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Research paper on the occupational structure in Poland

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Twenty years of transformation and its consequences for the occupational structure in Poland.

Introduction

In a society the term of "occupational structure" refers to the mix of different types of occupations found there (Johnson 2000). A number of factors play a substantial role in shaping the OS. Just to mention only those which are of key importance: countries and regions economies structure (relative weight of various industries), the labour market, technology, bureaucracy, occupations' status and prestige in the society and education. The changes of the occupational structure may be caused by a number of listed factors, which, additionally, have to be perceived as elements of a system, rather than separated determinants. It is also worth to mention that the role of the factors changes over time.

In the last two decades Poland, as a post-communist country, goes through a process of radical economic and democratic transition. Generally speaking the process has been accompanied by an enormous drop in the GDP (Gross Domestic Product), a significant decline in the employment and economic activity, a shift in the sectoral composition (drop of employment in agriculture and manufacturing and rise in public administration, retail and education) of demanded labour force, emergence of unemployment – a phenomena previously unknown to state-socialist countries. The introduction of market economy led to opening the national markets to foreign investments and cross-national competition. Furthermore, the transition has radically changed the role of education in individuals' life, employment, social status etc. and consequently led to significant alteration of the education system. To sum up the process of transition from state-socialism to market economy and from one-party system to democracy may have caused a revolutionary modification in occupational structure in Poland. The uniqueness of the process, not observable ever before and peculiarity of Poland, (the largest economy among New Member states, huge scale of unemployment during most of the last 20 years etc.) make the case of the country very interesting as a subject of the study of occupational structure.

The paper is organized as follows. The next section provides some background information and an overview of previous studies. The second section describes the changes in economic activity in Poland between 1994 and 2007 (the comparison limited by data availability). The third one provides the short analysis of changes in the

occupational structure in Poland. The fourth section presents the potentially most important factors; labour market, foreign investments, education; affecting the changes in occupational structure in Poland. It must be added that some data are not fully comparable and due to limited data availability not the whole period of 1989 -2007 is under study.

Employment trends and labour market development in Poland

In the year 1990 extensive changes have entered Polish labour market. Labour became, in a sense, a commodity. Polish society for the first time since the end of the Second World War faced unemployment and free market. In the period of communists' rules in Poland we had to deal with both (unofficially) covered unemployment and (officially) labour supply that was lower than demand. After 1990 thousands of people became very costly and redundant for employers which led to a dramatic rise of unemployment. The changes began in 1990 that led to a dramatic drop of activity rate in Poland, from almost 62% in 1992 to 53,7% in 2007 (for people older than 15). The most important factors: rise in the participation in education and liberal system of social security with number of possibilities to leave the labour market before the statutory retirement age (Poland has the "youngest"[1] pensioners in Europe).

Investigation of occupational structure

Why it is important to analyze the impact of structural changes and events on national occupational structure? Firstly, it is useful to determine whether or not the economy experienced a growth of "good jobs" over "bad jobs". Secondly, the analysis serves as a starting point for estimation of future skills and qualification requirements.

The empirical investigation of occupational structure change has mostly concentrated on high income countries and most of the time adopted the shift-share analysis (SSA). Adopting SSA method means that we look at skills upgrading effects from two perspectives: between industry and within industry where the former one translates into observing shifts in the industry composition, while the latter captures changes in individual industries' skill structure.

A country's skills structures emerge from alteration between and within industries. In literature of the subject it is commonly indicated that the economic development of

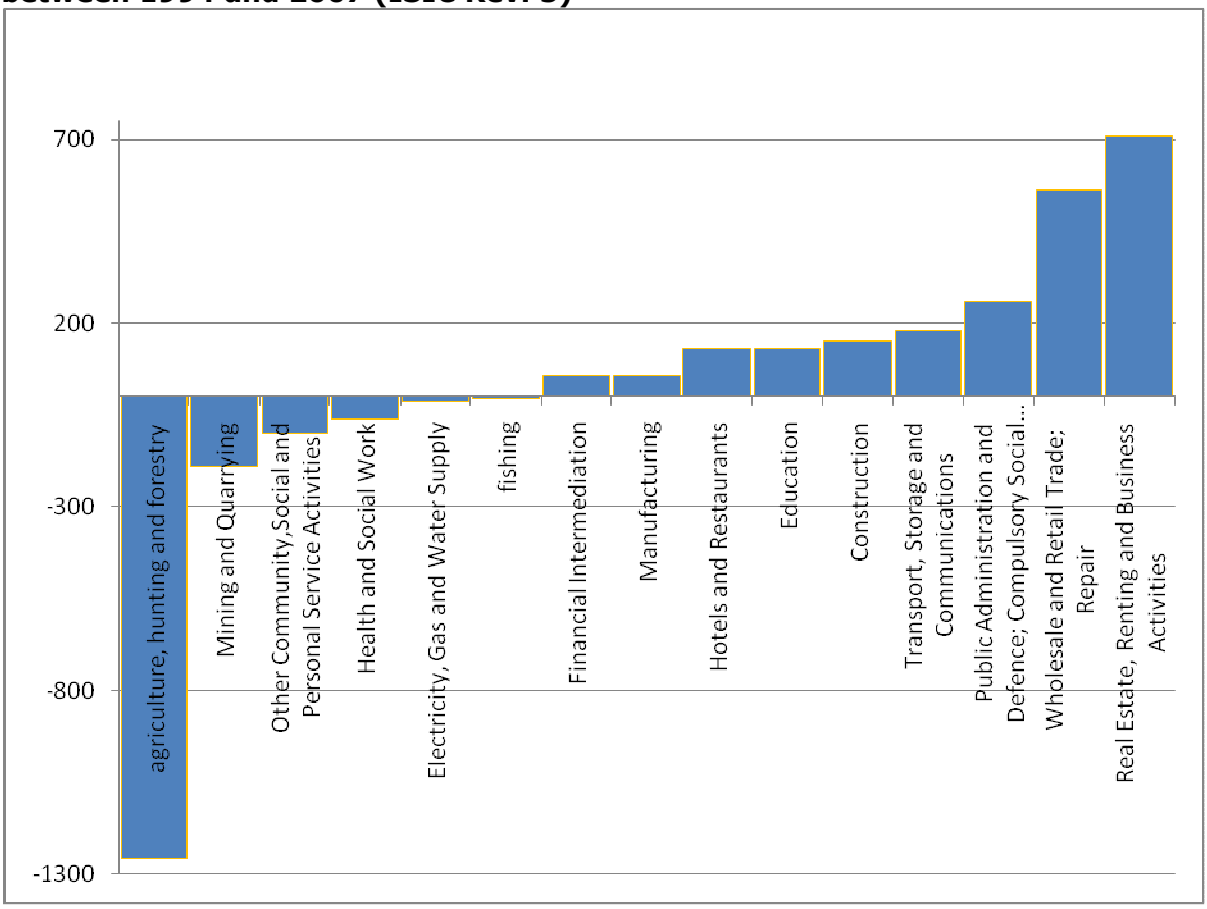
[1] In 2007 women taking advantage of early retirement were on average 56 years old, men 57.9 years old, while the average age in European Union reaches 60.4 for women and 61.4 for men. As a consequence Poland has the lowest percent of workers aged between 55 and 64 years in the EU at 28.1 percent. The average for the EU is 43.5 percent

