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On the international ranking and classification of research universities

1. Universities in the 21st century

There is growing consensus in the international literature on higher education and in the social and political discourse that to handle the complex problems of higher education (in fields like research, pedagogy, finance, organization and administration) efficiently and dynamically, it is necessary that the concept of the 21st university be defined.¹ How does our present conception of universities differ from that held in the 20th century or earlier? How should we define the universities' permanent task, one that equally applies to various ages? What are the changeable components? What compels us to ask these basic questions?

The higher education of advanced countries underwent thorough changes in the last three decades of the 20th century. Observers tend to agree that economic and social transformation was the engine of those changes. Economic growth has been accelerated by the application of modern technology transforming the national economies to a new level; transnational and even transcontinental arrangements have emerged to supply the countries of the world with energy, food and raw materials; the financial and political crises usually require collective action and their solution is getting more difficult; and the global communication networks offer new perspectives for relations among people. These new developments are often collectively referred to as globalization.

While globalization has negative as well as positive effects, one of the ways of reducing its negative effects is to implement what has become known as knowledge economy. (Other ways to neutralize the negative effects of globalization include the search for environmentally sound technology, sustainable development and the assertion of the principles of equity and equality.) Higher education is a key pillar of the knowledge economy. Its critical moment is the involvement of broad sections of society into higher education—and that is exactly what we are witnessing throughout the world. In the advanced countries at the beginning of the 21st century between forty and fifty per cent of the 19–25 age group is involved in higher education, and the same tendency is predicted for the developing countries.

The massive growth in the student population in higher education is welcome for a number of reasons. In future society the jobs that derive from the division of labour require higher levels of knowledge, and students need longer periods to acquire it

1 HRUBOS, Ildikó 2006. Változó egyetem (Universities in Transformation). *Educatio*. 655–790.

BÓKAY, Antal 2009. Az egyetemi eszme átalakulása – az európai felsőoktatás új irányai, feladatai (Transformation of the Idea of Universities—New Directions and Task of Higher Education in Europe). In: BERÁCS, József – HRUBOS, Ildikó – TEMESI, József (ed.) *Magyar felsőoktatás 2008 (Higher Education in Hungary)*. NFKK Füzetek 1. BCE Nemzetközi Felsőoktatási Kutatások Központja (International Centre for Research on Higher Education), March 2009. 24–31.

(not to mention the life-long learning that the rapid changes in the working environment require). By contrast, the steep increase in the number of students has its negative consequences: colleges and universities are not able to identify and to pay extra attention to the gifted students. Several observers are of the view that this will lead to the decline of the general standards of education. They are worried about the quality of universities and they stress the conflict between the massification of higher education and the efficiency of research.²

It is not the purpose of this paper to offer a detailed analysis, approval or refutation of those concerns. We intend to call attention to a very important counteracting factor, namely, diversity. The higher education of the future can respond to the global challenges if it encourages diversity in several fields. Examples are: diversity in providing different programmes at local and regional levels; differences in choosing a proper rate in teaching and research; variety of the methods of teaching, research and assessment; and a wide selection of organizational set-up.³ The goals which universities want to achieve do not have to be identical. Let each citizen find the institution that best fits his or her knowledge, experience, interests and ambitions. The state should grant powerful support for those institutions whose missions meet the state's strategic objectives.

The question is bound to arise whether each institution of higher education should possess each academic and social function in a unified way? If not, should the differences have organizational consequences? Should there be institutions of higher education that see research (and the inclusion of their students in that research) as their main priority? These questions have brought us to the notion of "research university"—an idea that is not free from controversy. We must ask whether an institution is a "research university" because it has earned that "title" throughout the centuries or because it was established for such a purpose and obtained that title within a short period? What makes a university a "research university"? Answering that question requires some definition of research university criteria. As most universities satisfy at least a few of those criteria, some measuring and evaluation is also needed. In our changing world it is inevitable to look for systematic rankings and classifications.

