

Professor Marek Kwiek
Center for Public Policy Studies, Director
UNESCO Chair in Institutional Research and Higher Education Policy
University of Poznan, Poland
kwickm@amu.edu.pl

Poland: A post-communist high participation system

(Forthcoming in:
High Participation Systems of Higher Education,
ed. by Brendan Cantwell, Simon Marginson and Anna Smolentseva,
Baltimore: Johns Hopkins University Press, 2018)

Introduction

Among the eight High Participation Systems (HPS) studied in this book, Poland is a high middle income country. Its leap in the Gross Tertiary Enrolment Ratio (GTER) in the last two decades was the highest among the eight systems, from 32 per cent in 1995 to 71 per cent in 2013, almost 40 per cent in less than 20 years (see Chapter 1, Table 1.1). The changes in society and economy in Poland in the last two decades have been as fundamental as the changes in higher education participation. The two are strongly interrelated. The growth in the proportion of the population with completed higher education programs, as illustrated by the difference between 25-34 year olds (43 per cent) compared to 55-64 year olds (14 per cent), was the highest in Poland of all the eight countries (see Chapter 1, Table 1.5). This substantial generational difference in the holding of qualifications shows the scale of change in tertiary educational opportunities between the pre-HPS communist era of the 1980s and the HPS era in the post 1989 period.

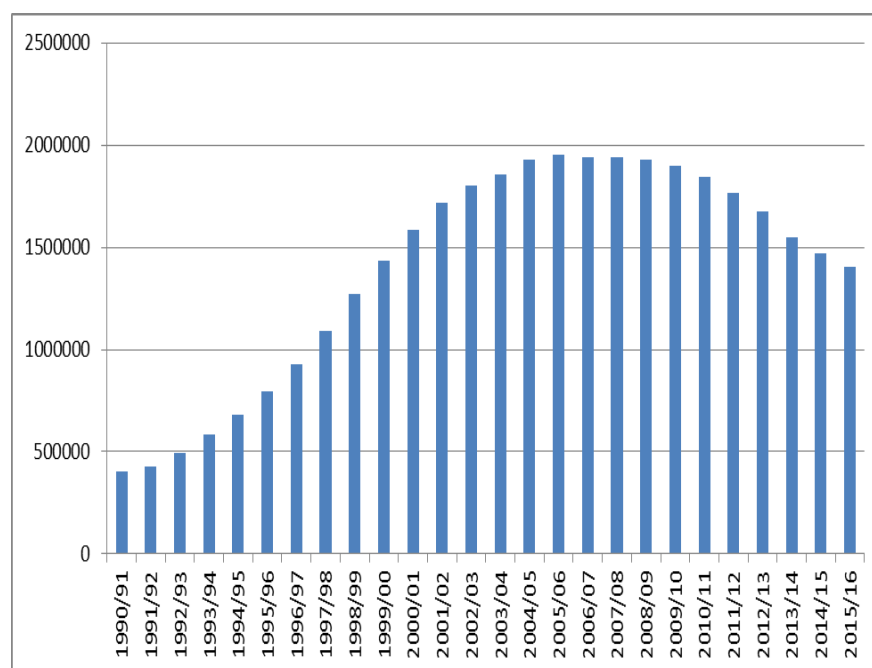
This Polish case study was prepared in the light of the generic findings about HPS presented in Part I of *High Participation Systems of Higher Education*. This case of a formerly communist country changing into a market economy and a liberal democracy, entering the NATO, the OECD and the European Union, while at the same time changing from a low participation system to a HPS, constitutes an interesting testing ground for the HPS hypotheses outlined at the beginning of the book.

Poland has undergone change processes typical of Central and Eastern Europe. The communist legacy in higher education funding and organization generated similar challenges across the region. Polish higher education system stagnated in the 1970s and 1980s, being stable in both quantitative and qualitative terms. The numbers of institutions, students, and academics were relatively constant. The system was state-coordinated, binary in terms of university and non-university sectors with both located in the public sector, publicly governed and publicly funded (Kwiek, 2017; Pinheiro and Antonowicz, 2015). Prior to 1989 universities were conceived as major change agents designed to redress social inequality, while at the same time subject to strong political supervision and state coordination (Szczepański, 1974). The target was a change in the

social composition of the educated social strata. Centrally planned higher education was also expected to serve the centrally planned economy. The principle of full employment combined with the principle of carefully planned supply of qualified workers to the closed, national labor market was a key factor limiting the massification of higher education. Massification was postponed for different reasons, including political ones: between mid-1970s and 1989, university academics were increasingly involved in anti-communist opposition movements, and research and technologies were developed in the research institutes sector and in the Polish Academy of Sciences, both without students. Access to higher education was heavily restricted.

One result was that when massification processes were finally set in motion in the 1990s, they could hardly be stopped (Siemińska and Walczak, 2012). Increased social aspirations for higher education among the lower social classes, along with ever-present high social aspirations of the former intelligentsia, now turned into the middle class, have fueled growth ever since 1989.

Figure 1. Higher education enrollments in Poland, 1990-2015.



Source: GUS (2016) and previous editions.

According to the general HPS Proposition 3: ‘*Once transition from a primarily agricultural economy is achieved, the long-term growth of High Participation Systems (HPS) is independent of political economic factors such as economic growth and patterns of labor market demand, patterns of public and private funding of higher education, and the roles of public and private institutions; and system organization and modes of governance*’. In contrast to the OECD area as a whole, the Polish system has both massively expanded and is now heavily contracting (Kwiek, 2016d). This is rooted in a major decline in the birth rate in the early 1990s. Between 2013 and 2020-2025, the number of people aged 20-24 decreases by 904,900 and by 2035-2040 the decline will be 1.013 million (GUS, 2014, p. 152). Yet while the system shows the signs of saturation, the long-term growth of the participation rate seems inevitable.

In certain respects, the Polish system is exceptional from a global perspective. In the last generation it became dual in the sense of public-private, highly differentiated, strongly marketized, and hugely expanded. After that it came under exceptionally heavy pressure due to the declining demographics, Poland being the fastest ageing society in the European Union. Total enrollments have fallen from 1.95 million in 2006 to 1.41 million in 2015 though the age group participation rate has continued to increase. The effects of the marked contraction in absolute student numbers (see Figure 1) have been to make the Polish system more public, less differentiated and less marketized. The HPS in Poland seems to have found its own idiosyncratic way to develop. In the 1990s and 2000s it was a perfect example of privatization processes, with ever more private providers, more private funding and more fee-paying students in both sectors. In contrast, in the last decade it has become a remarkable historic example of a de-privatization process, especially in financial terms (together with Romania, Bulgaria and Estonia, Kwiek, 2016a; see Szadkowski, 2017 and Marginson, 2016d on the operationalization of the public/private distinction).

The expansion of the Polish HPS, in terms of student numbers and growth in number of private institutions, was largely uncoordinated. At the end of the communist period in 1989 the gross enrollment rate in higher education (UNESCO/OECD tertiary type A education, only Bachelor and Master levels, distinct from postsecondary education) was about 10 per cent. Three years later in 1992 it was already 15.5 per cent and it reached 51.1 per cent by 2007. The drivers of this change included powerful social pressures, rising demographics, a new capitalist labor market with growing private sector employment and concurrent requirements for a more educated labor force, a laissez-faire public policy towards the quality of the emergent private sector in higher education, and the willingness of the academic profession to be directly involved in the institutional growth of both public and private sectors (Antonowicz et al., 2017; Kwiek, 2013; Dobbins, 2009; Bialecki and Dąbrowa-Szeffler, 2009; Kogan et al., 2011).

