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From System Expansion to System Contraction: Access to Higher Education in Poland

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Abstract

Access to higher education in Poland is changing due to the demography of smaller cohorts of potential students. Following a demand-driven educational expansion after the collapse of communism in 1989, the higher education system is now contracting. Such expansion/ contraction and growth/decline in European higher education has rarely been researched, and this article can thus provide a "possible scenario" for what might occur in other European postcommunist countries. Based on analysis of micro-level data from the EU-SILC (*European Union Survey on Income and Living Conditions*), I highlight the consequences of changing demographics for the dilemmas of public funding and admissions criteria in both public and private sectors.

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Introduction

The paper explores access to higher education in Poland in a specific moment in which demand-driven educational expansion following the collapse of communism in 1989 is declining due to demographic factors.[1] The pairs of expansion/contraction and growth/decline in European higher education, related to demographic trends, have not been discussed in the research literature so far and this paper is intended as a contribution to the themes expected to be highly relevant in Central and Eastern Europe.[2] The paper shows that the processes of inter-sectoral public/private differentiation characterizing an expanding higher education sector may be gradually replaced with the processes of the inter-sectoral homogenization of the contraction era. Public policies and institutional strategies for the contraction era have to be reinvented if the trend of inequality reduction in access to higher education is to be continued. The paper combines a theoretical framework with substantial original data analysis. Its empirical evidence comes from both Polish national educational statistics and Polish national statistical demographic projections. Two sections in particular are providing detailed analyses of original empirical data: the second section presents analyses of educational expansion in Poland in 1995-2010 based on four major dimensions: age, gender, sector (public/private) and status (full- and part-time). And the fourth section about access related to the intergenerational social mobility in Poland is based on the microdata analysis of

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the EU SILC dataset (*European Union Survey on Income and Living Conditions*) – to explore the relative mobility of the Polish society across generations (in terms of educational attainment levels and occupational groups) in a European comparative perspective. The paper contributes to several lines of theory in global higher education research, particularly: global comparative research on private higher education (and, related, public/private dynamics), research on intersectoral and intrasectoral differentiation of higher education, international comparative research in postcommunist European higher education systems, and international comparative research on social stratification.

There are two relevant national contexts. First, Polish higher education shows complicated inter-sectoral public-private dynamics and one of the highest degrees of marketization of the system in Europe. In 2010, it had the highest share of enrollments and enrollment numbers in the private sector in Europe, 31.5 percent (0.56 million), and a high share of fee-paying students, 51.6 percent (GUS 2011). Studies in the public sector are either tuition-free (full-time) or fee-based (part-time), while studies in the private sector are fee-based in both full-time and part-time modes. Second, there are radical demographic changes projected for the next three decades. The population of the 19-24 age group is projected to decrease between 2007 and 2025 by 43 percent (GUS 2009) and the number of students is projected to decrease from 1.82 million (in 2010) to 1.33 million (in 2020) to 1.17 million (in 2025. See Vincent-Lancrin 2008; Instytut Sokratesa 2011; IBE 2011).[3] The decline in student numbers in the coming decade is a relatively disregarded parameter in national higher education strategies (see Ernst and Young 2010), in international country reports by both the OECD and the World Bank as well as in academic discussions of mass higher education in Poland (Bialecki and Dabrowa-Szefler 2009). The paper links access to higher education in Poland to the exploration of different past roads of expansion of the system and to implications of the system contraction. Following a discussion of system expansion, this paper proceeds to analyze selectivity in Polish higher education in the past period of expansion and in the currently contracting system, in connection with possible changes in patterns of financing higher education. Then the paper discusses patterns of access to higher education across

[3] Recently (2012), the Ministry of Science and Higher Education presented its own projections of the size and composition of higher education in the next decade: it expects 1.26 million students in 2022 (69 percent of the 2010 size) distributed among the public (88 percent) and private (12 percent) sectors. The private sector enrollment is thus expected to decrease almost five times, from 660.000 students in 2007 to 151.000 students in 2022.

Europe in order to provide context to the Polish case, from the perspective of intergenerational social mobility shown through the logistic regression analysis. Before reaching conclusions, the paper discusses the links between demographic projections for Polish higher education and the future public/private dynamics, especially in the context of the possible introduction of universal fees in the public sector.

System expansion and its major parameters

It is generally assumed in scholarly and policy literature that major higher education systems in the European Union (EU) and in the OECD-area will continue to expand in the next decade (King 2004; Santiago et al. 2008; OECD 2008; Altbach, Reisberg and Rumbley 2010; Attewell and Newman 2010; EC 2011). Expanding systems generally contribute to social inclusion almost by definition because, as recently concluded in a large-scale comparative study on stratification in higher education, the expanding pie "extends a valued good to a broader spectrum of the population," (Arum, Gamoran and Shavit 2007, 29). In the knowledge economy, expansion of higher education systems is key and higher enrollment rates and increasing student numbers in the EU have been viewed as a major policy goal leading to economic growth in the European Commission throughout the last decade (EC 2011; Kwiek and Kurkiewicz 2012). In Poland, questions of admission, selection criteria, and funding mechanisms until recently were asked under the assumption of an expanding system, with ever growing numbers of both students and institutions (Duczmal and Jongbloed 2007; Bialecki and Dabrowa-Szefler 2009; Dobbins 2011). Those questions may need to be reformulated for the coming decades of system contraction, though. Dramatically changing demographics introduce new dilemmas related to public funding and admission criteria. The paper is highly relevant to other Central and Eastern European countries with similar admission patterns (with public/private dynamics) and similar demographic trends for the future (such as Bulgaria, Romania, Estonia, Lithuania, Latvia, and Slovakia, as well as, to a smaller degree, the Czech Republic, Hungary, and Slovenia). Research on the two decades of expansion here is combined with a brief exploration of possible implications for access of the contraction of the higher education system.

Access to higher education, credentials from it, and employability are closely linked (Knight 2009; Schomburg and Teichler 2011). In general, throughout the 1990-2010 period in Poland,

there was a clear divide between credentials from traditional metropolitan, elite public universities (in tuition-free, full-time mode of studies) and credentials from all other types of institutions, and modes of studies (a part-time fee-paying mode of studies in the Polish context being much less academically demanding than a tuition-free full-time mode). The hierarchy of institutions and programs was clear: "most highly valued were non-paying regular courses in trendy and attractive fields of study at several renowned state universities," (Bialecki and Dabrowa-Szefler 2009, 194-195). Selection criteria are demanding in the former case only. Consequently, educational outcomes, the quality of diplomas, and life chances of graduates in the labor market tend to differ increasingly, leading to the diversification and segmentation of the Polish higher education system.

Generally, strict meritocratic criteria are used for admissions only in two cases: in highly competitive elite metropolitan universities, and in less competitive non-elite regional public universities – but only in their tax-based or tuition-free places. In all other cases higher education for the last two decades has been open to all those who could afford it and who met the basic formal criterion: the possession of a secondary school matriculation certificate. Higher education in all other cases became affordable because of the "quasi-market" competition pressures (Le Grande and Bartlett 1993) between the ever-increasing number of private higher education institutions (328 in 2011) and the growing engagement of all public institutions (132 in 2011) in providing additional, part-time, fee-based studies. The large-scale competition for fee-paying students led to open access policies for fee-paying students in both sectors (Kwiek 2008; 2010).

In the first decade of expansion (in the 1990s), following the collapse of Communist rule, the difference between graduating from elite metropolitan public universities and graduating from all other types of institutions was not an issue of public concern. The differences in life chances of graduates were not clearly visible. Families with high socioeconomic capital, usually from the former class of intelligentsia then turning gradually into the new middle class of professionals, were sending their children to full-time, tuition-free places in elite metropolitan public universities, as they always did in the whole postwar period. Social structure in Poland shows not only substantial inheritance of education and occupations across generations, as discussed in more detail below, but also very substantial inheritance in terms of institutional types of higher education: first-generation students are far more likely to

choose academically less demanding higher education: fee-based, part-time mode in both sectors.

The expansion took different routes, as discussed in detail below; to a large extent, these routes determine the routes of future contraction and major policy strategies to combat it. The expansion is disaggregated here into four components: expansion by age, by gender, by sector (public/private), and by student status (full-time/part-time). The sets of Figures in the Online Data Appendix (Figure 5 through 12) show disaggregated enrollments in 1995 and 2010, and the disaggregated enrollment increase in the 1995-2010 period. Overall, student numbers increased from about 790,000 to about 1,841,000 (or by 133 percent). Ireneusz Bialecki and Malgorzata Dabrowa-Szefler (2009, 185) have recently summarized the drivers to the expansion in enrollments: "on the one hand, the society's growing educational aspirations and, on the other, a significant broadening of the tertiary-level education on offer."