2. Competition, visibility and measuring

As could be seen above, in an increasingly globalized environment the universities of the 21st century can accomplish their development potentials by being diverse (achieving a kind of biodiversity). Given the competition in the economy, the institutions feel obliged to ensure visibility of their strengths and obtain scarce resources by outstripping their rivals. Such an attitude is the strongest in the United States. In the last quarter of the last century

² DEZSŐ, Tamás 2010. A „kutatóegyetem” koncepció Európában és Magyarországon (The Concept of “Research University” in Hungary and Elsewhere in Europe). In: BERACS, József – HRUBOS, Ildikó – TEMESI, József (ed.) *Magyar felsőoktatás 2009. NFKK Füzetek 4.* BCE Nemzetközi Felsőoktatási Kutatások Központja. March 2010, 50–59.

³ See for instance: HRUBOS, Ildikó 2009. A sokféleség értelmezése és mérése. Kísérlet az európai felsőoktatási intézmények osztályozására (Understanding and Measuring Diversity. An Attempt at Classifying European Institutions of Higher Education). *Educatio*. 18–31.

the leading business and financial papers published, alongside lists of the best performing companies, rankings of business schools and later of universities. It follows that higher education has become a “service” whose performance can be measured and the “clients” are looking for the best service providers. No doubt, we have simplified the case as the service is special and highly diversified and the market is limited. But in a market economy the stakeholders find it easy to understand such an analogy. Actually the parents of youngsters about to enter higher education are grateful for every piece of information. After all, they are about to make important decisions. Over a period of years between 25 and 30 per cent of the family income is to be spent on higher education in the United States.

The majority of universities crave visibility: if they are featured high in rankings, that is publicity for them and fetches more applicants. Newspapers love the topic for it attracts the readers. Educational supplements raise extra revenues. International interest in higher education institutions of the United States promotes the reputation and increases the print run of American press publications.

In Europe, where education has traditionally been among the public goods, such visibility appeared later and especially in the bigger countries such as the United Kingdom and Germany. Information turned into competition during the 1990s, due especially to the following causes: higher education became international, mobility increased and the European Union encouraged that. Europe recognized its competitive handicap in the economy as compared to the United States (and ever more so some fast-growing countries in Asia) and identified education, research and innovation as a strategic direction for progress. The efficiency of the educational and research sector has become a key component of economic competitiveness. Europe realized that it had no other option but to enter the international race. Consequently, the European universities appeared in the international educational markets and the “export of higher education” became a governmental priority. The international research networks have become global. As a consequence, the practice of comparing universities within countries has been replaced by international comparisons.

It is inevitable that the question of how to measure educational and research excellence be addressed. What and whom to measure? Although there have been practical answers to those basic questions, no theoretical consensus has been reached either among educational researchers or the practitioners in that field. Certain conclusions can be drawn however from some related analyses. The subjects of the studies are the institutions of higher education, their subdivisions (faculties or, to use the Hungarian terminology, institutes) and individual degree programmes. The range of such studies can be national or international, or it can focus on certain institutional subdivisions or degree programmes. The surveys can cover the general status of entities, differentiate between their educational and research activities or they can zoom in on certain components, such as, for instance, university excellence.

Whichever is the case, obtaining the data is a critical task. Ideally, the surveys (whether national or international) should cover every aspect of the activities of a unit. As regular

surveys that consistently apply the same criteria within the educational sector of a country and therefore could serve as the basis for appropriate comparative analyses are rare, individual surveys are either partial and rely on voluntary data or on data that the analysts themselves collect by desk research. The sources usually include a mixture of statistical figures, results of questionnaire surveys, peer reviews, estimates and data obtained from various targeted surveys. Indeed the reliability of the data is a critical component of the studies that compare university performances.

Finally, let us examine the results of these comparative studies. Rankings are a very popular product of such investigations. It usually consists of a quantified result, which is the result of a synthesis of individual indicators. (In other words, qualitative indicators are made measurable and quantifiable.) The highest achievers form the category of “top universities”. A part of these classifications aim at separating groups of excellent, good, ... and poor universities according to specific indicators. In some other forms of classification, groups are identified but no hierarchy is set up inside the groups. In that latter case the so-called benchmarking method can be applied. Benchmarking means examining the elements of a group relative to a well-determined unit. Typically the benchmark is a certain unit (university) that is considered as excellent and other universities can be easily compared to it by examining the same indicators (and it is also possible to tell how universities that perform less well at the moment could catch up). Yet another option is to define a set of indicators (including qualitative ones), collect data about them and then map the institutions (or degree programmes) concerned on the basis of those data without making value judgments about them.

