Warsaw School of Economics
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Labour market in selected sectors of economy in Wielkopolskie voivodship in 2008 and its changes in the years 2005-2007

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Introduction

This report presents basic parameters of the labour market in Wielkopolskie voivodship for selected economy sectors, i.e.: engineering, electronics, automotive, aviation, biotechnology, and business services in 2008 and changes thereof in the years 2005 - 2008[1].

Wielkopolskie voivodship has considerable labour resources - ca. 9% of all employees in Poland. In the years 2005 - 2007 the number of employees increased by 3%. This phenomenon connected with migrations of people[2] had an impact on basic parameters of the labour market in Wielkopolskie voivodship, including: unemployment rate, employment rate, unemployment intensity, occupation shortage rate, etc. In 2005 - 2007 the employment rate rose from 47.2 to 49.9% and throughout the analysed period stayed above the national average. Nevertheless, it does not change the fact that nearly a half of the region's labour potential is not used.

The relatively low employment rate was influenced by the deteriorating employment activity of the voivodship's population. The employment rate indicator in the years 2005 - 2007 was going down gradually from 57% to 54.4%. Reasons for growing employment inactivity are rooted primarily in the slow ageing of the population, which results in retirement (in years 2005 - 2007 the number of employees inactive due to retirement grew from 358 thousand to 428 thousand people; other important reasons for employment inactivity are:

- education and improvement of qualifications (290 thousand and 310 thousand people respectively),
- illness and disability (273 thousand and 210 thousand people) [3].

[1] Due to inaccessibility of full data, the author presented business services using the example of real estate and printing services, the machine industry information was based on machines and devices production otherwise uncategorised, electronics industry information was based on electric machines and appliances manufacturing sector, and the automotive industry information - on the basis of cars, trailers and semitrailers manufacturing sector. There are no data for medical biotechnology sector and aviation industry.

[2] Internal migration balance values in years following from 2005 to 2007 reached, respectively +0.74;+0.71 and +-0.92 per mill, and the foreign migration balance values 0.71, 0.2 and 0.6 per mill. However, the abovementioned data are mere estimates, because they do not take into account the unregistered emigration growing since 1st May 2004.

[3] Data from the Regional Data Bank*;*

Table 1. Basic parameters of the labour market in Wielkopolskie voivodship 2005 - 2007

	basic parameters of the labour market	2005	2006	2007
1	*2*	*3*	*4*	*5*
1	Employees in thousand	1 274	1 295	1 312
2	Employment rate in %	47.2	48.3	49.9
3	Number of unemployed people in thousand	211. 4	169.1	112.8
4	Unemployment rate (%)	17.2	12.7	8.3
5	Job offers	1 465	2 556	3 193
6	Number of unemployed persons per 1 work offer	144.3	66.2	35.3

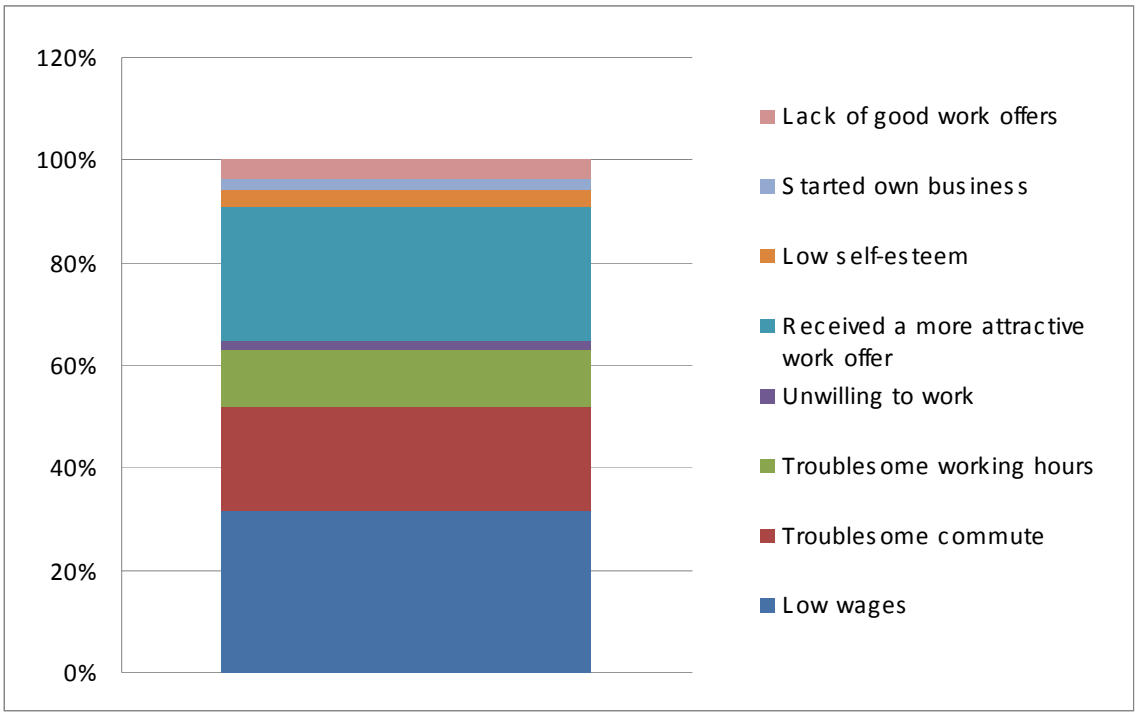
Data based on Labour Force Survey (LFS)
Source: own document based on Regional Data Bank of CSO.