the country affects the occupational structure; a rise of the domestic product is usually accompanied by proportional decrease in the share of agriculture and manufacturing and rise of employment in services. The data presented at figure (no 2) seem to confirm the hypothesis. Poland entered the last decade of XX century as a developing country with agriculture and manufacturing as the dominating sectors of the economy. During 13 years between 1994 and 2007 there was a significant drop in the number of persons employed in the former sector, and as a natural consequence, the proportion of employed in agriculture has also decreased. While in 1990 at the beginning of the transformation process every fourth person was employed in agriculture (according to the National Statistics Office it was 25,5 percent of employed population, and the proportion rose in the first years of 1990's because of dramatic rise of unemployment in manufacturing) it was every seventh in 2007. The findings for manufacturing are not so straightforward. Despite the substantial rise in the wealth of the nation the proportion of employment in manufacturing decreased slightly, while the number of employed in the sector is on rise; (between 2002 and 2007 the number of employed in manufacturing rose for almost 500 thousand persons)

Changes in labour market activity

The total number of jobs created in various occupational categories and economical activities, provide no point of references. Rather than focusing on the number of jobs created economywide, the distribution in percentage terms of the employed in different economic activities (ISIC Rev. 3) is examined.

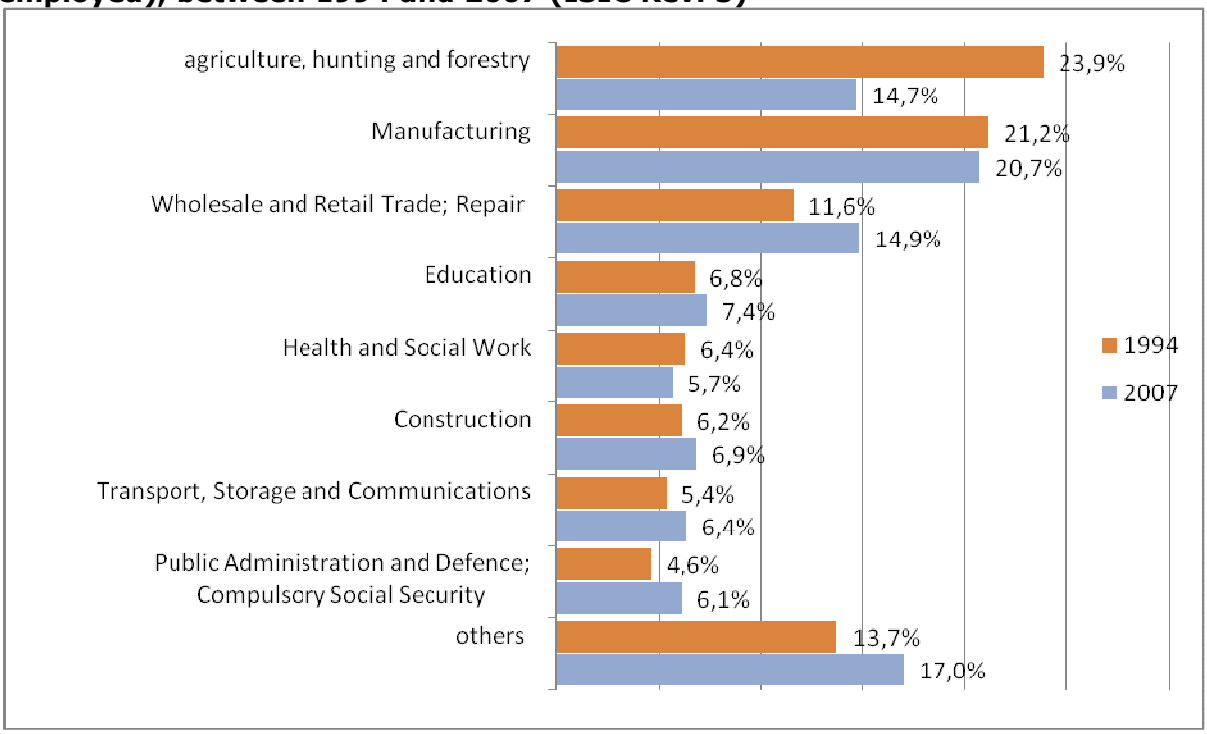
Figure 1
Changes in total employment in Poland, by economic activity (thousands), between 1994 and 2007 (ISIC Rev. 3)



Based on: Laborsta database ILO

Figure 1 indicates the significant changes in the employment structure in Poland in the years 1994-2007. One has to have in mind that the drop within industry might have been only partly caused by the industry's shrinking process, and partly by the overall decrease in activity rates. To study the process see figure 2, indicating the relative changes.

Figure 2
Changes in employment in Poland, by economic activity (proportion of employed), between 1994 and 2007 (ISIC Rev. 3)



Source: own calculation based on Laborsta (ILO) database

The significant change in the number of person economically active in agriculture (minus c.a. 1300 thousand) translated into a drop of slightly more than 9 percentage points of all employed. Since the wealth of the country has been on rise it was justified to expect that the proportion of employed in manufacturing would decrease, but the presented data do not confirm the hypothesis. The number of population active in manufacturing experienced a tiny rise.

Changes in major occupational groups

Among the 9 major occupational groups, employment change between 1995 and 2007 varies from an increase of nearly 68% for professional and related occupations and for service occupations and plant and machine operators both 31%, to a decline of more than 34% of agriculture workers, which are highly concentrated in declining agriculture industry (see figure 1.). The rise of employment in professional and related occupations translated into a numeric increase of 944 thousand jobs in the group. The rise for service workers was 425 thousand jobs and for plant and machine operators rose by 374 thousand. In service occupations growth was so large; the projected 17-percent growth rates entail numeric increases of nearly 5 million jobs in each group over the projection

period. While the number of jobs in agriculture occupations was very high in the beginning of the transformation, the decrease of 34% means that the occupational group experienced a numeric decline of more than 1 million jobs.

Figure 3

Employment in nine occupational groups as a proportion of all employed in Poland 1995-2007.