Analyzing the age structure of students in 1995 and in 2010, the increase in enrollments was most marked in the traditional student age group (the percentage of the distribution of increase was 70 percent for those aged 19-24 and about 30 percent for those aged 25 and more). While the enrollment increase in the former age group was about 955,000, in the latter it was about 405,000 (GUS 1996, GUS 2011). The expansion was also heavily gendered: about 40 percent of the increase was through male students, and about 60 percent was through female students. Consequently, the feminization of studies, already present in 1995, became even more marked in 2010: while the increase in the number of male students in the period was about 412,000, for female students it was more than 50 percent more, or about 640,000 (GUS 1996, GUS 2011). From a public-private sectoral perspective, despite an emergence and a massive growth of the private sector in the period, the private sector accounted for slightly less than a half of the total growth (about 47 percent, or about half a million students; GUS 1996, GUS 2011). And finally, the expansion was fuelled slightly more by fee-based part-time studies in both sectors than by full-timers. The number of part-timers increased from about 340,000 in 1995 to about 890,000 in 2010. As a consequence of the 163 percent increase in the numbers of part-timers, the distribution of the 1995-2010 increase was about 48 percent for full-time students and about 52 percent for part-time students (GUS 1996, GUS 2011). To sum up, the distribution of the expansion in the period studied was the following: new students were mostly of a traditional age (70 percent), female

(60 percent), studying slightly more often in a part-time mode (52 percent), and slightly more often in the public (53 percent) than in the private sector. See Table 1 for a summary of the composition of the enrollment increase in 1995-2010. For details in enrollment in 1995 and 2010 and in enrollment increase in 1995-2010 by age, gender, sector, and status, see Figures 5-12 in the Online Appendix.

Table 1: Composition of enrollment increase, 1995-2010 (in thousands)

	1995	2010	1995-2010	% change	% distribution of increase
Full-time	449.805	949.476	499.671	111.09%	47.51%
Part-time	339.635	891.775	552.140	162.57%	52.49%
Total	**789.440**	**1.841.251**	**1.051.811**	**133.24%**	**100.00%**
	1995	2010	1995-2010 change	% change	% distribution of increase
Men	346.485	758.768	412.283	118.99%	39.20%
Women	442.955	1.082.483	639.528	144.38%	60.80%
Total	**789.440**	**1.841.251**	**1.051.811**	**133.24%**	**100.00%**
	1995	2010	1995-2010 change	% change	% distribution of increase
Public	700.514	1.261.175	560.661	80.04%	53.30%
Private	88.926	580.076	491.150	552.31%	46.70%
Total	**789.440**	**1.841.251**	**1.051.811**	**133.24%**	**100.00%**

Source: Own calculations based on GUS 1996: 2, 192-193, GUS 2011: 55, 138-142.

The past distribution of increase in enrollments (by age, gender, sector, and status) in the period of educational expansion is highly relevant for the possible distribution of decrease in enrollments in the contraction period and for national policies to combat it. Patterns of expansion may determine policy choices in combating contraction. For instance, one obvious way to combat contraction in light of above analyses is to increase the participation rate of both male and female older students and of male students in the traditional 19-24 age. Other traditional tools for increasing student numbers, known from other systems, may fail; these normally include lowering the rate of early school-leavers, increasing the transition rate from secondary to higher education, increasing the graduation rate from higher education, and increasing enrollment rates (also from different age cohorts). But as a recent *Youth in Europe*

report shows, Poland already has the second lowest rate—5 percent—for early school-leavers in the European Union (after Slovenia, EC 2009); Poland also ranks first in entry rates at the higher education level, with 85 percent in 2009 (OECD 2011), and ranks second in graduation rates at the higher level (after Slovakia, with 50.2 percent, OECD 2011). Finally, enrollment rates are already higher than the average both for EU and OECD countries, having reached 53.8 percent in 2010 (GUS 2011). Consequently, compared with other European systems, traditional tools of increasing enrollments, apart from bringing older students to higher education, seem ineffective.

As discussed above, the expansion was accompanied by slow and gradual hierarchical differentiation of the system (see Meek et al. 1996; Goedegebuure et al. 1996; and Huisman and van Vught 2009). Much of the growth was absorbed by public and private second-tier institutions and by first-tier public institutions in their academically less demanding and less selective part-time studies. The expansion also took place in specific fields of study, in particular the social sciences, economics, and law. In 2000, the share of enrollments in these fields of study was 37 percent in the public sector and 72 percent in the private sector, and a decade later in 2010 it was still 32.8 percent and 52.6 percent, respectively (GUS 2011). When, as in the Polish case, quantitative equality is reached in higher education, qualitative differentiation becomes increasingly important: "qualitative differentiation enables education systems to reduce inequalities along the quantitative dimension because qualitative differences replace quantitative ones as the basis for educational selection," (Shavit, Arum, and Gamoran 2007, 44). Qualitative differentiation means different types of institutions and different types of study programs.

While communist-period higher education in 1970-1990 in Poland could be termed unified (following both Meek et al. 1996 and Shavit, Arum, and Gamoran 2007), the last two decades of its expansion show a transformation from a unified to a diversified system. Unified systems, as under communism in Poland, "are controlled by professional elites who are not inclined to encourage expansion, either of their own universities or through the formation of new ones," (Shavit, Arum, and Gamoran 2007, 5). Higher education in Poland was also predominantly "a political force and a political institution…given precise political tasks," (Szczepanski 1974, 7). The number of students in the two decades of 1970-1990 was strictly controlled, and fluctuated between 300,000 and 470,000. The strict *numerus clausus* policy was the rule in all Central European countries: admissions were part of central planning and

closely controlled by the state. In Poland, in 1951-1960 about 8-9 percent of those aged 19 went to higher education, in 1961-1970 it was 10-13 percent, in 1971-1980 – 12-16 percent, and in 1981-1989 – 11-13 percent. The *numerus clausus* policy placed restrictions on the total number of students and enrollments in particular study fields. While Western European systems were already experiencing the processes of massification in the 1970s and 1980s, higher education in Central Europe was as elitist in 1989 as in decades past. Following the 1989 collapse of communism, one of the major reasons for the phenomenal growth of private higher education in (some) Central European countries, and particularly in Poland, was newly opened private-sector employment. Increasing salaries in the emergent private sector gradually pushed young people into higher education. Consistent with Roger Geiger's findings regarding eight countries, the private sector in Poland was forced to operate "around the periphery of the state system of higher education," (Geiger 1986, 107).

System expansion and selectivity in higher education

Newcomers to the education sector following 1989, especially from lower socioeconomic classes, were massively going to new regional public universities and to fee-based tracks in elite metropolitan public universities, as well as to the emergent fee-based private sector. In the first decade of expansion, the difference between graduating from various types of institutions seemed largely irrelevant, especially to first-generation students and their families. After 1989, "the 'entrepreneurial spirit' and 'possessive individualism' – which had been blocked under communism by administrative obstacles – found an outlet," (Domanski 2000, 29). Higher education credentials from any academic field, any institutional type, and any mode of study were viewed as a ticket to good life and rewarding jobs by the newcomers.

The most valuable vacancies – those in elite metropolitan public universities in full-time mode of study – were scarce and competitive. They were socially valuable not only because they were tuition-free but because they were academically demanding (Bialecki and Dabrowa-Szefler 2009). All other vacancies, much less socially valuable from a larger perspective, and conceived as much less socially valuable by the intelligentsia-turned-middle classes, were offered to all, in fee-based modes, throughout the last two decades (1990-2010). During the expansion period, higher education was both accessible and affordable (Duczmal and Jongbloed 2007) and the recognition of its differentiation by type of institution and by

mode of studies was low. The lack of clear differentiation of the educational arena, paradoxically, seemed useful to all stakeholders: students and their parents, public and private institutions, and the state. The state boasted ever-rising enrollment rates and increasing education of the workforce; public institutions offered part-time studies for fees and this non-core non-state income played a powerful role in maintaining the morale of academics through increasing their university incomes; and private institutions were showing all elements of a traditional institutional drift – they were emulating public institutions. The gradual stratification of the system was increasingly being taken for granted and governed most student choices only in the second decade of the expansion when the labor market was saturated with new graduates (totaling about 2 million in 1990-2003).

During the time of expansion, questions about equitable access and fair selection criteria were not asked, and issues of social justice were not publicly raised, either in official policy documents (including several national strategies for higher education and official rationales for new draft laws on higher education, see Ernst and Young 2010), or in the scholarly discourse. Expansion was viewed as a public good in itself, and issues related to fairness and inclusion were generally under-researched in academia and under-debated in the public domain. Official higher education statistics and labor force statistics showed a highly positive picture of the emergent well-educated society with increasing share of the workforce with higher education credentials. National and regional statistics did not differentiate among types of institutions attended and modes of study selected. But the system expansion stopped in about 2005 and enrollments contracted from about 2 million to about 1.76 million in 2011. The contraction continues, and is expected to continue at least until 2025.

The expansion in Poland in both public and private sectors was demand-driven: students and their families wanted more access to higher education following the collapse of communism, and their demand was increasingly being met (Duczmal and Jongbloed 2007; Kwiek 2008; and Bialecki and Dabrowa-Szefler 2009). Higher education was no longer strictly rationed by the state, and the processes of massification were fueled by both sectors and modes of study. External shocks related to the "postcommunist transition" in the economy and the financial austerity in the academy prevalent throughout the 1990s were driving the dynamics of institutional change. Universities were driven by expansion-related phenomena and they responded in the way a resource dependence perspective used in organizational studies expects: seeking to survive, in the mutual processes of interaction between organizations and

their environments (Pfeffer and Salancik 2003; see also van Vught 2009), at both the micro-level of individuals and the meso-level of institutions (on the consequences of the fee-based revenues for the university research mission, see Kwiek 2012a and Kwiek and Maassen 2012).

