the knowledge economy discourse for current public debates about universities in Poland is as follows: major Western European economies are highly competitive. They are knowledge economies not only because they have well-performing universities, though: they are knowledge economies because their well-performing universities function (to refer to Porter’s twelve pillars of competitiveness) in strong institutional environments supporting growth and competitiveness, with high-quality infrastructure, while the macroeconomic stability of their countries is high, workforce in their countries is healthy and well-educated at the basic education level, and the domestic and foreign market competition is healthy. Because their labor markets are efficient and flexible, their financial markets are sophisticated and make capital easily available for private-sector investment, their readiness to adopt existing technologies is high, their markets are sizeable, their business sophistication is high and their companies are innovative. As Porter points out, the pillars of competitiveness

are not only “related to each other, but they tend to reinforce each other” (Porter et al. 2008: 6).

Polish universities function in Polish economic, political, social, and legal environments; they function in regions embedded in national economic, political, social, and legal environments. Universities do not function in isolation from other institutions and organizations and are powerfully nationally-embedded. Thus, returning to the popular criticism of universities by policy makers, universities in Poland indeed underperform in all aspects of their regional engagement (as shown by both hard data and soft data, international comparative statistics and global rankings, as well as numerous national case studies). Their academic entrepreneurialism is low (Shattock 2008, Kwiek 2008), universities’ partnerships with enterprises are relatively rare and their scientific and technological parks are small, with underdeveloped links to the business community (Mora et al. 2010), their non-core non-state income in research is low (although their non-core non-state income in teaching, through fees, is well-grounded, Kwiek 2010), their regional mission in research is underdeveloped (although their regional mission in teaching is well-grounded) and their role in national innovation systems is low. This is all true.

But all above assessments, based on international comparative data and analyses, need to be viewed in the context of different economic, political, legal, and social environments in which Polish universities operate today. They have their own history of almost five decades of operating under the communist regime and of two decades of postcommunist transformations. Knowledge economy in Poland, based on existing comparative hard and soft data, is still a future point of arrival. Regional engagement of universities in Western European knowledge economies is radically different from their regional engagement in the countries called until recently “transition” and “accession”

economies. Their national and international assessment needs to focus on their possible *modi operandi*, under changing legal, social, and financial circumstances only slowly leading in the direction of knowledge economies. Overall low research output of Polish universities, measured internationally, leads to overall low levels of regional research engagement. The regional research dimension is determined by the national research dimension.

Other tensions related to the regional university mission in Poland include links to the other two missions, teaching and research. Is the regional mission in Poland viewed as a fully legitimate university mission, with separate national funding streams – or is it viewed as a mission complementary to both major missions, teaching and research? Or is it viewed and assessed at both individual and institutional levels as an additional component to both – providing a “regional” dimension to teaching and a “regional” dimension to research? In most OECD countries, higher education policy does not include an explicit regional dimension: “ministries of education characteristically act as champions of the role of higher education and research in meeting national aspirations in terms of scientific excellence and advanced education of high quality for its own sake” (Goddard and Puukka 2008: 22). Current practice in both university funding and governance in Poland indicates that the regional mission is regarded as an additional dimension to teaching and research, and not as a separate category to be individually or institutionally assessed. It is not funded through separate (separate from teaching and research) national or regional funding streams; and it is not used for the assessment of performance of individual academics, academic units, and institutions; it also seems relatively irrelevant to academic employment patterns and tenure systems. As OECD stressed in its study of “globally competitive, locally engaged” universities,

In the past, neither public policy nor the higher education institutions themselves have tended to focus strategically on the contribution that they can make to the development of the regions where they are located. Particularly for older, traditional higher education institutions, the emphasis has often been on serving national goals or on the pursuit of knowledge with little regard for the surrounding environment. This is now changing (OECD 2007: 11).

This is also changing in Poland. In general, the regional dimension in research in Poland seems to be undervalued compared with traditional national and international dimensions. Empirical evidence shows that regional research studies are undervalued by national research communities, with much more prestige traditionally allocated to national-level and international-level research activities. The tension is thus between viewing the regional mission as a separate university mission – and as a new way of financing the traditional two missions, teaching and research. Certainly the lack of separate national funding streams for the regional mission in Poland contributes to relatively low social legitimacy and low academic prestige of regionally-engaged research undertaken in universities.