Low employment rate is mirrored in unemployment statistics based on the Labour Force Survey, as well as unemployment data registered by state employment services. On the basis of LFS data in Table 1. one may conclude that unemployment in Wielkopolskie voivodship is decreasing. In the years 2005 - 2007 the unemployment rate went down from 17.2% to 8.3% of the professionally active population.

Also the registered unemployment statistics show a radical drop in unemployment since 2005. Within the period from 31st December 2004 to 31st June 2008 the unemployment rate decreased from 16.2% to 6.2% of the professionally active population, and the number of unemployed registered in poviat labour offices dropped from 233.2 thousand to 88.7 thousand, i.e. by nearly a half.

The unemployment rate in Wielkopolskie voivodship was significantly influenced by the increased number of job offers as it increased over twofold reducing the number of unemployed people per one job offer from 144 to 35 in 2007. Enterprise Institute's survey showed nevertheless, that the unemployed are hardly interested in the offers, usually due to unsatisfactory wages or commuting costs - see Graph 1.

Graph 1. Distribution of answers to the question about reasons for not starting work given by the unemployed trained by Poviat Labour Office



Source: Own document based on a survey "Labour market in Polish regions 2008. Questionnaire for Poviat Labour Offices" conducted electronically.

The decrease of the number of unemployed resulted not only from the fact that some of them started to work, but also from the failure of some of them to confirm readiness to take a job. In 2007 this phenomenon occurred in 76.6 thousand cases which was equivalent to 30.2% of unemployment decrease[4].

1. Employment in selected economy sectors

Positive changes in the labour market illustrated by the growing number of employees were observed not only in the region overall, but also in high technology sectors, however to a lesser extent than on average nationwide. In the years 2005 - 2007 the number of employees in the selected sectors[5] in the voivodship grew from 96.9 thousand to 106.9 thousand, i.e. by

[4] *Assessment of the situation in the labour market in Wielkpolskie voivodship and of the labour market policy implementation in 2007*, publication by Voivodship Labour Office in Poznań, http://www.wup.poznan.pl/att/polityka/opracowania/Ocena_sytuacji_na_wielkopolskim_rynku_pracy__007.pdf downloaded on 11.11.2008.

[5] Data from PONT INFO for enterprises employing more than 9 persons, excluding sectors for which data was unavailable for 2005, which made calculation of change dynamics impossible.

10.3%; the number of new employees in these sectors nationwide grew by 13.8%. As a result of these changes, in the years 2005 - 2007 the share of employees of the analysed sectors in the overall number of the sectors' employees in the country went down from 11% to 10.6%.

In the same period employment in the sectors grew fro 90.9 to 102.2 thousand people, but the share was similar to the national average (18% and 19% respectively).

The abovementioned processes occurred with different intensity in each sector. In the years 2005 - 2007 in Wielkopolskie voivodship the highest average employment, among the analysed high technology sectors, occurred in the business services sector. Average employment in this sector in the first quarter of 2008 reached 43 161 people, and its growth rate in the years 2005 - 2008 was 9%. New jobs creation was the fastest in electronics sector (29%).

Table 2. Average employment in the selected high-technology sectors in Wielkopolske voivodship in the years 2005 - 2008

	average employment	Business services sector	Engineering sector	Electronics sector	Biotechnology sector	Automotive sector	TOTAL (all HT sectors)
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*
1	Average employment in the enterprises sector (I-XII 2005)	37626	17863	15765	N/A	19694	90948
2	Average employment in the enterprises sector (I-XII 2006)	39828	18733	18095	N/A	2100	78756
3	Average employment in the enterprises sector (I-XII 2007)	41751	19093	19004	N/A	22380	102228
4	Average employment in the enterprises sector (I-VI 2008)	43161	19531	20260	N/A	23463	106415
5	**Employment change dynamics 2005 - 2008**	**115%**	**109%**	**129%**		**119%**	**117%**

Source: own document based on WSE Enterprise Institute's database.