The Polish system is more market-based than most state-funded European systems but also much more state-funded than most global market-based systems, as in the United States, Korea, or Japan. The increasing differentiation of higher education institutions along the "client-seeking" and "prestige-seeking" lines is the discernible process in the times of system expansion. As Arum, Gamoran and Shavit (2007, 8) emphasize, "client-seeking implies low admissions criteria while status-seeking implies fewer clients than could otherwise be admitted. The conflict is often resolved through the differentiation of a status-seeking first tier of institutions and a client-seeking second tier, which is less selective and enjoys lower prestige." What will happen to the process of differentiation in times of system contraction? All institutions, public and private might be forced to become increasingly client-seeking (with perhaps no significant difference in whether the clients will be tuition-free students funded by the state or self-funded, fee-based students, and no matter whether universal fees in the public sector are finally introduced in the coming decade). The public sector may find it necessary to become aggressively client-seeking, as the private sector was throughout the two recent decades. It can be assumed that in contracting systems, the selectivity of institutions in both sectors will decrease over time. Admissions criteria will be less stringent, and access for candidates from lower socioeconomic classes may be less and less based on meritocratic criteria in public institutions which are highly selective today. All institutions, public and private alike, will try to maintain their current capacities, infrastructures, and academic workforce.

Consistent with findings in the global private higher education literature the largest growth in Polish private higher education occurred through the non-elite, mostly demand-absorbing, types of institutions (Geiger 1986; Levy 2009; Levy 2011). As elsewhere in rapidly expanding systems, most students were "not choosing their institutions over other institutions as much as choosing them over nothing," (Levy 2009, 18). As in other countries, the demand-absorbing private subsector tended to be both the largest private subsector and the fastest growing one. Now this is the most vulnerable subsector in the setting of declining demographics. The growth of private higher education did not necessarily mean "better"

services, or "different" services; rather, it meant most of all "more" higher education (Geiger 1986; Enders and Jongbloed 2007). Consistent with Geiger's (1986) findings about "peripheral private sectors" in higher education, as opposed to "parallel public and private sectors," the university component of higher education was monopolized by public institutions and a non-university, postsecondary component by private institutions. "Market segmentation" rather than open competition with the huge, dominant public sector, operating in "special niches" (Geiger 1986, 158), was the general characteristic of the emergent and then consolidating private sector institutions throughout the last two decades.

Recent policy proposals about the public subsidization of the private sector and about the introduction of universal fees in the public sector seem to indicate a possible change in policy patterns in financing higher education. Following Daniel C. Levy's typology of public/private mixes in higher education systems (Levy 1986), recent policy proposals might indicate a policy move towards the homogenization of the two sectors. Private-public blends involve a number of important questions: a single sector or a dual one, if a single sector – statist or public-autonomous, if dual sectors, homogenized or distinctive, if distinctive, minority private or majority private? The move, in this typology, would be from the fourth pattern to the third pattern. That is, a dual, distinctive higher education sector (a smaller private sector funded privately, and a larger public sector funded publicly) would become a dual, homogenized higher education sector (a minority private sector, similar funding for each sector; Levy's first and second patterns refer to single systems, with no private sectors). The policy debates about private-public financing emergent in Poland today are not historically or geographically unique. Levy identified three major policy debates in his fourth pattern of financing: the first concerns the very growth of private institutions; the second concerns whether new private sectors should receive public funds; and the third policy debate concerns tuition in the public sector. While in the expansion period of the 1990s, the debate about the growth of the private sector dominated in Poland, the contraction period of the 2010s can be expected to be dominated by fees and public subsidies debates.

The question of inequality in access to higher education, usually asked in the context of educational expansion, could also be asked in the context of educational contraction. And contraction expected in Poland seems unexpected in the context of knowledge-economy policy discourse which refers to ever-increasing need for better educated workforce (see e.g. Santiago et al. 2008; EC 2011 and education attainment benchmarks in the UE *Europe 2020*

strategy for growth and jobs) and ever-increasing numbers of students. This policy discourse in Europe largely ignores sharply falling demographics, and expected decreases in enrollments, in major postcommunist European countries, with Poland in the forefront.

Inequality in access to higher education: a note on Poland in a European comparative perspective

A decade and a half of continuous educational expansion in Poland could be expected to have reduced social inequality in access to higher education and to have enabled faster upward social mobility through higher education. Traditionally, higher education is the main channel of upward social intergenerational mobility (that is, it enables individuals to cross class boundaries between generations, see DeShano da Silva et al. 2007; Holsinger and Jacob 2008). Intergenerational social mobility reflects equality of opportunities; class origins in less mobile societies determine educational trajectories and labor market trajectories to a higher degree than in more mobile societies (Archer, Hutchings and Ross 2003; Bowles, Gintis and Groves 2005; Furlong and Cartmel 2009). Younger generations "inherit" education and "inherit" occupations from their parents to a higher degree in less mobile societies. Young Europeans' educational futures and occupational futures look different in more and in less mobile European societies.

My brief comparative analysis of social mobility is intended as a note on a wider social context to the expansion and contraction processes in higher education. It is based on microdata from the European Union Survey on Income and Living Conditions (EU-SILC).[4] For research on intergenerational educational and occupational mobility in Poland, the EU-SILC 2005 module on "The Intergenerational Transmission of Poverty" is most useful. The module provides data for attributes of respondents' parents during their childhood (age 14-16) and reports the educational attainment level and the occupational status of each respondent's father and mother. In almost all European OECD countries there is "a statistically significant probability premium of achieving tertiary education associated with coming from a higher-

[4] The EU-SILC collects microdata on income, poverty, and social exclusion at the level of households and collects information about individuals' labor market statuses and health. The database includes both cross-sectional data and longitudinal data. For most countries of the pool of 26, the most recent data available come from 2007 and 2008. The general population levels and the sample size are shown in Table 4 in the Online Data Appendix.

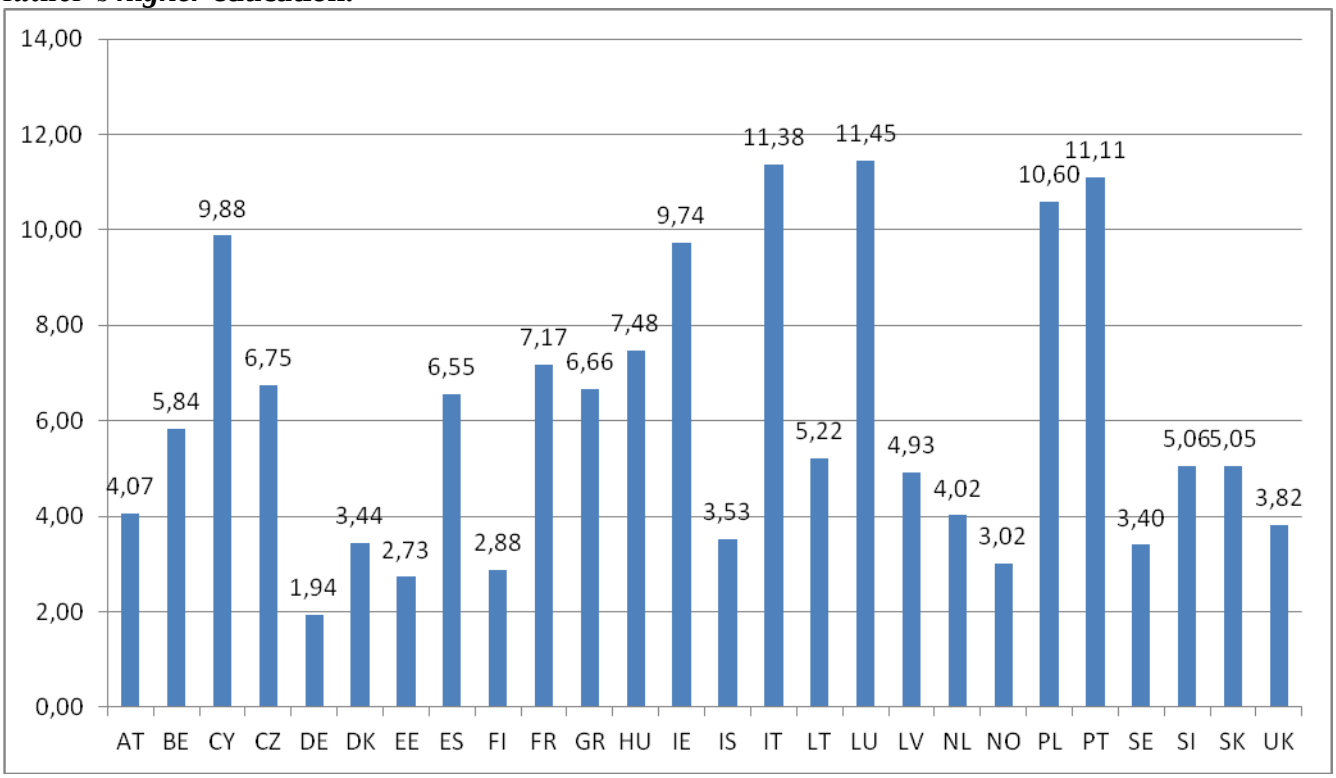
educated family, while there is a probability penalty associated with growing up in a lower-educated family," (Causa and Johansson 2009b, 18). Fairness in access to higher education in Poland is linked in this section to the issue of intergenerational transmission of educational attainment levels and occupational statuses of parents from a European comparative perspective. If Polish society is less mobile than other European countries, then the need for more equitable access to higher education is greater. While absolute numbers can speak by themselves, I assume here that the numbers tell us more in a European comparative context studied below.

