The Risk of the Outflow of Doctors and IT/ICT Specialists from the Czech Republic to Other Countries

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THE RISK OF THE OUTFLOW OF DOCTORS AND IT/ICT SPECIALISTS FROM THE CZECH REPUBLIC TO OTHER COUNTRIES

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Abstract

Qualified professionals are in demand in all of the world's developed economies, and qualifications in general are becoming more important. Despite relatively high levels of unemployment many countries are suffering from a lack of qualified professionals. Job seekers in modern information and communications technologies are particularly in demand, and there is also high demand for the full range of medical professions.

This publication continues from the first stage of the project "The risk of the potential outflow of qualified professionals from the Czech Republic". After an analysis of the professions most in demand (i.e. where there are shortages) on the Czech and European labour markets, work has focused on an in-depth analysis of specific migration-risk professionals. The analysis is divided into two parts. The first part covers doctors, the second information and communications technology experts. Both migration-risk professional groups are analysed using the same criteria: employers' needs and requirements; the number of professionals on the Czech labour market compared with other countries; anticipated future developments; the income motivation for working abroad.

Statistical analyses, economic analyses and sociological methodologies have been used, specifically questionnaires and in-depth surveys of doctors and IT professionals' willingness to emigrate. The depth analysis includes qualitative interviews with representatives of the groups concerned from the public sector, trade unions, professional associations, academia and the business world.

The publication includes fundamental aggregate information on both groups of professionals monitored, and selected results from field surveys of doctors and IT workers. Research work was carried out by the Research Institute for Labour and Social Affairs (RILSA) in 2006.

Key words

Doctors, IT/ICT professionals, labour market, monitoring needs, employment and employment trends, labour migration, earnings motivations to emigrate for work.

INTRODUCTION

This publication is a continuation of the first stage of the solution for "The Risk of the Potential Outflow of Qualified Professionals form the Czech Republic to other Countries" project. In the previous stage the basic characteristics of migration behaviour of highly qualified specialists were identified, information on the supply programmes for obtaining foreign qualified manpower was collected and the most sought-after, lacking specialists on the Czech and European labour market were identified and the income motivation of Czech specialists for work abroad was analysed. One of the outputs of this stage was the ascertainment that qualified specialists in an almost identical field, branch and professional structures were lacking on the Czech and European labour market.

The publication presents two relatively independent sections that offer a summary of the basic knowledge from the in-depth analyses of two groups of specialists that are at risk of migration. They are the following professional groups:
- DOCTORS,
- INFORMATION TECHNOLOGY SPECIALISTS.

The general European-wide need for doctors and qualified healthcare professionals follows from an unfavourable demographic development, not only in the Czech Republic, but in most European countries. A low birth rate will cause a reduction of potential economically-active people and the overall aging of the population in future years. This development, confirmed by demographic prognoses in most member states, indicates an increased need for a qualified work force in healthcare and in social and nursing services. Today a number of developed nations are already feeling the acute lack of doctors with various specialisations, nurses and assisted living care givers. Czech doctors are sought after abroad for their high qualifications and professional erudition, even in those countries where access to the labour market has so far been closed to Czech citizens (e.g. Germany). After the Czech Republic joined the EU the interest in doctors from the Czech Republic on the part of foreign employers increased even more.

The information society is often mentioned in connection with the transformation of developed economies into a society of services and the rapid development of information and communication technologies. Highly qualified IT professionals play an irreplaceable role in such a society. The need for IT/ICT specialists is continually increasing the world over. It is possible to say that IT/ICT specialists represent a globally preferred workforce and Czech IT professionals are no exception in that respect.

The in-depth analysis of both of the monitored groups of specialists was oriented on the characteristics of the basic problems in the field/branch, the strengths and weaknesses of Czech specialists, the status and development of the specified specialists from the perspective of the needs of the Czech and international comparison, the comparative analysis of income motivation for the work of Czech doctors / IT/ICT experts in other countries. The standpoints of experts approached from medical areas and representatives of the IT/ICT branch are also part of the performed analyses.

The basic findings of both analysed groups of specialists are supplemented with selected data from the field surveys of migration tendencies for samples of Czech doctors and IT/ICT workers and a combined graphs and tables.

Part I

Group at Risk of Migration
DOCTORS

A. BASIC SOLUTION FINDINGS

CHAPTER ONE
Problems, Strengths and Weaknesses of Czech Healthcare

The Opinions of Surveyed Healthcare Experts[1]

(1) Czech healthcare has currently found itself in a difficult situation where frequent changes to the leadership of the government department do not contribute to the stabilisation of the conditions in this branch. Problems in healthcare and its comparison with economically-advanced countries and other circumstances can influence, to a certain extent, decisions made by Czech doctors on whether to stay and work in the Czech Republic or to consider the possibilities (offers) of work abroad.

Most of the healthcare experts asked think that:
- Czech healthcare is lacking a clear conception of the management and implementation of substantial reforms. This situation has already lasted a number of years and has an impact on the stagnation of the entire healthcare system and the mood of healthcare personnel. In contrast with this, medicine has seen a rapid development of modern technologies, medical procedures, new drugs, etc. in recent years. The ruthlessness and onslaught of the pharmaceutical industry is evident. The prices for medicines are increasing while the extent of funds is lagging so far.

The financing of Czech healthcare through health insurance companies and the proper evaluation of the individual medical procedures are considered to be the most difficult problems it faces. Problems with financing appear from the perspective of the entire volume and system of distribution. The approached experts agree that this system does not perceive the importance and irreplaceability of human potential and mental/human resources.

The equipment of medical facilities in the Czech Republic is considerably differentiated. There are hospitals comparable to international, top-quality standards and hospitals without sufficient monetary funding and equipment that is falling apart. Healthcare facilities are also differentiated with regard to the region, the type of healthcare facility (e.g. a state hospital versus a private one) and other facts. The Czech Republic is among the average in the area of stomatology. Differences are only evident in the facilities of individual offices.

(2) **The professional level of Czech doctors** is completely comparable with the level of doctors from economically-advanced countries. The workload of doctors in the Czech Republic is higher, however, for reasons of high administrative load.[2] There is a milder

[1] In the first half of 2006 a qualitative survey was made on the basis of controlled interviews with selected experts from the area of healthcare. Representatives from the Ministry of Health, the Trade Union of Doctors, the Czech Medical Chamber, the Czech Dental Chamber, the World Health Organisation, The Institute for Post-Gradual Medical Education and specialists from selected teaching hospitals were involved in the study. Apart from representatives from Prague institutions, experts from medical circles from the Central and Pilsner Regions also participated in the survey.

[2] "Doctors are not buried under paperwork abroad. They have assistants for paperwork and the system uses their full potential for specialised work with the patient."

working environment in Czech healthcare in comparison with standards elsewhere in the world.[3]

The greatest strengths of Czech healthcare, in the experts' opinion, are the availability of healthcare services, the professional level of medical care and the highly-qualified workforce. Specific manifestations include, for example, one of the lowest infant death rates in the world (preventative care for pregnant women, infants and small children), one of the first places in the world when treating acute myocardial infarction (a high level of cardiological care), the mandatory vaccination system for children and youth, preventative dental care, diabetic programmes and a well-functioning system for the life-long education of doctors.

The greatest weaknesses are the management and financing of healthcare and the system of the Czech conception of health insurance. Experts are of the opinion that Czech health insurance does not cover the requirements and needs of the patient, since the patient cannot select the type of insurance (unlike some advanced countries). The criteria of the selection could be, for example, the age of the patient, state of health, occupational safety, etc. The fact that insurance companies in the Czech Republic do not control quality, but the focus of their activities is administrative work, is also perceived critically in relation to health insurance companies.

Repeated negative comments apply to the current single-component system of certification, which is especially unsuitable for small, regional hospitals without an accredited workplace.[4] The implemented certification system is seen as financially and organisationally impassable for Czech conditions by a majority of experts. Its lack of readiness is also evident in that certification from fields that are not recognised elsewhere in the world are recognised in the Czech Republic.

The inability of the legislation to resolve the patient's contribution to healthcare and the abuse of ambulatory services were also perceived critically.

Other negative aspects of Czech healthcare are the long waiting lists for planned operations and a lack of beds and after-care facilities. The affect of the market in healthcare causes the lobbying of pharmaceutical companies during the preference of selected pharmaceutical products. The support of theoretical fields, which do not bring immediate effect (e.g. biochemistry, microbiology) is not sufficiently-arranged in today's healthcare.

[3] "So far the threat of complaints and lawsuits for actions performed do not loom over doctors in the Czech Republic."

[4] According to Act No. 95/2004, the certification system has only one stage. In practice this means a further five years of education/fellowship at accredited workplaces. Small hospitals without credit do not have sufficient funds to pay young doctors a fellowship for the specified time at accredited workplaces.

CHAPTER TWO
An Analysis of the Numbers of Czech Doctors in the Context of International Comparison, the Needs of the Labour Marker and the Development of the Numbers of Doctors

a) The Opinions of Surveyed Healthcare Experts

(1) In a statistical comparison of the number of doctors per capita, the Czech Republic holds an average position in relation to OECD countries - from this perspective the number of doctors is sufficient. Nevertheless there are already medical fields and regions today with problems obtaining sufficient medical specialists. This is given by a number of reasons:

- The aging of doctors and their inadequate replacement by new graduates (e.g. stomatology);
- The physical demands of the field (e.g. orthopaedics);
- The traditionally low attractiveness of the field (i.e. pathology);
- The low attractiveness of the region (i.e. North Bohemia) or the small possibility to pay the required specialists, thereby obtaining them (as is the case in small regional hospitals).

The apparent lack of doctors in the Czech Republic can be a reflection of the **non-regulation of medical services.** The opinion that the doctors' needs also develop from the valid management system and that there is **abuse of medical care services and unnecessary doctor visits** prevailed among the experts approached.

In recent years **interest has increased** in the performance of general practitioners and dentists. There is still traditionally great interest in the profession of surgeons and orthopaedists (especially in relation to the growth in total prosthesis) and interns are a generally demanded field and there is a current increase for the field of neurosurgeons.

There is a lack of interest on the part of the market and medical students for preventative medical fields - hygiene and practicing medicine. The possibility for graduates of "smaller fields" (that not every hospital has) to find work is also decreasing. Roughly from the 1990's it has been possible to observe a lack of doctors in immunology.