The characteristic feature of the region is the similar employment level in engineering, electronics and automotive industries. In all of the abovementioned sectors employment rate

increased. It resulted from the good situation on the labour market and the region's high attractiveness for industry investments.

2. Graduates of post-gymnasium schools: numbers, fields of study*

High technology sectors have strong demand for employees with higher, as well as intermediate technical and often specialist education background. An important role in meeting the demand is played by the local education system, in particular fields of study offered on post-gymnasium and higher school levels.

In Wielkopolskie voivodship there are nearly 142 thousand students in post-gymnasium schools. Like in other regions in Poland, the largest group are general lyceum students; graduates of these schools every year constitute ca. 39% of all post-gymnasium school graduates. In terms of the number of graduates the following places are occupied by: post-secondary vocational schools (18%), technical schools (17%), vocational schools (15%), and specialised lyceums (11%). An important thing to note in the context of high technology sectors' needs is that over the last three years the number of students in technical schools was growing, while the number of such schools was falling. This trend combined with the growing

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* Structure of Polish Educational System:

- *Primary*: Primary School (Szkoła Podstawowa)
- *Basic Vocational*: Basic Vocational School (Zasadnicza Szkoła Zawodowa)
- *Lower Secondary*: Gymnasium (Gimnazjum)
- *Technical Secondary*: Technical Secondary School (Technikum)
- *Upper Secondary*: General Lyceum (Liceum Ogólnokształcące)
- *Vocational Secondary*: Vocational Secondary School (Liceum Zawodowe) /Specialized Lyceum (Liceum Profilowane)
- *Post- secondary*: Post- secondary Vocational School (Szkoła Policealna)
- *Higher education*:
    - first level courses (studia pierwszego stopnia); title of Bachelor or Engineer (licencjat/ inżynier);
    - second level courses (studia drugiego stopnia); title of Master (magister)
    - uniform 5-year magister level courses (jednolite studia magisterskie)

[translator's annotation on the basis of *The European Education Directory* http://www.euroeducation.net/prof/polaco.htm. (accessed: 15th December 2008).]

number of offers for intermediate level technical jobs should be treated as a negative phenomenon. What is more, the number of technical schools intended for adults is also decreasing (however, mainly due to the lack of interest in this type of education).

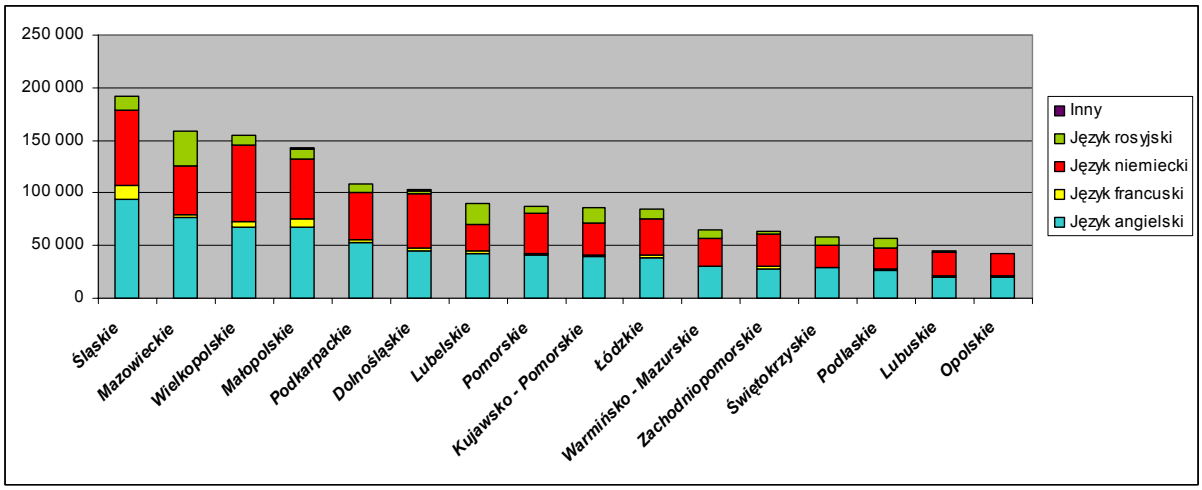
Fields of training in occupation-oriented schools (specialised lyceums, technical schools, vocational schools) are in a different degree adjusted to the needs of high technology sectors. In order to assess their usefulness, professions were divided into three groups:

- economic and administrative (this group includes economic and administrative professions gained in specialised lyceums, such as: administrative technician, occupational hygiene and workplace safety technician, economic technician, trade technician, office technician, accounting technician),
- general technical (this group includes technical professions, such as: IT technician, mechanic, car mechanic), and
- specialised technical (this group includes: automotive body repairer, electronics engineer, electrical engineering technician, electromechanic, electrician, car electromechanic, mechanic production technicians, mechanical machine fitter, industrial automatic devices and precision appliances mechanic, precision mechanic, mechatronics fitter, electronic fitter, mechatronics fitter, machine tools operator, chemical industry devices operator, electronics technician, electroradiologist, logistics technician, aircraft mechanics technician, mechatronics technician, forwarding agent, ITC technician, telecommunications technician).

