

**Changes in the Structure of Employed Persons
in Poland in 1992–2006**

Abstract

The aim of the paper is to characterise changes in the structure of employed persons according to social and demographic features in Poland in 1992–2006. The following criteria of structural changes have been taken into consideration: sex, age, education, occupation and place of residence. Criteria mentioned above emphasise those features of individuals which determine employers' demand for their work, while the very demand influences improvement of situation on labour market.

In order to evaluate the direction and scale of changes in the structure of employed persons in Polish economy, the comparison of these changes with the ones in other European Union countries has been made.

1. Introduction

Implementation of socio-economic pro-employment policy, aimed mainly at the growth of productive employment and quality of job resources, is very important for improvement of situation on Polish labour market. Goals of socio-economic pro-employment policy are important from the point of view of structural labour market changes and reduction of unemployment, especially in the case of the most endangered groups (youth, women, disabled and long-term unemployed persons). These goals are, above all, present in governmental programmes: *National Strategy on Employment Growth and Human Resources Development in 2000–2006* (MPiPS 2000 – the Ministry of Labour and Social

Policy 2000) and *National Employment Strategy for 2007-2013* (2005) based on guidelines and recommendations of the European Union and OECD in the field of employment policy⁹.

Changes in the level and structure of employment in Polish economy are directly related to ongoing transformations of economic structure which occur due to necessity for modernisation and improvement of economic competitiveness.

2. Employed persons and employment coefficients in Poland in 1992–2006

Since the beginning of transformation period one can notice significant fluctuations in employment coefficients and the number of employed persons, which is presented in Table 1.

Data from Table 1 shows that the number of employed persons in 1992–1994 decreased by 388 thousand persons (by 2.6%), while in 1994 it decreased significantly more, i.e. by 0.2% in relation to the previous year. Upward tendencies in the number of employed persons occurred only in 1995, however, they lasted until 1998. In this period increase in the number of employed persons amounted to 588 thousand (3.8%). Repeated and, as a matter of fact, quite significant decrease in the number of employed persons took place in 1999 (by 762 thousand persons) and continued till 2003. In this period 1617 thousand persons in total left the sector of employed persons, which was followed by increase in the number of employed persons in 2004–2006 by 1193 thousand persons. Nevertheless, the number of employed persons in 2006 was lower by 224 thousand persons than in 1992.

Tendencies of changes in the number of employed persons are reflected in changes in employment coefficients. Employment coefficient reached the highest level in the surveyed period in 1992 (53.3%). Until 1995 one could notice decrease in employment coefficient, whereas in 1996–1997 its renewed increase within 0.5–0.8 percentage point. From 1998 on downward tendencies of the coefficient predominated. In 2002 it reached its lowest level of 44.1% within the surveyed period. Repeated insignificant increase in the coefficient occurred in 2003, while significant one in 2004–2006. Nevertheless, the level of employment coefficient in 2006, which reached 47.5%, should be evaluated

⁹ It is visible in four priorities of employment policy which are based on priorities of the European Employment Strategy and goals of the Lisbon Strategy. They involve: improvement of employment possibilities, development of entrepreneurship, improvement in adaptation of enterprises and employees, as well as equality of chances on labour market.

as relatively low, since it means that only 47 persons were employed out of 100 persons aged 15 or more. According to the Labour Force Survey, employment coefficient decreased by 5.8 percentage points within the whole surveyed period of 1992–2006.

Table 1. Employed persons and employment coefficients in Poland according to the Labour Force Survey in 1992–2006

Years	Number of employed persons (thousands) ^{a/}	Changes before the previous year (thousands)	Previous year = 100	Year 1992=100	Employment coefficient (%) ^{b/}
1992	15.135	-	-	100.0	53.3
1993	14.772	-363	97.6	97.6	52.1
1994	14.747	-25	99.8	97.4	51.0
1995	14.771	+24	100.2	97.6	50.7
1996	15.103	+332	102.2	99.8	51.2
1997	15.315	+212	101.4	101.2	51.5
1998	15.335	+20	100.1	101.3	51.0
1999	14.573	-762	95.0	96.3	48.0
2000	14.540	-33	99.8	96.1	47.4
2001	14.043	-497	96.6	92.8	45.5
2002	13.722	-321	97.7	90.7	44.1
2003	13.718	-4	99.9	90.6	44.2
2004	14.058	+340	102.5	92.9	45.1
2005	14.390	+332	102.4	95.1	45.9
2006	14.911	+521	103.6	98.5	47.5

^{a/} - in 1992–1998 – data from the end of November;

- in 1999–2005 – data from the fourth quarter;

Number of employed persons involves all persons aged 15 or more as in the Labour Force Survey's definition cited in chapter 1, point 1.

^{b/} employment coefficient has been calculated as the share of the number of employed persons in the total number of persons aged 15 or more.

Source: Aktywność ekonomiczna ludności Polski IV kwartał 2001, GUS, Warszawa 2002, pp. XL, XXXV; IV kwartał 2003, GUS Warszawa 2004, p. XLII; IV kwartał 2004, GUS, Warszawa 2005, p. XLII; Kwartalna informacja o rynku pracy, GUS, Warszawa 2006, pp. 4, 6; Raport o inflacji kwiecień 2007, NBP, Warszawa 2007, p. 25; own calculations.

One can conclude that employment coefficient in Polish economy is highly unfavourable, which is reflected in its comparison with coefficients of European Union member countries. Relevant data is presented in Table 2.