I conduct a brief assessment of the relative risk ratio of "inheriting" levels of educational attainment and "inheriting" occupations in transitions from one generation to another generation in Poland from a cross-national perspective. Relative risk ratios show how many times the occurrence of a success is more probable in an individual with a given attribute than in an individual without a given attribute. In the case studied here, "success" is the respondent's higher education and the attribute is parents' higher education. Relative risk ratios show how an attribute of one's parents makes it more likely that the respondent (offspring) will show the same attribute (see Causa and Johansson 2009b; 2009a). Similarly, in OECD analyses, the risk ratio of achieving tertiary education is defined as "the ratio of two conditional probabilities. It measures the ratio between the probability of an offspring to achieve tertiary education given that her/his father had achieved tertiary education and the probability of an offspring to achieve tertiary education given that her/his father had achieved below-upper secondary education. Father's educational achievement is a proxy for parental background or wages," (Causa and Johansson, 2009b: 51). Relative risk ratios were estimated using logistic regression analysis for the weighted data. A binomial model was used. Multinomial dependent variables were dichotomized and separate models were constructed. The choice of independent variables was conducted using a backstep method and Wald criterion.

Among European countries, Poland has one of the highest relative risk ratios (10.6) for persons with higher education to have their parents with higher education, meaning that it is highly unlikely for children to have higher education if their parents did not also achieve the same level of education. In Poland, for a person whose parents had higher education, the probability of attaining higher education is 10.6 times higher than for a person whose parents had education lower than higher education. There are only four European systems that

markedly stand out in variation (Poland, Portugal, Italy, and Ireland; plus two tiny systems of Luxemburg and Cyprus): in all of them, the probability that an individual who has attained higher education has parents who have attained higher education is about ten times higher than a person whose parents did not. While higher education is being "inherited" all over Europe, in Poland the probability is on average almost two times higher than in other European countries (the average for 26 countries is 6.06, and the average for eight postcommunist countries is 5.97). The details are given below in Figure 1.

Figure 1: Relative risk ratio for persons with *higher* education in relation to their father's *higher* education.



Source: own study based on EU-SILC 2005 module on "The intergenerational transmission of poverty."[5]

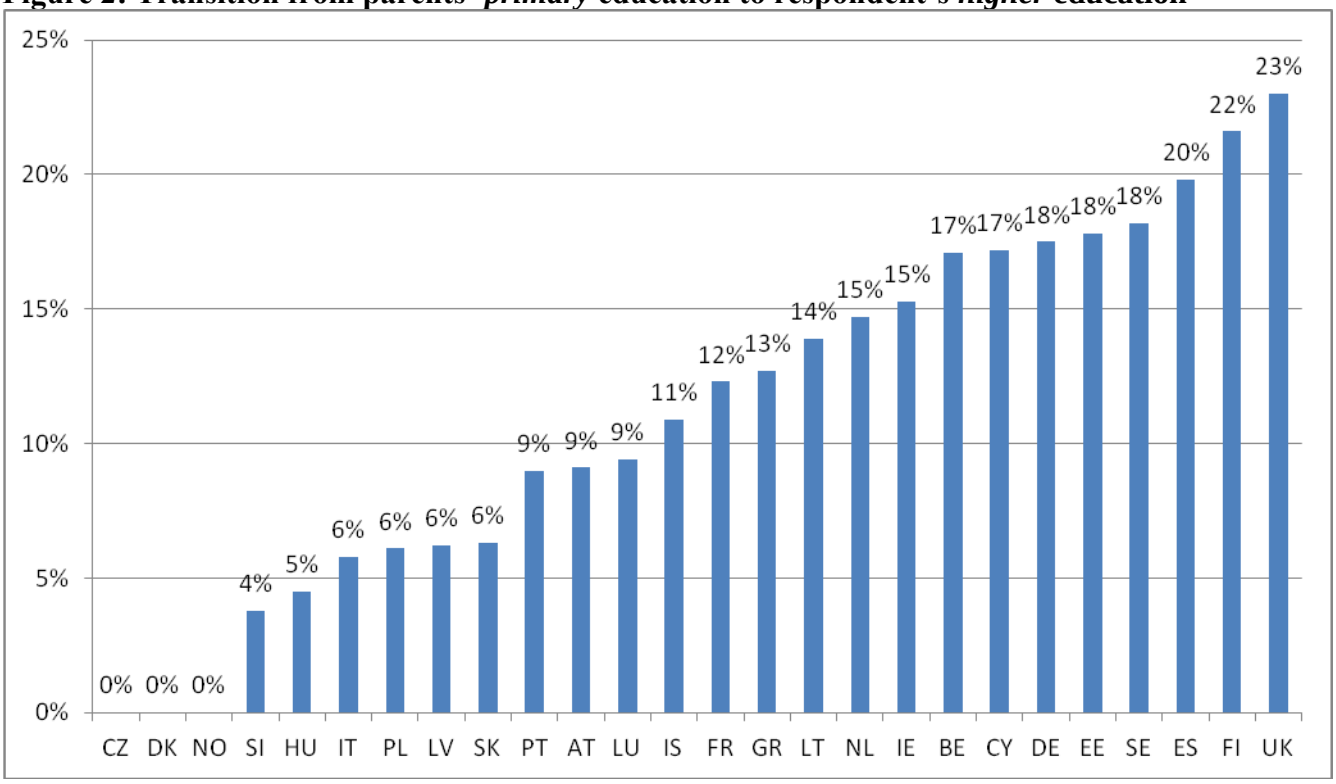
On the basis of the EU-SILC data, one can follow the transmission of *education* and the transmission of *occupations* across generations and see that parental educational and occupational backgrounds are reflected in their offspring's educational and occupational

[5] The cross-country results are presented for the 35-44 year old cohort. The module is based on data from personal interviews only. Variables analyzed were PM040: "Highest ISCED level of education by father," PM060: "Main activity status of father," and PM070: "Main occupation of father."

backgrounds. Educational status and occupational status are strong attributes carried across generations (Archer, Hutchings and Ross 2003, Breen 2004).

Figure 2 below shows the probability of respondents achieving higher education given that his/her parents had achieved a primary level of education. In more mobile societies, the probability will be higher; in societies in which intergenerational mobility is lower, the probability will be lower. There is a major divide between a cluster of countries in which there is low probability of upward mobility—in the range of 4-6 percent—and a cluster of countries in which the probability of upward mobility is 3-4 times higher, and the probability of a "generational leap" between generations is 3-4 times higher, in the range of 17-23 percent. The "low probability" cluster includes Poland and several other former communist countries, as well as Italy, and the "high probability" cluster includes the Nordic countries, Belgium Germany, Estonia, Spain and the UK. Other countries are in the middle. The probability of upward intergenerational mobility through higher education, from a comparative perspective, is clearly very low in Poland. The percentage of people with higher education whose parents had primary education is 6 percent; the remaining 94 percent of people whose parents had primary education never attained higher education.

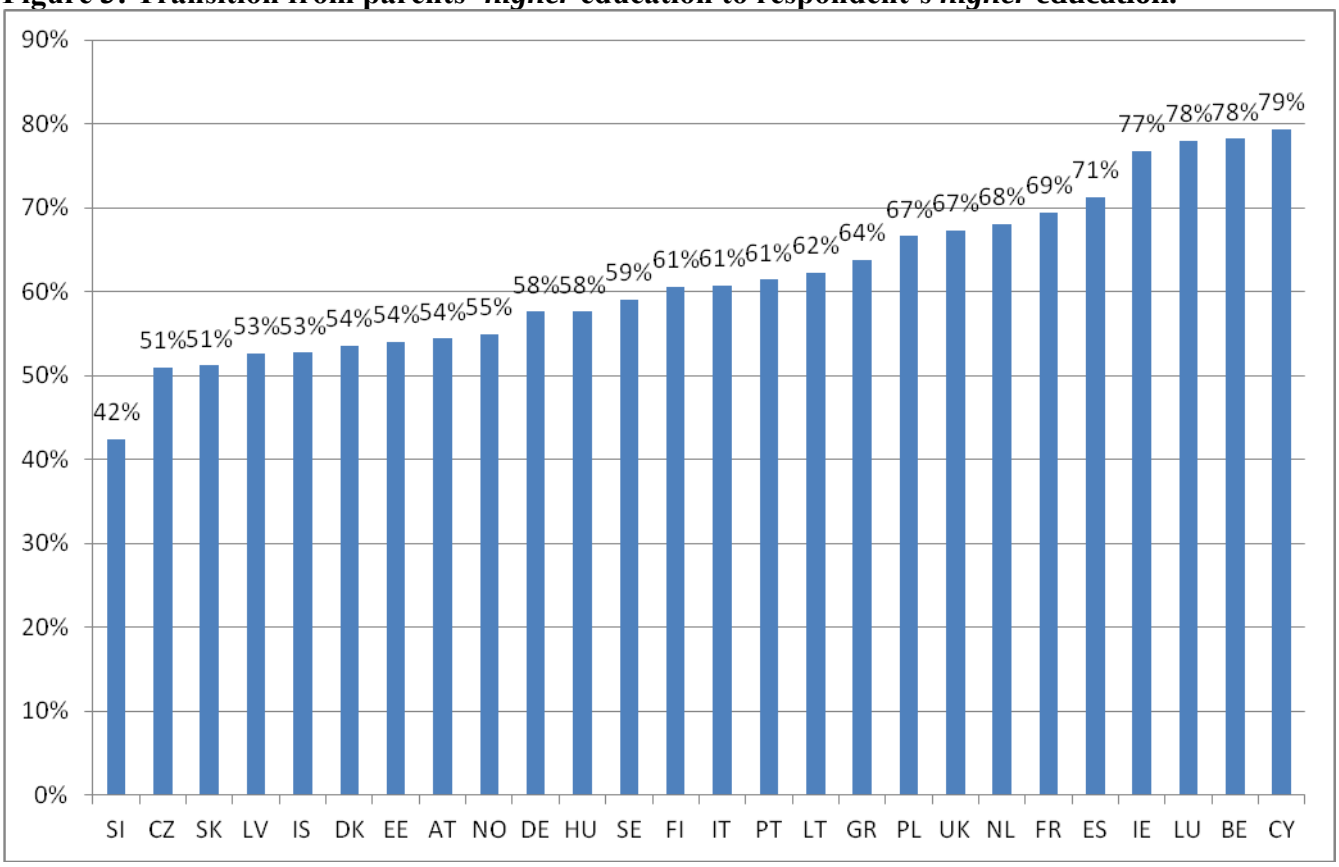
Figure 2: Transition from parents' *primary* education to respondent's *higher* education



Source: own study based on EU-SILC 2005 module on "The intergenerational transmission of poverty" (0 percent for CZ, DK, and NO results from a too low number of respondents in these countries).