Experts predict decreased interest in theoretical medical fields that will not be sufficiently financially lucrative or whose development will not be subsidised by the rich pharmaceutical industry. Voices of warning have been heard on the increasing differentiation of the needs of doctors and the level of medical care among individual regions.

b) Statistical Analyses - International Comparison

(2) The international comparison of human resources in healthcare is one of the most difficult from a methodological and practical perspective. A wide range of indicators can be the criterion for this comparison, though each covers the measured phenomenon from another angle. The number of doctors is influenced by many factors that vary in the individual countries. This can include, for example, the demographic characteristics of the population, the state of the population's health, the organisation and financing of healthcare services, and

even tradition, customs and historical developments. Comprehensive statistics also cannot depict regional differences and local specifics. We illustrate the comparison below on OECD data from 2002, which is the most complex. No significant deviations in the developments of subsequent years were recorded and in most of the countries the ascertained trends remained intact. The comparison does not cover the age structure of the doctors and the quality of care provided.

When comparing **the number of general practitioners** per 1,000 inhabitants in twenty-six OECD countries, the Czech Republic was directly in the middle, i.e. in 13th place (0.7 doctors). The highest number of doctors measured by this indicator was recorded in Belgium (2.1 doctors) and the lowest was in Poland (0.1 doctors).

In neighbouring Austria the number of general practitioners per 1,000 inhabitants was twice as high as in the Czech Republic in 2002. Neighbouring Germany also has more general practitioners. From the EU-15 countries, there are also a higher number of general practitioners in Finland, France, Italy and Luxembourg and, on the contrary, Denmark, Ireland, Great Britain, the Netherlands and Sweden have a lower number of doctors.

The situation in the **number of medical specialists** is entirely different. The Czech Republic, together with Greece and Hungary, occupies a leading position (the third highest place) among OECD states in the number of medical specialists per 1,000 inhabitants. There were 2.5 medical specialists per 1,000 inhabitants in the Czech Republic, while the highest number of specialists was recorded in Greece (3 specialists) and the lowest in Turkey (0.6).

All neighbouring countries (Germany, Austria, Slovakia and Poland) have less medical specialists as do most of the EU countries and the economically powerful overseas countries, e.g. USA (1.4) and Canada (1.1).

The Czech Republic is located in the upper half of comparable countries in the **number of dentists** per 1,000 inhabitants - it is in twelfth place (0.7 dentists) in a ranking of 30 countries. Greece has the most dentists measured by this indicator (1.2) while Mexico has the least (0.1).

There are fewer dentists in neighbouring Austria, for example, than in the Czech Republic, as well as in Ireland, Switzerland, the USA and Great Britain and more dentists than recorded in the Czech Republic in Germany, France, Sweden and Denmark. The range between comparable countries is not very significant. This situation covers the situation in 2002. It is important to note that the situation of Czech dentists is worsening every year with regard to their age structure (see below).

Table 1 **A Comparison of the Number of General Practitioners, Medical Specialists and Dentists per 1,000 Inhabitants in Selected OECD Countries - 2002**

Country	Number of General Practitioners	Number of Specialists	Number of Dentists
Belgium	2.1	1.8	0.8
France	1.6	1.5	0.7
Austria	1.4	1.9	0.5
Germany	1.1	2.3	0.8
Denmark	0.7	2.2	0.9
Great Britain	0.6	1.5	0.4
Switzerland	0.4	2.2	0.5
Slovakia	0.4	1.5	0.5
Czech Republic	**0.7**	**2.5**	**0.7**

The newer World Health Organisation (WHO) data corresponds to the OECD statistics. According to these findings the **total number of doctors** per 100,000 inhabitants in the Czech Republic in 2003 was slightly above average for EU countries (the Czech Republic - 352 doctors, average of EU countries - 348 doctors). The data for 2004 was not yet compiled at the time this report was put together.

(3) OECD statistics document that **Czechs visit doctors significantly more often than the inhabitants of the majority of other countries.** From twenty-eight comparable countries the Czech Republic stood on the third most frequented place in the indicator of the "number of visits to a general practitioner per person per year." Only the inhabitants of Slovakia and Japan visited the doctor more often.

Table 2 **A Comparison of the Number of Visits to a Doctor per Person per Year - for Selected EEC Countries**

Country	Number of Visits to Doctors		Number of Visits to Dentists	
	1999	2002	1999	2002
Belgium	7.9	7.8	1.9	2.0
Germany	7.2	7.2	1.4	1.4
Austria	6.7	6.7	1.3	1.3
Denmark	6.6	7.1	1.0	0.9
France	6.6	6.9	0.2	0.2
Great Britain	5.4	5.4	0.7	0.7
Switzerland	3.4	3.4	1.3	1.2
Slovakia	15.0	13.0	2.0	1.0
Czech Republic	**12.3**	**12.9**	**2.1**	**2.1**

During the course of three monitored years 1999 to 2002, the number of visits to general practitioners decreased in Slovakia but on the contrary saw an increase in the Czech Republic.

In comparison with neighbouring Austria, Czechs visit the general practitioner twice as often and four times as often in comparison with Switzerland.

Czechs also fill the **offices of dentists** more than most of the inhabitants of OECD countries. This can also be a reflection of the preventative examinations for children and youth and the overall availability of dental care. Two visits per person per year place the Czech Republic on the third highest ranking from twenty-one comparable countries. The state of the visits to dentists in the Czech Republic is stable during the course of the monitored years. Only the Japanese visit dentists more than three times a year and the Dutch visit them more than twice a year.

c) Monitoring the Available Medical Jobs

(4) In healthcare, as in other fields, there is a constant movement of the labour force. Seeing that medical jobs make up roughly two to three percent of the overall number of advertised job opportunities in LMC's programmes (including the www.jobs.cz and www.prace.cz

Internet portals), the monitoring of available jobs in selected hospitals was implemented for specifying the needs of doctors.[5]

In the monitored period there were 523 available jobs for healthcare employees advertised, from which an absolute majority (73%) were comprised of jobs for doctors. There are demands for higher specialisations in two thirds of the offered medical jobs. Primarily large teaching hospitals demand higher medical specialisations.

The specialisation structure of sought-after doctors during the monitored period included both some of the "large fields" such as internal medicine, surgery and paediatrics as well as jobs available for doctors from other medical fields.

Doctors with a specialisation in internal medicine and dentists belong **among the most sought-after professions**.

Because **internal medicine** represents one of the main medical fields and is divided into other sub-fields (with a large number of doctors), the demand for these specialists is logical and it is not possible to infer a critical lack of doctors from it.

The situation is more complicated in the case of **dentists**. Experienced dentists with 2nd degree certification are primarily on demand and there is a permanent lack of these on the market due to the aging of dentists, those retiring, etc. Hospitals settle for filling a job opening with a part-time employee, which can be the reason that both of the aforementioned fields usually manage to be filled within 3 months from the release of the advertisement.

There is a relatively substantial demand for specialists - **ophthalmologists from the "small fields" (i.e. fields with a lower number of doctors with the given specialisation). This is the medical field that is third-most in demand from the monitored hospitals.** The other most often sought-after medical fields were **paediatrics, surgery, radio diagnostics and pathology.**

Table 3 **A Comparison of the Five Most-Sought-After Medical Specialists**

Sought-After Medical Specialisations in 2004/2005	Sought-After Medical Specialisations in 2005/2006
1. Internal Medicine	1. Internal Medicine
2. Surgery	2. Stomatology
3. Anaesthesiology and Resuscitation	3. Ophthalmology
4. Gynaecology and Obstetrics	4. Paediatrics
5. Paediatrics	5. Surgery

A simple comparison of the results of the five most often advertised job availabilities with the previous period points to constant trends and deviations in the specialisation structure of doctors. A high demand for doctors from internal medicine, surgery and paediatrics remains. Nevertheless the average duration of one advertisement for these specialisation amounts to roughly two to three months.

[5] The implementation took place in the period from September 2005 until August 2006 and the research followed up on a survey in the same healthcare facilities in September 2004 to August 2005. More detailed information on the methodology of both inquiries are found in a partial documental report.

Compared to the previous period interest in stomatology **increased** substantially. The duration of one advertisement was, on average, four months and ophthalmology up to three months with the filling of the advertisement. **Doctors with a specialisation in geriatrics are hired worst of all, with the average duration of one advertisement looking for a younger doctor with interest in the field of geriatrics amounted to more than seven months.** Most of the other medical fields were managed to be filled within three months.

A change in the preference of medical specialisation can be caused by a wide range of various reasons, e.g. a narrow specialisation with a relatively small number of specialists (the case of geriatrics), by the seat of the hospital, etc. and it is not possible to infer an a priori conclusion on the lack of doctors in the field in question.

From a regional perspective the biggest problem in the monitored hospitals was to find doctors in the North Bohemian Region, specifically in the Masaryk Hospital in Ústí nad Labem. This hospital advertises available jobs for qualified experienced medical specialists as well as doctors that are not yet certified or that have short medical experience.

(5) A more complex overview of available jobs for doctors in the individual regions of the Czech Republic follows from the statistics that are carried out twice a year by the Administration of Employment Services of the Ministry of Labour and Social Affairs, according to announcements by the labour offices. From the inquiry's data **as of April 30th, 2006** it follows that there were 254 unemployed doctors and pharmacists (from which 26 were recent graduates) registered at the labour offices and 429 available jobs were registered at the same time. It is necessary, however, to be aware of the fact that the role of the labour offices when finding employment for doctors is minimal. Labour offices regularly have no feedback to healthcare facilities, which usually fill their job vacancies on the basis of their own activities.

In all of the Czech Regions (with the exception of the Pardubice Region) **the demand for doctors** (expressed in the number of job vacancies) **exceeds the number of applicants for employment** (expressed by the indicator of unemployed doctors).

In the Pardubice and Olomouc Regions the demand for medical specialists is altogether equal to the supply of these specialists. The number of unemployed doctors is only higher than the number of job vacancies in the South Moravian and Zlín Regions.

The highest number of medical job vacancies was recorded in West and North Bohemia (in the Karlovy Vary, Ústí nad Labem, Liberec and Hradec Králové Regions).

