The Competitiveness of european universities: Enhancing systems competition?

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1. Universities in Europe have a great tradition of nearly one thousand years. In many European countries, universities belong to the oldest institutions still in existence, proving their resilience and documenting their important role for society.

In the early 17th century the European concept of a university reached North America and began to spread around the world. Today, the world is witnessing the triumph of the university idea, especially in the developing world. E.g., India aims to increase the number of universities from about 300 in the year 2005 to 1500 institutions in 2015.

When Johns Hopkins University initiated PhD programs in the 1890s, the US university system converted into a hybrid one: On top of the still British college education, and in addition to professional schools, Humboldtian doctoral programs were offered. This hybrid system proved to be the most successful one during the 20th century's period of "massification" of higher education and "intensification" of research. It is now copied around the world. Today, among the 4-5000 US higher education institutions, most of them are mainly teaching

institutions. There are only 200-300 research intensive universities, granting PhDs. This diversified US system is, according to David Ward, the former president of ACE, "democratic at the base and elitist at the top".

2. In Continental Europe (EU) where the Humboldtian idea influenced so many national university reforms, there are about 1000 PhD granting institutions; only recently universities of applied sciences (polytechnics) started to diversify the otherwise uniform system. Humboldt changed the legitimacy of a university from humanism to philosophical speculation by stating that the search for truth, for new knowledge, is the very purpose of a university. As a consequence, in many countries of Continental Europe, bachelor and master programs were abolished. Doctoral programs were the "proprium" of a university, since doctoral education could be ideally combined with searching for the truth. If a university did not follow this speculative idea of a research university, it would not be regarded as "true" university.

The Bologna Process intends to open the university system to three-tier study architecture so that it can better grapple with the massification trends of higher education in the emerging knowledge societies. The competitive research funding of the European Research Area as well as the various "excellence initiatives" at national levels, e.g., in Germany, are drivers for research intensification at some, not at all universities. In addition, in order to improve quality and effectiveness, institutional autonomy is more and more granted. All these changes will bring about a more diversified university system and may enhance the global competitiveness of higher education and research of European universities.

3. There is not much time left for reforms. Continental Europe seems to fall behind in performance in world class research. The Shanghai Ranking and the Times Higher Education Ranking indicate that, among the top 20 or top 100 universities in the world, only few universities from Continental Europe are included. This is in contrast to the number of US or UK universities listed in these rankings. This is really alarming. Even more alarming is the fact that among the ISI-most highly cited researchers only few come from Continental Europe. In mathematics, a subject not dependent on investments in costly infrastructures nor a discipline requiring English as a mother tongue, two thirds of the 300 most highly cited researchers are affiliated to US institutions. About fifty percent of those at US institutions have obtained their first degree outside

of the US. In physics, molecular biology, economics, the situation is similar. It seems that US top universities excel not only by employing some top stars, but by engaging the bulk of the top 300 researchers of the world. Obviously, continental European Universities lack critical research mass at world class level.

4. What are the reasons for falling behind? In and after the 1930s, the centres of scientific communities clearly shifted to Anglo-American countries, making English the dominant scientific language. This shift of centres has consequences on the scientific development. Blau (1994) argues that debates on the state of scientific progress and the competition among the scientific communities for new results have an important side effect: they spur the development of new scientific fields. Continental Europe currently lacks this positive feed back.

But there are other factors too. One is the national fragmentation of the European university system, fostering national university cultures and national academic careers. According to a survey of the EU commission, still today, 97% of the academic staff of EU universities had employments only in the country in which they received their PhDs. Another factor is the poor dotation of universities, which, as percentage of GDP, is less than half in Europe than in the US.

In addition, in the US there is a federal innovation demand which powers basic research related to innovation. The NIHs spend more than 20 billion USD each year. The federal Departments of Defense or of Energy finance huge research programmes: E.g., MIT received 639,5 mio USD just from Defense Contracts in 2006! As the Aho Report of 2006 suggests, Europe should come up with a strong European-wide, cross-border innovation demand, especially in e-Health, pharmaceuticals, energy, and environment, thus ending the manifold duplication of national research and innovation efforts.

Clearly, Europe needs the European Higher Education Area and a united European Research Area, with better financial dotations. But how to proceed when the responsibilities in these areas remain at the national level mainly? National policies follow national interests; national interests except in Scandinavia, are not focused on higher education and research. As higher education in Europe is mostly funded by the national tax payers, weak national interests get translated into an underfunding of universities. The same is true for public research.

Only 5% of public research in the EU is funded by EU framework programs, nearly all public research is funded at the national level. Brussels wants to focus more on research, also on higher education, however, given the scepticism about the EU, shifting more money to Brussels seems not to be politically feasible.

5. There is one way out which is simple and radical: allow more systems competition among European nation states with respect to higher education and research. In the words of A. Hirschmann (1970) exit, or voting with one's feet, characterizes the new system competition. This new system competition is a competition for locational advantage that is primarily driven by the international migration of people and production factors.

Three ingredients are needed in order to intensify system competition: (1) convergence of common standards and rules (including the portability of pension rights, patent rights), (2) some highly competitive money at the European level such as ERC, EIT, Marie Curie actions, but also some money for setting up European Research Infrastructures (all regions should have fair chances) and (3) allow people to migrate. Then the system competition among member states and regions will result in a competition on good governance in the battle for brains. In fact, that is the way the US system became so competitive. There, responsibilities on universities are mostly attached to the 50 states, yet, there is sufficient federal money around, setting standards and rules. And there are people, staff as well as students, willing to migrate to the states with the best institutions.