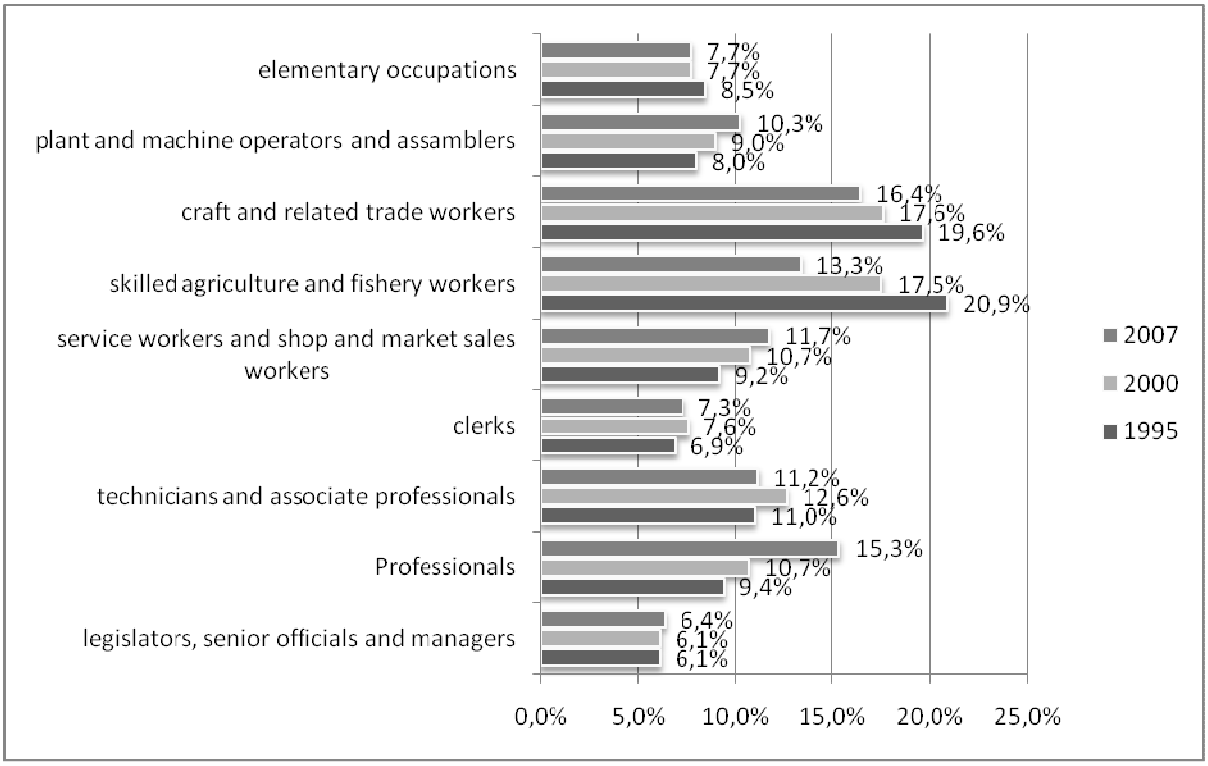
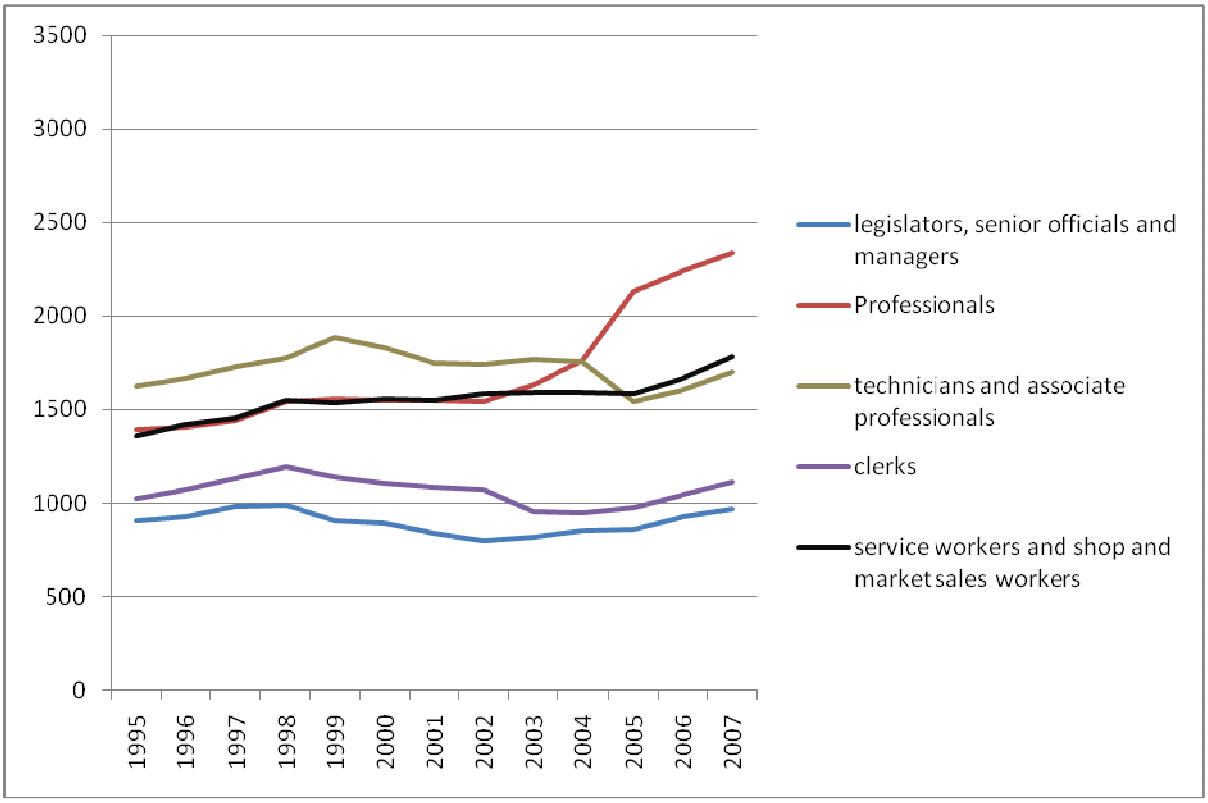
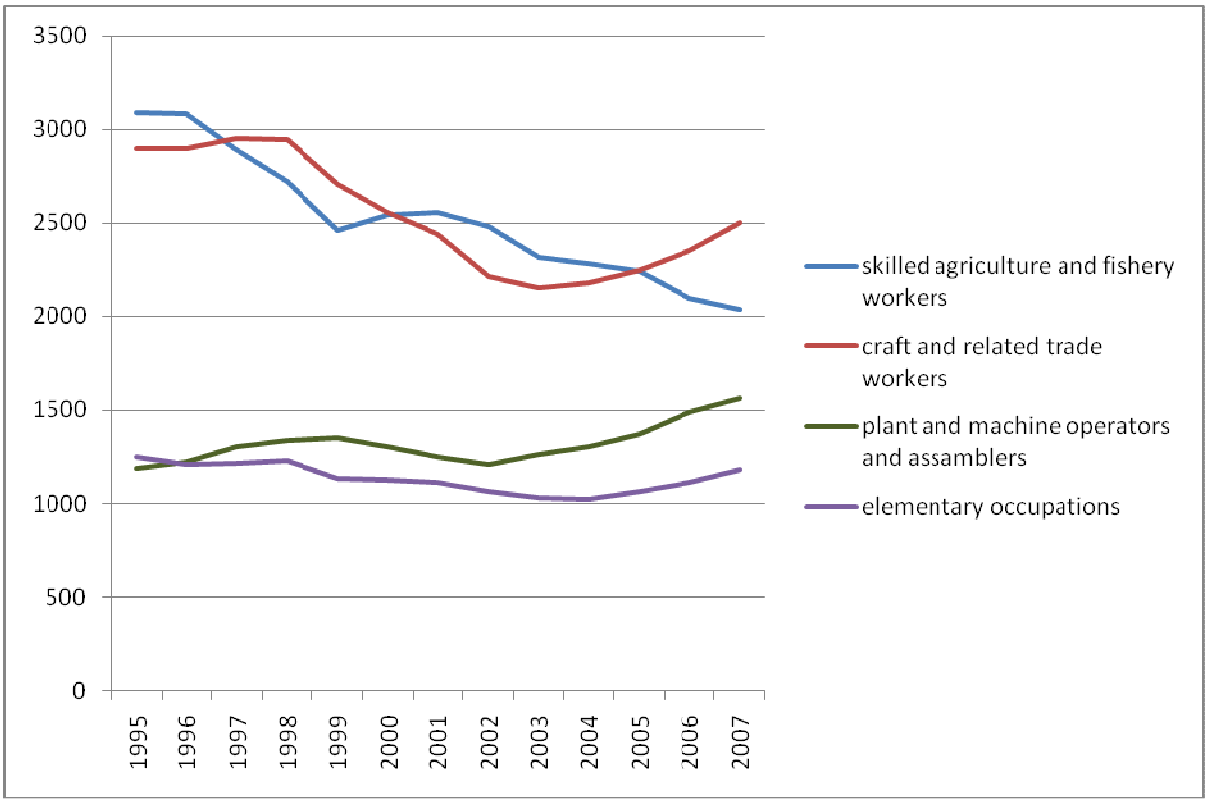