In Wielkopolskie voivodship there are in total 53.3 thousand pupils studying the abovementioned occupation-oriented subjects, which is equivalent to 10.4% of all pupils studying these subjects nationwide. From the point of view of high technology enterprises the most desired group are people with specialised technical professions. The share of pupils studying specialised technical subjects in the total number of all occupation-oriented students in Wielkopolskie is 28.5%, which is 7.3 percentage points higher than the national average. In Wielkopolskie voivodship the largest portion of students - 42.8% study economic and administrative professions, i.e. 1.8 percentage points more than the national average. Number of pupils in the voivodship studying general technical professions is lower than the national average (34.1%; Poland - 37.8%). Consequently, in terms of individual occupations, and in comparison with the nationwide average, in Wielkopolskie voivodship there is a very large number of people studying the following occupations: economic technician, IT technician, and car mechanic.

Under the conditions of open national economy and strong link between high technology sectors and the world economy, language learning is a very important field of education. In post-gymnasium schools in Wielkopolskie voivodship ca. 155 thousand people study foreign languages, including 72.3 thousand - German, 68.1 thousand - English, 9.8 thousand - Russian, and 4.6 thousand - French[6]. A characteristic feature of Wielkopolskie voivodship, like other voivodships in Western Poland, is that German is the most popular foreign language among young people - see Graph 2.

Graph 2. Number of students learning a foreign language in post-gymnasium schools in the school year 2006/2007 - by voivodship



Source: Own document based on *Oświata i wychowanie w roku szkolnym 2006/2007 (Education and training in the school year 2006/2007)*, GUS Warszawa 2007.

An important measurement of the quality of education provided to future employees of the analysed sectors is the quality of language teaching. Numbers of students learning foreign languages in the school year 2006/2007, by voivodship is presented in the table.

Table. Number of students learning foreign languages in vocational schools in the school year 2006/2007 – by voivodship

Voivodship	English	French	German	Russian	Other	Total
Dolnośląskie	45 043	3 197	50 395	3 877	44	102 556
Kujawsko - Pomorskie	*39 194*	*1 539*	*31 267*	*14 552*	*0*	*86 552*
Lubelskie	42 569	1 753	25 626	19 932	217	90 097
Lubuskie	19 310	2 219	22 276	1 659	0	45 464
Łódzkie	38 503	2 213	34 375	9 839	21	84 951

Statistical data: *Oświata i wychowanie w roku szkolnym 2006/2007 (Education and training in the school year 2006/2007)*, GUS Warszawa 2007.

Małopolskie	67 648	7 821	56 742	9 905	264	142 380
Mazowieckie	76 090	2 989	47 116	32 650	532	159 377
Opolskie	20 342	493	21 135	544	0	42 514
Podkarpackie	52 785	2 872	44 738	8 218	0	108 613
Podlaskie	27 091	670	19 578	10 114	0	57 453
Pomorskie	40 722	1 944	38 001	6 117	430	87 214
Śląskie	94 321	12 295	72 503	12 879	270	192 268
Świętokrzyskie	28 453	803	21 514	7 094	179	58 043
Warmińsko - Mazurskie	30 015	598	25 834	8 151	0	64 598
Wielkopolskie	68 092	4 641	72 300	9 834	57	154 924
Zachodniopomorskie	28 417	1 501	31 179	2 747	0	63 844
Poland	**718 595**	**47 548**	**614 579**	**158 112**	**2 014**	**1 540 848**

Source: Own document based on ***Oświata i wychowanie w roku szkolnym 2006/2007 (Education and training in the school year 2006/2007),*** **GUS Warszawa 2007.**