Table 2. Employment coefficients^{a/} in EU-15 countries and Poland in 1999–2005

Item	1999	2000	2001	2002	2004	2005
EU (15)	62.5	63.4	64.1	64.3	64.7	65.2
Austria	68.6	68.5	68.5	69.3	67.8	68.6
Belgium	58.3	60.5	59.9	59.9	60.3	61.1
Denmark	76.0	76.3	76.2	75.9	75.7	75.9
Finland	66.4	67.2	68.1	68.1	67.6	68.4
France	60.9	62.1	62.8	63.0	63.1	63.1
Greece	55.3	55.7	55.4	56.7	59.4	60.1
Spain	53.7	56.2	57.7	58.4	61.1	63.3
Netherlands	71.7	72.9	74.1	74.4	73.1	73.2
Ireland	63.3	65.1	65.7	65.3	66.3	67.6
Luxembourg	61.7	62.7	63.1	63.7	61.6	63.6
Germany	65.2	65.6	65.8	65.3	65.0	65.4
Portugal	67.6	68.4	68.7	68.2	67.8	67.5
Sweden	71.7	73.0	74.0	73.6	72.1	72.5
Great Britain	71.0	71.5	71.7	71.7	71.6	71.7
Italy	52.7	53.7	54.8	55.5	57.6	57.6
Poland	57.5	55.0	53.5	50.9	51.7	52.8

^{a/} % of persons aged 15-64;

Source: Employment in Europe 2003, European Commission, Luxembourg 2003, September, pp. 209, 212–226; Polska w Unii Europejskiej, GUS, Warszawa 2005; OECD, Employment Outlook, OECD, 2004, p. 294, Eurostat – www.europa.int/comm/eurostat, 1.06.2006.

As it follows from the data in Table 2, employment coefficient in Poland yet in 1999 was higher than coefficients in Greece, Spain and Italy. In 2000 it exceeded only the coefficient in Italy. Long-term downward tendencies of employment coefficient in Poland led in subsequent years¹⁰ to the situation in which it was significantly lower than an average coefficient of the EU-15 and of any particular member country. Even its increase in 2005 to over 52% did not

¹⁰ In 2003 employment coefficient in Poland amounted to 51.4%, OECD, Employment Outlook 2004, p. 294.

change the last position of Poland in the ranking of the European Community member countries, including also new member countries¹¹.

In the most developed countries employment coefficients exceeded 70% in 2005 (Denmark, the Netherlands, Sweden and Great Britain), which means that they reached one of main goals of the Lisbon Strategy earlier than expected. The goal concerns increase in overall employment coefficient in 2010 to the level of 70% of the total number of persons aged 15-64 in all European Community member countries. In other countries employment coefficients reached 60-68%, only in Italy about 58%. In most countries employment coefficients revealed upward tendencies within recent years proving implementation of pro-employment policy in accordance with objectives of the European Employment Strategy and in pursuit of goals of the Lisbon Strategy.

In Poland adjustment processes to the European Union standards in the field of employment are too slow. One can even say that the employment gap between Poland and the European Community countries has deepened. Such situation emphasises the necessity for systematic putting into practice priorities and objectives formulated in employment programmes aimed at increase of employment in Polish economy.

3. Structure of employed persons according to sex and age

Sex and age are basic demographic distinguishing features of all populations and employed persons as well. Structure of employed persons according to sex precisely indicates that higher percentage of men than women finds employment in Polish economy (see Table 3). This regularity has been observed since the beginning of transformation period. The share of employed women in the total number of employed persons amounted to 44.4-45.4%, whereas equivalent share of men to 54.6–55.6%. Differences in shares of employed men and women did not exceed one percentage point in particular years. Percentage of employed men and women did not change much in the

¹¹ In 2004 employment coefficients in new member countries (EU-25) were higher than in Poland: the highest employment coefficients were characteristic for Cyprus (69.1%), the Czech Republic (64.2%) and Slovenia (65.3%); relatively high for: Lithuania (61.2%), Estonia (63%) and Latvia (62.3%); relatively low for: Slovakia (57%), Hungary (56.8%) and Malta (54.1%), Polska w Unii Europejskiej, GUS, Warszawa 2005. In addition, in 2005 employment coefficients in countries mentioned above were also higher than in Poland (Cyprus 68.5%, the Czech Republic 64.8%, Estonia 64.4%, Latvia 63.3%, Lithuania 62.6%, Slovakia 57.7%, Hungary 56.9% and Malta 53.9%) – Eurostat's data, 21.06.2006.

surveyed years, whereas percentage of men in the number of employed persons increased in the period of growing GDP rate (1995–1997 and 2004–2005).

When one compares employment coefficients, differences in employment of men and women become more visible. They indicate percentage share of men/women in the total number of persons aged 15 or more in a given year.

Data from Table 4 proves that employment rates for women are significantly lower than for men. After the year 2000 38–39% of surveyed women were employed in comparison with over 50% of surveyed men. One should also notice slight improvement in employment coefficients in 2005–2006 (second quarter) in relation to the previous year. However, they did not reach the level of the year 2000. Employment coefficient of men increased more than the one of women and, thus, the difference between coefficients of men and women increased from 12.7 points in 2003 to 14 points in 2005 and subsequently to 14.3 in the second quarter 2006. This fact proves that women belong to a group of persons who are discriminated against on Polish labour market.

One of goals of the Lisbon Strategy (2002) is oriented towards implementation of equality of chances on labour market and aimed at the increase of employment rate of women aged 15–64 up to 60% in 2010.

Comparison of employment rates of women in member countries shows that the goal of the Lisbon Strategy was achieved in 2005 by 7 ‘old’ European Union countries (Austria, Denmark, Finland, the Netherlands, Portugal, Sweden and Great Britain). In all these countries employment rates of women exceeded the defined target. The highest employment rates of women were noted in Sweden (70.4%) and Denmark (71.9%). The highest employment rates of women among new accession European Union countries were characteristic for Estonia and Latvia (56–59%), as well as for Slovakia and Hungary, about 51%. Poland was one of the countries with the lowest employment rate of women (46.8%), together with Greece, Italy (46.1% and 45.3% respectively) and Malta (33.7%). Improvement in the position of Poland requires undertaking practical, not only formal, changes which increase chances of women for employment and guarantee their equality on labour market.

Table 3. Structure of employed persons according to sex in Poland in 1992–2006, %

Item	1992 ^a	1993 ^d	1994 ^a	1995 ^a	1996 ^a	1997 ^a	1998 ^a	1999 ^b	2000 ^b	2001 ^b	2002 ^b	2003 ^b	2004 ^b	2005 ^b	2006 ^b
In total including	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Women	45.1	45.2	45.3	45.2	44.9	44.7	45.1	44.4	44.5	45.4	45.2	45.2	44.7	44.7	44.7
Men	54.9	54.8	54.7	54.8	55.1	55.3	54.9	55.6	55.5	54.6	54.8	54.8	55.3	55.3	55.3

^a in 1992-1998, data from November in a given year.