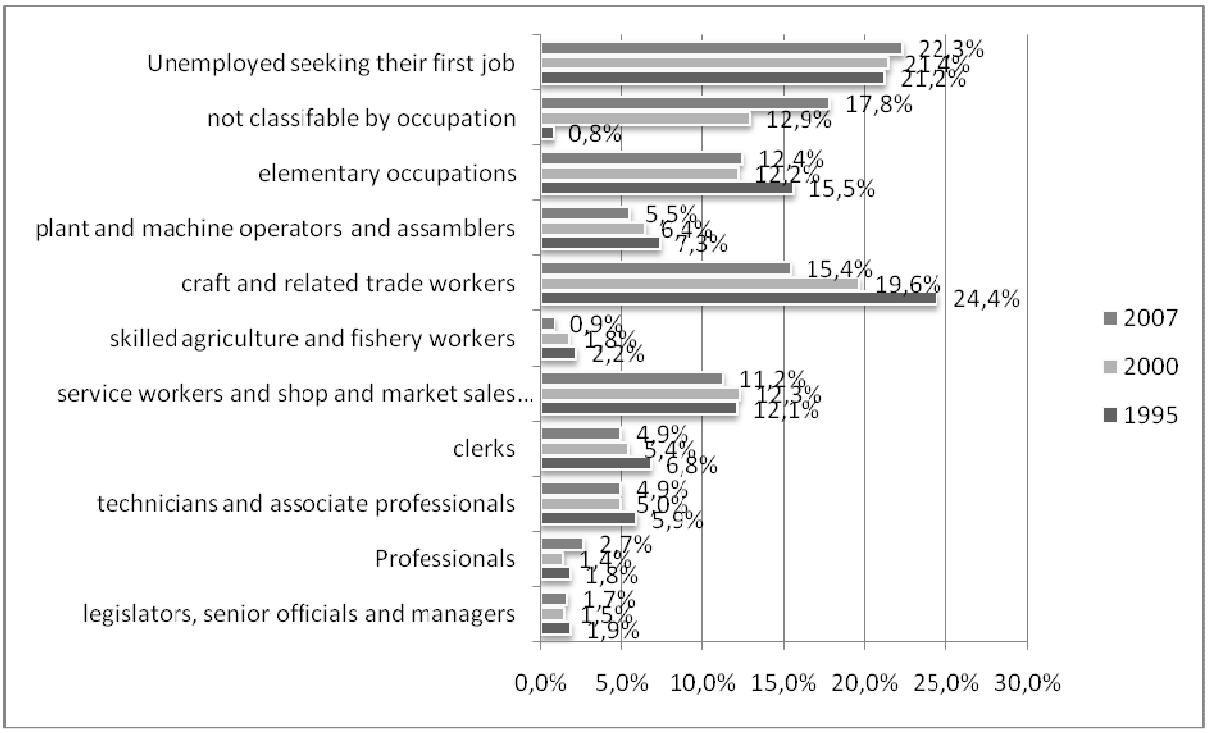
Figure 4
The total number of employmed in nine occupational groups in Poland 1995-2007.