The role of the state has also changed during the post-communist period and has done so twice. The explosive growth after 1989 was manifest in both an increase in size and an increase in the complexity of governance and funding. Massification created the need for new coordination mechanisms. There was a quarter of a century of large-scale structural changes intended to replace communist-period governance arrangements with new ones, mostly in an incremental manner. At this stage, no academic revolution occurred, but incremental changes gradually led to a new system based on new governing and funding principles. However, more far-reaching changes were introduced recently, in the 2009-2012 wave of reforms (Kwiek, 2016b). These signaled the second change in the role of the state. When in the 1990s the Polish system became more market-driven and differentiated along public-private lines the role of the state was rendered weaker than in the communist era. Nevertheless, the state, through its Ministry of Science and Higher Education (MoSHE) has been gradually regaining power since 2005, when a new law on higher education was introduced, and especially since the 2009-2012 reforms. Interestingly, 'de-privatization' has coincided with stronger central control, but state control has also taken a new form. The role of quasi-state intermediary agencies has grown, while at the same time, these agencies exercise a

closer control over academic work than did the earlier form of direct state administration (Antonowicz et al., 2017).

At the level of the institution, while overall enrolments and the role of government have fluctuated, there has been a long term trend to consolidation and strengthening of the position of the large multi-disciplinary public research universities or ‘multiversities’ (Kerr, 2001) in the Polish system. There are currently 18 universities and polytechnics with enrollments exceeding 20,000, including three universities with about 40,000 students (University of Warsaw, Jagiellonian University in Cracow, and University of Poznan). The Polish system in 2015 consisted of 415 institutions (132 public and 283 private): 19 universities, 23 polytechnics, 7 universities of life sciences, 67 of economics, 14 of education, 9 of medicine, 6 of physical education, 22 of arts, 15 of theology, and more than 200 other institutions. Recent demographic pressures reduce the number of private institutions (from 330 in 2009 to 265 in 2017, POL-ON, 2017), and national policies strongly support mergers of public institutions, with very limited success so far. The conversion of mission goes in several directions: polytechnics become more comprehensive by range of fields of study (seeking new students, especially females), and universities turn to applied research, apart from basic research (seeking new public funding).

Governance: Towards multi-level arrangements

The HPS governance Proposition 1 states that ‘*High Participation Systems (HPS) are governed by multi-level control, coordination, and accountability mechanisms*’. After 2009, within the framework of the so-called Kudrycka reforms, the Polish system was reconfigured on the basis of multi-level governance, with new intermediary coordinating institutions situated between higher education institutions and the state. The new national bodies included two independent and publicly-funded national research councils, one for fundamental research (Narodowe Centrum Nauki, NCN) and another for applied research (Narodowe Centrum Badań i Rozwoju, NCBR); the renewed Polish Accreditation Committee (Polska Komisja Akredytacyjna, PKA); and the national Committee for the Evaluation of Scientific Units (Komitet Ewaluacji Jednostek Naukowych, KEJN). In association with this change, an amendment to the law on higher education of March 18, 2011 introduced new rules of the academic game in both governance and funding. Financing of public higher education and academic research became more directly linked to measurable research productivity.

In the wake of the 2009-2012 reforms major aspects of funding and organization were moved from the level of the state to the intermediary level of the new agencies. The two national research councils allocate funding on a competitive basis to individual academics and research teams, as well as to companies in the case of the NCBR, for research in all areas. The accreditation committee (PKA) evaluates and accredits study programs and institutions across the whole of the public and private sectors. The evaluation committee (KEJN) provides a large-scale, periodical assessment of the research output of all 963 basic academic units—these are usually situated at the level of faculty, in the case of higher education institutions—through sophisticated periodical ‘parameterization’ and ‘categorization’ exercises (Kulczycki, 2017). These exercises took place in 2013 and 2017. The new bodies either directly allocate public funding, in

the case of both national research councils; or provide input to the MoSHE in the form of scores for study programs and basic academic units which are then linked to public subsidy levels, as occurs with the two accreditation and evaluation committees, the PKA and KEJN.

The Polish system is coordinated, funded, organized and governed in a homogenous way. All public sector institutions are funded centrally through subsidies by the state through MoSHE. Research in public institutions is funded centrally through subsidies based on the assessments of an intermediary agency, the KEJN, as well through grant funding as the results of national competitions for research funding available from the NCBR and the NCN. The mechanisms of coordination operate at one basic level, the state. There are national salary brackets, national teaching loads, a national student aid system, and a national system of academic titles and degrees. Full professorships are awarded centrally by the Central Committee on Academic Degrees and Titles and nominations are signed by the President of Poland. However, the state has diminishing power in organization and management of individual institutions and in allocating public funding. The role of the four intermediary peer-run agencies is heavily increasing, as is the role of students as consumers, with consumer rights guaranteed by the state. Institutions are becoming ever more accountable to the state, through the new intermediary agencies to which they report, and academics ever more accountable to both their own institutions and the research councils sponsoring their research.

The HPS governance proposition 3 states that '*Complex multi-level accountability and coordination, coupled with system differentiation, result in higher education institutions adopting increasingly corporate forms and robust internal governance and management capacities*'. Until 2011 the state in Poland, through the MoSHE, was directly involved in coordinating higher education. In the new governance architecture, higher formal autonomy for self-managing institutions and academics is combined with higher levels of accountability. The new intermediary agencies are, in principle, independent from the state in that they are either directly managed by academics elected by the academic community at large or indirectly influenced by academics through their governing boards. Hence either directly or indirectly, the four new agencies are managed and/or governed by academics through their democratically elected representatives. There is, however, a substantial cost for the more autonomous institutions, in that various aspects of university functioning are subject to rigorous systems of reporting, while there is an increasing bureaucratization of the whole system. This has provided a framework for processes of corporatization parallel to those emerging in many countries. Though corporate reform is very high on the policy agenda, the traditional Polish academic collegiality has so far retarded the change process (Kwiek, 2015b). However, the corporatist direction of the reforms proposed in 2017, in the context of an increasingly competitive national system, is unmistakable.

Increasingly, academic outputs in both teaching and research are being assessed, benchmarked and linked to public funding levels, at the aggregate level in the case of basic academic units, and at an individual level in the case of project-based research funding. Not only have research grants been rendered competitive, public subsidies for each of teaching and research now depend on how academic units perform in comparison with other units. There is quasi-market resource allocation for academic units in which they compete for a stable amount of funding available on a yearly basis.

Detailed bibliometric assessments of individual academics and academic units, performed through a point system linked to a ranking list of academic journals, increasingly determine the level of financial resources available.

Overall, Poland is gradually implementing a performance-based research funding system (Kulczycki et al., 2017). Funding levels are linked either directly to prior research outputs, through subsidies for research allocated to individual academic units rather than institutions as a whole; or indirectly in the form of grant-based competitive funding for academics. The core of the ongoing changes lies in competitive project-based funding from the two national research councils, especially the NCN for fundamental research. Amid the changing architecture of governance, the four new agencies located in the coordination system between the universities and the state are becoming ever more crucial. Putting it in simple terms, the state leaves most funding decisions to the competitive quasi-market institutionalized in new intermediary agencies. The state continues to define the global levels of public funding for both subsidies and research projects, national research priority areas, and the primary division of funds between the NCN and the NCBR. Decisions on how to allocate research funds are taken by the academics located in the research councils.