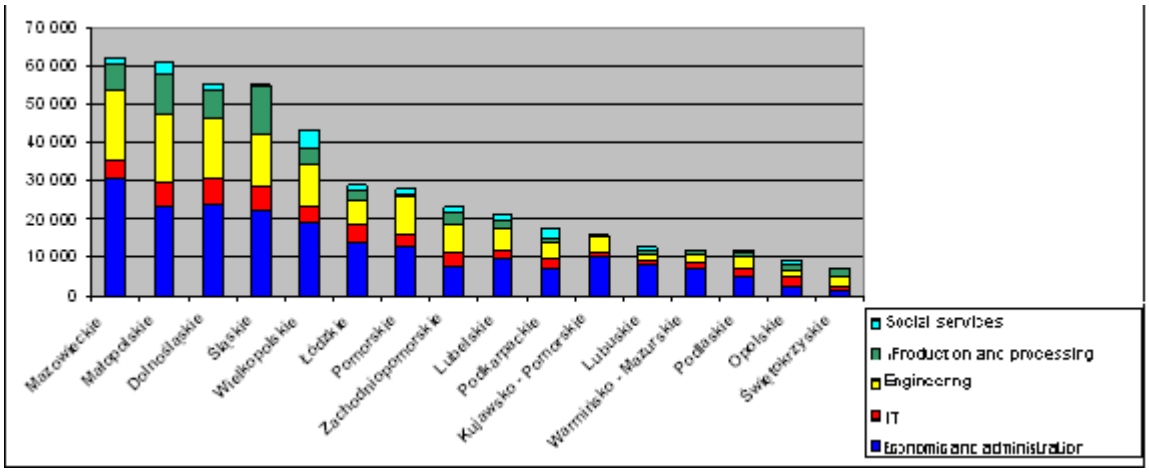
3. Graduates of higher schools: numbers and fields of study

The number of students and graduates of higher education establishments is gradually growing in Poland. In Wielkopolskie voivodship there are 38 higher schools with ca. 176.5 thousand students overall. In terms of the number of students the biggest educational establishment is Adam Mickiewicz University with ca. 45 thousand students. Other large academic centres in the region are: Poznań University of Technology (over 18 thousand students), Poznań University of Economics (ca. 12 thousand students), Poznań University of Life Sciences (ca. 12 thousand students), Poznań University of Medical Sciences (ca. 8 thousand students), President Stanisław Wojciechowski Higher Vocational State School in Kalisz (5.4 thousand students).

Main faculties studied at the majority of higher educational establishments in Wielkopolskie are the humanities and economy. In the region there are no non-public technical or medical universities. Under Polish conditions non-public higher technical schools do not develop due to bigger capital needs. On the other hand, young people show still too little interest in studying technical subjects.

Under such circumstances the public higher education sector is the only source of information about fields of training corresponding with needs of the high technology sectors. In 2007 at the voivodship's public schools there were 43 thousand students in the following five educational fields chosen for further analysis: economy and administration, information technology, engineering, production and processing and services; this number constituted ca. 9.3% of all people studying these subjects in Poland.

Graph 3. Number of students in selected subject subgroups (public schools) in 2007 - by voivodship



Source: own document based on Regional Data Bank, downloaded on 11.10.2008.

The largest population in this group were students of administration and economy - 19 157 (44.5%) and engineering - 11 113 people (25.8%). The following places, in terms of the number of students, were taken by: services - 4359 persons, production and processing - 4322 persons, information technology - 4097 students.

The dominant fields of study are reflected in graduates' educational background structure. The share of engineering faculties graduates in the overall number of graduates is equal to the national average (9%). The share of biological faculties graduates is slightly higher from the average (4% compared with 3% national average); the share of IT faculties graduates is slightly lower from the average (3 and 4% respectively).

4. Research fellows (in higher schools and research and development units)

High technology sectors have strong link with the research and development environment. On the one hand, enterprises establish their own research and development centres employing researchers, and on the other, they use outsourced potential (regional, national, or international). An indirect measure of a region's potential in this respect is the number of employees in R+D. In 2007 Wielkopolskie had 12 683 people employed in R+D sector; this gives the value of 0.85 per 100 professionally active people, i.e. above the national average (0.72). Out of this number 9 580 are employees of the higher education sector, including 24% independent researchers. An important factor for establishing links between the practice and the science is the R+D staff employment structure, in particular employment of R+D staff in

the enterprises sector. In 2006 the share reached 12% which was lower than the national average by 3 percentage points.

High technology sector enterprises are also supported by research and development facilities located in the region; majority of the facilities operates in the so-called governmental sector (ca. 12% of all R+D staff). The analysed high technology sectors may be supported, in particular, by the following facilities[7]:

- Poznański Park Naukowo Technologiczny (Poznań Science and Technology Park),
- Wielkopolski Klub Techniki i Racjonalizacji w Poznaniu (Wielkopolski Technology and Rationalisation Club in Poznań),
- Wielkopolska Izba Przemysłowo – Handlowa (Wielkopolska Chamber of Industry and Commerce),
- Polska Izba Gospodarcza Importerów Eksporterów i Kooperacji (Polish Chamber of Commerce of Importers, Exporters and Cooperation),
- Fundacja Kaliski Inkubator Przedsiębiorczości (Business Incubator Foundation in Kalisz),
- Stowarzyszenie „Ostrzeszowskie Centrum Przedsiębiorczości", Inkubator Przedsiębiorczości ("Entrepreneurship Centre in Ostrzeszów", Business Incubator).