^b in 1999-2004, data from the fourth quarter of a given year.

^c data from the second quarter 2006.

Source: Aktywność ekonomiczna ludności Polski IV kwartał: 2001, pp. XL, XLI, XLII; 2002, pp. XL-XLII; 2004, pp. 56-60, GUS, Warszawa; Kwartalna informacja o rynku pracy, GUS, Warszawa 2006, p. 4, 2007, p. 4; own calculations.

Table 4. Employment coefficients of men and women aged 15 or more in Poland in 2000, 2003–2006, %

Item	2000	2003	2004	2005	2006 ^{a/}
Women	40.3	38.2	38.5	39.2	39.3
Men	55.2	50.9	52.2	53.2	53.6

^{a/} in the second quarter 2006.

Source: Aktywność ekonomiczna ludności Polski IV kwartał: 2004, GUS, Warszawa, 2005, pp. 50, 52; Kwartalna informacja o rynku pracy, GUS, Warszawa 2006, p. 6, 2007, p. 6.

Structure of employed persons according to age also changed in the surveyed years (see Table 5). In 1992–2002 persons aged 35–44 predominated in the total number of employed persons. Until 1992 their percentage constituted over 30% of all employed persons, however, from 2000 on it decreased below 30% together with deteriorating economic situation and decrease in the number of employed persons. In 2006 share of persons aged 35–44 in the total number of employed persons (25.3%) was over 7 percentage points lower than in 1992, however, an employment rate in this age group was the highest and amounted to 76.6% (in 2005).

Employed persons aged 25–34 constituted next significant group. Its share in the total number of employed persons reached in the surveyed period 24–29%. Upward tendencies of the share of this age group in the total number of employed persons started in 1998 and yet in 2003–2006 persons aged 25–34 began to predominate in the total number of employed persons. Employment coefficient in this group reached a relatively high level of 72% in 2005.

Rapidly increasing share of persons aged 45–54 in the total number of employed persons was a characteristic feature of the surveyed period (about 9 percentage points). In 1992 18.9% of employed women and 16.7% of the total number of employed men belonged to this age group. In 2004 share of women increased to 28.7%, whereas share of men to 27%. In initial years of transformation period persons who belonged to this age group could take early retirement, therefore, percentage of employed persons in this group was relatively low at that time. Employment coefficient reached in 2004 a relatively high level and amounted to 69.2% for persons aged 45–49 and 56.7% for persons aged 50–54.

The youngest and the oldest age groups were characterised by relatively the lowest share in the number of employed persons. Percentage of persons aged 15–24 increased gradually from 1992 to 1999 (from 10.6% to 11.3%), then

it decreased to about 9%. In 2003–2005 share of young persons in the total number of employed persons was stable and amounted to 9.3%. In 2006 it increased by 0.4 percentage point. In 1992–2006 the share decreased by 0.9 percentage point. Such phenomenon must be acknowledged as unfavourable one from social point of view, since this age group is represented by young persons, graduates of various types of schools, for whom, in many cases, possibilities of first employment are enormously important for their occupational development, acquisition of practical skills and independence. Percentage of women employed in this group was lower than percentage of men. In 2004 9% of men and 8.6% of women aged 15–24 were employed. Employment coefficient in the group of persons aged 15–24 amounted to 36.7% for persons aged 20–24, 10.3% for persons aged 18–19 and 3.3% for persons aged 15–17. In 2005 it reached 23%.

Share of the oldest age group in the total number of employed persons (55 or more) systematically decreased from the level of 12.6% in 1992 to 9.6% in 2006 due to possibility of obtaining pre-retirement benefits. Employment coefficient for persons aged 55–59 amounted to 33.3% in 2004. It was lower for persons with more advanced age (17.4% for persons aged 60–64 and 6.6% for persons aged 65 or more). As a matter of fact, employment coefficient was two times higher for men than for women who due to lower retirement age have possibilities of earlier retirement.

Economic activation of the oldest age group is considered to be an important goal of the Lisbon Strategy. Until 2010 employment rate of persons aged 55–64 should increase to the level of 50%¹².

¹² The employment rate is calculated as the ratio of the number of employed persons aged 55–64 to the total number of persons of this age.

Table 5. Structure of employed persons according to age in Poland in 1992–2006, %

Employed persons	1992 ^a	1993 ^b	1994 ^b	1995 ^b	1996 ^b	1997 ^b	1998 ^b	1999 ^c	2000 ^c	2001 ^c	2002 ^c	2003 ^c	2004 ^c	2005 ^c	2006 ^c
In total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
including persons aged:															
15–24	10.6	10.6	10.5	10.5	11.1	11.4	11.3	11.3	10.5	9.6	8.8	9.3	9.3	9.3	9.7
25–34	26.6	25.5	24.6	24.6	24.2	24.3	24.6	25.2	25.8	26.6	27.1	27.4	26.2	25.6	25.3
35–44	32.5	33.2	33.9	33.5	32.7	31.8	30.9	30.6	29.4	2.6	28.3	26.8	26.9	26.6	26.3
45–54	17.7	18.4	19.7	20.8	21.6	22.4	23.5	24.4	25.7	26.4	26.8	26.8	26.9	26.6	26.3
55 or more	12.6	12.3	11.3	10.7	10.4	10.1	9.5	8.5	8.6	8.8	8.9	9.5	9.5	9.8	9.6

^a data from May 1992

^b data from November

^c data from the fourth quarter

Source: Aktywność zawodowa i bezrobocie w Polsce, 1992, p. 71; 1998, p. 51, GUS, Warszawa; Aktywność ekonomiczna ludności Polski: listopad 1993, p. 33; 1994, p. 43; 1995, p. 21; 1996, p. 21; 1997, p. 17; IV kwartał 2000, p. 15; 2001, p. 15; 2004, p. 75; Mały Rocznik Statystyczny Polski 2003, p. 146; 2004, p. 139; 2005, p. 140; 2006, p. 140; 2007, p. 143.