The KEJN, the new national ‘research assessment exercise’ body formed in 2010, has been crucial for the implementation of these reforms. Consisting of experts elected by the academic community and nominated by the Ministry, its role is a comprehensive assessment of research activities conducted in all ‘basic academic units’ (institutes of the Polish Academy of Sciences or PAS, research institutes and mostly faculties in higher education institutions), with the assessment largely carried out through bibliometric tools. The assessment process is termed ‘parameterization’ and leads to the categorization of all academic units, with the final assessment is presented on a four-point scale: A+ (national leaders), A (very good level), B (acceptable level) and C (unsatisfactory level). For a given unit assessed by KEJN, the level of a state subsidy for research is directly linked to the final assessment. The Ministry publishes a list of units with their respective categorization. The successive rounds of parameterization, leading to official categorization by the Ministry, have proven to a powerful instrument of stratification of the Polish higher education sector. The assessment process also tends to be reproductive of the stratification it creates. Units with low categorization in 2013, and consequently lowered research funding through annual state subsidies in the years 2014 to 2017, have limited prospects of achieving higher categories in 2017. The categorization of individual academic units does not directly lead to classifications of the institutions in which those units are located, but institutional funding and status are affected indirectly. The top higher education institutions in Poland house mostly A-category and A+category faculties, together with varying numbers of B-category units. The PAS sector comprises 68 institutes which are involved in doctoral-level education only, 80 per cent of its institutes have A+ or A categories, and its staff of 3 720 is responsible for 14 per cent of Polish publications; the PAS sector competes with the higher education sector for research grants from the NCN and in 2011-2016 it received 1.21 billion PLN out of 3.33 billion PLN disbursed, or 36.34 per cent.

The new system of coordination is associated with new tensions within institutions and between institutions, intermediary agencies and the state. Managerial-type reforms, such as an increase in the power of academic leaders, both rectors and deans, as well as

the increased role of the periodic research assessment exercises and performance-based research funding systems, have been introduced into a traditionally collegial system in which there is a very strong tradition of universities as communities of scholars. Indeed, the Polish system is one of the most collegial systems in Europe, and one that comes closest to the ideal of the Ivory Tower. Links between higher education institution and the economy are weak, as are links to society (Fulton et al., 2007). The perceived ‘index of collegiality’ for Poland is one of the highest in Europe, and the ‘index of academic entrepreneurialism’ is one of the lowest. The majority of academics perceive themselves as very influential (and somewhat influential) in shaping key academic policies at department levels but not at all influential at institutional levels (Kwiek, 2015b), with significant cross-generational differences between highly influential full professors and powerless new entrants (Kwiek, 2017).

That said, the newly introduced governance modes have strengthened both university-enterprise partnerships and the rise of tracer studies and student and graduate satisfaction surveys. The relatively large public funding allocated for the commercialization of research, mostly sourced from EU Structural Funds, have introduced new lines of accountability to EU and national-level sponsors, with specific project reporting regimes. The new intermediary agencies in Poland are in the process of learning of not only how to allocate funding on a highly competitive basis, but also how to systematically audit and assess research results. The state demands ever more measurable outputs from institutions, and inevitably, these institutions in turn demand ever more outputs from their academics. In addition, students demand ever more high quality instruction from their institutions and academics, now that they are conceptualized by the state and the private sector as ‘clients’ and ‘consumers’; overall, recent reforms construct universities as organizations rather than traditional academic institutions (Kwiek, 2016b).

Finally, the HPS governance proposition 2 states that ‘*HPS governance tends to involve the management of horizontal differentiation*’. In the Polish case, horizontal differences in institutional mission, classification, type and profile are still limited: apart from the major public/private sectoral distinction, all public institutions are involved in both teaching and research, all academics are employed according to a national system of academic posts based on academic degrees. However, with new competitive research funding, the traditional division between universities and polytechnics is being turned into a division between more research-focused and better publicly-funded universities and polytechnics on the one hand and much more teaching-focused and specialist universities (for instance, of economics or education), still more reliant on student fees from part-timers.

The increasing power of comprehensive universities

The HPS Proposition 4 on horizontal diversity states that: ‘*All else being equal, the combination of expanding participation and enhanced competition in neoliberal quasi-markets is associated with specific effects in relation to diversity, including (1) increased vertical differentiation of HEIs (stratification), (2) reduced horizontal differentiation (diversification), (3) convergence of missions through isomorphistic imitation, and (4) growth in the role of private HEIs, especially for-profit institutions*’.

The power of recent reforms in Poland lies in their ability to combine changes in governance with changes in funding (Kwiek, 2012). The heavy dependence of public universities on public funds, as elsewhere in continental Europe, leads them to gradually accommodate the new rules of the academic game. New monies come through new funding instruments. There was much more public funding available in 2011-2015 for higher education and for the university sector (see Table 2). Total operating budgets, total income from teaching and total income from research all rose compared to the previous period. All institutions, through their academic units, now compete in the quasi-market of public subsidies for research, striving for higher KEJN scores in the parameterization and categorization exercise. However, as noted, greater financial autonomy has gone hand in hand with the emergent audit culture and the new accountability mechanisms. The state-sponsored agencies directly shape academic work rather than handing over every aspect of its management to autonomous institutions.

In the contest for increasingly competitive funding the institutional winners are mostly the research-oriented metropolitan universities, especially the two flagships, the University of Warsaw and the Jagiellonian University in Cracow, and several other comprehensive universities. The role of these multiversities has grown substantially. The institutional losers are mostly the regional, teaching-focused public institutions that cater for regional and local students, located away from the major academic centers, and also the private sector of higher education, which is unable to compete successfully within the new funding arrangements.

The first HPS Proposition on horizontal diversity states that: *‘In the HPS era, regardless of the political economy and culture of systems, an increasing proportion of higher education becomes centred on comprehensive multidiscipline and multi-function research universities, or “multiversities”. The multiversity is increasingly dominant as the paradigmatic form of higher education’*. In Poland there has been a powerful concentration of all types of public funding and all types of public resources, and all national-level infrastructural investments, in research universities. In a disintegrated system structure deriving originally from the communist period, Poland’s comprehensive universities are separate not only from the polytechnics but also from specialist universities of medicine (except in the case of Cracow), economics, life sciences, education, and the arts. For instance, in Poznań there are separate public institutions which developed out of faculties of the comprehensive University of Poznań in the 1950s-1970s: University of Economics, of Life Sciences, of Fine Arts and of Physical Education. A trend toward multi-function multiversities involves current debates about within-city mergers of academic institutions.

The second HPS Proposition on horizontal diversity states that: *‘Regardless of the political economy and culture of the HPS, when participation expands there is no necessary increase in the overall diversity of institutional form and mission; and this has probably declined, except in relation to online provision’*. The concentration of enrollments in metropolitan academic centers has grown, with the eight biggest enrolling over 60 per cent of all students. There are 76 public and private higher education institutions located in Warsaw, with 243,000 students (GUS, 2016, pp. 25-27). In the period between 2005 and 2015, in the midst of contraction, different institutional types in the system experienced different trajectories. Universities and

polytechnics enrolled more than a half of all students in Poland in 2015, compared with 45 per cent in 2010. In 2015, 30.0 per cent of students were enrolled in universities, 21.4 per cent in polytechnics, 12.8 per cent in academies of economics, 5.1 per cent in agricultural academies, 4.3 per cent in medical universities, 3.3 per cent in pedagogical academies, and the rest in other institutions (GUS, 2016, p. 59). So far there has been no large-scale tendency to merge specialist universities into comprehensive multi-disciplinary institutions of the multiversity type, as was suggested in chapter 3's discussion of diversity propositions 1 and 2, but the total weight of the multi-disciplinary institutions increases. The overall diversity of institutional form, profile, type and mission has certainly decreased in the last decade.