The monitoring of job vacancies for doctors led to the conclusion that the Czech Republic as a whole **is not in danger of a critical lack of doctors;** most of the offered job vacancies with healthcare facilities are filled within three months. A lack of doctors is only shown in some regions and for some individual specialisations.[6]

(6) On the basis of **statistical analyses of the development of the number of doctors** in the Czech Republic it was ascertained that from the year 2000 the **total number of doctors** is increasing at an average speed of 2% annually and the numbers of male and female doctors is

[6] The monitoring was realised before the new Labour Code and the rules for the overtime work of doctors came into effect.

increasing at the same tempo. The average annual increase in the number of registered doctors in this period is 338 people.

The total number of dentists has been increasing at an average rate of 1% annually since 1998. It has been shown that this rate of growth is insufficient and results in the aging of the entire basic group.

Roughly 50% of the doctors provide primarily outpatient care (general practitioners for adults, children and youth, gynaecologists and dentists), others work as outpatient specialists (50% at inpatient facilities, 50% in independent outpatient facilities, primarily surgeries).

The analysis of the age cohorts of doctors shows that up to 2002 there were decreases in age cohorts, and thus departures of doctors from records. They apparently left to other jobs or to other countries. It turns out the both male and female doctors behaved similarly.

Since 2003 doctors appeared in some cohorts that were not there five years ago, and more doctors are applying to the registries in these cohorts than they are decreasing from them. **The main source of increases in middle and higher age cohorts** are evidently foreign doctors, around three hundred of which are increasing in the records each year. We do not know their age structure, and so we cannot assign them to the age cohorts. The increases can also be made up of doctors that worked outside of the sector, or that returned from abroad.

The source of the increases **in the first two age cohorts** are mainly graduates of medical faculties, domestic students and foreign students.

Decreases in the higher age categories are caused by doctors entering retirement, women earlier than men. Male doctors are newly getting into the records after 65 years of age.

An influx of foreign doctors is flowing into the Czech healthcare system. Their number is increasing. It reached a growth rate of 22.5% between 2003 and 2006 and the increase amounted to 695 doctors in absolute terms between these years, an average of 232 people annually. A great majority of the doctors are from Slovakia.

The numbers of **medical faculty graduates** from the year 2000 ranges between **716 and 874 people.** If we consider that the decrease from the oldest cohorts 55 years of age and older together with the entire cohort of 70-year-olds and older amounts **to almost 400 people annually** in the last 5 years, **the graduates can easily replace them.**

The number of dentistry graduates has stabilised around 117 people, which soon causes other decreases of the total number of dentists if we consider that the average annual decrease in the last 3 years for those 55 years old and older amounted to 187 people and is continually increasing with regard to the age structure of dentists.

CHAPTER THREE
The Working Migration of Doctors from the Czech Republic to other Countries

a) The Opinions of Surveyed Healthcare Experts

(1) The opinion of the experts to the severity of the foreign working migration of doctors is not unequivocal. Roughly two thirds of the surveyed experts consider the foreign working migration of doctors to be a current social problem. The situation is particularly critical with beginning and young doctors in relation to their salary undervaluation. School graduates also represent a risk group. In the generation of older doctors the problem of migration is also not significant because the communication with the patient is important in clinical medicine and language abilities represent a considerable barrier for experienced doctors. The migration of dentists is understood by the experts to be within the limits of natural movement.

The remaining third of the experts consider the departure of the doctors to other countries to be more of an isolated matter, but the severity of this problem could appear in future years, i.e. in the situation where the borders to the west will be fully opened.

Some of the queried experts understand the foreign migration to be a natural manifestation of globalisation processes - on the one hand specialists from healthcare from the Czech Republic will leave, on the other hand we will see the immigration of doctors from economically poorer countries (e.g. there are already Slovak doctors, doctors from the Ukraine, etc. working in hospitals today).

Czech doctors are in demand in almost all of the EU countries for their good qualifications, skilfulness and flexibility. An expanded form of foreign migration for doctors living near the border is commuting to work to neighbouring Germany or Austria. The reason is apparently the higher income abroad and lower expenses in the Czech Republic.

From the perspective of medical fields the interest is primarily in orientations where perfect knowledge of a language is not necessary, which is made evident by the high interest in anaesthesiologists.

Most of the of those questioned are convinced of the temporariness of foreign stays, the doctors' return to the Czech Republic, which can be positive in the final effect.

b) The Results of the Questionnaire Survey

(2) A questionnaire survey was used for mapping the opinions of Czech doctors.[7] **The research of the doctors included 462 people** (i.e. about a 1.5% representation of the medical population, the ten busiest medical fields, and 12 regions of the Czech Republic).

[7] In the framework of the second stage of the solution field questionnaire survey of medical students was also implemented. The sample included 376 medical students from higher years of five Medical Faculties - approximately a 5% representation of the entire population of medical students. The results of survey of medical students corresponds with the basic trends of migration inclinations of doctors (migration destinations, the duration of foreign migration, migration motives, barriers …). The level of the migration potential for medical students is more than 10% higher - more detailed analyses will be published in professional literature and in the media (just like the results of the survey of students in IT/ICT fields).

The goal of the survey was to objectify the findings on the specified target group's migration tendencies, to ensure the probability of migration intention, the main destination migration territories, the expected length of the foreign employment stay, the basic motives and barriers of work abroad and other phenomena connected with migration.

While it is not possible to consider the survey of doctors to be representative from the perspective of rigorous methodological criteria, the results bring a series of relevant and previously-unknown findings that can be generalised with a certain caution to the given population.

(3) **The migration potential of Czech doctors** measured by the basic question on the intention to work abroad is high. 45% of the surveyed doctors are considering working abroad. The probability/feasibility of the declared migration intention is already substantially lower. The total potential (45% of those surveyed) is steeply reduced with regard to the steps leading to realising a stay and work abroad. The reduction receives this concrete form:

a) 30% of the doctors thinking about work abroad have done nothing for this intention. It is a group for which work abroad remains in the realm of vague, theoretical speculations;
b) Another 38% of migration-oriented doctors have also done nothing yet, but are getting ready to do so. It is possible to designate the representatives in this group as hypothetical-probable migrants, that could (but not necessarily will) implement their plan under certain conditions;
c) Roughly a third (32%) of the positively-tuned doctors has taken certain steps for realising work abroad. In this case it can be expected that these doctors could leave the Czech Republic in the foreseeable future with more or less probability.

The extent of the last group surprisingly corresponds to the frequency of doctors that have already obtained specific experience in the past with a stay abroad. Approximately 30% of the surveyed doctors have studied or worked abroad and roughly the same number (33%) of them currently have working contacts in the framework of scientific research or other cooperation with colleagues from other countries. This thus confirms that experience with stays abroad tends to be a significant impulse to further migration to other countries.

(4) The **degree of probability of the foreign migration of doctors** can be inferred from specific activities (steps) that the doctors perform to carry out the declared migration intention.

The most common implementation steps to staying and working abroad were obtaining information on the possibilities of employment abroad, approaching potential employers, seeking employment over the Internet, which cannot yet be considered activities that could demonstrate the actuality of migration intention.

35 doctors obtained the **promise of a job** (i.e. 17% of the potential migrants), 6 doctors (3%) had taken care of living abroad and only one of the doctors surveyed has a signed work contract. From this perspective **the realistic migration potential can be estimated at roughly in the range from 10 to 15% of the group of doctors with a positive attitude to foreign migration. This share is 4.5 to 6.7% of the surveyed doctors in conversion to the total number.**

The majority (three quarters) of the doctors that want to leave to other countries assume that they will work in hospitals, another 17% in the outpatient sphere and almost a tenth plan active work at a local university or connection to international research projects.

(5) The approached **doctors choose a return migration in the absolute majority of the cases. 13% of the potential migrants declare permanent migration abroad.** This percentage corresponds to the extent of the estimated potential doctors that are actually expected to leave. The frequency of permanent migrants for doctors is three times higher than for surveys of foreign migration for the total Czech population.

The most common length of the stay for doctors with the intention to leave to other countries ranges from one to five years (46%). Only every eighth doctor with a positive attitude to migration would want to stay abroad. The remaining nearly one fourth of the potential migrants are doctors that have not yet decided.

The most attractive migration destinations for doctors were made up of three European countries - Great Britain, Ireland (i.e. countries with an open labour market since the Czech Republic's entry to the EU) and the geographically close Germany. The number of those interested in Austria was identical with the interest in overseas countries being either the USA and Canada or relatively new migration destinations - Australia and New Zealand. In the rankings of preference for the most popular countries among doctors, the overseas countries split into fifth, sixth and seventh place from ten possible options.

The basic motive in choosing the destination country was definitely the financial effect – the vision of a high income, thereby achieving a higher standard of living. Unlike the general Czech population, there is a **high importance attributed to motives concerning employment** among doctors - the motive of being employed in one's field, better conditions for the work of doctors in the given country.

When selecting the migration country language concerns, being the knowledge of the language of the country in question and also the possibility of further perfecting it, are important. Conversely it has been shown that the motive of the country where relatives and acquaintances are living does not play a significant role in the choice of the destination country (it ranked seventh from among ten possible choices).

Data on the intended **start of the work activity abroad** corresponds to the degree of the reality of these considerations. During the analyses we assume that the more remote the planned departure from the country is, the lower the actuality of the migration intention will be. A higher probability of foreign migration would be attributed to roughly one fifth of the potential migrating doctors that plan to leave for other countries during the following year.

Those that expect to work abroad in a timeframe of one to two years or later is a far higher percentage (35%). Roughly 30% of these have not clarified their migration intention as far as the time is concerned.

(6) **General motives for leaving to another country** coincide to a certain extent with the motives for selecting a destination migration country.

A higher financial evaluation clearly dominates in the first ranking (94% of the migration-oriented doctors consider it to be an important impulse for foreign migration).

Language reasons and **motives related to the development of specialised and professional prerequisites** (to obtain an international perspective and contacts, to learn to work with the best medical technology and examination and treatment procedures) are a significant motivation for working abroad. Most doctors see working abroad as hope for more professional relations in the workplace and the possibility of working in a renowned healthcare facility.

When deciding on foreign migration the signing of a work contract is primary for doctors before leaving (91% of the doctors) as is precise and detailed information on the migration country.