It is regrettable that methodologically speaking, the majority of rankings and classifications made public are not scientifically sound; they do not pass the test of serious statistical requirements (for instance, the size of samples examined with questionnaire surveys is not big enough to be representative; and advanced multivariate descriptive or analytical methods of statistics are rarely applied).

Below we take a closer look at some of the often-quoted comparative surveys. Please consult the following table that includes the main dimensions of such surveys. The abbreviations used in the table will be explained as we go.

Table 1: Rankings and classifications

	Range	Aim	Method
THES	International	Rankings	Weighting
AWRU	International	Rankings	Weighting
Webometrics	National/International	Rankings	Weighting
CHE	National	Comparison/Rankings	Benchmarking
CHEPS	EU	Mapping	Statistics
Carnegie	National/International	Comparison	Statistics

3. University classifications

There is ample Hungarian literature on rankings. Most recently *Közgazdasági Szemle* carried an interesting debate on them⁴ with a lot of details. Let us first introduce the main features of two well-known rankings and one less known (also to illustrate what we said in Part 2 above), and then we will make some general observations.

The Times (of London) has been carrying educational rankings for a long time. The *Times Higher Education Supplement* (THES) is also published yearly in a book. The THES intends to show international university excellence in a balanced way on the basis of four criteria: international reputation, education, research and internationalization.⁵ Table 2 shows the methodology of their measuring and how they are condensed into a single indicator. It is quite obvious that both the methods and indicators are highly questionable. The questionnaire used is entirely subjective (the author of this paper can tell from first-hand experience), it is not representative and the way it is processed is not known. The staff/student ratio is one of the most controversial indicators in this field. The citation index is also widely criticized. That having been said, the THES rankings are well known and broadly accepted.

Table 2: Components of the *Times Higher Education Supplement* (THES) rankings

Academic Peer Review	Points determined on the basis of questionnaire survey (in five categories)	40%
Employers' opinion	On the basis of questionnaires sent out to employers	10%
Staff/student ratio	Statistical figure	20%
Citation index of staff	Meant to evaluate research accomplishment; corrected for size of staff	20%
International mix of staff	Ratio of non-resident staff	5%
International mix of students	Ratio of non-resident students	5%

A highly successful list of recent years is the the so-called Shanghai Rankings, so named because it was elaborated by researchers of a university in that city. Officially it is called the Academic World Ranking of Universities⁶, so its name refers to academic excellence. It explicitly focuses on research excellence. As commissioned by the Chinese Government, Chinese researchers sought ways and means to raise Chinese universities to the high echelon of the universities of the world. They concluded that the key factor

4 TÖRÖK, Ádám 2008. A mezőny és tükröképei. Megjegyzések a magyar felsőoktatási rangsorok hasznáról és káráról (The Field and its Reflections. Observations on the Benefits and Disadvantages of Rankings in Hungarian Higher Education). *Közgazdasági Szemle*. 874–890.

FÁBRI, György 2008. Magyar felsőoktatási rangsorok – tíz év tükrében. Hozzászólás Török Ádám cikkéhez (Rankings in Hungarian Higher Education – Ten Years On). *Közgazdasági Szemle*. 1116–1119.

5 THES 2010. THE World University Ranking. <http://www.timeshighereducation.co.uk/> (5 February 2011)

6 ARWU 2010. Academic Ranking of World Universities. <http://www.arwu.org/index.jsp> (5 February 2011)

is research and that scientific prizes and publications are the best tools to measure that. That is where China needs to make a breakthrough. How does the Shanghai Rankings compare with other such lists in the early years of the 21st century? It was compiled with an immense effort and in part by reliance on the Internet. It carries data about the most prestigious universities. As it turned out, the media “discovered” their list, then politicians reluctantly began to pay attention and eventually the universities also began to take it seriously. Although it is commonly known that the workplace of Nobel Prize laureates tells little about the quality of the university from which graduated, and that the analyses of published papers – especially if they only take into account science and life science papers – may offer distorted results, the Shanghai Rankings started a career of its own.