The third HPS Proposition on horizontal diversity states that: '*As participation expands the internal diversity of multiversities tend to increase*'. Major Polish comprehensive universities seem to increasingly specialize internally in attracting ever more students and attracting ever more diversified national and international monies. Multiversities may include several highly-ranked units accompanied by several lower-ranked units. The heterogeneity of these multiversities has increased, with the separated measures of the research intensity and separate national benchmarks applied to their different constitutive elements. Flagships seem to need ever more of everything and expand in all directions simultaneously, and one natural consequence is that their units change at a variable pace. Expansion has its costs and draws on ever more quality and quantity of students, doctoral students, postdocs, grants, and publications. In the different units of multiversities there are differing emphases on teaching and research roles and these variations are associated with different patterns of funding sources.

Since 2010 the gradually changing formula for the distribution of research funding has led to the 'haves' receiving more competitive research funds and the 'have-nots' receiving proportionately less, illustrating the workings of the mechanisms of cumulative advantage and disadvantage at an institutional level (Merton, 1968; Cole and Cole, 1973). In other words, the new funding mechanisms are fueling vertical stratification, gradually leading to the emergence of two opposing families of institutions: on the one hand, those that are strongly and moderately research-oriented; and on the other, those with no research mission and no research funding.

While the distribution of resources for research was always unequal, this can now be illustrated in detail, in terms of research funding allocated by the national research council. During its first six years of operation from 2011 to 2016, the NCN funded about ten thousand research grants, with budgets totaling 3.331 billion PLN (approximately 830 million USD). The distribution of these funds indicates the new geography of knowledge production, and indicates the growing stratification of the Polish HPS, driven by competition in the research quasi-market and the regulation of 'quality' in terms of international scientific excellence.

The first HPS proposition on vertical stratification states that '*The expansion of participation towards and beyond the HPS stage is associated with a tendency to bifurcation and stratification (vertical diversification) in the value of higher education, between elite (artisanal) institutions and mass (demand-absorbing) institutions*'. In Poland the two largest national universities, the Jagiellonian University in Cracow (UJ) and University of Warsaw (UW), between 2011 and 2016 together received about

30 per cent of all research funding competitively available from the NCN, with 14.98 per cent allocated to UJ and 14.82 per cent to UW. These two institutions are well ahead of the other leading institutions in Poland. In 2011-2016 the top five institutions were awarded 46.12 per cent of all grants and the top ten received 62.99 per cent (see Table 1); and the top 20 received 80.56 per cent. There were 410 institutions in 2016 in total, but only 115 institutions were awarded NCN funding.

Table 1. The concentration of research funding - the Polish Top 10 institutions by the amount of project-based competitive research funding awarded by the National Research Council (NCN) in its first six years of operation (2011-2016). 1 USD = 4.00 PLN.

Institution	Location	Funding awarded (in million PLN)	% of Total funding awarded
Jagiellonian University (UJ)	Cracow	498.839	14.98
University of Warsaw (UW)	Warsaw	493.696	14.82
University of Poznań (UAM)	Poznań	222.613	6.68
University of Wrocław (UWr)	Wrocław	167.238	5.02
AGH University of Science and Technology (AGH)	Cracow	154.028	4.62
Wrocław Polytechnics (PWr)	Wrocław	128.850	3.87
Warsaw Polytechnics (PW)	Warsaw	126.760	3.81
University of Gdańsk (UG)	Gdańsk	124.911	3.75
Nicolaus Copernicus University (UMK)	Toruń	92.317	2.77
Łódź Polytechnics (PŁ)	Łódź	88.933	2.67

Source: own calculations based on NCN (2017) data.

What of the 300 institutional losers under the new research funding regime? These are public middle-level institutions, together with, and especially low-level public and private institutions, where knowledge production is only marginally competitive. Interestingly, out of the 963 units awarded any of the KEJN categories in 2013, only 533 received any funding from the NCN. According to HPS governance Proposition 2, *'HPS governance tends to involve the management of horizontal differentiation'*. The combination of KEJN categories and NCN funding works as a tool for the management of horizontal differentiation, with the missions of institutions defined by the number of high and low categories they receive, while at the same time also strengthening vertical stratification. The level of research funding serves as a precise system for calibrating competitive standing.

Table 2: Income of top 6 Polish universities, 2011-2015, in million PLN (1 USD = 4.00 PLN).
Growth leaders in bold.

	University of Gdańsk (UGd)	University of Poznań (UAM)	Jagiellonian University in Cracow (UJ)	Nicolaus Copernicus University in Toruń (UMK)	University of Warsaw (UW)	University of Wrocław (UWr)	Total (the university sector only)
Total operating budget							
2011	296 1120	519 472	792 658	370 516	1 037 086	381 111	5 916 606
2012	313 219	549 031	850 264	374 386	1 071 155	384 769	6 090 464
2013	353 496	610 002	946 333	407 144	1 132 558	410 237	6 529 304
2014	369 545	660 414	1 036 744	436 288	1 248 786	448 637	7 110 253
2015	401 994	701 248	1 123 350	483 590	1 318 199	472 415	7 448 954
% change	136%	135%	142%	131%	127%	124%	126%
Total public subsidies for teaching							
2011	171 376	295 821	417 673	224 227	373 944	216 530	3 146 467
2012	181 697	308 740	440 262	230 645	391 457	225 319	3 263 197
2013	198 133	344 226	504 433	256 079	447 798	244 138	3 638 974
2014	223 017	383 145	570 841	283 690	517 401	268 342	4 058 839
2015	246 500	428 128	636 492	307 172	572 410	292 476	4 453 927
% change	144%	145%	152%	137%	153%	135%	142%
Total income from fees (part-time students only)							
2011	56 168	65 799	99 136	41 788	153 036	69 375	906 102
2012	50 013	58 478	107 383	39 775	137 975	60 557	783 767
2013	44 220	50 406	106 252	36 429	127 535	53 954	708 675
2014	45 314	38 577	100 648	34 972	117 583	49 200	640 356
2015	44 260	45 749	100 850	33 821	101 500	45 619	606 830
% change	79%	70%	102%	81%	67%	67%	67%
Total income from research							
2011	34 463	65 351	126 860	42 687	329 620	53 222	853 829
2012	43 406	78 481	159 420	45 687	354 603	47 862	951 224
2013	55 463	82 487	175 279	46 877	352 809	55 211	975 837
2014	56 673	92 180	194 890	49 233	386 757	59 249	1 070 913
2015	58 950	95 126	209 785	58 316	420 299	63 327	1 126 352
% change	173%	146%	165%	135%	127%	119%	132%
Total public subsidies for research							
2011	12 514	28 382	44 491	17 424	199 823	24 120	394 488
2012	16 651	30 266	46 369	19 310	225 999	23 781	444 786
2013	18 380	29 952	40 742	17 141	213 763	19 128	418 530
2014	14 918	30 337	38 906	18 660	223 380	17 749	426 644
2015	17 337	25 016	47 459	20 301	252 346	15 622	565 200
% change	139%	88%	107%	117%	126%	65%	143%

Source: own calculations based on POL-ON (2016) data.