Family reasons are attributed high importance - the possibility of visiting family members remaining in the Czech Republic several times a year, leaving to the other country directly with the family or with one's partner and the creation of better conditions for one's children's future. The fact that the doctor's wife/husband will find employment opportunities abroad is important for more than two-thirds of the doctors.

On the other hand low importance (ninth place out of ten options considered) is attributed to support for the doctors from relatives living abroad.

(7) Men in the age category from 30-39 and 25-29 years of age predominate among the potential migrating doctors. The inclination to migrate weakens considerably with advancing age. Nevertheless experienced, qualified specialists are interested and probably have a chance, unlike the general Czech population, to work abroad even at a more advanced age. The survey showed that 13% of the doctors in the age from 50-55 years of age were considering foreign migration.

The major part of the doctors (43%) with a positive attitude to migration work in teaching hospitals, another tenth in regional hospitals; one fifth is from doctors from former regional hospitals, doctors from the private sphere and other types of healthcare facilities (long-term care hospital, outpatient facilities, first-aid services, rehabilitation institutes, etc.).

Secondary doctors primarily think about working abroad, but doctors with basic certification in the field and doctors that have not yet received certification do as well.[8]

(8) The basic **barrier to leaving for another country** is a good job in the Czech Republic and fear from leaving one's family. The third most common obstacle to a foreign stay is language - for the performance of a medical profession enhanced by the need for good communicational language skills.

A serious barrier for a working abroad is the partner's disagreement and fears of a worse job than the doctors have at home. However the waste of suitable opportunities in the Czech Republic is entirely insignificant according to the positions of the interested doctors (this option is in last place in the rankings of perceived barriers).

[8] Other characteristics of potential migrants, i.e. the medical specialisation or the place of work, can be essentially determined by the size and structure of the selection sample, and thus these findings cannot be generalised.

CHAPTER FOUR
Income Motivation of Doctors for Foreign Working Migration

a) The Opinions of Surveyed Healthcare Experts

(1) Most of the questioned experts think that the income motivation of Czech doctors for work abroad is considerable. The social prestige of doctors in the Czech Republic is on a good level, but their remuneration does not correspond to this. The opinion that a doctor's wage should be three times higher than the average wage in the country (and nurses' wages 1.5 times higher) predominated among the questioned experts. It is not about the level of wages comparable to their western colleagues, but maintaining the wage relations in the salary distribution of the population.

The survey revealed that there are **differences between the wages of doctors in the state and private spheres,** though doctors in the non-state sector showed a higher dissatisfaction with wages.[9] In private healthcare facilities the wages are roughly 20% lower than in state facilities, where the salaries are controlled by valid wage regulations.

The wage undervaluation for starting doctors, (for whom their long studies, incl. post-graduate studies, were not taken into account) was generally very critically assessed. The wages of starting doctors are socially unacceptable and degrading.

Dentists, general practitioners and also doctors operating a private practice (e.g. gynaecology, obstetrics) achieve a higher level of earnings compared to the normal level.

b) Professional Analysis of Income Relations of Doctors in the Czech Republic and Doctors in Selected EU Countries

(2) According to current research, the earnings (income) motivation is a significant factor in the complex of stimuli for the migration of doctors from the Czech Republic for work abroad. In the last survey (RILSA, 2006) almost 95% of the doctors questioned gave higher wages as important migration impulse.

Along with financial motives, motives connected with the performance of the medical profession are important for work abroad; more than four fifths of the respondents consider the possibility to work with cutting-edge medical technology and to get to know the latest diagnostic and treatment procedures, to obtain an international view and contacts and to improve language skills to be important.

(3) The following contexts ensue for income relations between countries from the nature of the potential and just realised migration of doctors for work abroad:

First: The predominant segment of doctors considers the **temporary work migration**, usually with a multiple-year stay and employment abroad (most often in the range of two to

[9] By it is meant employment of doctors in non-government hospitals (in-patient establishments), non private doctors in ambulant sphere.

five years) and with a return to the Czech Republic, to be most advantageous.[10] They pay the specified income tax and contributions to social and health insurance from the wage (income) provided by the foreign employer and living expenses (consumer expenses) for themselves (or for people who are staying abroad with them and are financially dependant on them) at the local level of consumer prices.[11]

From this context it ensues that the **relations (differentials) of the actual purchasing power of net (available) earnings between the Czech Republic and the country of temporary residency** are **decisive** for the income motivation and earnings advantage of a foreign work migration (see below for more details).

Second: The migration of doctors for work from the Czech Republic to other countries is **commonly realised on the basis of an offer by foreign employers** (predominantly hospitals). The offers and specific conditions of the work contract and any wider living conditions are mediated by specialised employment agencies. The employment conditions are agreed upon (contractually stipulated) before the doctor leaves for the other country. The level of the wage essentially corresponds to the wage systems used in the relevant countries. The specific offers range widely according to the demands of the foreign employers. Doctors - migrants thus enter the "primary" labour market protected by labour laws and contractual relations (including collective ones).

(4) The income position of doctors inside the individual countries is a significant factor influencing (albeit indirectly) the differential between the earnings of doctors in the Czech Republic and compared countries. In the Czech Republic the income situation for doctors has improved with the background of ongoing social changes in the last roughly fifteen years. Their gross monthly earnings have increased from 1.6 times the average wage level in the Czech Republic (1992) to slightly more than twice as much at the current time (2004-2005). This is a position comparable to relations existing in other countries; the ratio of the gross income of doctors to the national income standard ranges from 1.7 times (Germany, Ireland), through 2.0 (Austria) to 2.4 (Great Britain).[12]

Comparing the **average gross nominal earnings of doctors** between the Czech Republic and the analysed foreign countries shows that foreign earnings are several times higher than Czech earnings (even if there are considerable differences among the countries).[13]

[10] In the current survey almost two thirds of the doctors - respondents expected a temporary work stay abroad.
[11] Some migrants have certain expenses in the Czech Republic (paid for from foreign earnings) which “double” the expenses abroad (expenses for maintaining a house or flat in the Czech Republic are typical).
[12] In the interest of the greatest methodological and content comparability, the earnings of doctors are taken from statistical information on the earnings of general practitioners and the national standards of average earnings are specified as the average earnings of manual, single, childless employees in the industrial and commercial service sectors (sectors C to K of the CZ-NACE classification).
[13] Earnings in national currencies converted into CZK by the average annual exchange rate.

Table 4 **The Average Gross Nominal Earnings of the "General Practitioner" Profession in the Czech Republic and in Compared States (CZK/month) and their relation (the Czech Republic = 1.0)**

	Monthly Earnings in CZK	Relation (Czech Republic = 1.0)
Czech Republic	37	1.0
Germany	186	5.0
Austria	176	4.8
Ireland	137	3.7
Great Britain	259	7.0

The statistical data for the profession "General Practitioner" in the period from 2002 to 2004; rounded to the nearest thousand CZK; see Appendix 10 for more details

The relations of the gross nominal earnings **provide inaccurate and strongly misleading information on the income advantage of foreign work migration.** Migrants are often disappointed by the markedly lower financial benefits compared to the expectations created according to the relations of gross earnings. The proportion of gross earnings does not reflect those factors that currently bridge the income level of Czech doctors in comparison with foreign doctors and significantly influences the factual intensity of the motivation for migration.

(5) **The first factor is the summary tax rate of gross earnings.[14] In the Czech Republic this is the lowest of the compared countries in the bracket of above-average wages.** It amounts to (in % of the gross wage): Czech Republic 27%, in Germany 48.3%, Austria 37.8%, Ireland 29.6% and in Great Britain also 29.6%.[15] By using these rates the doctors' gross earnings are converted to net nominal earnings.

The factor that is currently acting the strongest (most intensive) towards bringing the level of earnings and their real purchasing power closer together (generally, and thus for doctors as well) between the Czech Republic and the compared countries is the national consumer price level, or the relations between these levels.

The generally-used characteristic of relations between national consumer price levels is the **relative price level of household final consumption expenditure** ("HFCE"). This is determined for EU member states annually by Eurostat;[16] the fundamental base of deriving the relative coefficients of the HFCE price levels is the average EU-25 price level; in the interest of a more comprehensible interpretation the base is recalculated (converted) to the Czech HFCE price level; the relative price levels are specified in the following table:

[14] The summary tax rate is understood to be the percentual rate of deductions from the gross wage given by the sum of the income tax rate and the rate of mandatory contributions to social and health insurance; By deducting the summary tax rate the gross earnings (wage, salary) are converted to net earnings.

[15] The values are taken from the OECD publication "Taxing Wages 2004-2005." It is the taxed earnings that are 67% above the average earnings of manual, single, childless employees from industry and services. This summary taxation value has an approximate character; its precision is acceptable for the international analysis of earnings.

[16] The relative price level of the household final consumption expenditure is determined on the basis of a multilateral comparison of consumer prices in national currencies; the prices of a wide set of products and services entering into household consumption are compared.

Table 5 **The Relative Price Level of Household Final Consumption Expenditures (HFCE) in the Czech Republic and in Compared Countries**

	Relative HFCE Price Level	
	EU-25 = 1.00	Czech Republic = 1.00 [x]
Czech Republic	0.55	1.00
Germany	1.07	1.95
Austria	1.04	1.89
Ireland	1.23	2.24
Great Britain	1.06	1.93

[x] *rounded*
Source: Eurostat: Structural Indicators, epp. eurostat.cec.eu.int.s (October 2006)

The gap of the Czech level of consumer prices is currently considerable. The price level in foreign countries oscillates around twice that of the Czech price level.

(6) The data in the following table characterises the comparable (parity) real purchasing power of the doctors' average net earnings in thousands of crowns per month (i.e. financial amounts are available to a doctor on average) in compared states.

Table 6 **Comparable Real Purchasing Power of the Average Wage in the Czech Republic and Compared Countries (thousands of CZK per month)**

	Net Real Wage in '000 CZK/Month. [x]	Relation (Czech Republic = 1.0)
Czech Republic	27	1.0
Germany	49	1.8
Austria	58	2.2
Ireland	43	1.6
Great Britain	95	3.5

[x] *information for the profession of "general practitioner"; in thousands of CZK rounded off; see Appendix 10 for more details*

The net wage achieved on average by general practitioners in foreign countries, with the level of consumer prices in these countries, represents a considerably higher purchasing power than the purchasing power of the average wage that is achieved by general practitioners in the Czech Republic. The wage disparities roughly amount to: 60% in Ireland, 80% in Germany, 120% in Austria, 250% in Great Britain and they create a generally strong motivation for doctors to migrate to countries that are the subject of the evaluation.[17,18] A considerable disparity of the real level of average net wages in Great Britain follows from both the generally higher level of the British currency's purchasing power as well as from the higher income position of doctors in the domestic income hierarchy of professions. This indicates that migration to the United Kingdom is the most advantageous for doctors in terms of earnings.