ELTE University Budapest is the only Hungarian institution of higher education that has been among the world’s top 500 universities since 2003 in every consecutive year. Since 2005 it has been between the 300th and 400th places.⁷

Table 3: Components of the Academic World Ranking of Universities (ARWU)

Alumni winning Nobel Prizes and Fields Medals	10%
Staff winning Nobel Prizes and Fields Medals	20%
Highly-cited researchers in 21 subject categories	20%
Articles published in the journals <i>Nature</i> and <i>Science</i>	20%
Articles featuring in the Science Citation Index-Expanded and the Social Science Citation Index	20%
Per capita academic performance on the indicators above	10%

The question arises: obvious as the shortcomings of those rankings are, why are they so widely quoted in the academic world? Few rational explanations can be found—apart from the psychological and commercial ones. It is a viable explanation that usually the universities in the top 25 places of every rankings are the ones that are considered the best also by academia. That fact apparently lends legitimacy also to the universities that are placed below. Moreover, there is the argument that “what else should be used?” and “everyone uses them”. Note that the majority of people who refer to those rankings use second-hand information or are clearly unfamiliar with the way those rankings are compiled.

This cult of rankings has been criticized from various circles, including the universities that top the charts. They say the rankings may push universities in undesirable directions. Instead of fulfilling their original mission, they redesign their programmes to produce attractive indicators for the rankings, which in turn will distort the utilization of their resources.

⁷ ARWU-ELTE 2010. Academic Ranking of World Universities.
<http://www.arwu.org/Institution.jsp?param=Eotvos%20Lorand%20University> (5 February 2011)

Europe is frustrated as its universities do not perform well in the rankings. The European Union has made numerous initiatives to improve the prestige of European universities, including the U-Multirank project.⁸ Based on sound methodology, it offers appropriate techniques to handle the situation.⁹ We will offer information about the Mapping Diversity programme in Part 4 below.

Are there rankings that are based on a more robust methodology? The Center for Measuring University Performance (CMUP) that is based in the United States has compiled a list of the best American research universities.¹⁰ The list heavily relies on the value of grants won by individual universities. Where experts evaluate the personal achievements and the worth of publications, the indicator concerned cannot be mistaken or distorted. Other indicators that the CMUP applies are the number of instructors with academic qualifications, the number of doctoral diplomas issued and postdoctoral jobs and, finally, the entrance examination results (SAT score) of the students admitted. The related table is not shown here to save space but it can be found on the website of.¹¹

Let us have an example of rankings that apply techniques of the 21st century. The Webometrics rankings¹² consists of four components: size (20%), which in this context means the number of websites found with four of the best-known Internet search engines; visibility (50%), which means the number of external links, about which information is obtained confidentially from said four search engine companies; the aggregate size of rich files (in pdf, ps, doc, ppt format) uploaded on websites, files that document the scientific activities done (15%); the number of appearances in Google Scholar and the value of citations (15%). This approach is totally different from the conventional ones.

Finding a reliable methodology for setting up realistic rankings is not only on the mind of European academia. A group recruiting experts from all over the world¹³ has been set up for the purpose. They hold conferences and intend to work out the required theoretical foundations. Their declaration¹⁴ identifies the following requirements: when such rankings are compiled, the universities' varying missions, cultural and historical traditions should be taken into consideration; output figures should form the majority of indicators, and the mathematical formula of the indicators should be transparent; all data should be verifiable; the presentation and interpretation of data should comply with the international standards.

8 U-Multirank 2010. Multi-dimensional Global Ranking of Universities: a Feasibility Project. <http://www.u-multirank.eu/> (5 February 2011)

9 Cherpa-Network 2010. U-Multirank: Interim progress report. Preparation of the pilot phase. November 2010. <http://www.u-multirank.eu/project/U-Multirank%20Interim%20Report%202.pdf> (5 February 2011)

10 CAPALDI, Elisabeth D. – LOMBARDI, John V. – ABBEY, Craig W. – CRAIG, Diane D. 2009. The Top American Research Universities. 2009 Annual Report. The Center for Measuring University Performance. Arizona State University.