The increasing concentration of funding in top national institutions, which is also associated with the growing concentration of research talents and opportunities, goes far beyond competitive research funding from the NCN, however. It includes all funding categories: competitive and non-competitive, project-based and subsidies, subsidies for research and subsidies for teaching, international funding, as well as income from fees from part-time students. The Polish multiversities increasingly attract higher proportions of monies from all possible sources, compared with lower tier institutions. All funding mechanisms seem to work to their advantage; and in a contracting system, the top tier institutions attract an ever-higher share of total students. Their nominal numbers are falling but their share grows. The institutional data for 2011 to 2015 in Table 2 show in detail the changing incomes of six major Polish universities. These are the university sector's representatives in the list of top ten institutions, the other four being polytechnics. Note that the average increase in funding for the six institutions in 2011-2015 was higher than for the university sector as a whole, underlining the point that multiversities tend to attract more funds from all possible sources.

It is clear both informally and formally, through the dense system of several competing national rankings, which institutions are prestigious and which are less so. The list of top ten public universities and polytechnics has been stable in the last 10 years, with two national flagship universities in Warsaw and Cracow holding top place in the list from the very beginning of national rankings two decades ago. The effect of the recent reforms has been to render the Polish system even more vertically stratified than was the case in the past two decades, and more (quasi-) market driven in research, while also less market-driven in organizational terms, given the decreasing number of private institutions and the increase in public funding as a proportion of funding. The prestige hierarchy seems tighter and the position of the leading universities if anything seems less open to contestation from below.

The third HPS Proposition on stratification states that: *'In stratified HPS, a middle layer of institutions tends to form, shaped by the combination of upward aspirations (drift) with systemic scarcity of resources and status'*. In Poland the middle layer institutions are those with their faculties rated predominantly B by KEJN. They aspire to move up the ladder of prestige and resources but the distinction between the top layer and the middle layer institutions is made on the basis of easily measurable research intensity, and the vast majority of institutions are unsuccessful in the research-based competition for A and A+ categories and for NCN competitive research funding. The Polish case clearly testifies Marginson's (2016c, p. 2) claim that 'the research/non-research distinction always has positional implications' and that 'the weightiest distinction between HEIs derives from comparisons of research intensity'. At the very top of the academic ladder of prestige, there are two universities, the only two ranked in ARWU (in the ranks 400-500 in 2016), comprising half of all faculties highly categorized across the system, and jointly collecting about 30 per cent of all research grants from the national research council.

Social aspirations for higher education as change drivers

The first HPS Proposition on equity states that: *‘As participation expands in the HPS phase, equity in the form of social inclusion is enhanced’*. The Polish HPS clearly follows the pattern. However, Poland is distinguished from the other HPS countries in this book in that historically speaking, the most significant aspect of social inclusion is the urban/rural divide (in 2015, 60.4 per cent of the population lived in cities, and 39.6 per cent in rural areas), apart of a more international divide between parents with high and low level of education. The two divides do not coincide and therefore social mobility in Poland is related to both.

In the pre-HPS period the social distribution of access to comprehensive universities favored the children of the intelligentsia class. Between 1960 and 1990, of the three major social classes in the communist world, the rural class, worker class and intelligentsia, the enrolment shares of the intelligentsia and worker classes steadily increased while the share of the rural class was decreasing (see Table 3). In the HPS period, the share of students from the rural areas has moved much closer to the share of the population living in the rural areas. About one third of students in 2015 were of rural socio-economic origin (GUS, 2016, p. 26), compared to approximately 40 per cent of the population living in the rural areas. However, the social importance of the rural/urban divide continues. In 2013 the share of population with higher education credentials in cities was three times higher than in the rural areas, with 30.9 per cent in the cities and just 11.0 per cent in rural area. Four in every five graduates were living in cities, 82.6 per cent. The urban/rural divide also shows itself in current educational aspirations. While in the cities, 82.7 per cent of parents want higher education for their children, in rural areas that share is merely 64.6 per cent.

Table 3. The social composition of Polish students accepted to the first year of studies in 1960-1988 (in per cent).

Year	Rural	Worker	Intelligentsia	Other
1960	18.0	26.2	49.4	6.4
1970	15.5	29.9	50.3	3.5
1980	8.5	32.2	55.2	4.1
1988	6.2	31.7	59.3	2.8

Source: Wasielewski (2013, p. 32).

The third HPS Proposition on equity states that: *‘Within a national system, as participation expands in the HPS phase, all else being equal the positional structure of the higher education system increasingly resembles that of society. The HPS is increasingly implicated in the reproduction of existing patterns of social equality/in equality’*. No matter which institutional type is selected, the share of rural students (to use the urban rural divide) has substantially increased: of the students in polytechnics, 32.8 per cent were from rural areas in 2015, compared to 18.2 per cent in 1960 and 6.8 per cent in 1980. In comprehensive universities in 2015, 29.0 per cent were from rural

areas, compared to 16.8 per cent in 1960 and 7.7 per cent in 1980 (Wasielewski, 2013, p. 34).

Surprisingly, rural access to higher education of the various institutional types was relatively high in 1960, decreasing in the 1960s, 1970s and 1980s, with the lowest point in 1990, and then increasing again in the HPS era. Cross-sectional OECD data related to parental education show that the proportion of 20-34 year-olds in higher education whose parents have low levels of education in 2009 was 20.6 per cent, above the OECD average of 16.9 per cent (OECD, 2012, p. 102). Institutional-level studies indicate relatively stable patterns of selection of fields of study over time, with the constant more and less ‘ruralized’ fields (Wasielewski, 2013, pp. 112-124). As in other Central and Eastern European countries, young people from lower socio-economic strata tend to choose bachelor’s level studies, with a stronger market orientation, and in less demanding academic fields (Kogan et al., 2011, p. 336). In 2013, intergenerational social mobility in the urban/rural terms was much higher in Poland’s cities than the rural areas. In the cities almost half of the children of fathers without primary education reached higher education (46.2 per cent), as opposed to 5.5 per cent in the rural areas (CBOS, 2013a, p. 29).

HPS general Proposition 2 states that: *‘In HPS there is no intrinsic limit to the spread of family aspirations for participation in higher education until universality is reached; and no intrinsic limit to the level of social position to which families/students may aspire’*. In the HPS era in Poland, the difference in educational aspirations between the highly-educated and lower-educated families has decreased substantially. Between 1993 and 2009, a period which saw the most rapid educational expansion, among parents with vocational education, the proportion of parents who wanted higher education for their sons increased by 29 per cent to reach 82 per cent (and the proportion of inhabitants of the rural areas increased by 26 per cent to reach 82 per cent). This partly closed the gap between vocational parents and parents with higher education (and between parents from the rural areas and big cities). Among parents with higher education, 97 per cent aspired to higher education for their sons, an increase of 5 per cent in 1993-2009 (and among parents from big cities, 93 per cent, an increase of 18 per cent, CBOS, 2009, p. 8). Positional competition in society tends to spread and total social demand for higher education is rising (Marginson, 2016a; Hirsch, 1976; Brown et al. 2011). The tendency to HPS has a universal character and ‘the ambition for higher education now appears unstoppable’ (Marginson, 2016b, p. 266). It seems that also in Poland, higher education is increasingly important. Nevertheless, the last decade the share of population stating that it is ‘definitely worth it’ to ‘achieve education, to learn’ decreased radically, from 76 per cent in 2004 to 49 per cent in 2013 (see Table 4). This suggests possible educational disillusionment

Table 4. The attractiveness of education, 1993-2013.