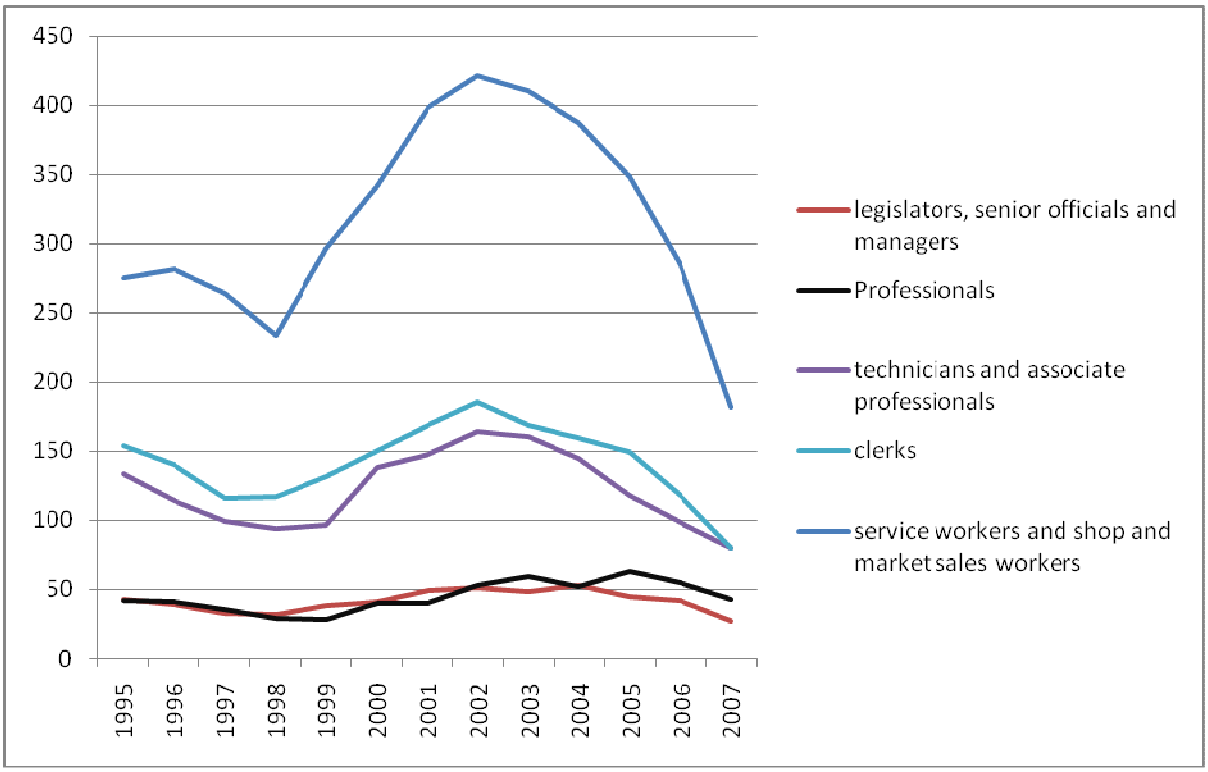


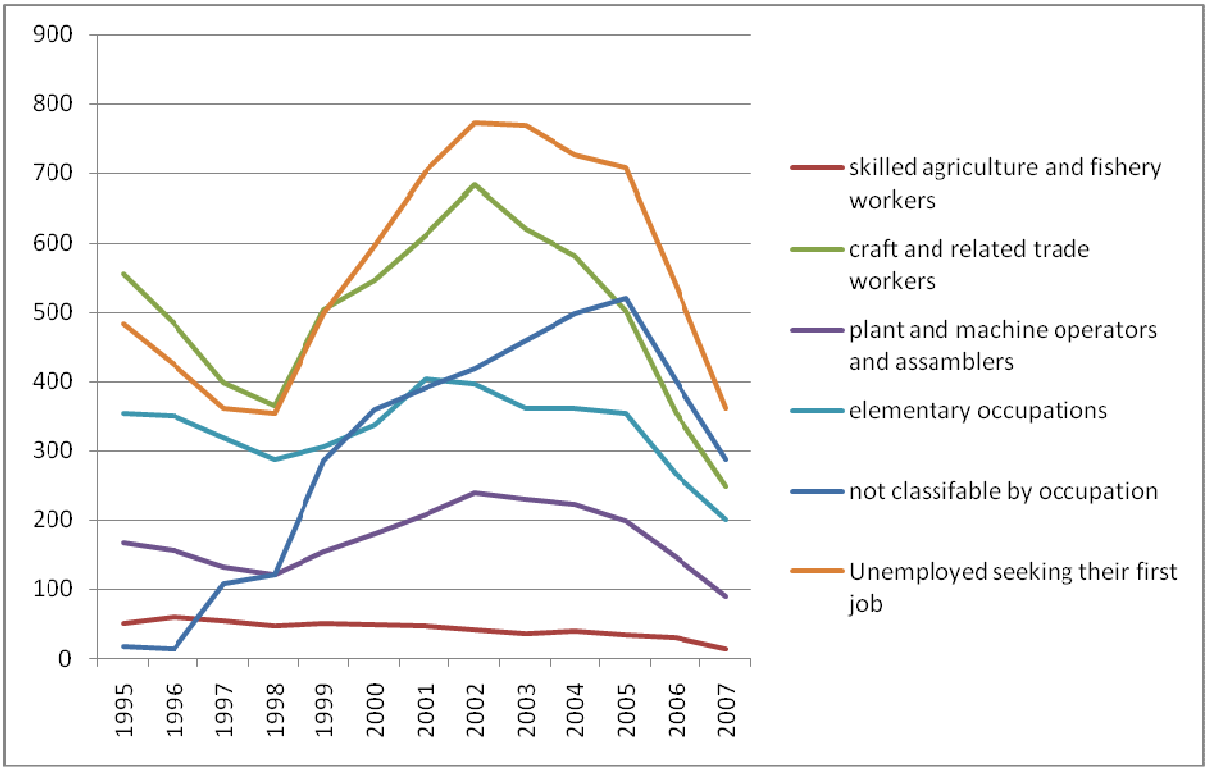


Between 1989 and 2007 Poland experienced one of the highest levels of unemployment among all European Union member states. But in the last years of that period the situation at the labour market has significantly improved. When considering the occupational groups we observed that in all but one the number of unemployed has decreased i.e. the group defined as "not classifiable by occupations". "Craft and related trade workers" is the group of unemployed that experienced the most significant drop in number (307 thousand) between 1995 and 2007, followed by elementary occupations (153 thousand) and unemployed seeking for their first job (122 thousand). However, taking into consideration the fact that the number of employed individuals representing the two former groups ("craft" and "elementary") decreased with the exception of the period 2003-2007 when it was on rise, it is justified to conclude that the drop of number of unemployed representing the groups is due to exit (limiting activation on the labour market) or, eventually, not entering (among the new arrivals) the labour market.

Figure 5
The unemployed in nine occupational groups, as a proportion of all unemployed in Poland 1995-2007.







Changes in occupational structure

The growth of occupational groups—and occupations—is determined, in a large part, by varying rates of growth in industries in which they are concentrated (Dohm & Shniper 2007).

To picture: if professional and related occupations are concentrated in some fast-growing industry sectors such as real estate, renting and business activities it is justified to predict that their number is to grow. It appears to be only partly true.

The data on labour market activity by occupational group and economy sections are available only to a very limited extend, but it allows us to follow the changes within occupational groups within the industries.

Table 1 The proportion of the occupational groups according to industry (the main industries)

Occupational group	2007	2000
legislators, senior officials and managers	• whole sale and retail trade 28% • manufacturing 20% • construction 11%	•whole sale and retail trade 27% •manufacturing 20% •construction 11%
professionals	• education 31 % • health and social work 19% • real estate, renting and business activities 13%	•education 43 % •health and social work 12% •manufacturing 8%
technicians and associate professionals	• public administration, defence and compulsory social security 18% • manufacturing 17% • whole sale and retail trade 13%	•health and social work 21% •manufacturing 18% •public administration, defence and compulsory social security 14%
clerks	• whole sale and retail trade 21% • manufacturing 16% • transport, storage and communication 16%	•whole sale and retail trade 21% •manufacturing 16% •transport, storage and communication 14%
service workers and shop and market sales workers	• whole sale and retail trade 62% • hotels and restaurants 10%	•whole sale and retail trade 63% •hotels and restaurants 10%
skilled agriculture and fishery workers	• agriculture 99%	•agriculture 99%
craft and related trade workers	• manufacturing 52% • construction 26%	•manufacturing 50% •construction 24%
plant and machine operators and assemblers	• manufacturing 46 % • transport, storage and communication 29%	•manufacturing 39 % •transport, storage and communication 28%
elementary occupations	• manufacturing 24% • education 13% • real estate, renting and business activities 11%	•manufacturing 27% •construction 12% •health and social work 11%

Between 2000 and 2007 in all economic activities (ISIC-rev.3) but in "hotels and restaurants" (H) the number of professionals have risen. The economic active populations of professionals rose in economic activities with categories: (N) "health and social work" (256 thousand between 2000 and 2007) and (K) "real estate, renting and business activities" (199 thousand). However in the former case the observed rise was mainly due to the changes in definition of nurses, which took place in Polish occupational classification.