In 2005 employment rates of persons aged 55-64 exceeded the goal defined in the Lisbon Strategy in eight member countries, namely in: Sweden (69.4%), Denmark (59.5%), Great Britain (56.9%), Finland (52.7%), Portugal (50.5%), Estonia (56.1%), Ireland (51.6%) and Cyprus (50.5%). Comparatively close figures to the goal of the Lisbon Strategy were characteristic for employment rates of persons aged 55–64 in Lithuania and Latvia (over 49%). Moreover, relatively high equivalent employment rates (over 41–46%) were noted in the Netherlands, Germany, Spain, Greece and the Czech Republic. In other member countries employment rates reached 32-38% (for example from 31.8% in Belgium and Austria to 37.9% in France). The lowest employment rates of persons aged 55-64 were recorded in Slovakia, Malta, Slovenia and Poland, with employment coefficient in Poland (27.2%) being slightly worse than the one in Malta (30.8%), Slovenia (30.7%) and Slovakia (30.3%).

One can arrive at a conclusion that decrease in economic activity of persons aged 55–64 should be weakened, whereas their chances for employment increased, especially in conditions of forecast decrease in labour force supply and in view of anxieties connected with inefficiency of retirement system. Institutional changes are indispensable in pension and retirement system, especially in terms of early retirements and pre-retirement benefits which facilitate the process of transformation into economic inactivity of persons who have not reached their retirement age yet.

4. Structure of employed persons according to education and occupation

Structure of employed persons according to education, professional qualifications and practised occupations is an important element of the structure of labour market. One can assume that qualifications of employed persons are revealed in the level of their education. Professional qualifications, education and occupation of potential employees are basic features which shape employers' labour force demand. Table 6 presents structure of employed persons according to the level of their education in 1992–2006.

Analysing data from Table 6 one can observe a few favourable changes which took place in the surveyed period in the structure of employed persons according to the level of their education. First, in 1992–2006 the share of employed persons with higher education increased significantly (by 12.4 percentage points). Increase in labour demand for persons with higher education and high qualifications was systematic and permanent. Demand for education and high professional qualifications is a consequence of an increasing level

of innovativeness of Polish economy which stems from implementation of process and product technological progress, as well as the progress in organisation and management. Additionally, the demand results from inflow of indirect foreign investments together with new techniques and technologies which require employees with high or the highest professional qualifications. On the one hand, integration processes which force growth of productiveness and competitiveness of enterprises and the whole economy constitute an important reason for the existence of education and professional qualifications demand. On the other hand, the very employees invest in themselves increasing the value of human capital by means of getting higher education and further continual education in the form of postgraduate studies, specialised occupational courses, etc. As a matter of fact, they are aware of dependence between a level of education and a position held on labour market. It is also worth emphasising that women dominate among persons with higher education. The share of women with higher education in the total number of employed women increased from 10.4% in 1992 to 24.5% in 2004. A positive tendency, i.e. significant increase in importance of higher education, can also be observed among men – the share of men with higher education rose from 9.5% in 1992 to 17.3% in 2004.

Second, one could notice constant increase in the share of persons with vocational, post-secondary vocational and secondary education in the total number of employed persons (from 32.5% in 1992 to 38% in 2006). Persons with secondary education constituted the lowest share among employed persons, which can be explained by their tendency to undertake further higher education in order to acquire more specific qualifications. The group of persons with secondary education was dominated by women, however, the surveyed period was characterised by increase in the share of both men and women. The share of women with secondary education in the total number of employed women increased from 40.2% in 1992 to 42.7% in 2004, whereas the share of men with secondary education in the total number of employed men rose from 26.2% in 1992 to 32.3% in 2004.

Third, share of persons with primary, incomplete primary and grammar school education in the total number of employed persons decreased significantly (after 2002). Decrease in the share of these persons amounted to 17.5 percentage points in 2006 in relation to 1992 and concerned to a greater degree women rather than men. It was caused by economic de-activation of elderly persons who frequently had primary education (even incomplete) and predominated in this group. A downward tendency of the share of persons with primary and incomplete primary education in the total number of employed persons should be evaluated as positive. It proves the existence of decreasing labour demand for persons with low and very low professional qualifications, therefore, this

tendency should be retained in the future (see Kwiatkowska 2001, p. 172; Boni 2001, p. 15).

Fourth, it is worth noticing that persons with basic vocational education predominated in the total number of employed persons (1/3 of the total number of persons employed in the surveyed period). From 2002 on the share of this group in the total number of employed persons started to decrease slightly. In 2005 percentage of employees with this kind of education equalled the one in 1992, however, it decreased slightly in 2006. It is a serious problem of Polish economy, especially taking into account the fact that basic vocational education does not provide direct access to higher education. The group of persons with basic vocational education was dominated by men whose share in the total number of employed men increased from 38.6% in 1992 to 38.8% in 2004. The share of women also increased slightly, i.e. by 1.1 points (from 21% in 1992 to 22.1% in 2004). Additionally, it is worth emphasising that a lot of professional qualifications were acquired in conditions of uncompetitive economic system. Thus, structure of persons with basic vocational education resembles, to a great degree, outdated structure of economy which undergoes changes in the process of transformation.

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Table 6. Structure of employed persons according to the level of education in Poland in 1992-2006, %

Employed persons	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
In total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
including persons with:															
– higher education	9.9	10.5	11.1	11.4	11.6	12.0	13.0	13.4	14.1	15.6	17.1	19.1	20.5	21.8	22.3
post-secondary	32.5	25.5	27.2	27.9	28.2	28.8	29.5	31.2	30.5	29.8	29.9	29.1	29.0	29.7	29.9
– secondary education		7.0	6.3	6.0	6.0	6.2	6.0	7.1	7.0	6.8	7.1	7.6	7.9	7.9	8.1
– basic vocational education	30.7	32.2	32.9	33.5	34.0	34.5	34.6	33.3	33.6	33.9	32.7	32.3	31.3	30.7	30.3
– primary education and incomplete primary education	26.9	24.8	22.5	21.2	20.2	18.5	16.9	15.0	14.8	13.9	13.2 ^a	11.9 ^a	11.2 ^a	9.9 ^a	9.4 ^a

^a together with grammar school.