Is it worth it currently in Poland to achieve education, to learn, or not?	Answers by year (in %)											
	1993		2002		2004		2007		2009		2013	
Definitely worth it	42	76	66	91	76	93	70	93	68	91	49	82
Rather worth it	34		25		17		23		23		33	
Rather not worth it	16	20	5	7	4	5	4	5	6	7	13	16
Definitely not worth it	4		2		1		1		1		3	
Hard to say	4	4	2	2	2	2	2	2	2	1	2	2

Source: CBOS, 2013b, p. 5.

There is a significant difference between the pioneering HPS era of 1990s, when a growing labor market was open to all newly highly educated graduates, and the stable HPS era of the 2010s when the labor market was saturated with graduates. In the first decade of growth it seemed that anything was possible. Opportunities for those with higher education, combined with personal entrepreneurialism, were seen as unlimited. Since about 2000 there has been growing disillusionment in Poland as indicated by public opinion surveys. It also comes as a warning to the Polish HPS system that for 57 per cent of Poles surveyed in 2013, ‘in general, the higher education diploma has low value in the labor market’. And 78 per cent of those people surveyed confirmed that higher education is ‘mass, everyone can study’ (CBOS, 2013a, pp. 2-7). One reconciliation of this tension between access for all, and the perceived value of higher education credentials, is to increase the vertical stratification of the system so that some credentials retain value. As discussed, the present reform agenda has a stratifying effect.

Finally, the second HPS Proposition on stratification states that: ‘*The tendency to institutional stratification is magnified by features common (though not universal) among HPS including (a) intensified social competition for the most valuable student places, (b) variable tuition charges, and/or (c) intensified competition between institutions*’. In Poland, social competition for the most valuable student places in most prestigious institutions is clearly increasing. However, as elsewhere in HPS, the intensity of that competition (which occurs in full-time taxation-financed studies in the public sector only) is highest in the traditionally least accessible faculties of law and, outside of comprehensive universities, the faculties of medicine in specialist universities. For instance, in 2016 there were on average 16.8 candidates per vacancy in medical studies. There are no admission tests or interviews and the scores from standardized national secondary education final exams are used instead. In 2016, the highest number of applications were filled for computing, management, law and psychology, the highest number of applications per vacancy was in four polytechnics (in Warsaw, Poznań, Gdańsk and Łódź), followed by University of Warsaw. Thus the most valuable student places are located in selected metropolitan universities and polytechnics, in selected study programs within these institutions. High selectivity in some faculties goes hand in hand with almost open access in numerous faculties even in most prestigious institutions. Dozens of study programs are fully accessible to first-

year students every year at comprehensive universities, including the two flagships. In other words, the primary social stratification of opportunity in higher education in Poland is centred on disciplines, but disciplines that are provided in specific institutional contexts

Final thoughts

Taking account of the continually growing family aspirations for higher education, which have been expressed by all socioeconomic strata in the post-1989 HPS era, the further expansion of participation seems unlimited. Given that the HPS in Poland has become transformed into a demand-driven system that is also highly stratified in the vertical sense, there seems to be no political, social or economic rationale to keep anyone out of it.

However, while indeed there may be no limits to growth of the Polish HPS, there are clear limits in other components of what Marginson terms in chapter 6 as the ‘specific social *assemblage* of family/state/education/ economy with nationally distinctive features’, especially limits in the economy. The number of bad jobs still exceeds the number of good jobs. For graduates this scarcity of middle-class jobs seems still inevitable. Prestigious and well-paid jobs are limited in number in every society. As Brown and colleagues argue (2011, p. 135): ‘There are simply too many people wanting to make the same life journeys that depend on educational and occupational success’. In Poland there is increasing social congestion in the competition for decent jobs. As the above-cited public opinion surveys show, the HPS society is aware that new educational opportunities do not necessarily led to new occupational opportunities, and the expectations from the 1990s cannot be met in the 2010s and beyond. In that respect the Polish high participation society seems realistic.

Higher education on the one hand is a ‘positional advantage’ (Smolentseva, 2016) in a race for middle-class jobs and lifestyles, and on the other a ‘defensive necessity’ (Hirsch, 1976, p. 51) in a competitive social environment. As Hirsch (p. 51) argues, ‘as the average level of educational qualifications in the labor force rises, a kind of tax is imposed on those lacking such qualifications, while the bounty derived from possessing a given qualification is diminished’. In the Polish case, the two approaches come together: the ‘how to win the race’ approach dominates when economy is good and the ‘how not to lose in the race’ approach applies when economy is bad. In the case of some jobs there is an internal competition between graduates, while in the case of other jobs there is an external competition between graduates and non-graduates, with the non-graduates inevitably losing out.

Middle class growth is probably the key to understand the evolution of the Polish HPS. The evolution of the middle class is in turn linked to the emergence of the postindustrial society and market economy, with a new distribution of jobs and prestige, totally unrelated to their once standard distribution under communism. Changes in the economy in the 1990s led to gradual changes in the social structure and, especially, in social aspirations, with not only the middle class but all social strata willing to do everything necessary to secure higher education credentials for their offspring. Every generation wants for its offspring at least the same level of affluence and prestige it has experienced, and higher education seems to be the best way to

achieve these qualities, although not the only way. Arguably, a HPS in Poland was inevitable once the social structure became transformed by the 1990s economic changes. For a quarter of a century, when there were ever more graduates, returns from higher education remained high and growing, and the system continued to expand. While in the early HPS era economic factors probably mattered more in shaping demand for higher education, in the current more stable HPS era prestige-related factors, powerful social aspirations, seem more important. The society is now realistic in its economic expectations from credentials.

Universities in Central and Eastern Europe have not been included in any of the major typologies of university governance and organization, such as those by Burton R. Clark (1983) and Robert Birnbaum (1988). The region, Poland included, finally seems to follow the global trend towards high participation. On the demand side, the advantage of participation over non-participation in higher education is becoming a social fact, social inclusion has expanded (even while educational and occupational competition for position has become harsher than ever before), and social demand and social aspirations for higher education are on the rise. All of this has been accompanied by changes on the supply side. There the elite universities are becoming more elite and, as Kerr's multiversities, they are garnering ever more prestige and ever more funding from all sources possible. They are the winners in emergent post-2011 quasi-market resource allocation; and, though it is more difficult to measure (the proxy is KEJN scores) in the allocation of prestige. As elsewhere in HPS, the steep vertical hierarchy is reinforced by a permanent state-imposed and peer-run comparison of institutional research intensity.

In sum, the HPS propositions fit the Polish case very well: specifically, all general, governance, horizontal diversity and vertical stratification propositions provide perfect conceptual guidance; however, in some cases, specific reservations need to be emphasized. Propositions that work only partially are equity ones – which is clearly related to post-2006 processes of contraction and de-privatization of the Polish system (Kwiek 2016a). In terms of general propositions, the HPS period in Poland is accompanied by enhanced equity (General, 1). Family aspirations for participation in higher education have been growing steadily, and the aspirational gap between the highly-educated and lower-educated families, and between the urban and rural families, has been closing steadily (General, 2). While the system shows the signs of saturation and some disillusionment with education is reported, the long-term growth of the participation rate seems inevitable (General, 3).