One can also look at the rigidity of educational backgrounds across generations, or the transmission of the same level of education (primary to primary, higher to higher) across generations. What is particularly relevant here is the inheritance of higher education across generations. Figure 3 shows that in all 26 European countries studied (except Slovenia), the chance of having attained higher education if one's parents have also attained higher education is more than 50 percent. The lowest range (50-60 percent) dominates in several postcommunist countries, as well as in Denmark, Austria, Norway, Germany and Sweden. The highest range (70-79 percent) is shown only for Spain, Ireland, and Belgium, as well as two small systems of Luxembourg and Cyprus. Poland (67 percent) is in the upper-middle range of 65-70 percent, and ninth from the top: 67 percent of people whose parents had higher education managed to attain higher education. The remaining 33 percent attained education which was lower than higher education.

Figure 3: Transition from parents' *higher* education to respondent's *higher* education.



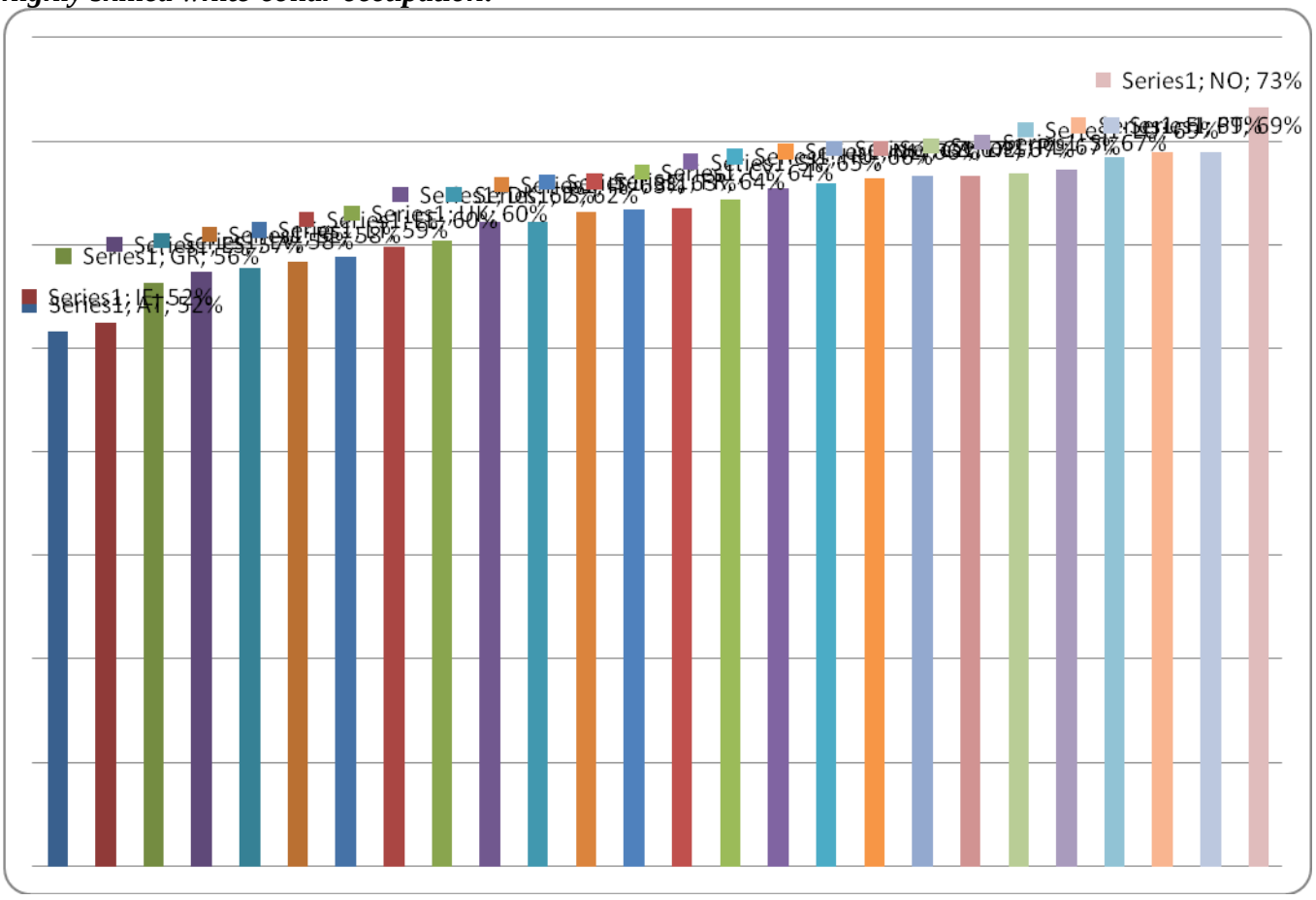
Source: own study based on EU-SILC 2005 module on "The intergenerational transmission of poverty."

Analyses of the transmission of *levels of education* across generations can also be supplemented with analyses of the transmission of *occupation* across generations, with similar results for Poland. Analyses performed with reference to ISCO-88 (International Standard Classification of Occupations) Group 1 occupations ("legislators and senior professionals", translated in Figure 4 below into "highly skilled white collar") in relation to parents' occupation show that while overall in Europe, the "inheritance" of highly skilled white-collar occupations is high, and it is generally in the 50-70 percent range, in Poland it is very high and reaches 67 percent.

In the case studied here, the success is respondent's Group 1 occupation and the attribute is parents' Group 1 occupation. Relative risk ratios show how an attribute of one's parents makes it more likely that the respondent will show the same attribute. Table 2 in the Online Data Appendix shows the relative risk ratio for persons from ISCO-88 *highest occupational group* ("legislators and senior professionals" or LE, shadowed) in relation to their fathers'

occupation. For instance, for Poland, the probability that a person whose father was a legislator or senior professional will have the same category of occupation is 3.22 times higher than in the case of a person whose father had a different occupation; the probability that a person whose father had an "elementary" (EL) occupation will have a legislator or senior professional occupation is 1.49 times lower than in the case of a person whose father had occupation other than EL. Table 3 in the Online Data Appendix shows the relative risk ratio for persons from ISCO-88 *lowest occupational group* ("elementary" or EL, shadowed) in relation to their fathers' occupation. For Poland, the probability that a person whose father had an elementary occupation to have the same category of occupation is 2.11 times higher than in the case of a person whose father had a different occupation. Figure 4 below shows that, for Poland, 67 percent of persons whose fathers had highly-skilled white-collar occupations also have the same occupation. The remaining 33 percent of those persons have different occupation. In Poland, the level of "inheriting" higher education and highly-skilled white-collar occupations is high, and successful transitions across generations from primary education to higher education and from low-skilled blue-collar occupations to highly-skilled white-collar occupations are rare.

Figure 4: Transition from parents' *highly skilled white-collar occupation* to respondent's *highly skilled white-collar occupation*.[6]



Source: own study based on EU-SILC 2005 module on "The intergenerational transmission of poverty".

Thus, to summarize the comparative findings: upward educational social mobility in Poland (from a longer perspective and despite the 1990-2005 expansion period in higher education) is still limited, and the level of inheritance of both educational status and occupational status across generations is quite high, compared with other European countries. The changes in mobility among social strata are long-term, and the recent expansion period in higher education is still short enough to change the basic social structure in Poland. Both the highest

[6] The analysis presented in Figure 12 aggregated the nine ISCO-88 basic occupational groups, following recent EUROSTUDENT IV study (Eurostudent 2011: 55), into the following four groups of workers: "highly-skilled white-collar" (1. legislators, senior professionals, 2. professionals, and 3. technicians and associate professionals); "low-skilled white-collar" (4. clerks, 5. service workers and shop and market sales workers); "highly skilled blue-collar" (6. skilled agriculture and fishery workers, 7. craft and related trades workers); and "low skilled blue-collar" (8. plant and machine operators and assemblers, 9. elementary occupations).

educational attainment levels and the most socially and financially rewarded occupations ("highly-skilled white-collar") are inherited in Poland to a stronger degree than in most European countries, except for most postcommunist countries. Based on above analyses, Poland seems to differ more from more socially mobile Western European systems and less from most socially immobile postcommunist systems in its educational social mobility than traditionally assumed in the research literature (e.g. Domanski 2000, Mach 2004, Baranowska 2011). Polish society in general is less mobile compared with most Western European systems because the links between parents' and children's social status as adults (in both educational and occupational terms) are tighter. While the expansion period substantially increased equitable access to higher education in Poland, upward social mobility viewed from a long-term perspective of change across generations is still limited. Consequently, from a European comparative perspective, there is much greater need for further fair and increased access to higher education than commonly assumed in educational research.