5. Unemployment - shortage / surplus occupations

Access to qualified labour resources is very important for high technology sectors. The information about shortage and redundant professions in the region is essential for investors. Therefore investors search data about the rate and structure of unemployment divided by age, education and profession. One should bear in mind however, that the data contain numerous errors, therefore may only be used for preliminary study of the labour market situation.

From the point of view of high technology sectors two aspects are worth pointing out: age - young people are preferred by employers in innovative sectors, who are more willing to invest in the new staff by, e.g. providing them with specialised training; and education level. In Wielkopolska in the period 2005 - 2007 the decrease of the number of unemployed people younger than 24 years was the strongest among all voivodships, which proves that young people of the region are actively looking for work; the number dropped from 54 thousand to 23.7 thousand people, i.e. to 44% of the status in 2005. Also the population of unemployed people aged 25 - 34 was reduced from 59.5 thousand to 32.9 thousand, i.e. reached 54% of the

[7] Poll data from Polish Information and Foreign Investment Agency, Regional Cooperation Department, July 2008.

number in 2005. Thus, in spite of the simultaneous reduction of the unemployed people population in older age groups, one may observe the process of "ageing" of the unemployed population. The share of young people (24 years and less) dropped from 26% to 21% (Poland - 23 to 19%), and the share of the oldest age group, i.e. (55 years and more) rose in the same period from 4 to 8% (Poland - 5 to 8%).

From the point of view of high technology sectors and region's appeal for this type of business education background of the unemployed people is equally important. In the years 2005 - 2008 the largest group among the unemployed people were graduates of basic vocational schools and gymnasiums. However, these people would not qualify for a job in high technology sectors without appropriate training. People with higher and intermediate education background are potential employees of high-tech companies. The unemployment in the former group decreased in 2005 - 2007 from 10.1 thousand to 7.6 thousand; the number of unemployed graduates of post-secondary vocational schools and people with intermediate vocational training fell from 46.7 thousand to 26.1 thousand Since changes of the unemployment rate in other groups were more significant, the share of people with training useful for the high technology sector in the overall unemployed population rose from 27 o 28%.

Another piece of information used to determine potential labour supply to the high technology sector is the occupational structure of the unemployed population. In 2007 in Wielkopolskie there was a large group of unemployed people with the following training: technical - 7649 persons (6.8%), mechanics – 2391 persons (2.1%), fitters -1756 persons (1.6%), machines and devices operators – 1418 persons (1.3%), and electromechanics and electrical fitters – 1099 persons (1%). The number of unemployed people with other types of training useful for high-tech companies was very low.

In market economy the information about adjustment of the broadly understood education system to needs of enterprises (supply of suitable workforce) is provided by the labour market situation perceived in terms of surplus / shortage occupations[8]. Limiting the analysis only to professions and trades related with the high technology sector one may notice that in the years 2005 - 2007 in Wielkopolskie voivodship surplus professions were more frequent than shortage professions. However, it should be noted that the data available in Poviat Labour Offices fail to reflect this phenomenon in full. Firstly - not all enterprises notify free positions to Labour Offices - in the case of rare professions they use services of specialised firms.

[8] In accordance with CSO definition, a shortage occupation is a situation where the market demand for an occupation is higher than the number of people looking for work in it.

Secondly - unemployed people who register with Labour Office often are not interested in starting to work. Therefore the analysis of shortage / redundant professions is a mere illustration of certain general trends and relationships, rather than a full statistical analysis.

In accordance with PLO data, the surplus of labour resources in Wielkopolskie voivodship concerned in particular specialists, although it decreased in the analysed period. In the group of specialists the surplus of labour in 2007 constituted 83% of this value in 2005.

In professional groups with slightly lower qualifications the supply of workforce is much higher than in the case abovementioned professions, but it is not the case for all occupational groups. High labour supply surplus in the years 2005 - 2007 occurred in Wielkopolskie among technicians, including biological and agricultural sciences technicians, and financial and trade workers. Like in the case of specialists, workforce surplus in these occupations was also much lower in 2007 than in 2005. This trend occurred also in the group of office workers and qualified manual workers. In 2007 in Wielkopolskie voivodship there was shortage of, inter alia, office management staff, money flow and customer service personnel and machines and devices operators and fitters. This was also true for certain manual workers.