In terms of HPS governance propositions, after 2009 the system was reconfigured on the basis of multi-level governance, with new intermediary coordinating institutions (Governance, 1). Horizontal differences in institutional mission are still limited but with the increasing role of competitive research funding (from NCN) and research assessment exercise (by KEJN), a salient division between a group of more research-focused comprehensive universities and polytechnics on the one hand and a group of more teaching-focused and specialist universities on the other is growing. The combination of high-to-low KEJN categories and ample-to-none NCN competitive research funding applied to faculties provide a new tool for the management of horizontal differentiation within the both groups (Governance, 2). New multi-level coordination through new intermediary bodies leads to enhanced horizontal

differentiation. All institutions are increasingly subject to rigorous systems of reporting and the corporatist direction of reforms – in the context of a gradually implemented performance-based research funding system – is unmistakable (Governance, 3).

Comprehensive multidiscipline and multi-function research universities tend to dominate in the Polish system: there has been a powerful concentration of public funding and infrastructural investments in major research universities, especially in the two national flagships (Diversity, 1). While the overall diversity of institutional profile and mission has decreased (Diversity, 2), the internal diversity of comprehensive universities has increased (Diversity, 3). Major comprehensive universities tend to attract ever more students in some faculties and ever more research funding in other faculties, with different faculties internally assuming different roles, leading to growing internal heterogeneity. All institutions compete in the newly created quasi-markets of public funding and strive for higher KEJN scores in the national parameterization and categorization exercise (Diversity, 4). However, the role of the private sector has been diminishing and its decline is linked to declining demographics, in sharp contrast to global trends (Kwiek, 2016d).

The bifurcation between traditionally elite research institutions and demand-absorbing mass institutions (Stratification, 1) is clear: research funding, research talents and opportunities, as well as all competitive and non-competitive funding categories, are concentrated in the former institutions, with two Polish flagships garnering about 30 percent of all competitive research funding from the national research council (NCN) and comprising half of all exceptionally highly categorized (category A+) faculties in the system (KEJN). The most valuable student places are located in selected study programs within elite metropolitan universities and polytechnics, and social competition for them intensifies (Stratification, 2). However, in contrast to global trends, there are no tuition fees and there is wide access to non-elite study programs within elite institutions. In the Polish HPS, a middle layer of institutions tends to form (Stratification, 3), aspiring to move up the ladder of prestige and resources but with limited chances to join the first university league with entry tickets based purely on research intensity.

Poland also clearly follows the pattern of equity in the form of social inclusion being enhanced (Equity, 1). The positional structure of the higher education system increasingly resembles that of society (Equity, 3): the share of rural students (and of students from lower socio-economic classes) has substantially increased in the HPS period. However, a greater social inequality in educational outcomes and social outcomes (Equity, 2) was not observed, perhaps due to deeper social changes in Poland in the last two decades compared with other HPS systems except for Russia; the redistribution of educational opportunities and social opportunities, against the (Equity, 4) proposition, seems to be still secured, perhaps due to a combination of declining demographics and a tax-based system in which educational opportunities are not limited by fees or class-based fee-aversion/debt-aversion.

A high participation system became the reality in Poland much faster than almost anywhere else, with still unclear consequences for the society, as well as for academic institutions. The conceptual framework of HPS explains what has happened in higher education in Poland since 1989, what may happen in the next few years, and why.

Acknowledgements

The author gratefully acknowledges the support of the National Research Council (NCN) through its research grant (UMO-2013/10/M/HS6/00561). And he would like to thank Simon Marginson and Anna Smolentseva for their friendly intellectual guidance, from the Moscow 2013 seminar on “high participation systems” to the revision of the draft chapter. All traditional disclaimers certainly apply.

Bibliography:

- Antonowicz, D. (2016). Digital Players in an Analogue World: Higher Education in Poland in the Post-Massification Era. In: B. Jongbloed, H. Vossensteyn (Eds.), *Access and Expansion Post-Massification. Opportunities and Barriers to Further Growth in Higher Education Participation*. London: Routledge. 63-81.
- Antonowicz, D., Kwiek, M., Westerheijden, D. (2017). The Government Response to the Private Sector Expansion in Poland. In: H. de Boer et al. (Eds.), *Policy Analysis of Structural Reforms in Higher Education*. New York: Palgrave. 119-138.
- Białecki, I., Dąbrowa-Szefler, M. (2009). Polish Higher Education in Transition: Between Policy Making and Autonomy. In *Structuring Mass Higher Education: The Role of Elite Institutions*, ed. D. Palfreyman and D. T. Tapper. London: Routledge.
- Birnbaum, R. (1988). *How Colleges Work: The Cybernetics of Academic Organization and Leadership*. San Francisco: Jossey-Bass Publishers.
- Brown, P., Lauder, H., Ashton, D. (2011). *The Global Auction: The Broken Promises of Education, Jobs and Incomes*. New York: Oxford University Press.
- CBOS (2013a). *Studia wyższe – dla kogo, po co i z jakim skutkiem*. Warsaw, July 2013, BS/92/2013.
- CBOS (2013b). *Wykształcenie ma znaczenie?* Warsaw, July 2013. BS/96/2013.
- CBOS (2009). *Aspiracje i motywacje edukacyjne Polaków w latach 1993-2009*. Warsaw, May 2009. BS/70/2009.
- Clark, B.R. (1983). *The Higher Education System. Academic Organization in Cross-National Perspective*. Berkeley: University of California Press.
- Cole, J. R., Cole, S. (1973). *Social Stratification in Science*. Chicago: The University of Chicago Press.
- Dobbins, M. (2011). *Higher Education Policies in Central and Eastern Europe: Convergence towards a Common Model?* London: Palgrave Macmillan.
- Fulton, O., Santiago, P. Edquist, Ch., El-Khawas, E. and Hackl, E. (2007). *OECD Reviews of Tertiary Education*. Poland. Paris: OECD.
- GUS (2016). *Higher Education Institutions and Their Finances in 2015*. Warsaw: GUS (Central Statistical Office) (and previous editions).
- GUS (2014). *Population Projection 2014-2050*. Warsaw: GUS (Central Statistical Office).
- GUS (2013). *Wybory ścieżki kształcenia a sytuacja zawodowa Polaków*. Warsaw: GUS (Central Statistical Office).
- Hirsch, F. (1976). *Social Limits to Growth*. Cambridge: Harvard University Press.
- Kerr, C. (2001). *The Uses of the University. Fifth Edition*. Cambridge MA: Harvard University Press.
- Kogan, I., Noelke, C., Gebel, M. (2011). Comparative Analysis of Social Transformation, Education Systems, and School-to-Work Transitions in Central and Eastern Europe. In: I. Kogan, C. Noelke, M. Gebel (Eds.), *Making the Transition: Education and Labor Market Entry in Central and Eastern Europe*. Stanford: Stanford University Press. 320-351.
- Kulczycki, E. (2017). Assessing publications through a bibliometric indicator: The case of comprehensive evaluation of scientific units in Poland. *Research Evaluation*. 16(1): 41-52.
- Kulczycki, E., Korzeń, M., Korytkowski, P. (2017). Toward an excellence-based research funding system: Evidence from Poland. *Journal of Informetrics*. 11(1): 282-298.
- Kwiek, M. (2017). A Generational Divide in the Polish Academic Profession. A Mixed Quantitative and Qualitative Approach. *European Educational Research Journal*. Vol. 17. 1-26.