Source: Aktywność zawodowa i bezrobocie w Polsce, GUS, Warszawa 1992, p. 71; Aktywność ekonomiczna ludności Polski: listopad 1993, p. 33; listopad 1994, p. 43; listopad 1995, p. 21; listopad 1996, p. 21; listopad 1997, p. 17; IV kwartał 2000, p. 15; 2001, p. 15; IV kwartał 2003, p. 23; IV kwartał 2004, p. 77; Aktywność zawodowa i bezrobocie w Polsce w listopadzie 1998 r., GUS, Warszawa 1999, p. 51; Rocznik Statystyczny Rzeczypospolitej Polskiej 1991, p. 128; 2003, p. 146, GUS, Warszawa: Mały Rocznik Statystyczny Polski 2006, p. 140; 2007, p. 143; own calculations.

Present changes in the structure of employed persons according to the level of education should be evaluated as positive. As a matter of fact, the total share of persons with higher and secondary education (especially post-secondary and vocational) increased in the analysed years from 42.4% to 60.3%, whereas the total share of persons with basic vocational, primary and incomplete primary education decreased from 57.6% to 39.7%, still being relatively significant. Changes mentioned above prove the existence of ongoing gradual qualitative transformations in the structure of employed persons which are caused by employers' growing preferences towards employing highly-educated and highly-qualified persons rather than uneducated employees with low professional qualifications.

Percentage of employed persons with higher education is lower in Poland than in some transforming countries such as: Bulgaria (32.1%), Estonia (38.6%), Lithuania (56.5%) and Latvia (25.2%)¹³.

Comparisons of employment rates in developed European Union countries and Poland show that persons with higher education have the greatest chances for employment (see Table 7).

An employment rate of persons with higher education amounted to about 83% in the EU-15. The highest coefficients (86-88%) in comparison with an average employment rate were noted in: Portugal, Great Britain, the Netherlands and Sweden. The lowest employment rates of persons with higher education (79-82%) were recorded in Greece, France and Italy. Polish coefficient was very similar to an average employment rate in the EU-15, which proves that the position of highly-educated and highly-qualified persons is the most favourable on labour market.

¹³ Data for 2001. In 2001 share of employed persons with higher education in Hungary (19.2%) was also higher than in Poland, whereas in the Czech Republic it amounted only to 11.8%, *Employment and Labour Market in Central European Countries, 2002*, pp. 48-54.

Table 7. Employment rates according to the level of education among persons aged 15–64 in EU-15 countries and Poland in 2002, %

Countries	Level of education		
	Higher education	Secondary education	Primary education
Austria	85,0	72,9	48,2
Belgium	82,8	65,7	40,8
Denmark	87,0	80,6	60,4
Finland	85,5	72,8	48,9
France	79,2	69,8	46,6
Greece	77,5	58,2	52,8
Spain	80,2	57,2	49,2
Netherlands	86,2	79,8	61,7
Ireland	84,8	71,2	48,1
Luxembourg	83,6	69,1	50,8
Germany	83,0	69,8	43,6
Portugal	88,6	64,7	67,3
Sweden	86,2	79,6	58,2
Great Britain	87,3	77,3	50,9
Italy	81,8	64,8	45,3
UE-15	82,8	70,5	49,4
Poland	82,4	57,8	25,0

Source: Employment in Europe. recent, trends and prospects, European Commission 2003, Brussels.

An employment rate of persons with secondary education is far lower in Poland than an average one in the EU-15 (by about 13 percentage points). It is similar to coefficients in Greece and Spain. The level of employment rate indicates that only about 58% of persons with secondary education could find employment in Polish economy.

Uneducated persons with low qualifications are in the worst position on labour market. As it follows from the data in Table 7, an employment rate of persons with a low education level amounted to 49.4% in the EU-15. In Poland the rate was almost half lower, which proves the fact that persons with low education are the most endangered with unemployment and in an unfavourable position on labour market. Decrease in demand for employees with low qualifications indicates the necessity for undertaking activities aimed at increasing their chances for employment and social integration. In addition to development of vocational trainings and subsidised employment one postulates support for initiatives undertaken on local markets in

order to sustain so called second labour market which offers workplaces for problematic groups, among others, for persons with low qualifications and a low education level.

Positive changes in the level of education of Polish society are reflected in rising tendencies of education coefficient¹⁴ in higher education in an age group 19-24, from 9.8% in 1990/1991 to 36.8% in 2004/2005 (see *Rocznik Statystyczny Rzeczypospolitej Polskiej* 2001, p. 235; 2005, p. 341). In these years the number of higher school students increased more than four times (from 403.8 thousand in 1990/1991 to 1926.1 thousand in 2004/2005 - *Rocznik Statystyczny* 2001, p. 246; 2005, p. 355), which was caused also by rapid development of non-public colleges. As a result, the number of higher school students per 10 thousand persons increased in Poland from 142 (1990/1991) to 519¹⁵ (2002/2003). On the one hand, its value is similar or even frequently higher than in other European Union countries where the number of higher school students per 10 thousand persons amounted to: 342 in France (2001/2002), 432 in Spain, 394 in Portugal, 459 in Ireland, 363 in Belgium and 560 in Finland. On the other hand, the number of higher school students per 10 thousand persons is lower than in developed countries such as, for example, the USA – 570 students, Canada – 600 (1997/1998) or Australia – 556 (2001/2002) (*Rocznik Statystyczny*, 2005, p. 781). In 1999 Poland occupied 22nd-23rd place among 25 OECD countries (together with Portugal) as regards the value of higher education coefficient of persons aged 25-34 which amounted to 12 (before the Czech Republic (11) and Italy (10) – *Informationen*, 2001, p. 3616)¹⁶. One might think that this coefficient has improved now.

Despite these positive changes, increase in percentage of employed persons with higher education requires further development of higher education in Poland. Increase in state budget expenditures on science and higher education, whose share in GDP reaches a relatively low level (in 1995 the share amounted to 0.63% of GDP in total, whereas in 2004 to 0.56% – *Rocznik Statystyczny* 2005, p. 420), is indispensable for this development. There are numerous postulates concerning increasing budget expenditures on science and higher

¹⁴ Data concerns the value of so called net education coefficient, i.e. ratio of the number of learning persons (at the beginning of an academic year) on a particular education level (in a particular age group) to the number of persons (on 31st December) in the age group corresponding to a given education level.

¹⁵ Including foreigners.