The surplus (shortage) of an occupation is illustrated by the occupation surplus (shortage) intensity indicator expressing the relation of the average monthly number of job offers in a particular occupation notified to PLO with the average monthly number of registered unemployed representatives of the occupation in a certain period. It is assumed that:

- occupations with the indicator value >1.1 are shortage occupations,
- occupations with the indicator value <0.9; 1.1> are sustainable occupations,
- occupations with the indicator value <0.9 are surplus occupations.

Following this classification, in 2005 the group of shortage occupations included: managers of large and medium-sized organisations, managers of other internal organisational units, middle office staff; the group of sustainable occupations included: office support staff, small enterprises managers, office agents supporting economic activity and trade agents, and money flow and customer service personnel. All other occupations were in surplus in 2005. In 2007 the shortage intensity indicator value increased for all of abovementioned groups, and sustainable occupations of 2005 became shortage occupations. By the end of the analysed period, the group was joined by higher education teachers, tax and customs officials and related professions, as well as machines and devices operators and fitters.

Surveys conducted in 6 Poviat Labour Offices confirm the shortage of labour in the automotive industry (100% indications), electronics (100% indications), and business services

sector (40% indications). Shortage is more frequent in the case of managers, than manual workers. This conclusion was also confirmed by quality studies conducted by Enterprise Institute with a sample of 50 enterprises in Wielkopolskie in October 2008.

1. Wages vs. expected wages

Labour shortage in high technology sectors may be connected with the fact that actual wages do not meet employees' expectations. In the years 2005 - 2008 average gross wages in Wielkopolskie voivodship were more or less on the same level as the national average (99 - 100%), and in high-technology sectors significantly higher - 113.5%, 114%, 117% and 121% respectively of the national average in 2005, 2006, 2007 and 1st quarter of 2008. Thus, in the analysed sectors gross wages were systematically increasing from 2450 PLN in 2005 to 3200 PLN in the 1st quarter of 2008.

The biggest increase occurred in the automotive industry, from 2663 to 3836 PLN in the first quarter of 2008 (wages in this sector in Poland - 2041 and 2576 PLN respectively); this means that the increase was by 18 percentage points higher than the sector's national average. A big change in gross wages occurred also in the business services sector - from 2224 PLN to 2919 PLN (in Poland respectively – 2486 PLN and 2978 PLN); this meant a relative increase from 89.4% to 98% of the sector's national average, i.e. 9 percentage points. On the other hand, gross wages in electronics industry decreased from 134% to 133% of the sector's nationwide average.

In the 1st quarter of 2008, the most expensive were employees in the automotive industry (149% of the average) and electronics industry (133%); labour in engineering industry was slightly more expensive (11%), and in the business services sector it was relatively cheap (98%).

In the period from 2005 to 1st quarter of 2008 average gross wages in high technology sectors in Wielkopolskie were higher than all sectors' average (in the entire economy of the region) by 9% in 2005, 10% in 2006 and 2007, and 13% in the 1st quarter of 2008.

Table 3. Average monthly gross wages in selected high technology sectors in Wielkopolskie voivodship in the years 2005 - 2008 (PLN)

Details	Business services sector	Engineering sector	Electronics sector	Automotive sector	**Total (in the voivodship)**
Average monthly gross salary in the enterprises sector (I-XII 2005)	2224.07	2516.91	2397.32	2663.19	**2245.27**
Average monthly gross salary in the enterprises sector (I-XII 2006)	2333.52	2675.89	2523.4	2840.25	**2362.62**
Average monthly gross salary in the enterprises sector (I-XII 2007)	2607.63	2926.64	2720.47	3314.01	**2625.29**
Average monthly gross salary in the enterprises sector (I-VI 2008)	2919.5	3172.23	2873.21	3836.22	**2828.16**

Source: database of the WSE Enterprise Institute

The survey conducted by WSE Enterprise Institute shows that wages offered in high technology sectors in most cases do not meet employees' expectations. The analysis of discrepancies between offered and expected wages indicates that in Poland employees expect a wage 1000 PLN higher than the offered one.

Conclusions

1. Low unemployment rate is a characteristic feature of Wielkopolskie voivodship, and the employment rate is higher than the national average; however, still one half of labour resources is unused.
2. The region's strength is the relatively high number of students (third position in the country); its characteristic feature are higher education establishments located not only in the region's capital, but also in smaller towns; this facilitates closer cooperation in the R+D field.
3. In terms of knowledge of foreign languages, the voivodship is predestined for cooperation with German-speaking investors.
4. Decreasing unemployment rate was accompanied by a drop in the number of people seeking their first jobs, including young people; at the same time the share of people with higher and intermediate education rose.