- Kwiek, M. (2016a). De-privatization in Higher Education: A Conceptual Approach. *Higher Education*. 74(2). 259-281.
- Kwiek, M. (2016b). Constructing Universities as Organizations. University Reforms in Poland in the Light of Institutional Theory. In E. Samier (ed.), *Ideologies in Educational Administration and Leadership*. New York: Routledge. 193-216.
- Kwiek, M. (2016c). The European research elite: a cross-national study of highly productive academics in 11 countries. *Higher Education*, 71(3). 379-397.
- Kwiek, M. (2016d). From Privatization (of the Expansion Era) to De-privatization (of the Contraction Era). A National Counter-trend in a Global Context. In S. Slaughter & B. J. Taylor (Eds.), *Higher Education, Stratification, and Workforce Development. Competitive Advantage in Europe, the US and Canada* (pp. 311–329). Dordrecht: Springer.
- Kwiek, M. (2015a). Academic Generations and Academic Work: Patterns of Attitudes, Behaviors and Research Productivity of Polish Academics after 1989. *Studies in Higher Education*, 40(8). 1354-1376.
- Kwiek, M. (2015b). The unfading power of collegiality? University governance in Poland in a European comparative and quantitative perspective. *International Journal of Educational Development*. 43. 77–89.
- Kwiek, M. (2013). From System Expansion to System Contraction: Access to Higher Education in Poland. *Comparative Education Review*. Vol. 56. No. 3. 553-576.
- Kwiek, M. (2012). Changing Higher Education Policies: From the Deinstitutionalization to the Reinstitutionalization of the Research Mission in Polish Universities. *Science and Public Policy*. Vol. 35. No. 5. 641-654.
- NCN (2017). National Research Council (Narodowe Centrum Nauki) database. <https://www.ncn.gov.pl/>. Last accessed May 17, 2017.
- OECD (2012). *Education at A Glance 2012. OECD Indicators*. Paris: OECD.
- POL-ON (2017). Zintegrowany System Informacji o Nauce i Szkolnictwie Wyższym. <https://polon.nauka.gov.pl/>. Last Accessed May 17, 2017.
- Marginson, S. (2016a). The worldwide trend to high participation higher education: dynamics of social stratification in inclusive systems. *Higher Education*. 72: 413-434.
- Marginson, S. (2016b). High Participation Systems of Higher Education. *The Journal of Higher Education*. 87(2): 243-271.
- Marginson, S. (2016c). Diversity within high participation systems of higher education. A speech at the University of Oxford, 31 October 2016.
- Marginson, S. (2016d). Public/Private in Higher Education: A Synthesis of Economic and Political Approaches. *Studies in Higher Education*. Published on-line 13 April 2016. <http://dx.doi.org/10.1080/03075079.2016.1168797>.
- Merton, R. K. (1968). The Matthew Effect in Science. *Science*, Vol. 159. No. 3810. 56-63.
- Pinheiro, R. and D. Antonowicz (2015). Opening the Gates of Coping with the Flow? Governing Access to Higher Education in Northern and Central Europe. *Higher Education*. 70(3). 299-313.
- Siemińska, R., Walczak D. (2012). Polish Higher Education: From State Toward Market, from Elite to Mass Education. *Advances in Education in Diverse Communities: Research, Policy, and Praxis*, vol. 7. 197-224.
- Smolentseva, A. (2017). Universal higher education and positional advantage: Soviet legacies and neoliberal transformation in Russia. *Higher Education*. 73(2). 209–226
- Szadkowski, K. (2017). The University of the Common: Beyond the Contradictions of Higher Education Subsumed under Capital. In: M. Izak, M. Kostera, M. Zawadzki (Eds.), *The Future of University Education*. Cham: Palgrave Macmillan. 39-62.
- Szczepański, J. (1974). *Higher Education in Eastern Europe*. New York: International Council for Educational Development.
- Wasielewski, K. (2013). *Młodzież wiejska na uniwersytecie. Droga na studia, mechanizmy alokacji, postawy wobec kształcenia*. Toruń: Wydawnictwo Naukowe UMK.

Appendix:

Propositions about high participation systems (HPS) of higher education (the core of the Cantwell/Marginson/Smolentseva book):

General

As HPS spread to an increasing number of countries, equity in world society is enhanced.

In HPS there is no intrinsic limit to the spread of family aspirations for participation in higher education until universality is reached; and no intrinsic limit to the level of social position to which families/students may aspire.

Once transition from a primarily agricultural economy is achieved, the long-term growth of High Participation Systems (HPS) is independent of political economic factors such as economic growth and patterns of labour market demand, patterns of public and private funding of higher education, and the roles of public and private institutions; and system organization and modes of governance.

Governance

High Participation Systems (HPS) are governed by multi-level control, coordination, and accountability mechanisms.

HPS governance tends to involve the management of horizontal differentiation.

HPS complex multi-level accountability and coordination, coupled with system differentiation, result in higher education institutions adopting increasingly corporate forms and robust internal governance and management capacities.

Horizontal diversity

In the HPS era, regardless of the political economy and culture of systems, an increasing proportion of higher education becomes centred on comprehensive multidiscipline and multi-function research universities, or 'multiversities'. The multiversity is increasingly dominant as the paradigmatic form of higher education.

Regardless of the political economy and culture of the HPS, when participation expands there is no necessary increase in the overall diversity of institutional form and mission; and this has probably declined, except in relation to online provision.

As participation expands the internal diversity of multiversities tends to increase. This affects some or all of the range of missions, business activities, institutional forms and internal structures, the discipline mix, research activities, levels of study and range of

credentials, the heterogeneity of the student body, links to stakeholders, cross-border relations, and forms of academic and non-academic labour.

All else being equal, the combination of expanding participation and enhanced competition in neoliberal quasi-markets is associated with specific effects in relation to diversity, including (1) increased vertical differentiation of HEIs (stratification), (2) reduced horizontal differentiation (diversification), (3) convergence of missions through isomorphistic imitation, and (4) growth in the role of private HEIs, especially for-profit institutions.

Vertical stratification

The expansion of participation towards and beyond the HPS stage is associated with a tendency to bifurcation and stratification (vertical diversification) in the value of higher education, between elite (artisanal) institutions and mass (demand-absorbing) institutions.

The tendency to institutional stratification is magnified by features common (though not universal) among HPS including (a) intensified social competition for the most valuable student places, (b) variable tuition charges, and/or (c) intensified competition between institutions.

In stratified HPS, a middle layer of institutions tends to form, shaped by the combination of upward aspirations (drift) with systemic scarcity of resources and status.

Equity

As participation expands in the HPS phase, equity in the form of social inclusion is enhanced.

Because in the HPS phase the growth of participation is associated with enhanced stratification, and intensified competition at key transition points, all else being equal (i.e. without compensatory state policy) the expansion of participation is associated with a secular tendency to greater social inequality in educational outcomes and through that, social outcomes.

Within a national system, as participation expands in the HPS phase, all else being equal the positional structure of the higher education system increasingly resembles that of society (albeit with the caveat of Proposition 2). The HPS is increasingly implicated in the reproduction of existing patterns of social equality/inequality.

As the HPS boundary of participation expands it becomes more difficult for the state and/or autonomous educational system/institutions to secure a redistribution of educational opportunities, and through that, of social opportunities.