¹⁶ In 1999 higher education coefficients of persons aged 25-34 in selected countries amounted to: 47 in Canada, 45 in Japan, 38 in Finland, 38 in the USA, 34 in Belgium, 33 in Norway, 33 in Spain, 32 in Sweden, 31 in France, 29 in Australia, 29 in Denmark, 29 in Ireland, 27 in Great Britain, 26 in Greece, 26 in Switzerland, 25 in the Netherlands, 22 in Germany, 21 in Luxembourg, 14 in Hungary and 13 in Austria.

education. Development of science and higher education is an important factor for the increase of economic effectiveness. Together with other factors such as a level of capital investments, transfer of new technologies and infrastructure development, it is an effective way to raise effectiveness of Polish economy (Kasperkiewicz 2002).

Let us focus now on characteristics of employed persons according to practised occupations. Unfortunately, one cannot compare directly the structure of employed persons according to occupations from the beginning of transformation period with the one from the year 2004, the last adopted in the analysis. The Labour Force Survey in 1992 provides data on the structure of employed persons according to 9 occupational groups, declared by respondents (see Table 8). Furthermore, in 1995 *Classification of Occupations and Specialisations* was elaborated by the Ministry of Labour and Social Policy. It was supplemented in 1998 and is currently coherent with international standards worked out by the International Labour Organization in 1988. Most European Union countries use these standards (see Wielowariantowa, średniookresowa prognoza popytu na pracę najemną w Polsce w przekroju 369 grup zawodowych, 2000, p. 60). According to this classification, occupations are grouped on the basis of similarity of skills required for fulfilling occupational (specialisation) tasks. Table 9 presents the structure of employed persons according to classification of occupations in 1995 and 2004.

Table 8. Structure of employed persons according to occupational groups in Poland in 1992, %

Item	1992 ^{a/}	Men	Women
In total	100.0	100.0	100.0
Managing directors	0.4	0.6	0.2
Enterprise managers	4.5	4.9	3.9
Heads of Departments	3.0	3.5	2.4
Specialists	17.8	11.3	25.7
Technical lecturers	5.4	2.4	9.2
Production workers	30.9	46.4	12.0
Service workers	9.1	4.7	14.4
Unskilled workers	5.8	4.0	8.0
Farmers	23.1	22.2	24.2

^{a/} data from May

Source: Aktywność zawodowa i bezrobocie w Polsce, 1992, p. 63.

Table 9. Employed persons according to sex and selected occupational groups in Poland in 1995 and 2004

Occupational groups	Employed persons in total		Men		Women	
	1995	2004	1995	2004	1995	2004
In total including:	100.0	100.0	100.0	100.0	100.0	100.0
Members of Parliament, high-ranking officials and managers	6.3	6.2	7.6	7.3	4.8	4.8
Specialists	9.5	13.1	6.0	9.3	13.6	17.8
Technical and medium-level personnel	11.2	12.5	7.9	8.5	15.2	17.3
Office workers	6.9	6.9	3.2	4.2	11.5	10.2
Individual service workers and vendors	9.3	11.3	5.7	7.5	13.6	16.1
Farmers, gardeners, foresters and fishermen	20.4	16.7	20.0	16.9	20.8	16.6
Industrial workers and craftsmen	19.8	15.8	29.5	24.0	8.0	5.6
Machinery and equipment operators and mechanics	7.9	9.5	12.6	15.1	2.3	2.7
Unskilled workers	8.5	7.3	7.1	6.1	10.2	8.9

Source: Aktywność ekonomiczna ludności Polski, listopad 1995, p. 21 and IV kwartał 2001, p. 20; IV kwartał 2004, p. 96.

Despite differences in occupational classification, some characteristic features in this field in 1992 are worth emphasising. Production workers constituted the largest group in the structure of employed persons – almost 31% of the total number of employed persons, in which the share of men amounted to 46.4% of the total number of employed men. Generally, workers – production, service and unskilled workers – constituted 45.8% of the total number of employed persons (among men – 55.1%). Meanwhile, specialists made up only 17.8% of the total number of employed persons, women being superior in numbers in this group (25.7% of employed women). Almost every fourth employed person was a farmer, which concerned both men and women. So called managerial group, i. e. managing directors, enterprise managers and heads of departments, constituted 7.9% of the total number of employed persons with dominating share of employed men (9%). Data presented above prove that the structure of employed persons in 1992 was yet traditional, since groups of workers and farmers predominated in it over other occupational categories.

Due to a short period of the analysis, structures of employed persons according to occupations in 1995 and 2004 do not differ from each other

in a significant way. Still some positive changes can be noticed. First, decrease in the share of two largest occupational groups, i.e. industrial workers and craftsmen (by 4 points) as well as farmers, gardeners, foresters and fishermen (by 3.7%), was noticed in the surveyed years. Men dominated in the group of workers. The share of unskilled workers also decreased. There was growing demand for machinery and equipment operators and mechanics. Professional qualifications of these groups of workers are, above all, related to vocational or incomplete vocational education and primary or incomplete primary education. Thus, basic and low qualifications predominate (Wielowariantowa, średniookresowa prognoza popytu na pracę..., 2000, p. 60). Total share of occupational groups mentioned above in the total number of employed persons decreased by about 7 percentage points. Second, the share of occupations which require medium-level qualifications, connected with secondary education, and high qualifications, connected with higher education, increased in the total number of employed persons. This concerns mainly specialists (increase in 1995-2004 by 3.6 points) and technical and medium-level personnel (increase by 1.3 points). The share of office workers placed itself on the same level. Women dominated in these occupational groups. The share of Members of Parliament, high-ranking officials and managers decreased (by 0.1 point). These occupational groups altogether increased their share in the total number of employed persons from 33.9% in 1995 to 38.7% in 2004.

Third, together with development of a service sector, the share of individual service workers and vendors in the total number of employed persons increased (by 2 points in the surveyed years). Persons with basic vocational and secondary vocational education predominate in this group (Prognozowanie popytu na pracę według kwalifikacji..., 2000, p. 63).

On the one hand, one can state that changes in occupational groups in the total number of employed persons reflect changes in the structure of employed persons according to education. On the other hand, although the direction of changes in occupational groups should be evaluated as positive, still the scale of these changes is too insignificant to be able to talk about creation of modern structure of employed persons according to occupational groups and the level of education, in which a dominating position would be held by specialists, medium-level office and administrative personnel as well as service occupations, especially in respect to quality of life improvement, medical care, social welfare, computer science, telecommunications and environmental protection.