5. The decreasing unemployment accompanied by the slight increase in the number of employees signifies a change in the labour market in terms of labour shortage and surplus in individual occupational groups; surplus occupations change into shortage occupations; it is true in particular of business services sector and management.
6. Wielkopolska became an expensive region for automotive, electronics, and - to a lesser extent - engineering sectors. From the point of view of investors, gross wages in the business services sector are attractive.
7. Gross wages in Wielkopolskie voivodship increased mainly in industrial sectors, however it may be related more with the lack of managerial staff, than with the lack of manual workers.

Annex 1:

Symbol of the occupational group	Name of the occupational group	Average monthly number of job offers notified during a year		Average monthly number of registered unemployed during a year		Average monthly surplus (shortage) of labour during a year		Occupation surplus (shortage) rate	
		2005	2007	2005	2007	2005	2007	2005	2007
12	Managers in large and medium-sized organisations	17.17	22.25	14.50	16.58	-2,67	-5,67	1,2	1,3
121	Directors general, executives, chairmen and their deputies	2.00	2.67	3.58	3.17	1,58	0,50	0,6	0,8
122	Managers of internal core business units	3.83	7.50	4.33	5.42	0,50	-2,08	0,9	1,4
123	Managers of other internal organisational units	11.33	12.08	6.58	8.00	-4,75	-4,08	1,7	1,5
13	Managers in small enterprises	11.75	6.67	12.08	14.08	0,33	7,42	1,0	0,5
131	Managers in small enterprises	11.75	6.67	12.08	14.08	0,33	7,42	1,0	0,5
2	Specialists	344.58	384.17	1827.25	1614.17	1482,67	1230,00	0,2	0,2
21	Specialists in physics, mathematics, and technical sciences	75.08	58.92	308.33	243.42	233,25	184,50	0,2	0,2
214	Engineers and related professions	55.58	42.17	196.08	157.58	140,50	115,42	0,3	0,3
221	Specialists in biological sciences	1.42	2.00	27.50	28.08	26,08	26,08	0,1	0,1
231	Higher education teaching professionals	0.25	1.92	0.83	1.42	0,58	-0,50	0,3	1,4
3	Technicians and intermediate personnel	854.58	801.50	3907.92	2939.75	3053,33	2138,25	0,2	0,3
311	technicians	83.17	94.42	1329.92	902.67	1246,75	808,25	0,1	0,1
312	Computer technical service personnel and related professions	21.33	26.92	96.58	78.00	75,25	51,08	0,2	0,3
313	Optical and electronic equipment operators	2.92	3.25	17.25	17.50	14,33	14,25	0,2	0,2
314	Seafarers, barge, lighter, boat and air transport operatives	0.42	0.25	4.17	3.67	3,75	3,42	0,1	0,1
321	Biology and agricultural sciences technicians	18.92	12.83	800.25	579.25	781,33	566,42	0,0	0,0
3211	Medical analytics technicians	1.08	1.00	8.58	5.00	7,50	4,00	0,1	0,2

341	**Finance and trade workers**	**231.25**	**205.92**	**1153.17**	**931.58**	**921,92**	**725,67**	0,2	0,2
342	**Office agents supporting economic activity and trade agents**	**14.00**	**16.00**	**16.42**	**13.00**	**2,42**	**-3,00**	0,9	1,2
343	**Middle office staff**	**367.25**	**289.25**	**246.33**	**188.58**	**-120,92**	**-100,67**	1,5	1,5
344	**Tax and customs officials and related professions**	**1.25**	**5.00**	**1.83**	**1.42**	**0,58**	**-3,58**	0,7	3,5
4	**Related professions**	**748.17**	**1029.50**	**723.17**	**508.08**	**-25,00**	**-521,42**	1,0	2,0
41	**Office management workers**	**673.58**	**907.50**	**643.92**	**436.75**	**-29,67**	**-470,75**	1,0	2,1
42	**money flow and customer service workers**	**74.58**	**122.00**	**79.25**	**71.33**	**4,67**	**-50,67**	0,9	1,7
72	**Metal processing workers and machine and device operators**	**546.00**	**746.42**	**2237.50**	**1549.42**	**1691,50**	**803,00**	0,2	0,5
73	**Precision workers, ceramics makers, decorative objects makers, printers and related professions**	**25.83**	**31.83**	**104.42**	**87.83**	**78,58**	**56,00**	0,2	0,4
8	**Machine and device operators and fitters**	**508.50**	**833.67**	**694.92**	**523.25**	**186,42**	**-310,42**	0,7	1,6

Source: Enterprise Institute's databases