The demographic decline and the universal fees option

Reducing inequality in access to higher education in Poland in the next decade depends on a number of factors: gross enrollment rate; wage premium for higher education; the number of tuition-free vacancies and fee-based vacancies available in the public sector; national higher education funding policies (including cost-sharing mechanisms in the public sector, state subsidization of the private sector, public investments in education and research infrastructure); the internationalization of studies; and enrollments of students in non-traditional ages (Levine 1990; Holsinger and Jacob 2008; Knight 2009).

Some factors may redefine public-private dynamics in the system without actually changing the current trend of inequality reduction. That is, the system may move gradually from a "dual and distinctive" ideal typical model to a "dual and homogenized" ideal typical model in Levy's typology of public/private mixes in funding regimes: in this case, both sectors may be funded in the next decade in a similar manner, through fees and through direct public subsidies (see Levy 1986). Further inequality reduction from this perspective may thus be sector-blind. In the present paper, the focus is more on the intersectoral public/private differentiation rather than on intrasectoral differentiation in any of the two sectors (on various notions of differentiation in higher education, see Geiger 1986; Rhoades 1990; Goedegebuure

et al. 2007; van Vught 2009; and on how social change in general can be seen as a process of differentiation, see Alexander 1990).

Demographic shifts are expected to powerfully affect new admission patterns in both sectors and may increase access of lower socioeconomic classes to higher education throughout the system. In terms of demographics, the number of 19-year-olds was increasing throughout the 1990s until 2002. Since then the number has been decreasing, and according to national demographic projections, it will continue to decrease for more than a decade. In 2020, there will be about 360,000 19-year-old Polish residents, compared with about 612,000 in 2005 and 534,000 in 2010 (GUS 2009). Also the pool of potential students (traditionally in the age bracket 19-24 in Poland) will steadily decrease until at least 2020, from about 3.4 million in 2010 to about 2.3 million in 2020, both in urban and rural areas (decrease by 31 percent within a decade). The decrease in the size of the population in the 19-24 age bracket will continue until 2025 and in 2035 the population will be only 64.15 percent of the 2007 population (GUS 2009).

The future of equitable access to higher education, inequality reduction, and admission patterns are linked to demography and demographic forecasts, although one should remember that "the accuracy of population forecasts can only be assessed after the fact," (Preston, Heuveline, and Guillot 200, 135). In this particular case, simple population forecasts are likely to be fairly accurate because, for the period up to 2025 studied here "the people have already been born and almost all of them will survive," (Frances 1989, 143; assuming no other complexities as increasing numbers of international students, currently below 1 percent of the student body, or increasing migration to Poland, currently marginal).

Just as there were several parallel routes by which educational expansion occurred in Poland (as shown above), there are several possible parallel routes leading to educational contraction. Overall, an increase in rates of access or a change in the length of studies may offset decreases in the cohort size. The length of study may change and access rates depend on the eligibility rate and the proportion of those eligible who indeed enroll (which depends on different aspirations, incentives, but also different numbers of vacancies): "the actual proportion of entrants also depends, among other things, on the cost of higher education, the financial pressures confronting those otherwise eligible, pecuniary (and non-pecuniary) advantages that they hope to gain from higher education and the length of their studies from

an opportunity cost perspective," (Vincent-Lancrin 2008, 44). Additionally, student enrollment levels lag behind changes in the size of younger age cohorts, and the demographic shift takes several years to be noticeable

The fall in enrollment levels in Poland is projected to be one of the highest in Europe, and comparable only with other postcommunist countries: Bulgaria, Romania, Slovakia, Estonia, Lithuania and Latvia. According to several enrollment scenarios based on national statistical data (e.g. Vincent-Lancrin 2008; Ernst and Young 2010; Instytut Sokratesa 2011; IBE 2011) enrollments in Poland in 2025 are expected to have fallen to 55-65 percent of the 2005 levels. In Western Europe, only Spain and Germany can expect decreases of more than 200,000 students by 2025 (Vincent-Lancrin 2008). Certainly, as Richard A. Easterlin (1989, 138) confirmed in the US context, there is an "inverse association between college enrollment rates and the size of the college-age population." Citing Carol Frances (1989, 143) Easterlin also mentions the cohort effect: "enrollment rates, in fact, partly depend on the size of the college-age population – other things remaining constant, at the aggregate level a larger college-age population makes for lower enrollment rates, while a smaller college-age population makes for higher rates," (Easterlin 1989, 137). Thus demographic factors need to be combined with social, economic, and public policy related factors in any meaningful projections for the future.

Higher education systems in the OECD area in general are expected to continue to expand; as Paul Attewell put it in his global study of educational inequality around the world, "so far, the growth in demand for more years of education seems to have no limit. … Each new generation exceeds its parents in terms of average years of schooling completed," (Attewell 2010, 3). Therefore implications of educational contraction for equitable access, institutional selectivity, and admissions criteria in Polish higher education (as well as higher education in such postcommunist European countries as Bulgaria, Romania, Estonia, Lithuania, Latvia and Slovakia) are important research areas. The institutional will to survive the demographic decline is overwhelming, but the logics governing access to publicly-funded vacancies in the past expansion era may differ from the logics governing them in the expected contraction era.

Access to higher education in Poland has been powerfully related to the public-private dynamics in higher education (Duczmal and Jongbled 2007; Kwiek 2008; 2011a; 2012b). The biggest private higher education system in Europe ("independent private" in OECD statistical

terms, fee-based in practical terms) may be heavily dependent in its future survival on a change in higher education financing – namely, the introduction of universal fees (that is, for both full-time and part-time students) in its competing public sector. If universal fees are not introduced, the size of the private sector may be heavily reduced within a decade. Maintaining the tax-supported public sector under declining demographics might threaten the very existence of the private sector as there have been three divergent trends: the decreasing total number of students, the increasing number of tuition-free vacancies in the public sector, and substantial public investments in public university infrastructure in the last five years. Mergers between public and private institutions, envisaged in the new law of March 2011, might be a possible survival strategy for the sector.

The decline of private higher education – its size, as projected by the Ministry, is expected to decrease from 580,000 students in 2010 to 151,000 students in 2022, or by almost 75 percent – is a rare theme in scholarly literature, as it is a rare educational phenomenon from a global perspective. Poland (together with several other postcommunist European countries) is exceptional from a global perspective: both private shares in enrollments and also absolute enrollments in the private sector have decreased between the years 2007-2011 and will decrease further. The private higher education sector may expect to have fewer students every year and for a system in which there are 325 private institutions it is an enormous challenge. The expected demographic shift creates a major institutional challenge to all public institutions; but for private institutions it may be a life or death challenge, as lamented by Polish conferences of private sector rectors (KRUN, and since 2005, KRZaSP). As a recent study by the national Institute for Educational Research points out, "it has to be assumed that a part of newly created private institutions, of relatively poor educational offer, opened to meet the demand from the generation from the 1980s … will not be able to survive," (IBE 2011, 110). These findings are consistent with Levy's global conclusions about private higher education (2011, 5): "Much PHE [private higher education] has not had to offer very much, other than access and the prospect or hope of a degree. Logically, then, it is the demand-absorbing subsector of PHE that is most vulnerable when demands slows."

But, finally, ensuring "fair" access to higher education and reducing social inequality in access to higher education in view of low upward social mobility based on higher education is actually sector-blind. From the perspective of equitable access to higher education, the intersectoral difference (that is, future sector-related differentiation or dedifferentiation) seem

largely irrelevant. The expansion of a tuition-free public sector (from 0.85 million in 2010 to about 1 million students in 2020), under declining demographics, accompanied by the contraction of fee-based private sector and the contraction of the whole system, may contribute significantly to widening access to higher education. From a sector-blind perspective, regardless of the future of the private sector institutions, the expansion of tuition-free vacancies in the public sector, in tough financial times, may contribute more to social justice (see Furlong and Cartmel 2009) than the emergence of fee-based vacancies in both sectors with mechanisms of cost-sharing introduced universally across the two sectors.

Conclusions

Dramatically changing demographics in Poland introduce new dilemmas related to public funding and admissions criteria in both public and private sectors. Public policy for higher education under contraction can be expected to be fundamentally different from public policy under expansion. This paper has explored the question of inequality in access to higher education with reference to the past two decades of expansion and to the expected two decades of contraction of the system. The era of contraction seems unexpected in knowledge-economy policy discourse which generally ignores the option of sharply falling population levels, relevant for higher education systems in only some European countries and OECD economies, Poland included. Educational contraction in a highly diversified and strongly market-oriented system may continue the trend of inequality reduction if national policies adequately respond to changing demographics combined with new social and economic determinants. There are several countries in the European Union—all postcommunist new member states—in which similar demographic shifts lead to shrinking student populations to a comparable degree. Poland has the biggest higher education system and provides an inspiring case study, relevant for those countries in which changing public/private dynamics is combined with falling birth rates. Powerful demographic shifts may change the structure of the system, and allow for the re-monopolization of the system by the public sector, so the gradual decline of the private sector cannot be excluded as a possibility even though market-driven private sectors have also been highly resilient and adaptable to changing environments. The processes of inter-sectoral public-private differentiation of the expansion era may be replaced with the processes of the inter-sectoral public-private de-differentiation (or homogenization) of the contraction and the gradual decline of the private sector.