11 TARU 2010. Top American Research Universities. <http://mup.asu.edu/> (5 February 2011)

12 Webometrics 2010. Ranking Web of World Universities. <http://www.webometrics.info/> (5 February 2011)

13 IREG 2010. Observatory on Academic Ranking and Excellence. <http://www.ireg-observatory.org/> (5 February 2011)

14 Berlin principles 2006. Berlin Principles on Ranking of Higher Education Institutions. <http://www.ireg-observatory.org/pdf/iregbriefhistory/berlin2006.pdf> (5 February 2011)

4. University classifications

Even those who have reservations about the rankings tend to show interest in the classification and mapping of universities. Classification can occur globally or at the level of a (major) country. If research and its excellence (which can be defined in a number of ways) are used as an indicator, the research university offers itself as a statistical category. Can that really be handled statistically? We have yet to get used to that.

The Carnegie Classifications has been used in the United States for years and is widely acknowledged. The Carnegie Foundation produces and publishes it. It is based on carefully collected data, and the principles of data collection have undergone repeated minor changes over time. Numerous scholarly articles and papers have been published about the philosophy of its data collection, the purposes of these analyses and the results themselves. This classification is based on voluntary data disclosure from some 4 400 higher education institutions of the United States.¹⁵ As those institutions widely vary in size, owner, mission and the disciplines covered, it would be unwise to compare them directly. For that reason the institutions are assigned into categories and the rankings are made inside those categories.

Let us use as an example the some 400 universities that issue PhD diplomas. Their enrolment accounts for about a third of the US student population. The institutions in this category are further differentiated according to various criteria: PhD diplomas are issued in a single discipline only (a sub-category here refers to universities whose doctoral school only covers education) and those where the doctoral schools cover several disciplines (a sub-category here is the universities that issue PhD diplomas in medicine). Another category is for universities that only offer doctoral training in social sciences. As a rule there is a statistically relevant number of universities in each category. (For instance, one of the broader categories covers universities that train 20% of the students of the United States, while universities that only issue PhD diplomas in social sciences only account for 1% of the student body, but even that category includes enough entities to have its own rankings.)

If we intend to make comparative analyses with scholarly precision, the Carnegie system is the ideal example. You can spend a long time browsing the various comparative lists on the relevant website (Carnegie 2010). Why is this example not easy for other countries to follow? As a rule the countries lack enough universities to make all the various minor categories statistically relevant. But even if that criterion is met, it is still difficult to emulate the readiness and discipline in data gathering that the Carnegie system has established.

The tables of the Universities Research Association¹⁶ enable us to analyse individually and compare in time series the data of 82 universities (that cooperate especially in

¹⁵ Carnegie Classification of Institutions of Higher Education 2010. <http://classifications.carnegiefoundation.org/> (5 February 2011)

¹⁶ URA 2010. Universities Research Association. <http://www.ura-hq.org/> (5 February 2011)

physics and chemistry) of the United States and four other universities (McGill, Toronto, Pisa and Waseda). The data about Columbia University (Table 4) can illustrate that point. The purpose here is benchmarking and offering opportunities for analyses rather than establishing a ranking order.

In the early years of the 21st century certain European countries began to espouse the principles on which these rankings are based. Germany has begun to build a similar system.¹⁷ Commissioned by the German Government, the Center for Higher Education Development first compiled a database that can be handled interactively to inform German secondary school students, their teachers and parents. Later on other functions were added and, as from 2008, rankings are also made.¹⁸ See for instance Bergoff et al 2010. As each visitor to such websites looks for a school that is the most suitable, information can be appropriately filtered to focus on relevant information on universities and their requirements. Hungary's Felvi-system¹⁹ also includes similar functions.

The motto of the Classification of European Institutions of Higher Education project is "Mapping Diversity". The Higher Education Research Institute of the University of Twente²⁰ conducted that project between 2006 and 2008.²¹ The European Union supported that major three-stage scheme. Since then further research has been launched as relying on the final report²² but the results are not known yet – perhaps also because the press has not found them as easily digestible and "sensational" as the motley rankings.

17 CHE 2010. Center for Higher Education Development.
<http://www.che.de/cms/?getObject=303&getLang=en> (5 February 2011)

18 See for instance: BERGOFF, Sonja – BRANDENBURG, Uwe – CARR-BOULAY, Diane – HACHMEISTER, Cort-Denis – LEICHSENING, Hannah – ZIEGEL, Frank 2010. Identifying the Best: the CHE Excellence Ranking 2010. Working Paper 137. Gütersloh. October 2010.