Regional development in Poland is funded largely by regional funds, except for national, strategically important infrastructure (like roads, railroads, airports etc.) – while public universities in Poland are funded almost exclusively by national funds. And their funding does not come from student fees as studies (in major, regular track) are free, or tax-based. Consequently, even public funding for teaching is national; the link between fees from part-time students paid regionally and the regional relevance of teaching services is very weak in the public sector (as opposed to the Polish private sector whose strength often derives from their regional engagement in fee-based teaching). The tensions are



unavoidable: national interests represented by the national ministry of science and higher education are different than regional interests represented by regional authorities, responsible for funding compulsory education. The difference between public and private sectors is that national interests in funding for teaching in the public sector are different from regional interests in funding for teaching in the private sector, provided by (mostly, except for a limited number of private institutions with national ambitions, in almost all cases located in the capital, Warsaw) regional students through their fees. Both in theory and in practice, private sector is much more regionally-oriented in teaching.

Thus an interesting tension occurs between public and private higher education institutions in their study offer. Private higher education in Europe is a purely Central (and Eastern) European phenomenon (the only exception in Western Europe being Portugal). Demand-absorbing growth of “independent private sector” (in OECD definition) in Poland in the last two decades (see Kwiek 2011) – which was almost fully fee-based – introduced to the national education system a new element of competition: a competition for (fee-paying) local students, increasingly from lower socioeconomic strata, much more interested in the relevance of their education to local and regional labor-market needs than students from traditional, elite, nationally-oriented public institutions, mostly students from higher socioeconomic strata. The private sector have strengthened the regional engagement in higher education – albeit only in teaching, as it is involved in any research (national or regional) only marginally.

Private institutions are generally not involved in a prestige-seeking race for national and international research grants and for prestigious, nationally and internationally measured research output. But their teaching mission, especially in non-metropolitan areas, in institutions serving populations from the rural areas and small towns/cities, is increasingly regionally-oriented, especially in

terms of matching local and regional labor-market needs and their educational offer (longer established higher education institutions are in larger cities but private sector in Poland is scattered throughout the country; see also Goddard and Puukka 2008: 23). And Polish students are much more attached to the ideas of labor market relevance of higher education and of closer cooperation with local and regional employers in both curricular and governance issues (for instance, tailor-made study programs for enterprises offered by universities and employers in universities' boards of trustees) than their Western European colleagues, as recent Eurobarometer data indicate (EC 2009).

The recently reported relevance for students of the links between higher education and labor market in Poland is highest in Europe, and well above the European average, as opposed to Western European systems, where its relevance is generally much lower and the links are perceived as much weaker. Higher education reforms intended to link higher education more directly to the labor market have powerful social support. A large majority of surveyed Polish students (89%) agreed that there should be a possibility to undertake work placements in private enterprises as part of their study program. Almost all (97%) of them agreed that it is important for higher education institutions to foster innovation and an entrepreneurial mindset among students and staff (the highest score in Europe). Poland has also had the highest support in Europe for the idea that higher education institutions should provide tailor-made study programs for enterprises to help upgrade their work force (93%, much higher than the European average of 76%). Also the idea of the involvement of enterprises in higher education governance structures, curricula design and funding is very strongly supported (86%, the average for Europe being 72%, EC 2009: 40-43).