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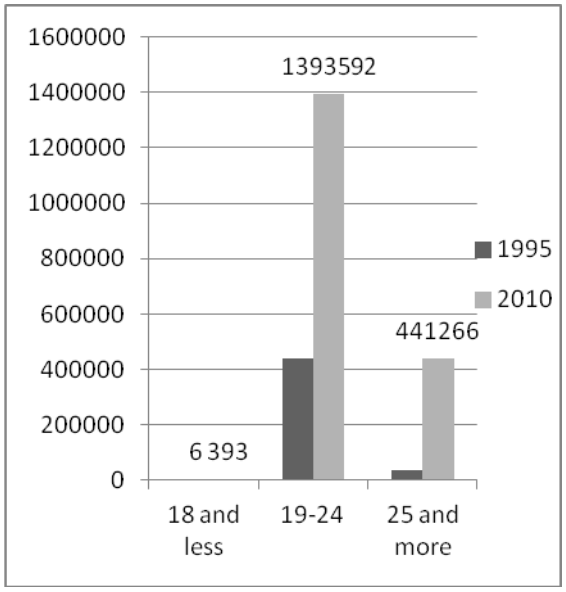
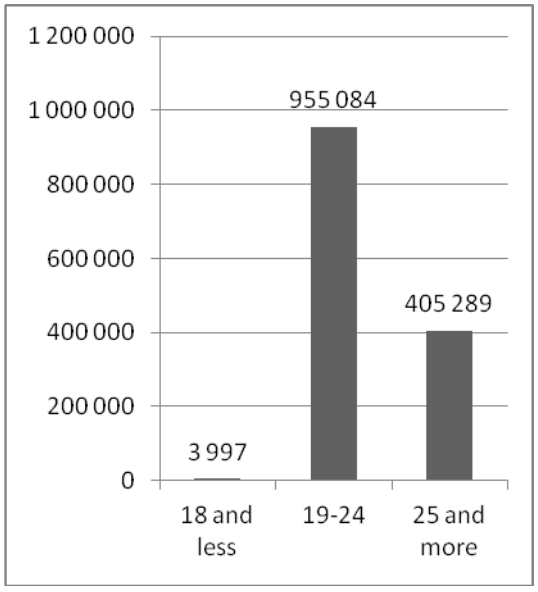
Appendix

Figure 5: Enrollment in Polish higher education by age, 1995 and 2010



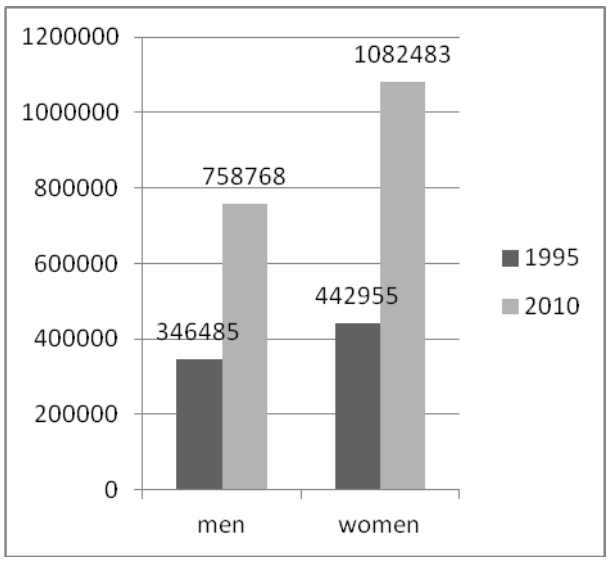
Source: Own calculations based on GUS 1996: 192-193, GUS 2011: 138-142

Figure 6: Enrollment in Polish higher education *increase* by age, 1995-2010



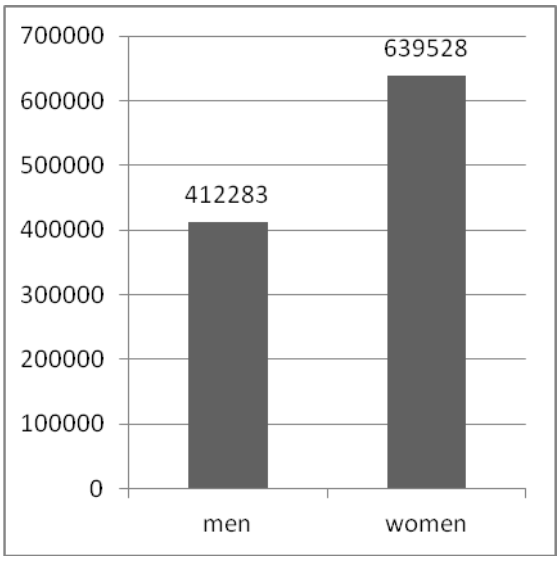
Source: Own calculations based on GUS 1996: 192-193, GUS 2011: 138-142.

Figure 7: Enrollment by gender, 1995 and 2010



Source: Own calculations based on GUS 1996: 2, GUS 2011: 55.

Figure 8: Enrollment *increase* by gender, 1995-2010.



Source: Own calculations based on GUS 1996: 2, GUS 2011: 55.

Figure 9: Enrollment by sector, 1995 and 2010;

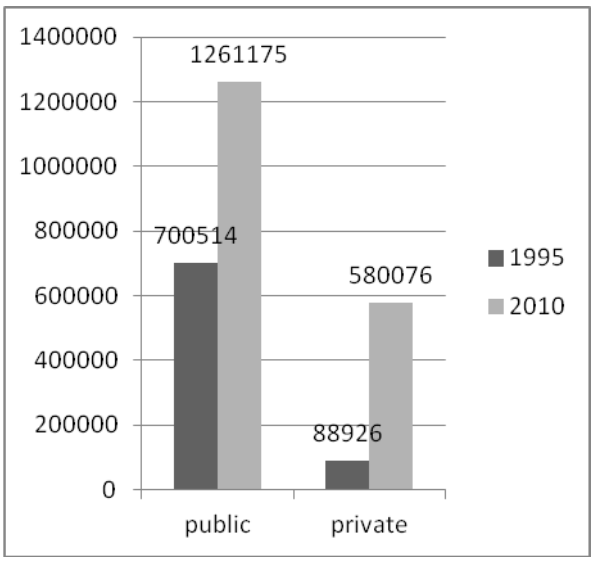
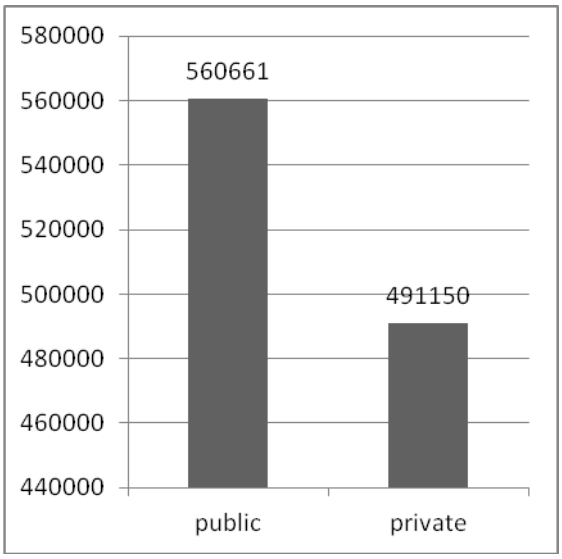


Figure 10: Enrollment *increase* by sector, 1995-2010.



Source: Own calculations based on GUS 1996: 2, GUS 2011: 55.

Figure 11: Enrollment by status, 1995 and 2010;

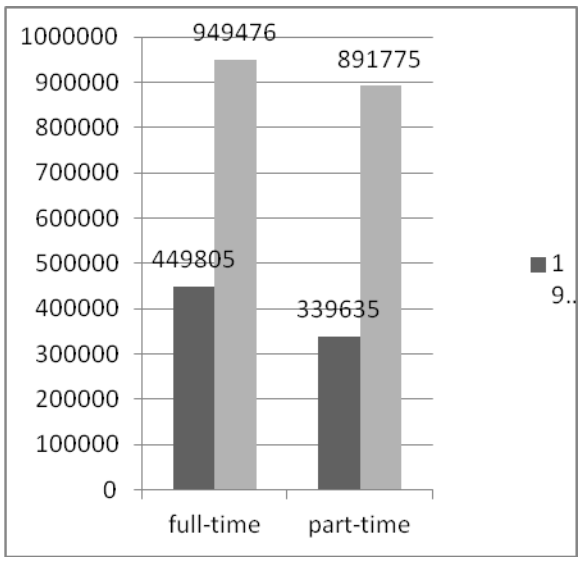
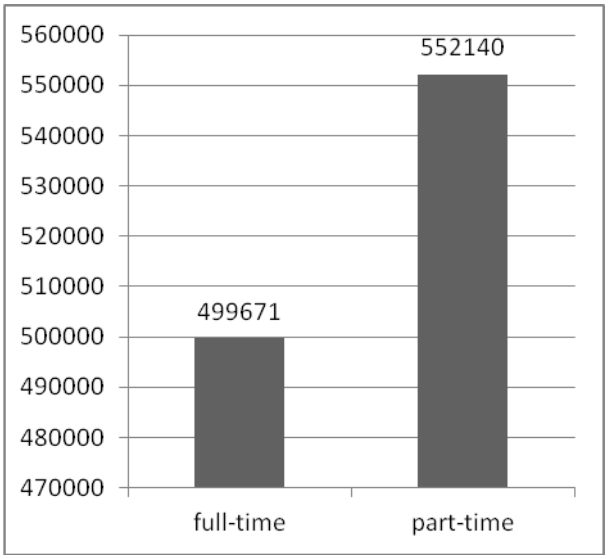


Figure 12: Enrollment *increase* by status, 1995-2010.