19 Felvi 2010. http://www.felvi.hu/felveteli/ponthatarok_rangsorok/rangsor (5 February 2011)

20 CHEPS 2010. <http://www.utwente.nl/mb/cheps/> (5 February 2011)

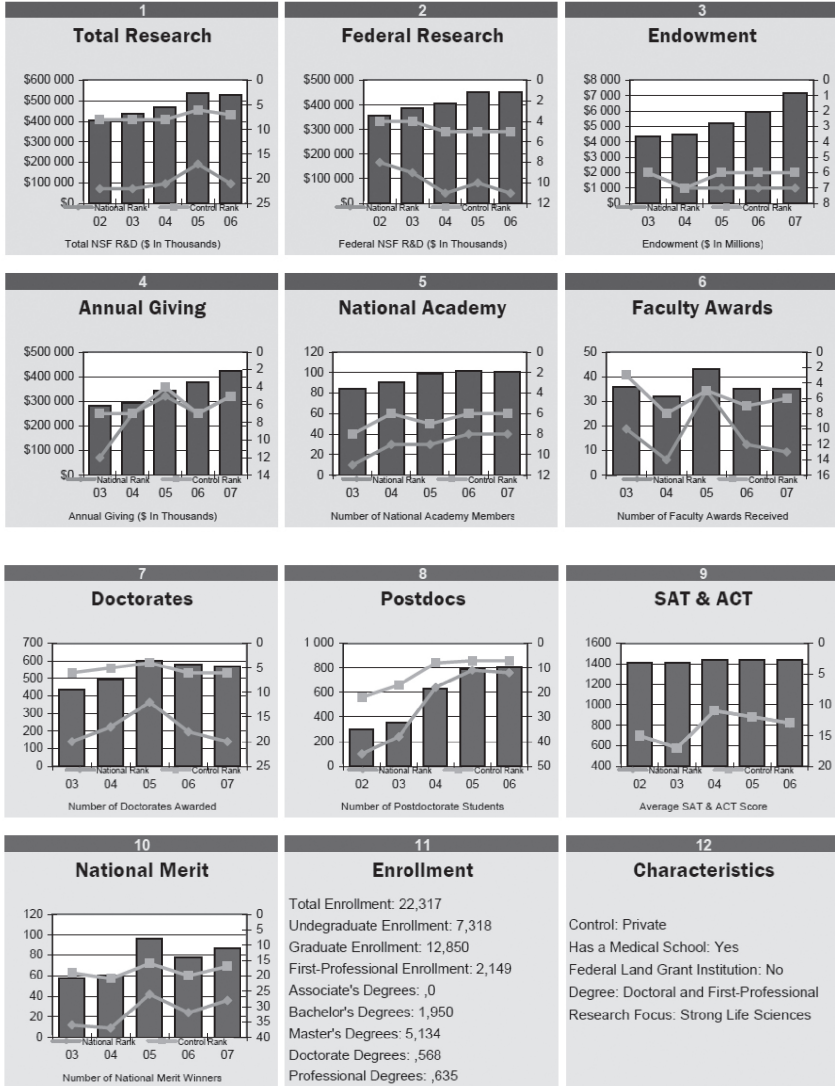
21 CEIHE 2010. Classification European Institutions of Higher Education.
<http://www.utwente.nl/mb/cheps/research/projects/ceihe/> (5 February 2011)

22 Mapping Diversity 2008. Developing a European Classification of Higher Education Institutions. Project Report. Enschede.

Table 4: Universities Research Association: the Case of the Columbia University

Columbia University

2008



5. Clubs and leagues

Groups of universities can also be formed by setting up “clubs”. After all, the idea of clubs has always been appealing for the elite. Research universities have formed various organizations in several continents. Below we will not talk of the best-known ones; instead, our aim is to show some typical global and national examples. The founders usually have a firm and unquestionable idea of what a research university is in that continent, region or country and then they establish rigorous criteria for admitting members to their club.