Unfortunately, an extremely positive attitude of Polish students to stronger higher education-graduate employers links does not seem to be mirrored by employers themselves. A good explanation could be that employers are assessing higher education-regional labor market cooperation much more realistically. Contrary to students' expectations, graduate recruiters (as reported in recent EU analytical report on *Employers' Perception of Graduate Employability* (EC 2010) in Central Europe generally were the least likely from among 31 countries to say that cooperation with higher education institutions was important – and most likely to say that such cooperation was not at all important. Among the six countries with highest disbelief in university-employers cooperation, there were five new EU member states, including higher education systems of Poland, Slovakia, the Czech Republic and Hungary (as well as Latvia and France). In Poland 27% of employers view their cooperation with higher education as “not important at all” (almost equal to the European average of 26%); at the same time, the share of employers who view this cooperation as “very important” is very low in Poland, reaching the level of 9%. In terms of employers' satisfaction with the skills and capabilities of higher education graduates, among 31 European countries studied, Poland consistently ranked below the European average, being 9<sup>th</sup> from the bottom for good literacy skills, 3<sup>rd</sup> from the bottom for good numeracy skills, 5<sup>th</sup> for teamworking skills, 11<sup>th</sup> for communication skills, 5<sup>th</sup> for ability to adapt and act in new situations, 4<sup>th</sup> for analytical and problem-solving skills, 5<sup>th</sup> for planning and organizational skills, 3<sup>rd</sup> for decision-making skills and 5<sup>th</sup> for foreign language skills (EC 2010: 26-31).

Thus there is a powerful tension between overall positive attitude of Polish students towards stronger higher education/employers cooperation, closely linked to the regional mission of the university, and overall negative (and highly pessimistic) attitude of employers to this cooperation. Consequently, the introduction of stronger links between universities and their regional economic

partners may take longer than current higher education strategies in the region indicate.

#### **4. Universities, their environments, and economic competitiveness**

Universities function in multi-level, interdependent environments, and their regional engagement is closely linked to types of economies in which they function. But relationships between universities and economic competitiveness of nations and regions are complicated and there is no easy one-way passage from systems of better developed universities to more competitive regional economies. Growth, wealth and competitiveness are produced, first of all, at the level of companies, and if universities fit better into patterns of effective university-enterprises cooperation, regional economies have a chance to be more competitive. Macroeconomic, political, legal and social circumstances underpin a successful economy – but are not sufficient, though: “wealth is actually created in an economy at the microeconomic level – in the ability of firms to create valuable goods and services using efficient methods. Only firms can create wealth, not government or other societal institutions” (Porter et al. 2008: 53). So economic competitiveness and productivity ultimately depend on the microeconomic capability of the economy (see more details on Central Europe in general in Kwiek 2011b).

Discussions on knowledge production and regional engagement of universities in postcommunist Europe cannot ignore a fundamental distinction between efficiency-driven growth in such European countries as Albania or Bulgaria, almost innovation-driven growth (in transition between the second and the third stage of economic development in this classification) in Poland, Hungary, Slovakia and Romania, and finally innovation-driven growth in the Czech Republic. Of the twelve pillars of competitiveness (Schwab 2010), two are of

special interest: “higher education and training” and “innovation”. While most major OECD economies are ranked in the first two tens of the index, Poland is ranked 39<sup>th</sup>. Expectations from higher education are similar in Poland and in Western Europe (and derive from both the knowledge economy discourse and from OECD and EC documents and reports) but there are many other equally important factors – exogenous to educational efforts, and even exogenous to government efforts – which are specifically Polish. These exogenous factors make a comparative analysis of higher education roles in promoting economic growth difficult but also create considerable tensions between the “knowledge economy” discourse used at the policy level in Poland and actual environments in which Polish universities function.

In the areas most important for knowledge production in global competitiveness index, Central European economies such as Poland, Slovakia and Hungary are ranked generally low, and in some specific cases, dramatically low. But even if they were ranked high or very high in these areas, their overall economic competitiveness would be still low or very low due to low (or, in some cases, dramatically low) rankings in other standardized and measurable pillars of competitiveness, not related to higher education and innovation systems.

Polish economy is not globally competitive not only because it lags behind in higher education and innovation pillars of economic competitiveness, as policy makers and reformers in higher education tend to stress. They lag behind, perhaps most of all, in the other pillars. Poland in the global competitiveness index consistently ranks dramatically low in the last few years in one of the publicly most expensive categories – the pillar of infrastructure: quality of overall infrastructure is ranked 108<sup>th</sup> out of 139 economies, quality of roads is ranked 131<sup>st</sup>, quality of port infrastructure is ranked 114<sup>th</sup> and quality of air transport infrastructure ranked 108<sup>th</sup> (Schwab 2010: 111-299; Hungary, Slovakia

and the Czech Republic are also generally ranked very low in all above sub-indices of infrastructure, in the 50-80 range, with the exception of railroad infrastructure in the Czech Republic and Slovakia).