Source: Own calculations based on GUS 1996: 2, GUS 2011: 55.

Table 2: Relative risk ratio for persons from ISCO-88 *highest occupational group* ("legislators and senior professionals") in relation to their father's occupation (shadowed: "legislators and senior professionals").

Country	**Father's occupation**								
	LE	PR	TE	CL	SE	AG	CR	PL	EL
AT	3.36	2.33	1.24	1.15	-1.18	-2.08	-1.37	-1.72	-1.43
BE	2.59	1.29	-1.41	-1.14	-1.67	-1.00	-1.37	-1.30	-1.89
CY	4.21	2.58	1.47	1.18	1.33	-1.75	-1.11	-1.14	-1.61
CZ	2.30	2.41	1.39	1.60	-1.41	-1.12	-1.52	-1.45	-1.23
DE	1.64	1.23	1.15	1.10	-1.18	-1.10	-1.16	-1.32	-2.00
DK	1.98	-1.15	1.20	1.02	1.16	-1.45	-1.19	-1.85	-1.04
EE	1.60	1.41	1.72	-1.27	-6.25	-2.44	-1.18	-1.09	-1.54
ES	4.12	1.13	1.21	-1.00	-1.32	-1.22	-1.47	-1.35	-1.52
FI	2.12	1.35	1.06	-1.01	1.09	-1.33	-1.05	-1.28	-1.79
FR	2.09	1.69	1.49	-1.30	-1.28	-1.89	-1.03	-1.64	-1.52
GR	2.38	-1.08	-1.15	-1.32	-1.19	-1.22	-1.16	-1.08	-1.22
HU	2.38	2.14	1.68	1.45	1.44	-1.75	-1.18	-1.27	-2.22
IE	1.61	1.04	2.17	-1.09	-1.08	-5.26	-1.37	-1.23	-2.04
IS	1.42	1.08	1.19	1.14	-1.64	-1.59	-1.00	-1.05	1.24
IT	2.83	-1.37	-1.10	-1.59	-1.06	-1.18	-1.28	-1.27	-1.15
LT	3.00	1.93	1.61	1.52	1.13	-1.85	-1.11	-1.45	-1.52
LU	3.26	1.79	-1.12	-1.67	1.04	-1.14	-1.69	-1.54	1.03
LV	1.24	2.23	1.22	1.06	1.83	1.04	-1.11	-1.23	-1.43
NL	1.56	-1.19	-1.09	1.03	-1.01	-1.00	-1.56	-1.23	-1.00
NO	1.77	-1.23	-1.03	1.14	-1.01	-1.54	-1.06	-1.15	1.02
PL	3.32	2.10	1.30	1.34	1.07	-1.67	-1.00	-1.25	-1.49
PT	2.58	1.58	1.02	-1.52	1.31	-1.28	-1.20	-1.43	-1.00
SE	3.44	1.07	-1.64	1.77	-2.13	1.70	-2.22	-1.69	1.34
SI	2.36	2.03	2.27	-1.08	1.67	-1.69	-1.09	-1.85	-2.38
SK	1.86	1.62	1.28	1.31	-2.22	-1.67	-1.18	-1.27	-1.02
UK	1.71	-1.14	1.25	1.31	1.07	-1.75	-1.56	-1.23	-1.59

Source: own study based on EU-SILC 2005 module on "The intergenerational transmission of poverty". ISCO-88 occupational groups (International Standard of Classification of Occupations, 1988, used in EU-SILC) are the following: 1. LE - legislators, senior professionals, 2. PR - professionals, 3. TE - technicians and associate professionals, 4. CL - clerks, 5. SE - service workers and shop and market sales workers, 6. AG - skilled agriculture and fishery workers, 7. CR - craft and related trades workers, 8. PL - plant and machine operators and assemblers, 9. EL - elementary occupations.

Table 3: Relative risk ratio for persons from ISCO-88 *lowest occupational group* (9. "elementary") in relation to their father's occupation (shadowed: 9. "elementary" to 9. "elementary").

Country	**Father's occupation**								
	LE	PR	TE	CL	SE	AG	CR	PL	EL
AT	-1.23	-2.94	-1.96	-2.63	-1.12	1.22	-1.43	-1.09	2.45
BE	-2.08	-3.33	-2.63	-2.22	-1.43	-1.37	1.16	1.45	3.10
CY	-2.56	-6.25	-4.76	-3.85	-1.79	1.67	-1.19	-1.11	1.77
CZ	-1.89	-14.29	-3.03	-2.86	-1.30	1.51	1.01	1.20	3.06
DE	-1.47	-2.27	-1.30	-1.69	-1.23	1.60	1.07	1.56	2.03
DK	-1.61	-4.17	-1.54	-1.45	-1.35	1.25	-1.05	1.77	1.83
EE	-1.64	-2.86	1.08	-1.25	-1.39	1.27	-1.00	1.02	1.95
ES	-2.33	-4.55	-2.22	-2.50	-1.61	1.20	-1.33	-1.47	2.47
FI	-2.63	-1.82	-1.25	-1.69	1.16	1.21	1.15	-1.00	1.87
FR	-1.41	-4.00	-2.08	-2.56	-1.19	1.36	1.10	1.13	2.09
GR	-2.17	-2.63	-1.89	-1.47	1.31	1.04	-1.05	1.20	2.23
HU	-2.94	-9.09	-4.76	-2.00	-1.19	1.76	-1.14	-1.04	2.34
IE	-1.54	-1.85	-1.45	-2.04	-2.22	1.86	1.06	1.17	2.10
IS	-1.32	-5.56	-1.96		1.52	1.46	1.12	1.41	1.45
IT	-2.22	-1.67	-2.78	-2.08	-1.28	1.37	-1.10	-1.22	2.39
LT	-2.50	-3.57	-2.78	-1.23	-1.04	1.15	-1.15	1.05	1.63
LU	-2.04	-20.00	-2.44	-5.00	-1.10	1.83	1.38	1.31	1.65
LV	-1.47	-2.08	-1.79	-2.78	1.40	1.44	-1.27	-1.09	2.04
NL	-1.30	-10.00	-1.82	1.10	-1.08	1.49	1.17	1.91	2.43
NO	-4.35	-2.70	-1.30	-1.89	2.08	1.81	-1.01	1.53	-1.10
PL	-2.08	-7.14	-2.50	-1.92	-1.64	1.11	1.03	1.03	2.11
PT	-3.57	-3.70	-3.13	-2.04	-1.67	1.16	-1.02	-1.18	2.35
SE		-3.45	1.13		1.61	2.33	1.07	-1.23	4.91
SI	-4.55	-3.03	-1.72	-1.22	-2.38	1.45	-1.00	1.08	1.78
SK	-3.03	-2.63	-3.03	-1.61	1.04	1.31	-1.16	-1.09	2.16
UK	-2.63	-4.00	-1.82	-2.00	1.08	2.49	1.26	1.52	1.73

Source: own study based on EU-SILC 2005 module on "The intergenerational transmission of poverty". ISCO-88 occupational groups (International Standard of Classification of Occupations, 1988, used in EU-SILC) are the following: LE - legislators, senior professionals, PR - professionals, TE - technicians and associate professionals, CL - clerks, SE - service workers and shop and market sales workers, AG - skilled agriculture and fishery workers, CR - craft and related trades workers, PL - plant and machine operators and assemblers, EL - elementary occupations.

Table 4. The general population levels and the sample size for EU-SILC 2005.

Country	EU-SILC		EU-SILC module	
	The general population	Sample size	The general population	Sample size
AT	6 719 295	10 419	4 642 702	7 396
BE	8 252 412	9 974	5 577 071	6 831
CY	590 080	8 997	402 636	6 050
CZ	8 481 400	8 628	5 844 895	5 852
DE	68 509 364	24 982	46 454 862	17 235
DK	4 272 821	11 900	3 018 720	4 408
EE	1 108 285	9 643	718 402	5 940
ES	36 187 597	30 375	24 589 046	20 202
FI	4 182 733	22 961	2 879 945	7 887
FR	47 649 123	18 769	31 687 601	12 665
GR	8 966 147	12 381	5 995 505	7 870
HU	8 218 174	14 791	5 653 355	9 906
IE	3 216 036	12 032	2 077 997	5 403
IS	214 936	6 670	148 340	1 987
IT	49 285 838	47 311	32 945 556	32 044
LT	2 766 290	9 929	1 820 512	6 433
LU	357 969	7 535	251 190	5 502
LV	1 810 818	7 913	1 190 065	4 958
NL	12 894 547	17 852	9 163 937	7 090
NO	3 567 659	11 913	8 680	8 542
PL	30 942 896	37 671	20 772 093	24 875
PT	8 766 392	10 706	5 872 684	6 778
SE	7 353 801	12 191	4 866 098	8 108
SI	1 646 881	23 862	1 111 942	5 493
SK	4 475 308	12 879	2 985 859	8 632
UK	47 194 526	20 115	31 869 725	13 724

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