In some cases it is difficult to judge if the changes in occupational structure within an economic activity have led to increase or decrease of the level of skills of people active in that industry. For example between 2000 and 2007 the number of professionals, technicians and service workers active in **education** (M) rose for: 44, 9 and 28 thousand respectively but in the same period the activity of people with elementary occupations rose (!) by 27 thousand.

In **manufacturing** the number of professionals rose by 62 thousand while the number of plant and machine operators and assemblers rose by 172 thousand. That is probably the consequence the impact of technology development has on the occupational structure: while the activity of the operators was on rise the activity of craft and related trade workers has been dropping (by 136 thousand between 2000 and 2007).

The activity in **health and social work** changed dramatically, the number of professionals rose by 256 thousand while number of technicians dropped by 238 thousand. However the reason for the alteration was of bureaucratic nature: between 2002 and 2004 the occupational classification in Poland changed, and as a consequence number of nurses and midwifes gained the status of professionals instead of technicians. The occupational structure in health and social work category changed mostly because of a decrease in activity rates of individuals with elementary occupations (by 70 thousand) and service workers (40 thousand).

Of all economic activities: agriculture, hunting and forestry experience the most dramatic change in terms of number of people active on the labour market, but it has only limited, if any, consequences for the structure of labour force activity in the industry. Both in 2000 and 2007 absolutely dominating the activity: among those active in agriculture were: skilled agriculture and fishery workers, with the proportion remained almost unchanged around 90% (89% in 2000 and 91% in 2007).

The number of technicians, clerks, craft and related trade workers, plant and machine operators and elementary occupations decreased in **construction.** Only the

number and proportion of senior officials and managers have increased between 2000 and 2007. However the highest activity rate in the industry belongs to craft and related trade workers (around 62%).

Factors

Technology

Cörvers and Meriküll (2008) indicate that in Poland, as well as in other new member states, that joined EU in 2004, the industry structure is biased towards less skills intensive industries. In the last two decades Poland has been a country with relatively lower, comparing to old 15 EU members, labour cost. To picture: according to Eurostat data in 1996 labour costs in Poland represented around one seventh of the costs in Germany and the Netherlands, one fifth of those in UK and two fifth of Portuguese labour costs. Since then it has changed but the difference remains substantial. In 2006 labour costs in Poland represented 23% of labour costs in Germany, 56% in Portugal, 20% in United Kingdom and 21% in the Netherlands. Along with labour costs tax rates on corporate income also was in favour of Poland, but not during the whole period. In 1995 the adjusted top statutory tax rate on corporate income was on the level of 40%; in Germany 56.8%, United Kingdom 33%, the Netherlands 35%, Portugal 39,6%. Between 1995 and 2007 we observed a substantial drop to 19% (Germany 38,7%; United Kingdom 30%, the Portugal 26,5%; the Netherlands 25,5%.

Let us use the model authored by Heckschler and Ohlin, which states that the relative costs of production factors (here: labour and capital) in different countries determines the direction of capital flow as a starting point. As Polish labour costs are much lower than in most of the developed countries, it should be a net exporter of labour-intensive goods, whereas the wealthy economies are expected to be net exporters of capital-intensive goods. What are the consequences for occupational structure? It seems to support the low-skilled labour. Meriküll and Cörvers (2008) suggest that due to complementarity and high-skilled labour, and the substitutability between capital and low-skilled labour, the OS of poorer countries (new members of European Union) is expected to be driven towards low-skilled labour force. However, the authors point out, that the technological changes in countries like Poland due to diffusion from the richer countries should over time lead to skills upgrading in the country (Meriküll and Cörvers 2008).

Poland represents an aim for intensifying foreign investments. As a consequence it is justified to expect sill upgrading process in the country. The diffusion may take place mainly via foreign direct investment. Since 1990 the amount of FDI in Poland is on rise and was slightly more than 16.500 million EURO in 2007. Two main economic activities for foreign investments are: services (58% of all FDI in 2007) and manufacturing (30%). We have to have in mind that most of the investments are originated from well-developed countries like: Germany, United States, France, the Netherlands and United Kingdom.

Poland is likely to experience significant structural changes but it is worth to emphasize that manufacturing sector is likely to remain an important source of jobs and a crucial part of the national economy in the country. Obviously, due to technological improvement the skill requirement of the jobs will change. This includes formal qualifications that are required to undertake such jobs. Having in mind that there is no simple relationship between qualification and occupation it is possible to explore the trends.

Education

In the past few decades the education and training have acquired high status in capitalist and democratic countries of Western Europe. Generally speaking; the higher the level of education, the lower the risk of unemployment and a higher status on labour market. Diplomas and certificates play a crucial role in determining an individual's opportunities when living in developed countries. In pre-capitalist Poland, similarly to other Eastern bloc countries, the role of education has become so important relatively late. Under communists' rule one had to fulfill other than educational criteria to be successful (i.e. membership in communist party), on the other hand individuals opportunities were determined by politically driven decisions: "the career" was possible mostly in state-owned manufacturing companies. While in Poland there was a rule of guaranteed employment, which led to an extreme imbalance between labour supply and demand; the vacancies outnumbered the jobseekers[2], the role of education in guaranteeing employment was rather insignificant. Starting in 1990 the economic and social changes in Poland had increased the importance of education and professional experience. As a consequence the demand for (tertiary) education rose reasonable after the collapse of communist rule in the country. Obviously, the changes in the meaning of education have had direct influence on skill supply at the labour market. The proportion

[2] Although unemployment was not officially defined or measured, the labour agencies collected data on jobseekers and vacancies. In 1989 the number of registered jobseekers in Poland was 9,600, while the number of vacancies was 254,400. (Socha & Weisberg 1999, p. 10)

of economically active individuals who graduated only from primary or first step of basic education has been dropping continuously (figure 6 and figure 7). Low educated[3] individuals are over-represented in two age groups the oldest and the youngest in the labour market. In 1994 slightly more than a half (51,6%) of economically active persons aged more than 50, and 30% aged 15-19 were low-educated. But the number of low-educated people in Poland rises along with the activity at the labour market and achieves its peak for the age group 40-44 years (1994) and 50-54 (2007). The issue of low education is mostly related to age. The majority of people, who in 1990 had not achieved any education on a basic level is to leave the labour market in coming years. Between 1994 and 2007 the number of people in this group fell for more than 2 million, with the end at the level of 1.71 million. For active population aged 50 or more the drop was for more than 800 thousand.