A more detailed assessment shows that a similar income interval as in the average between the net wage's real purchasing power exists while evaluating the income range ("minimax") and also the wage offers of foreign employers. The domestic wage differentiation and offers indicate that there is a greater intensity of wage motivation for work migration in areas of

[17] In the last survey (RILSA, 2006) doctors also gave Great Britain, Ireland and Germany as the most frequent countries of their migration interest.
[18] In the cited survey about 43% of the doctors state that their income abroad would exceed their income in the Czech Republic by roughly 2x and 40% believe in a triple increase.

work that are less demanding and erudite, i.e. more for younger doctors. There are, however, offers corresponding to the interest in highly educated and experienced specialists.

The disparity of the average net real wages between the Czech Republic and compared countries characterises the basic statistics of average relations and tendencies. The specific proportions can be considerably individualised. Both relations between a wage achieved by a specific doctor in the Czech Republic and abroad as well as variances between factual personal consumption and the expense structure of the household consumption have an effect. The degree of wage savings that the migrants tend towards (in the interest of transferring funds to the Czech Republic) is limited for doctors by their social status, especially when compared with “blue-collar” migrants.

(7) From among the wider social-economic contexts, the range of the foreign migration of doctors is influenced by the fact that demand for professionally-prepared and erudite doctors is permanent in all advanced EU member states and in several countries outside of Europe. The range of the foreign migration for work is also intensified by the character of the performance of the medical profession - a highly specialised personal service demanding personal contact with the patient.

B. SELECTED RESULTS OF THE QUESTIONNAIRE SURVEY ON THE ATTITUDES OF DOCTORS TO FOREIGN WORK MIGRATION

B1. Survey Methodology and Selection of Respondents

The Selection of Respondents and Survey Methodology

The field survey of Czech doctors was carried out in the first half of 2006. **The goal of the research** was to determine the attitudes and readiness of Czech doctors to possible work migration to other countries and the phenomena connected with this.

The questionnaire survey on the migration readiness of Czech doctors followed up on the following two sources of knowledge:

- The extensive quantitative research on the migration potential of the population of the Czech Republic that was carried out in 2000 - 2005 in connection with the Czech Republic's entry to the EU and the stormily discussed right to free movement for people and employees in the spaces of EU countries;
- A qualitative research probe on the attitudes on the foreign work migration of Czech doctors in the form of controlled interviews with selected experts from the area of healthcare - 2006.

The subject of the survey became the doctors with a wide range of medical specialisations, from various types of medical facilities (from teaching hospitals to private offices) with regional representation throughout the Czech Republic.

The selection of the respondents was random with a limiting condition on the age of the doctors (doctors more than 55 years old were not included in the survey), with a view to the current knowledge on the medical specialists in demand abroad and to other current circumstances. The collection of the questionnaires was carried out in two manners. First of all in the framework of the post-gradual education of doctors through the Institute for the Further Education of Healthcare Employees. Secondly by directly addressing selected healthcare facilities with the use of external contributors. The obtained questionnaires were handed over personally (in the framework of an educational process) or sent to the contact person in printed form and on-line.

From the perspective of the territorial distribution almost half of the tested doctors came from Prague and the Central Bohemian Region (doctors from Prague made up more than one third). Eight Czech regions and four Moravian regions were also included in the survey.

A total of 462 questionnaires were collected. While the selected sample[19] makes no claim to being representative - it is a probe into the attitudes towards foreign work migration for a

[19] The classic academic title of MD was predominant among the tested doctors while approximately 15% of the selected sample's doctors had a different scientific or pedagogical title. More than a fifth of them worked in the function of head physician; almost fifty percent (48%) held the function of secondary doctor and the remaining number comprised doctors in functions of deputy head physician and doctor - intern. Roughly one tenth of the respondents were active in scientific-pedagogical activities in addition to medical practice. Almost half of the doctors in the surveyed sample worked in teaching and regional hospitals with a prevalence of teaching

specific group of highly qualified professionals at risk of migration - it does bring a series of new findings that can be generalised for the professional group of doctors with a certain degree of caution.

hospitals. The other half was comprised of doctors from former district hospitals, municipal hospitals and doctors with their own private practice. Doctors from medical faculties, military hospitals, from out-patient facilities, from first-aid services, medical and rehabilitation institutes, from long-term care facilities, regional hygienic stations, etc. were represented with a lower frequency (even uniquely) in the survey.

B2. SELECTED SURVEY RESULTS

THE FOREIGN EXPERIENCE, LANGUAGE SKILLS AND INTERNATIONAL COOPERATION OF THE SURVEYED DOCTORS

Prior Academic or Working Experience Abroad

In the last 15 years **almost 30%** (28.9%) **of the surveyed doctors studied or worked legally abroad.** Study sojourns (52.3%) prevailed slightly over working activities for doctors who had stayed abroad during the specified period.

More than one fifth (21.6%) of the approached doctors attended graduate studies, roughly the same number (19.5%) of the doctors attended post-graduate studies abroad and roughly every eighth doctor from the selected sample studied languages abroad.

In territorial terms the study sojourns were primarily oriented on Germany and other unspecified EU countries. The overseas countries of the USA and Canada figured more often for graduate studies and even Asian countries figured in post-graduate studies. English played the primary role in language studies abroad; most of the surveyed doctors had taken part in language studies in Great Britain, the USA or Canada.

The length of the professional studies ranged on average from one half to one year, while the language studies abroad were relatively short (roughly four months on average).

Longer stays abroad by doctors were connected with **employment stays.** The average length of a stay abroad for work in the field amounted to more than two years (26 months) and almost one year (11 months) for work outside of the field. Only working relations as part of student stays were shorter in time - they lasted four months on average.

Doctors worked most often in Germany, Great Britain and Ireland and mainly in the USA and Canada for overseas countries, though also in Australia, New Zealand and unspecified Asian countries. The objective of the short-term working stays in the framework of student activities was most often America and Canada.

Language Skills

The knowledge of international languages plays a special role in relation to finding employment on a foreign labour market. Similarly as for the Czech population, the knowledge of three international languages (**English, German and Russian**) was also highest among doctors.

In accordance with the current trends, an overwhelming majority (94%) of the surveyed doctors knew the **English language** on various levels. English is also the language that showed the greatest level of knowledge. According to their own assessment, almost 70% of the questioned doctors know English on a communicative level (the fluent and active knowledge of the language).

German is also considerably important for foreign migration since neighbouring Germany is becoming a frequent destination of working migrants from the Czech Republic with the qualified workforce being no exception. Though 62% of the questioned doctors claim a knowledge of German, the communicative level of the knowledge of the language is considerably lower when compared to English - just under 30% of the respondents specified this.

A relatively high number of doctors declared a knowledge of **Russian**, amounting to 290 people (63%) without regard to the level of knowledge. In relation to the territorial distribution of the realistic migration flows, however, the active knowledge of Russian does not play such an important role.

The knowledge of other investigated world languages is rare among doctors, just like in the majority of the population. French is worth a mention, with 17% of the doctors speaking it, though less than one tenth actively.

Table 7 **The Subjective Assessment of the Doctors' Language Skill Levels** (line percentages)

	Fluent Knowledge of the Language	Active Knowledge of the Language	Passive Knowledge of a Language	Cannot Use
English	21.2	48.7	23.6	6.5
German	6.3	22.9	32.7	38.1
French	2.8	4.3	10.0	82.9
Russian	5.0	27.1	30.7	37.2
Spanish	0.4	1.5	3.0	95.0

Working Contacts with Colleagues Abroad

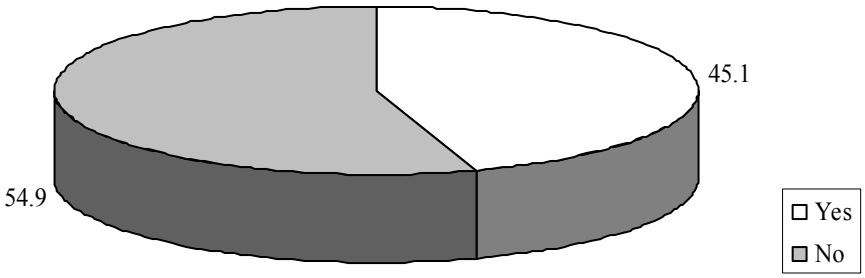
Foreign cooperation and obtaining working contacts are closely connected with doctors studying and working abroad. A direct link is also apparent from the perspective of determined frequencies. One third of those asked kept working contacts with colleagues in other countries, which is only three percentage points higher than the share of doctors studying or working abroad.

THE MIGRATION POTENTIAL OF CZECH DOCTORS

The degree of Czech doctors that are considering working abroad is determined by the principle question: "Are you thinking about leaving to work abroad?"

The share of positive answers is surprisingly high. **Almost every other surveyed doctor is thinking about work abroad.**

Graph 1 **Are you thinking about leaving to work abroad?** (in %)



THE DEGREE OF FEASIBILITY (PROBABILITY) OF THE MIGRATION INTENTION

How realistic the intention is to leave to work abroad is important for the foreign migration of specialists. The degree of the feasibility (probability) of the doctors' migration intention was determined by the control question: "Have you taken any specific steps to realise your intentions?" The sense of the question was to determine whether a declared foreign migration was only a theoretical, as-yet groundless intention or a seriously-considered life perspective.