Consequently, even much more modernized, reformed, and Europeanized higher education and innovation systems in Poland would not be a determining factor in overall regional and national economic competitiveness. There is a wide, although slowly bridged, East/West gap related to a multitude of factors, from tax systems to legal systems to transportation infrastructure. Knowledge production in Poland cannot be assessed in isolation from its multi-layered economic, infrastructural and legal environments.

Knowledge production in universities and in the business sector in Poland occurs in economic and regulatory realities which cannot be easily overcome by either universities or companies. In universities, it is funding and governance regimes, in the business sector it is often the “ease of doing business” that matters most, for all companies, including those involved in research, development, and innovation. To show the differences between major OECD economies and Poland let me refer briefly to the “ease of doing business” ranking (at the microeconomic level of companies), annually measured by the World Bank in the last five years, most recently in *Doing Business 2011. Making a Difference for Entrepreneurs* (World Bank 2010).

There are ten categories in which comparative advantages of countries are sought: starting a business, dealing with construction permits, employing workers, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts and closing a business. Central European countries are scattered along the ranks, with Slovakia and Hungary in the forties (ranks 41<sup>st</sup> and 46<sup>th</sup>), followed by Poland and the Czech Republic

almost in the middle of the ranks, in the seventies (70<sup>th</sup> and 63<sup>rd</sup>) (World Bank 2010: 4). These are the regulatory realities, internationally assessed, in which Polish economy is operating, which go far beyond (higher) education and innovation systems but, at the same time, which directly influence both national economic competitiveness and processes of knowledge production in the business sector. Poland's regulatory weaknesses, direct inhibitors to become a fully-fledged knowledge economy, are clear: Poland is ranked higher than 100 (out of 183 countries) in such categories as starting a business (rank 113), dealing with construction permits (rank 164) and paying taxes (rank 121) (World Bank 2010: 159-193).

Universities in Western European countries – as opposed to Poland – function in highly competitive economies and companies, including companies involved in research, development, and innovation, operate in relatively friendly legal and regulatory environments. Therefore, first, expectations from higher education systems should not be exaggerated in globally much less competitive economies such as Polish economy, as opposed to more competitive Western European economies in which all other components of competitiveness are in place and higher education systems seem to matter considerably more. And, second, the role of higher education systems in Poland and in Western Europe differs strongly due to a multitude of factors exogenous to higher education systems themselves. The necessary (and measurable) need of “catching up with the West” in such areas as infrastructure, technology or business sophistication may be viewed as more important, and consequently public funding may be directed more easily towards these areas rather than towards higher education or research and development in public higher education. And, assessing the level of public funding for research in Poland, this is exactly what has been the case in the last two decades. Throughout the 2000s, gross domestic expenditure on research and

development was in the range of 0.5-0.6 % of GDP, and only in the last two years it was slightly increasing.

## 5. Conclusions

Highly competitive economies have excellent universities operating in increasing symbiosis with the business sector, and both universities and the business sector are operating in friendly legal and regulatory environments. Globally competitive universities in Europe operate in globally competitive regions and economies. This is not the case of Poland which increasingly refers to knowledge economy principles and uses the knowledge economy discourse in legitimizing new national higher education strategies but which lags behind not only in its higher education and innovation systems but also in other factors determining economic competitiveness. It is difficult for higher education and innovation systems to go beyond their national social and economic contexts: they belong to national settings, are funded through national taxes, cooperate with regional companies, and produce graduates with skills necessary for national economies. The national settings are for higher education and innovation systems both burdens and challenges. The major tension in Poland is between policy wishes (meaning: being a globally competitive, knowledge-driven economy) and institutional realities, including economic, legal and infrastructural environments in which Polish universities and Polish companies function. The “arm of the past” (communist and postcommunist transformation periods in Poland) is long (Elster et al. 1998). The tension between basic assumptions about the role of universities in knowledge economies valid for most affluent OECD economies and postcommunist realities of university knowledge production in Poland is still substantial. Convergence processes take much more time than initially assumed.\*



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