Figure 6

The distribution of low-educated individuals among economically active population in Poland 1994 and 2007.

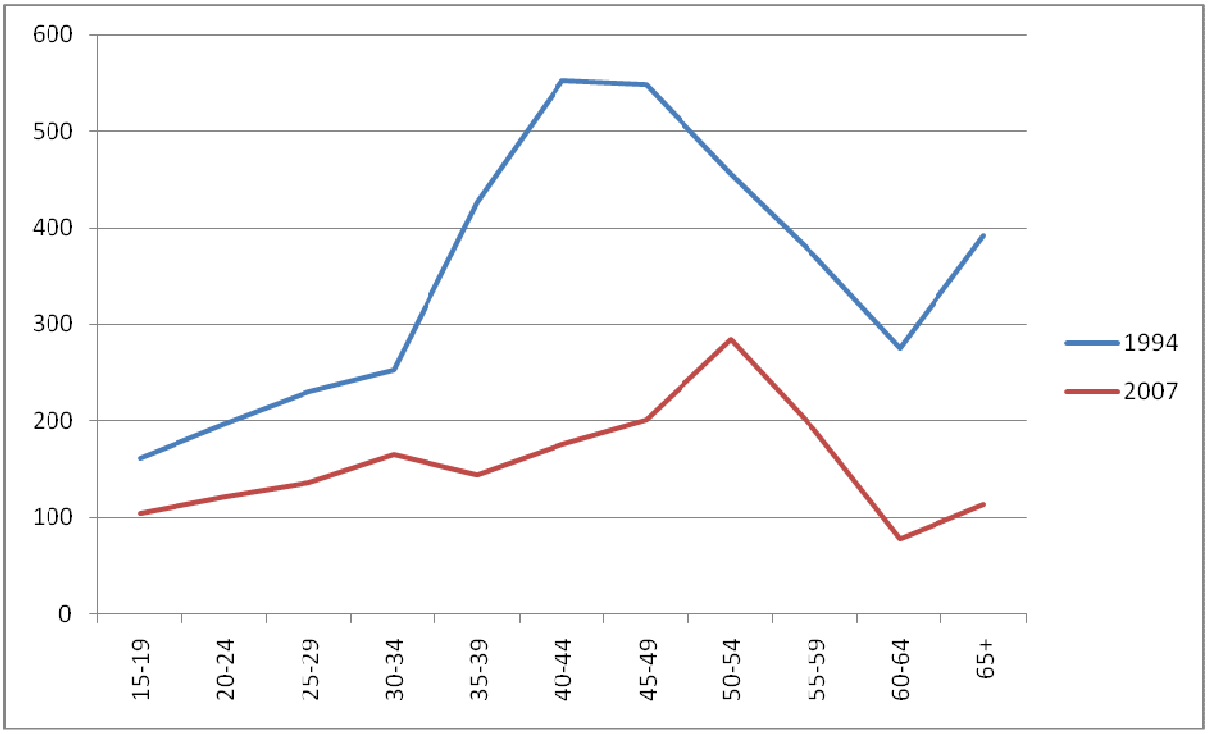
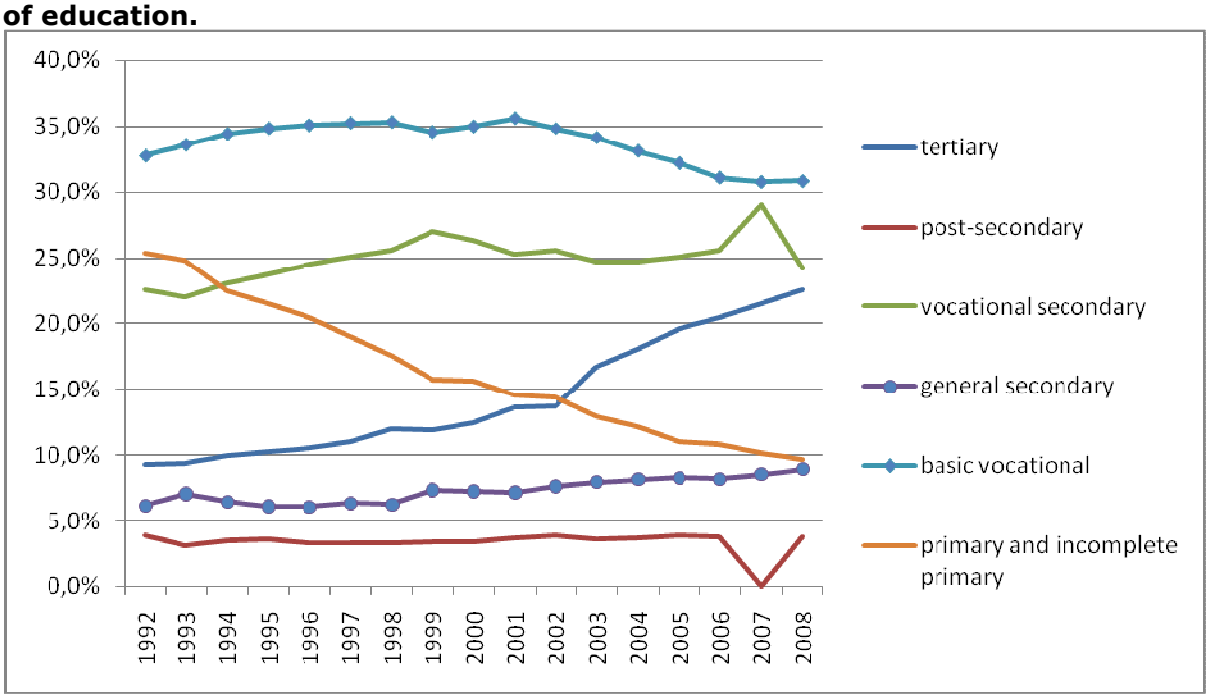


Figure 7

[3] "Low- educated" defined as: primary education or first stage of basic education