A forecast made by the Interdepartmental Team for Forecasting Labour Demand predicts increase in demand for occupations mentioned above. It is worth mentioning that the list of occupations with the highest demand involves highly-qualified teachers, only with higher education, and occupations

connected with construction industry such as: architects, engineers and construction workers.

The group of occupations with the lowest forecast demand (or even with negative demand) contains occupations connected with restructured branches or the ones to be restructured in the future, i.e. mining, railway transport, metallurgy, agriculture, forestry and light industry. Negative demand is predicted in the case of most unskilled workers or those with low qualifications. Additionally, demand for these workers is dependent on the rate of economic growth (see Karpiński, Paradysz, Penconek, 1999, pp. 47–52).

5. A spatial aspect of the structure of employed persons

Taking into account a spatial aspect, one can examine the structure of employed persons from the point of view of place of residence (city – countryside) and region of a country. Figure 1 shows that percentage of employed persons in the total number of the employed was relatively higher in cities than in the countryside in the surveyed period of 1992–2006. In 2006 share of persons employed in cities (61.4%) was higher by 5.6 percentage points than in 1992, whereas share of persons employed in the countryside evidently decreased in this period. Decrease in the share of persons employed in the countryside was significantly influenced by bankruptcy of state-owned farms which were usually the only workplace available, underdevelopment of infrastructure, a slow rate of development of non-farm workplaces, for example in a service sector. Increase in the share of persons employed in cities in 1992–2006 was caused by slowdown of privatisation of state enterprises and by growing number of private enterprises as a result of founding privatisation and inflow of foreign investments (Padowicz, 2002, p. 9). Persons with higher and secondary education predominated among persons employed in cities, whereas persons with basic vocational, primary and incomplete primary education prevailed in the countryside. Differences in the value of human capital of persons employed in the countryside and cities also influenced higher share of persons employed in cities in the structure of employed persons in total. Persons connected with farms (63.8%) dominated in 2004 among the employed in the countryside. Employment coefficient of these persons amounted to 59.8%. Employment coefficient of persons employed in the countryside who had nothing in common with farms was significantly lower reaching 34.4% (Aktywność ekonomiczna ludności Polski IV kwartał 2004, p. 81).

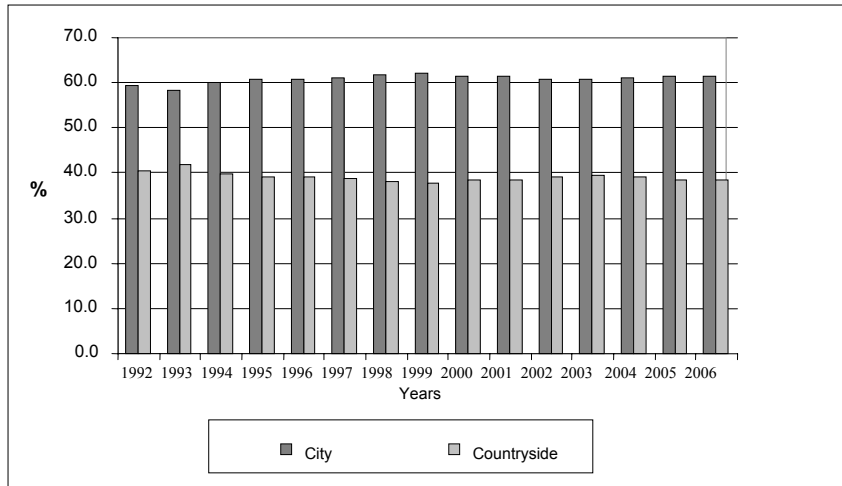


Figure 1. Structure of employed persons according to place of residence in Poland in 1992–2006, %

Source: *Aktywność ekonomiczna ludności Polski IV kwartał 2004*, op. cit., pp. 46, 62, 64; *Raport o inflacji*, NBP, Warszawa, kwiecień 2007, p. 25.

Structure of employed persons is also diversified in terms of regions. It means that specific regional features determine labour demand in particular regions. Data on the structure of employed persons in a given voivodeship in relation to the total number of persons employed in Poland in 1995 and 2005 is presented in Table 10.

Shares of employed persons in particular voivodeships in 1995 and 2005 were very diverse. The highest percentage of employed persons occurred in both surveyed years in Mazowieckie Voivodeship and Śląskie Voivodeship. Total share of these voivodeships in the total number of employed persons amounted to 26.2% in 1995 and 28.4% in 2005. The share of employed persons was also relatively high in Małopolskie Voivodeship and Wielkopolskie Voivodeship (over 8%-9% of the total number of employed persons). Altogether 42.9% of the total number of persons employed in Poland worked in all these four voivodeships in 1995 and 46.2% in 2005.

The lowest percentage of employed persons (2-3.5%) was noted in 2005 in the following voivodeships: Lubuskie Voivodeship, Opolskie Voivodeship, Podlaskie Voivodeship, Warmińsko-Mazurskie Voivodeship and Świętokrzyskie Voivodeship. Persons employed here constituted 12.1% of the total number of employed persons in 1995 and 14.3% in 2005 (together with Świętokrzyskie Voivodeship).

Table 10. Structure of employed persons in Poland according to voivodeships in 1991 and 2005, % (in relation to the total number of employed persons)

Voivodeships	1991 ^{a/}	2005	Changes in shares in percentage points 2005/1991
Dolnośląskie	7.4	7.1	-0.3
Kujawsko-Pomorskie	5.2	5.2	0
Lubelskie	6.3	5.8	-0.5
Lubuskie	2.5	2.3	-0.2
Łódzkie	7.2	7.2	0
Małopolskie	8.4	8.1	-0.3
Mazowieckie	13.9	16.4	+2.5
Opolskie	2.9	2.3	-0.6
Podkarpackie	5.8	5.1	-0.7
Podlaskie	3.2	3.1	-0.1
Pomorskie	5.1	5.3	+0.2
Śląskie	12.3	12.0	-0.3
Świętokrzyskie	3.7	3.5	-0.2
Warmińsko-Mazurskie	3.5	3.1	-0.4
Wielkopolskie	8.3	9.7	+1.4
Zachodnio-Pomorskie	4.3	3.8	-0.5

^{a/} Data revalued for new voivodeships in 1991.