Table 8 **"Have you taken any specific steps to realise your intentions?" N = 207**

Answer Options	Absolute	In %
1. NO, it is not current	62	29.9
2. NOT YET, but I am getting ready to do so	79	38.2
3. YES, I have already taken some steps	66	31.9
Total	207	100.0

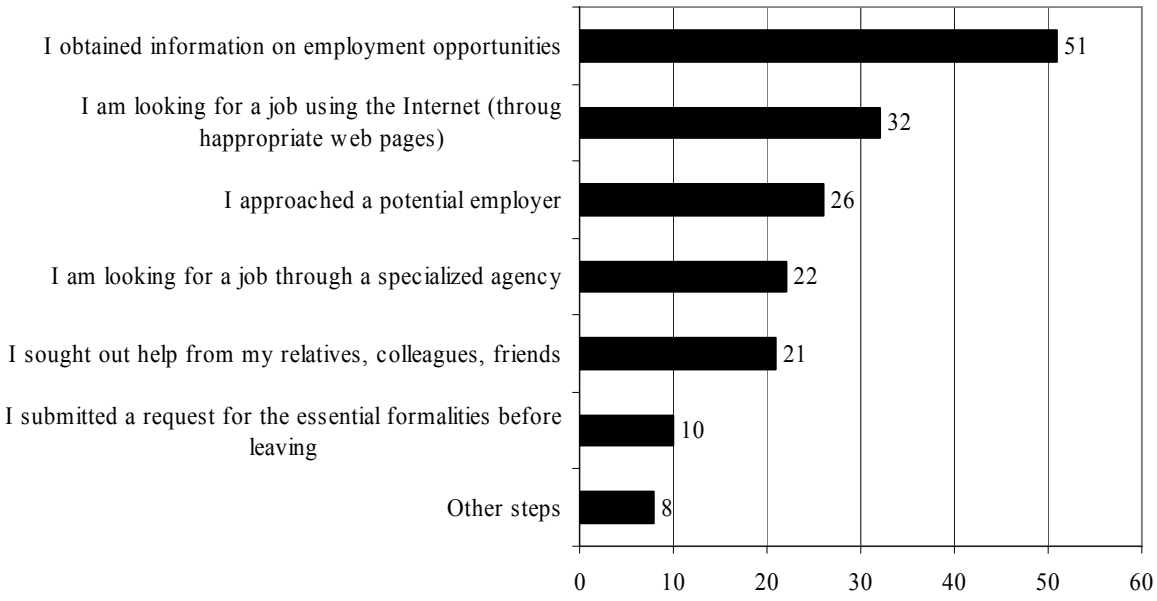
The results select the migration-oriented doctors into three important groups. Roughly one third (30%) of them did not do anything at all for the declared desire to work abroad. It is represented by the answer "No, it is not current." This group represents individuals hovering in the area of vague, theoretical considerations.

The second group - the largest section of potentially-migrating doctors (almost 40%) have also not done anything towards the declared migration intention, but the doctors are getting ready to do so. The representatives of this category tend to be designated as migrant hypothetical-probable. This concerns migration that may (but also may not) be realised in the future under certain subjective and objective circumstances.

The remaining third is comprised of doctors that have already taken some concrete steps for realising the expresses intention. In this case the foreign migration has already taken on concrete dimensions.

The doctors' foreign migration feasibility/probability level can be illustratively demonstrated in absolute values. If 207 of the total 462 doctors approached declare a positive attitude to migration, then during a probe of concrete activities the number decreases to 66 migrating doctors that could leave the Czech Republic under certain conditions. The group can be further differentiated with regard to the steps for realising the migration, see the following graph.

Graph 2 **If you have already taken concrete steps, what have you done in connection with your wishes to leave and work abroad?** (expressed in absolute values)[20]



Obtaining information on the destination country and looking for a job through the Internet were predominant among the steps towards realisation. Other frequent activities are approaching a potential foreign employer, looking for a job through a specialised agency and looking for the help of their relatives, colleagues and friends.

The most specific activity (the request for the necessary formalities for leaving) placed in the lower half of the imagined rankings.[21] **The more concrete the activity mentioned, the lower the number of doctors that have performed it.**

The steep reduction of the potential of migrating doctors is illustratively documented by the following data.

Table 9 **If you have already taken some steps, what result did they have?**

	Absolute	%
I received the promise of a job	35	17.0
I have already arranged for living accommodations abroad	6	2.9
I have a signed employment contract in another country	1	0.5

The end of the questionnaire was made up of a control question on leaving to another country, this time not formulated as a hypothetical consideration, but as making a decision on a concrete, realistic life situation. **"If you were offered attractive work in a foreign country during the following months would you:**

- Definitely accept the offer;
- Probably accept the offer;

[20] The respondents could check more than one option (with respect to the reality of their life situation), thus the absolute values exceed the number of doctors that have already taken steps to realise their migration abroad.

[21] Other realisation steps include, for example, the request for registration in the Medical Council in Great Britain, taking the IELTS language exams, studying literature, intensive language courses - they proportionately represent almost one percent of the potential migrating doctors.

- Probably not accept the offer;
- Definitely not accept the offer."

Both groups of respondents were evaluated for the analysis:
1. Doctors who are thinking of leaving for another country;
2. Doctors who do not have that intention.

Table 10 **The Acceptance of an Attractive Job Offer Abroad, Data in %**

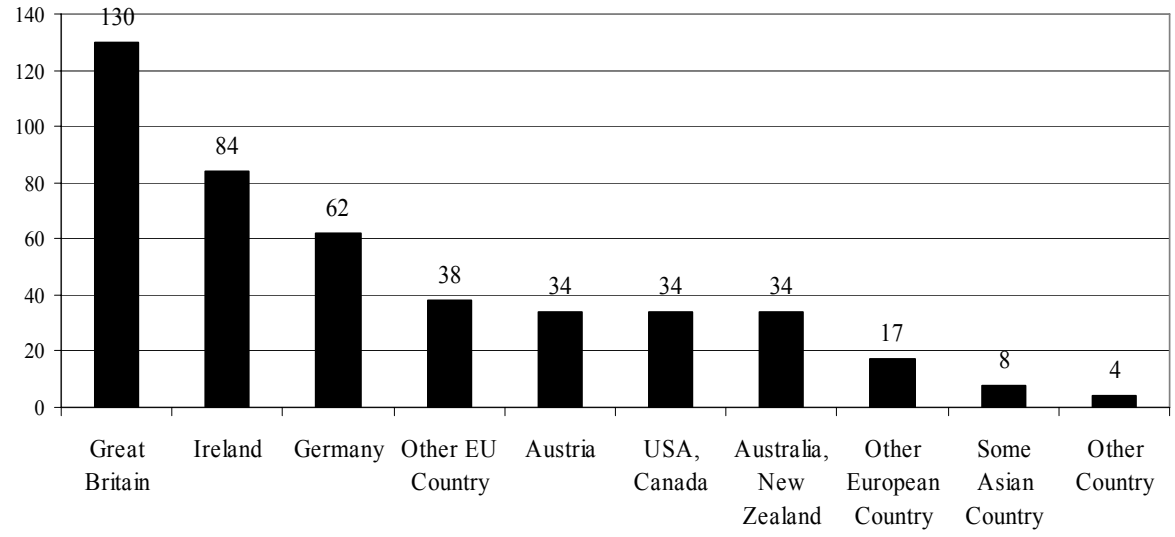
I would…	Migration-Oriented Doctors	Other Doctors
1. Definitely accept the job offer	36.1	1.2
2. Probably accept the job offer	51.0	17.3
3. Probably not accept the job offer	10.4	57.7
4. Definitely not accept the job offer	2.5	23.8

According to realistic assumptions, the overwhelming majority of doctors considering work abroad would accept an attractive job offer (87%). Nevertheless, even in this group there is more than one tenth of those who would take a restrained, or even negative, position on the possibility offered. The fact that more than half of the declared migrants have not firmly decided on a stay abroad and would "probably" accept an offer also complies with this. **The control question confirms that the share of declared potential migrants from among doctors will in any case be significantly reduced.**

On the other hand, there is a group of doctors, according to the questionnaire findings, who are not considering working abroad but would not rule this possibility out in the case of an attractive job offer and in roughly one fifth of the cases would definitely or probably take the job abroad.

DESTINATION COUNTRIES FOR THE FOREIGN MIGRATION OF CZECH DOCTORS

Graph 3 **Which country do you intend to leave for?** (expressed in absolute values)[22]



[22] The doctors could specify a maximum of three destination countries in the questionnaire. The total does not represent 100% of the value given in absolute numbers.

Great Britain ranks a clear priority from the perspective of the most frequented migration destinations. Next is **Ireland** with a difference of almost 50 votes and **Germany** is after this. Great Britain and Ireland are a favoured destination for Czech specialists, particularly for the problem-free access to the labour market for Czech citizens. Germany is attractive for Czechs, primarily in relation to territorial proximity.

Unspecified EU countries follow after a considerable interval. The same weight of preference place on the USA/Canada and on Australia/New Zealand (which are relatively new countries attractive for Czech citizens to migrate to) is an interesting finding. Switzerland is important for Czech doctors from among the countries outside the EU. Asian and other countries are only represented in isolated instances.

LENGTH OF FOREIGN MIGRATION

Table 11 **How long do you intend to stay abroad?**

Answer Options	Absolute	In %
Less than 1 year	9	4.5
1-2 years	46	22.3
2-5 Years	48	23.3
More than 5 years, but not permanently	28	13.4
Permanently, if possible	27	12.9
Don't know yet	49	23.8
Total	207	100.0

The most preferred declared lengths of foreign work migration for Czech doctors are **from one to two years and from two to five years** (45.6% in total). This finding also corresponds to the length of the most often made employment contracts for Czech doctors in other countries. Roughly one in eight potential migrants are considering a foreign stay longer than five years.

The finding that **12% of the doctors** thinking of leaving the Czech Republic **declared permanent migration** is significant. On one hand this number is a warning since it achieves a share that is three times higher than the average migration behaviour for the total Czech population and 70% of the declared permanent migrants have taken some steps for realising the migration. On the other hand, the permanent migrants only make up a minority of the migration potential of doctors - an absolute majority are only planning a temporary stay abroad with a return to the Czech Republic.

The relatively considerable share of potential migrants that have not yet decided (23.2%) is also worth a mention. It is a circle of people that either have not yet formed their migration intention, or count on the length of their stay conforming to the concrete foreign conditions.