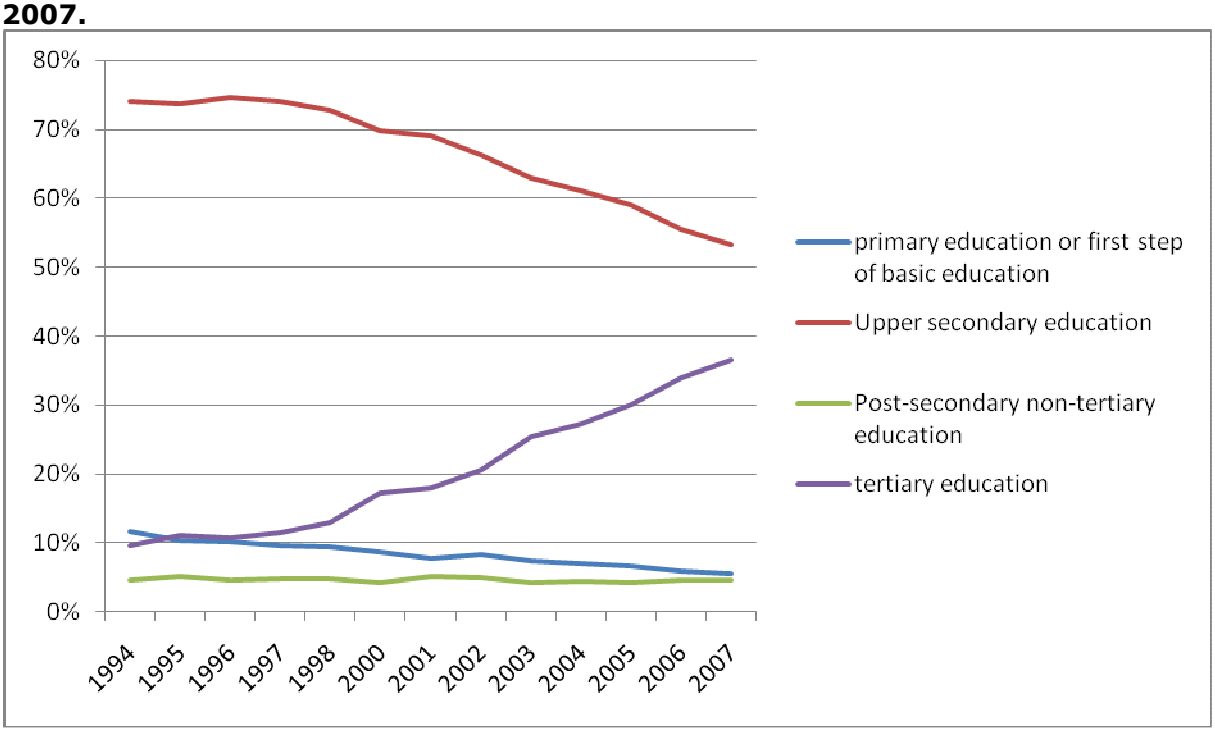
The proportion of economically active population according to the highest level of education.



*no data for post-secondary education in 2007
Source of data: Labour Survey in Poland

Considering education between 1992 and 2008 we can observe extensive change in the structure of the group of Polish active population. The most striking is the rise of the proportion of highly educated individuals (from 9,3% to more than 22,6%) and drop of low-educated ones (from 25,4% to 9,7%). The changes observed for the whole population are even more vivid when watching the age group 25-29 years (figure 8). While in Poland the average age of graduate from the universities and higher vocational schools is 24, we can assume that paying attention to the group relatively well pictures the process of alteration. The results presented in figure 8 in a very suggestive way show that entering labour market generations fully appreciate the meaning of building their human capital through education. Almost two in five young persons (37%) graduated from tertiary education level institution, and only one in twenty (5%) represented the low level of education (in 1994 it was 10% of the population).

Figure 8
The education of economically active population aged 25-29 in Poland, 1994-2007.



The statistical data on unemployment point out the importance of human capital investment in Poland. Already in 1994 more than 20% of low-educated population active at the labour market was registered as unemployed (the level which is not very high when taking into consideration that the unemployment rate in Poland on those days was 17%). However in 2007 the unemployment rate for low-educated was equal to 33% (despite the fact that economic activity of people in this group dramatically decreased), while for individuals with university diploma it was 3%, both in 1994 and 2007.

The connection between the level of education and qualifications on the one hand and the employment level on the other is likely to become closer in the course of the structural change that is taking place.

Prestige of occupations

In social perception some of the occupations are perceived as more respect deserving. The reason for the prestige in society may be due to different reasons like: social usefulness, knowledge and skills, effort in providing job, responsibility etc. It is reasonable to assume that the most prestigious occupations are the most of interest among the potential candidates to the occupation. It seems rather reasonable to believe that prestige belongs to the criteria of choosing a job, position or career. Having the data

that allow us to compare the changes in prestige of the occupations across years would be beneficial for our attempt to describe and understand the Polish occupational structures alteration. The data provided by CBOS (2009) – survey institute, are comparable across years.

Table 2

Prestige of occupations in Poland 1975-2008.

	1975	1987	1995	1996	1999	2008
university professor	90	87	80	79	81	81
fireman						80
miner	72	83	72	74	66	77
nurse					65	75
doctor	86	82	75	74	73	74
school teacher	77	79	72	72	71	73
qualified worker i.e. operators	65	64	60	63	58	72
engineer	72	69	66	65	65	72
bookkeeper						70
IT expert						70
farmer (medium size farm)	51	66	61	63	56	69
solder (rank of captain)	65	65	66	64	63	69
judge			71	69	70	69
bus driver						68
lawyer						67
Factory manager	76	79	64	61	61	67
Journalist	71	71	67	64	61	65
Entrepreneur, company owner			60	58	62	65

policeman			62	60	61	62
Small shop owner	45	55	52	54	53	63
Sales assistant						63
Cleaner						62
Stock market specialist			53	54	56	59
priest	69	69	55	56	55	58
village headman					59	58
unqualified construction worker	38	44	46	47	45	56
minister of national government	85	78	62	60	59	54
councillor					54	53
member of the parliament			58	51	56	45

It is difficult to establish the main factors behind attaching prestige to the occupations. It might be that university professor is appreciated for its expertise, intellectual independence, and for the knowledge confirmed by diplomas. The respect enjoyed by fireman has its possible sources in the nature of work characterized by large utility for society and risking their own life to save others. Trying to find a pattern of the interdependence between prestige of the occupations and its popularity in society is rather risky. Having in mind the limitations we might conclude, that the main source of occupations' social appreciation are: expertise (professor, judge) and serving others (teacher, doctor, nurse, and fireman). Based on prestige we might expect that increasing skill levels will be gain on importance. On the other hand one must be aware that some of that, relatively to other factors like wage, demand or economy structure; prestige remains a poor predictor of occupational structure changes.

Conclusion

Poland represents a country with dominating between industries shifts and not within. There are two main factors that drove the changes in occupational structure in the country for the last 20 years. Firstly, it has been the dramatic alteration of education's role in the professional life of young Poles. Secondly, Poland became a host for many foreign investments, and the driving force behind the increase of employment in industry – especially in the last few years.

In coming years we can expect an increase in the overall level of employees in Poland, a decrease in the proportion (and number) of employed in agriculture, and a rise in the employment in services.

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