Among the European voluntary leagues let us mention the League of European Research Universities²³, which was founded in 2002 by 22 research-intensive universities in the form of a consortium. (Its members include Barcelona, Cambridge, Edinburgh, Leuven, Imperial College, Strasbourg, Utrecht and Zurich). That group has a student population of 550 000, of which 50 000 are doctoral students, and year by year they issue 55 000 Master’s degree and 12 000 PhD diplomas. Their total budget reaches EUR 5 billion, of which over EUR 1 billion was won as a competitive research grant, and EUR 1.25 billion was earned from contractual research projects. As many as 230 Nobel and Field Prize laureates have graduated from or are working for the LERU universities. Their cooperation focuses on research.

In Australia the Group of Eight²⁴ rallies the leading universities: Adelaide, Australian National, Melbourne, Monash, New South Wales, Queensland, Sydney and Western Australia. It is a coalition for the accomplishment of shared goals, including research. The non-traditional universities – founded in the 1960s and 1970s – define themselves as the group of research- and innovation-intensive universities (Flinders, Griffith, LaRobe, Murdoch, Newcastle, James Cook and Charles Darwin).

The benefits of setting up such groupings has also be recognized in Eastern Asia. The Association of East-Asian Research Universities²⁵ was formed in 1996 and has 17 members: leading universities of the PR of China, Japan, Hong Kong, the Republic of Korea and Taiwan. (For instances, the Taiwan International, Seoul, Tsinghua, and Tokyo Institute of Technology.)

Global leagues of research universities have also been founded. Examples include the International Alliance of Research Universities²⁶, which has ten members (Australian National, Zurich, Singapore, Beijing, Berkeley, Cambridge, Copenhagen, Oxford, Tokyo and Yale). The shared functions include accomplishing research projects, applying for grants, organizing summer courses and issuing diplomas.

23 LERU 2010. League of European Research Universities. <http://www.leru.org/index.php/public/home/> (5 February 2011)

24 Go8 2010. Group of Eight. <http://www.go8.edu.au/> (5 February 2011)

25 AEARU 2010. Association of East-Asian Research Universities. <http://www.aearu.org/> (5 February 2011)

26 IARU 2010. International Alliance of Research Universities. <http://www.iaruni.org/index> (5 February 2011)

Various approaches are known at the national level. In Germany the institutions may apply in several rounds for the title of research university and centre of excellence, and for obtaining considerable grants. In the United Kingdom research excellence receives generous support in a system where applicants have to satisfy a complex set of indicators. In The Netherlands training is done both at research universities and (practice-oriented) universities of applied sciences. In Hungary the first time when universities could apply for the title of research university was in 2009 and five institutions won that title (the Budapest Technical University, Debrecen, ELTE, Semmelweis and Szeged), while another five universities received the title of outstanding (Corvinus, Miskolc, Pannon, Pécs and Szent István University). The grants do not stand comparison with their Western European counterparts.

6. Conclusions

Research excellence can only be defined in an international context, and that explains the need for global rankings and classifications. Measuring research excellence must include, alongside the objective data and accomplishments, traditions and tacitly adopted common values. Research has to appear as a national priority in higher education policy and higher education strategy. Countries that lack (research) universities of international reputation cannot fare well in international economic competition either.

Time, energy and plenty of money are needed for research universities to become strong. It is a priority to ensure the appropriate financing of research at the universities. Research universities excel also in the field of training, especially with their doctoral programmes. Unless efforts are made continuously to expand and generously support the doctoral programmes, a university cannot do advanced research and gifted people are bound to go elsewhere. The business sector should be involved in the financing of research. For that end, interested businesses should receive tax benefits and targeted support. Additional resources can be found in European Union programmes. If Hungary intends to develop, it is inevitable that it must raise the standards of its higher education and research, pay professors appropriately, upgrade university infrastructure with state support, ensure academic freedom and make the management of universities professional. Such steps should be taken alongside ensuring for universities a proper social status and that society could have control over the work of universities. The first step in the right direction was made when the first titles of research university were conferred.

It is evident that the universities should contribute to these efforts their high-quality accomplishments, which rank well internationally. That is where the international rankings and classifications can play a role. Whether we like them or not, it would be a mistake to think that we can afford sitting on the fence and shunning them. Participation is the best strategy: we should join those who shape them and feature in them.