DATES FOR LEAVING TO ANOTHER COUNTRY

Table 12 **In what time horizon are you preparing to leave to another country?**

Answer Options	Absolute	In %
During the next six months	8	3.9
In the period from one half to 1 year	32	15.3
In 1-2 years	71	34.5
Later	38	18.2
Don't know yet	58	28.1
Total	207	100.0

The date of the intended departure from the Czech Republic is an important indicator of how serious the decision to leave to work outside of the native country. It can generally be said that the more remote the date indicated, the more hypothetical or nebulous the migration intention is and vice versa. In can hypothetically be assumed that for specialists with ambitions to hold a qualified job abroad, a serious intention for a realistic departure includes periods up to about one year.

During the next twelve months almost one fifth of the doctors considering migrating (18.9%) are planning on leaving to another country. If we factor in those who have also taken some specific realisation steps, then it would apply to approximately every seventh respondent from the specified group.

More than half (52.7%) of the positively-oriented doctors expect to work abroad either in a time horizon of one to two years or later.

The frequency of those who have not yet decided (28.1%) testifies to the vagueness and uncertainty of the migration intention.

DOCTORS' IDEAS OF WORK ABROAD

Table 13 **What do you expect that you will specifically be doing abroad?**

Answer Options	Absolute	In %
I will work in a hospital	156	75.4
I will work in a the outpatient sphere	35	16.6
I will work at a university	9	4.5
I will work on a research project	4	2.0
I will work at a pharmaceutical company (or in an international pharmaceutical concern)	1	0.5
I will look for any work - any type of business	1	0.5
Other	1	0.5
Total	207	100.0

Three quarters of the doctors considering work abroad are convinced that they will **work in a hospital** in the other country and roughly every sixth potential migrating doctor expects to work in the out-patient sphere. Approximately 5% of the doctors plan active work at a university and 2% a connection to scientific research

Other possibilities are otherwise statistically insignificant. This includes, e.g., work at a pharmaceutical company (at an international pharmaceutical concern), work outside the area of medicine and science and any other type of business.

It clearly follows from the results that the overwhelming majority of Czech doctors expect employment in the area of medicine and specialised healthcare services abroad. Work outside the field in the attractive (in terms of income) pharmacy field does not have practically any significance for the migration of doctors.

CHARACTERISTISATION OF DOCTORS CONSIDERING WORK ABROAD

Doctors thinking about foreign employment can be characterised from a wide variety of perspectives. Apart from the usual socio-demographic characteristics, their professional character, professional classification, type of healthcare facilities and length of practice in the field were also monitored.

Methodologically it is important to take the fact that the selection sample of doctors was relatively small into consideration. Thus in the following text we present a comparison of the group of doctors with a positive attitude towards migration with the group of doctors that is not striving for work abroad. The question is whether the monitored characteristics of migration-oriented doctors are different and to what degree.

Table 14 **Comparison of Socio-Demographic Characteristics of "Migrating" and "Non-Migrating" Doctors**

	Potential Migrants	Other Respondents	Difference in %
Sex			
Male	64.7	52.2	+ 12.6
Female	34.3	47.1	- 12.8
Age			
25 - 29	26.6	15.3	+ 11.3
30 - 39	39.1	25.9	+ 13.2
40 - 49	20.3	18.4	+ 1.9
50 - 55	13.0	38.4	- 25.4
Family Status			
Single	17.9	11.8	+ 6.1
Married without Children	26.1	26.7	- 0.6
Married with Children	53.6	57.6	- 4.0
Divorced, Widowed	2.4	3.9	- 1.5

Table 15 **Comparison of Professional Characteristics of "Migrating" and "Non-Migrating" Doctors**

	Potential Migrants	Other Respondents	Difference in %
Highest Title			
MUDr.	89.4	83.3	+ 6.1
CSc.	4.4	10.5	- 6.1
PhD.	5.1	3.8	+ 1.3
DrSc.	1.1	2.4	- 1.3
Current Functional Classification			
Head Physician	18.8	26.2	- 7.4
Deputy Head Physician	4.7	6.2	- 1.5
Intern	6.3	8.7	- 2.4
Secondary Doctor	60.2	38.4	+ 21.8
Other	9.9	20.5	- 10.6
Number of Certificates			
No Certificate Yet	26.2	17.9	+ 8.3
Basic Certification in the Field	29.6	20.3	+ 9.3
One Further Certification	19.9	35.5	- 15.6
Two Further Certifications	22.3	21.9	+ 0.4
Three Further Certifications	1.9	4.4	- 2.5

Table 16 **Comparison of Type of Healthcare Facilities of "Migrating" and "Non-Migrating" Doctors**

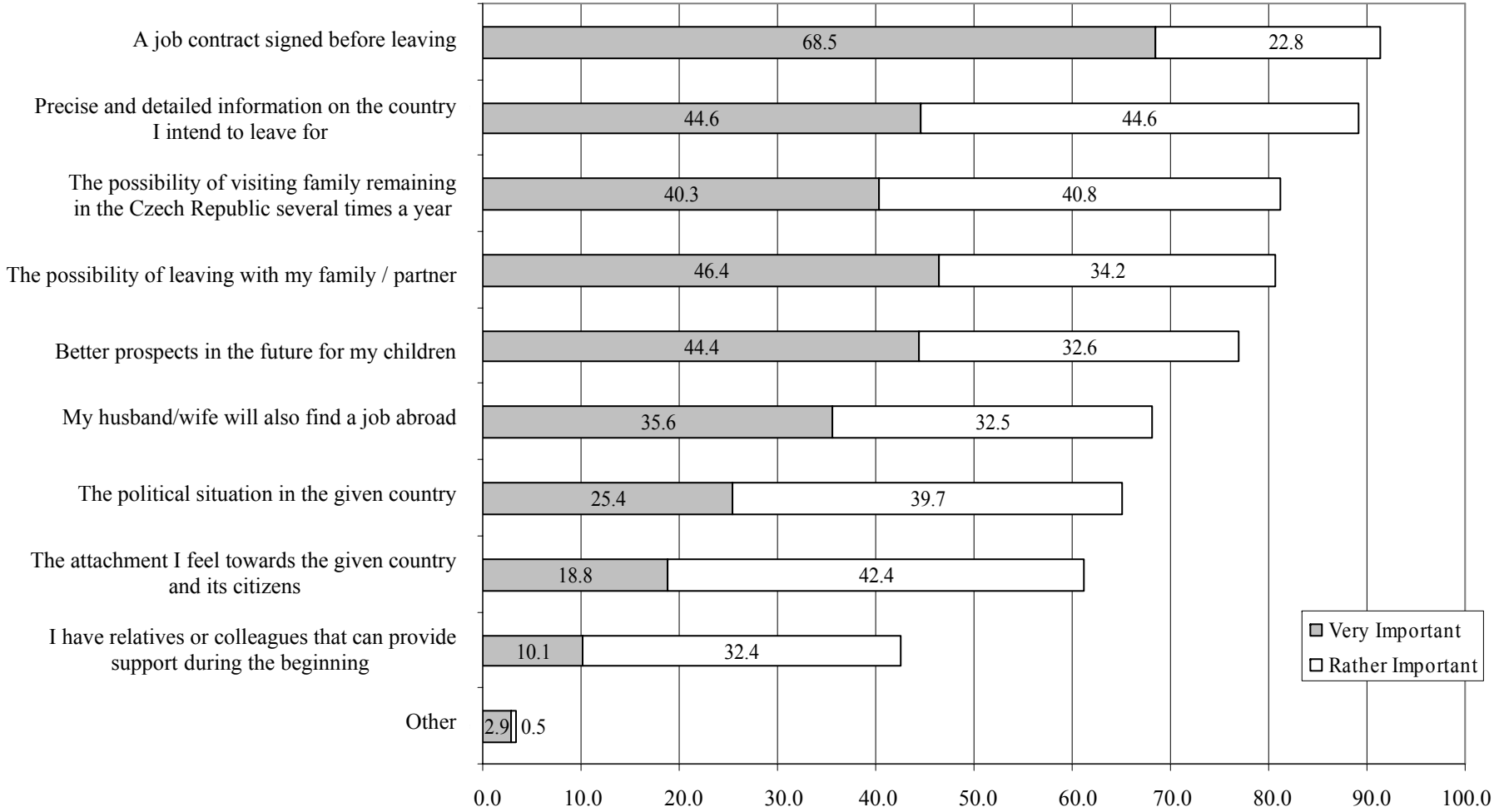
	Potential Migrants	Other Respondents	Difference in %
Healthcare Facilities			
Teaching Hospital	42.9	37.8	+ 5.1
Regional Hospital	10.2	6.4	+ 3.8
Former District Hospital	20.0	25.7	- 5.7
Municipal Hospital	6.9	4.8	+ 2.1
Other Type of HC Fac.	20.0	25.3	- 5.3

It follows from the specified data that the monitored characteristics have a complementary character; they supplement and qualify each other. When taking a closer look it is apparent that when compared to the group of doctors that prefer staying and working in the Czech Republic, the doctors considering working abroad:

- Have a higher representation of men;
- Have a preponderance of younger age categories (even though the relatively high representation of married doctors with children and doctors 40 years old and more among potential migrants cannot be overlooked);
- Have a higher share of doctors that are preparing for certification or have the basic certification in the field;
- Have a lower representation of "migrating" doctors with scientific titles, Head Physicians and their deputies and a higher frequency of secondary doctors;
- Have a lower number of doctors in the private sector and a higher number of doctors from large teaching and regional hospitals.