Source: Mały Rocznik Statystyczny Polski, 2002, GUS, Warszawa, p. 607; Kwiatkowski, Tokarski, Kucharski, Rogut, Kaczorowski, 2002, p. 9; Rocznik Statystyczny Rzeczypospolitej Polskiej 2005, op. cit., pp. 74-77; Mały Rocznik Statystyczny Polski 2006, p. 623; own calculations.

Relatively low share of employed persons (in between 3.7-5.3% of the total number of employed persons) was characteristic for the following voivodeships: Świętokrzyskie Voivodeship (in 1991), Kujawsko-Pomorskie Voivodeship, Pomorskie Voivodeship, Zachodnio-Pomorskie Voivodeship and Podkarpackie Voivodeship (in 2005). Percentage of persons employed in these voivodeships amounted to 18.3% of the total number of employed persons in Poland in 1991 and 19.4% in 2005.

In other voivodeships, namely Dolnośląskie Voivodeship, Lubelskie Voivodeship, Łódzkie Voivodeship and Podkarpackie Voivodeship (in 1991), absorption of labour workforce amounted to 5.8-7.4%. Altogether 26.7% of the total number of employed persons in Poland worked in these voivodeships in 1991 and 20.1% in 2005.

It is worth noticing that decrease in the share of employed persons in 2005 in relation to 1991 can be observed in voivodeships with relatively low percentage of employed persons. The fact that the highest decrease in the share of employed persons in 2005 in relation to 1991 was noted in the group of voivodeships with the lowest or low percentage of employed persons is alarming. These voivodeships involve voivodeships in which state-owned farms (Polish abbreviation 'PGR') were liquidated or numerous enterprises operating in agriculture also either closed or undermined in their activities at the beginning of transformation period (for example Zachodnio-Pomorskie Voivodeship, Warmińsko-Mazurskie Voivodeship and Podlaskie Voivodeship). In these voivodeships one can expect further decrease in the number of employed persons as a result of agriculture restructuring and revealing of so called hidden unemployment.

In comparison to 1991 the highest decrease in the share of employed persons occurred in 2004 in Opolskie Voivodeship and Podkarpackie Voivodeship (by 0.6-0.7 point).

The highest absorption of labour force was characteristic for Mazowieckie Voivodeship and next for Śląskie Voivodeship, Wielkopolskie Voivodeship and Małopolskie Voivodeship. Percentage of employed persons increased in the surveyed period by most percentage points in Mazowieckie Voivodeship, i.e. by 2.5, and by 1.4 in Wielkopolskie Voivodeship. It decreased slightly in Śląskie Voivodeship and Małopolskie Poland Voivodeship. It seems that dynamically developing cities such as Warsaw, Poznań and Cracow play an important role in these voivodeships, since new workplaces are created here mainly in a service sector. Favourable economic conditions of these agglomerations and regions attract most foreign investments, which increases possibilities of employment. Increase in the share of employed persons in these voivodeships was also closely related to their highest share in produced GDP. In 2005 the share of Mazowieckie Voivodeship in total GDP amounted to 20.8%, Śląskie Voivodeship to 13.5%, Wielkopolskie Voivodeship to 9.2%, whereas the share of Lubuskie Voivodeship, Podlaskie Voivodeship and Opolskie Voivodeship reached 2.2-2.3% (Mały Rocznik Statystyczny Polski 2006, p. 631).

Evaluating changes in the structure of employed persons in a regional aspect, it is worth emphasising growing disproportion in labour force localisation between 1991 and 2005. The disproportion is a result of growing percentage of the employed in voivodeships with a relatively high share of employed persons (Mazowieckien Voivodeship and Wielkopolskie Voivodeship). However, in voivodeships with low absorption of the employed (Opolskie Voivodeship, Lubuskie Voivodeship, Warmińsko-Mazurskie

Voivodeship and Zachodnio-Pomorskie Voivodeship) the share of employed persons decreased in the surveyed period.

As it follows from forecasts concerning regional changes of labour demand depending on the rate of GDP growth in Poland in 2001-2005, economic growth within the range of 2-5% will result in decrease of labour demand. Economic growth at the level of 6% would create possibility of maintaining a current number of employed persons and direction of structural changes of employed persons, for example in the form of further decrease of the share of employed persons in Śląskie Voivodeship and Dolnośląskie Voivodeship, as well as increase of the share in Mazowieckie Voivodeship, Małopolskie Voivodeship and Pomorskie Voivodeship. According to the forecast, GDP growth by 7% should result in increase of the number of employed persons in most voivodeships with simultaneous maintenance of direction of structural changes of employed persons (see Kwiatkowski, Tokarski, Kucharski, Rogut, Kaczorowski, 2002, pp. 24–33).

6. Conclusions

Conducted considerations allow to formulate the following conclusions:

1. Increase in the number of employed persons observed in Polish economy since 2004 is a result of systematic growth of labour demand.
2. Employment coefficient in Poland is relatively low in comparison with employment coefficients in other European Union member countries, which indicates the necessity for consistent implementation of goals of pro-employment economic policy in practice.
3. One could notice changes in the structure of employed persons in the surveyed period which resulted from defined employers' preferences.
4. In 2006 structure of employed persons in Polish economy was characterised by:
 - a) significantly higher share of men than women in total employment, which reveals lack of equal chances on labour market,
 - b) increasing share of young persons aged 25-44 in total employment and the lowest share of persons from the youngest and the oldest age groups,
 - c) still relatively high share of persons with vocational, primary or lower education despite downward tendencies,

- d) increasing percentage of employed persons with higher education, which should be treated as a positive and desirable phenomenon.
5. The share of occupations requiring secondary and higher qualifications (especially specialists, technicians, architects, engineers, qualified teachers and service sector employees) increased in the total number of employed persons.
 6. There exists a downward tendency in the share of countryside dwellers in the total number of employed persons.
 7. In the surveyed years percentage of employed persons increased more in voivodeships with high share of employed persons than in voivodeships characterised by low absorption of the employed, which deepened disproportion in the structure of employed persons in regional terms.

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