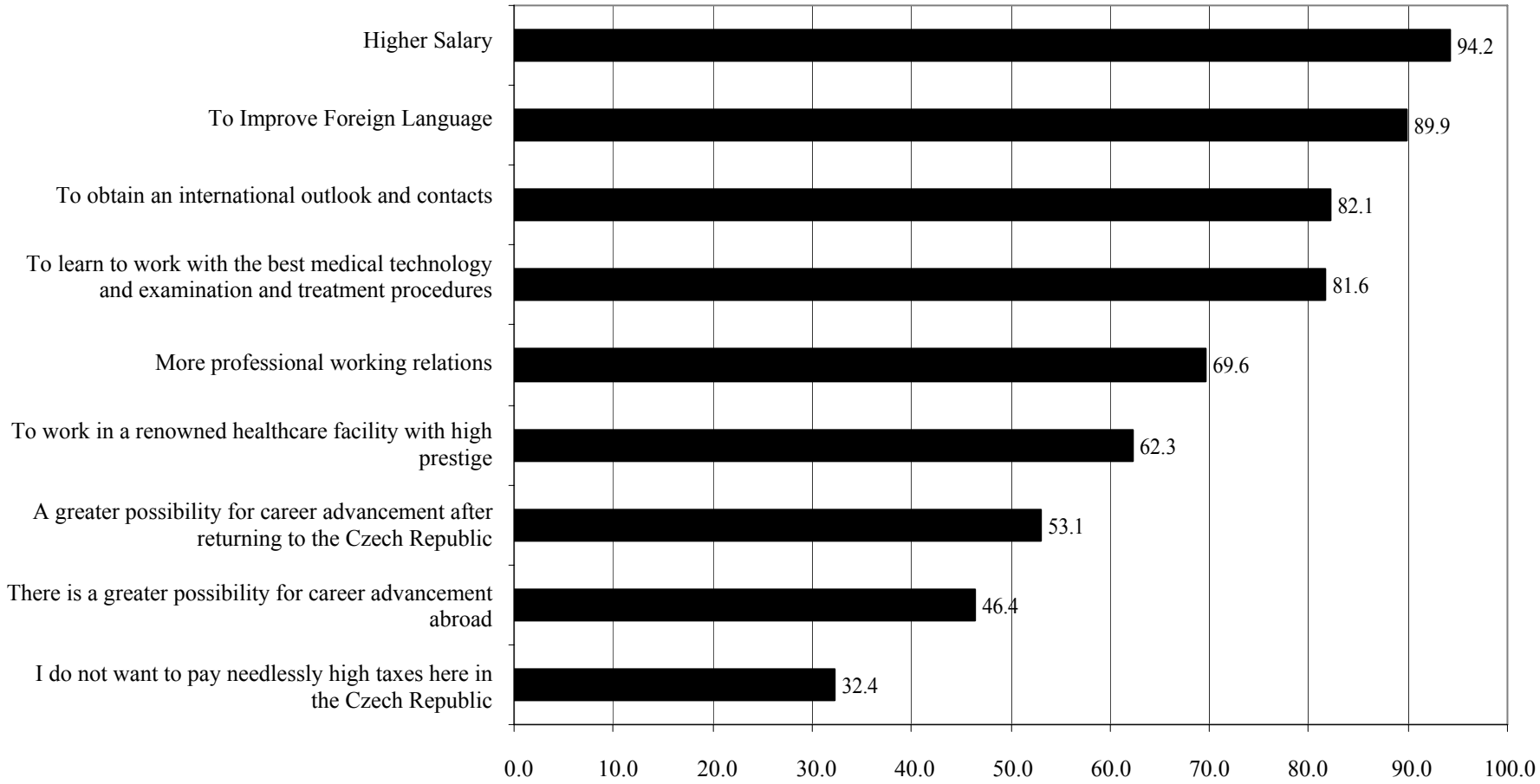
FACTORS FOR MAKING MIGRATION DECISIONS

Graph 4 **What importance do you place on each of the factors shown below when leaving to another country for a period longer than 1 year?** (expressed in %)



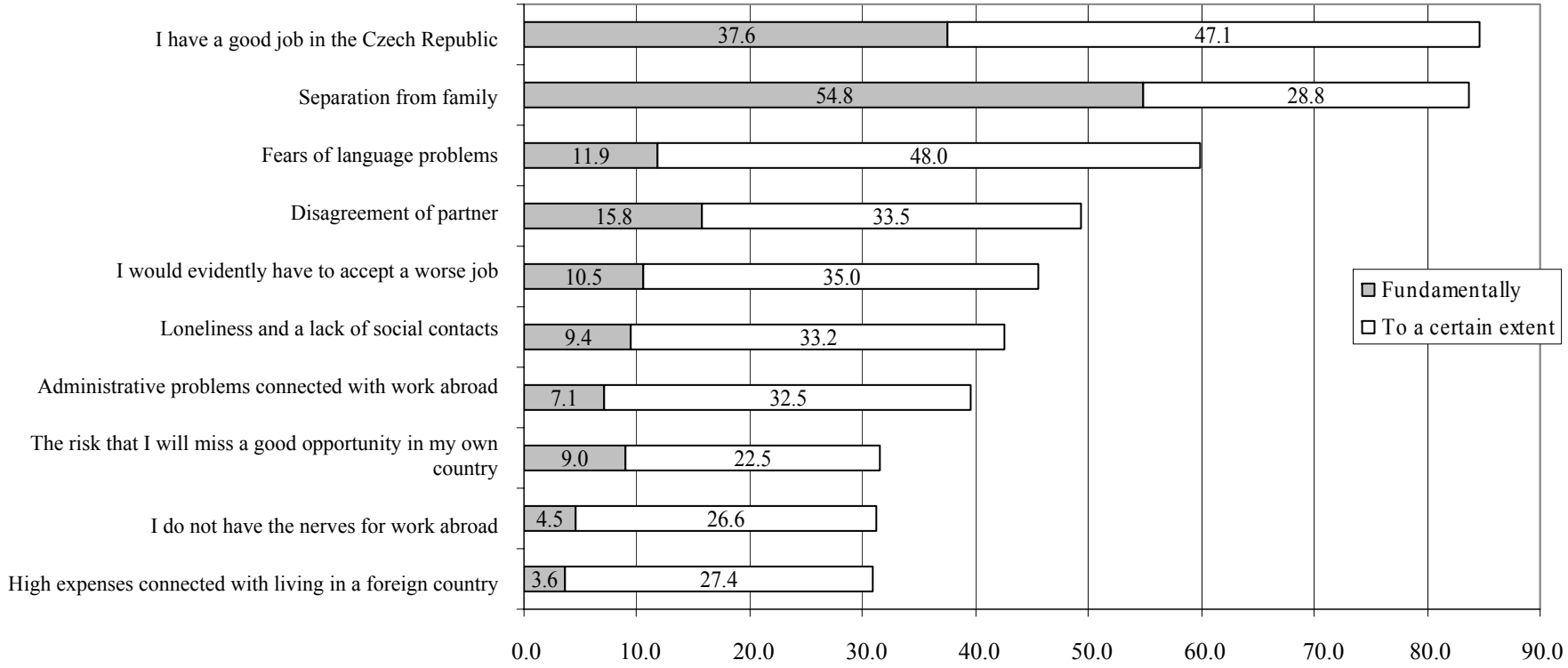
MIGRATION MOTIVES

Graph 5 **Please specify your motives for work abroad.** (expressed in %)



BARRIERS TO MIGRATION

Graph 6 **What factors are preventing you from going abroad?** (expressed in %)



Part II

Group at Risk of Migration
IT/ICT SPECIALISTS

A. BASIC SURVEY FINDINGS

CHAPTER ONE
Problems, Strengths and Weaknesses of IT/ICT Fields in the Czech Republic

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The Opinions of Surveyed IT/ICT Experts[23]

(1) The queried experts came from the state, academic and business practices; with regard to this fact the specification of the problems in the field of information and communication technologies was differentiated from the perspectives of the individual explored groups. The following facts can be stated with a certain amount of generalisation.

Representatives of the state sphere consider the basic problem of the IT/ICT field in the Czech Republic to be a lack of development programmes and a not-very-complex approach to the whole issue. The Czech Republic is lacking a long-term or medium-term conception on the part of the country with a clear orientation on the information society and institutional security. Other problems are in the low flexibility of the legislative area and the lack of preparedness on the part of specialists to provide their know-how to the professional and lay public.

Representatives of the academic sphere point to a lack of funds and connected problems with the quality of the hardware at schools of all levels. They refer to an **increasing need for software specialists** and the problem of universities to cover this need (even though there is a department oriented on IT/ICT issues at almost all universities). The consider the biggest problem to be ensuring top specialists for quality instruction, since those prefer to leave for the commercial sector which offers them salary conditions that are many times higher. If appropriate measures are not taken, it is a real threat that second- or third-rate instructors will be teaching at universities.

Representatives of the commercial sphere emphasise the discrepancy between the need to obtain the newest technologies and the available volume of finances which often do not permit this, especially in the case of Czech companies. The IT/ICT sector is going through an unbelievably fast development of technologies in a short period for the usability of the individual software. Most Czech companies have a limited availability to top know-how as well, since training in the most modern technologies is extremely financially demanding. The insufficient interlinking of universities with the needs of practice, and the low interconnection of the academic and business spheres connected with this, is a target of criticism by the experts from selected IT/ICT firms. Universities should more actively react to commercial practice, ascertain the needs of companies and coordinate their study plans in accordance with this. With regards to the preparation of IT/ICT specialists, experts from practice place a

[23] In the middle of 2006 a qualitative survey was made on the basis of controlled interviews with selected experts from the area of information and communication technologies. Representatives of the state sphere (Ministry of Informatics, The Ministry of Industry and Trade), representatives of the academic community (experts from various types of universities) and selected specialists from the field were involved in the survey. The focus of those asked come from Prague.

greater emphasis on the graduates' general overview, analytical thinking, knowledge on the latest trends and language skills.

Some of the respondents from this group pointed to the low use of outsourcing services in the IT/ICT sector.

(2) The surveyed experts agree in that the **field of information and communication technologies in the Czech Republic is on a good level** and roughly corresponds to the European-wide average.

The lack of finances for top-of-the-line technologies, which causes the Czech Republic's dependence on Western Europe and the USA, is a **weakness**.

The high creative potential and knowledge of Czech information specialists, who, in comparison with their foreign colleagues, think through a problem more fully, can flexibly improvise and resolve situations even when they do not have precise rules specified, is coincidently considered to be a **strength** in this area.

CHAPTER TWO
An Analysis of the Numbers of IT Professionals in the Context of the Needs of the Labour Marker and the Status and Development of the Employment of IT/ICT Specialists

a) The Opinions of Surveyed Experts

(1) While the demand for IT professionals is generally increasing, their specific lack is only apparent in specifically defined areas. Companies see that IT/ICT specialists with knowledge of the newest technologies, with good communication abilities, with the ability to present and sell products are hard to find on the Czech labour market. IT professionals with good language skills are lacking on the labour market and experts capable of joining technical know-how with an overall system solution are generally lacking.

The professions of information specialists most often in demand are:
- Software developers;
- Network information specialists;
- Specialists of the most modern and sought after technologies on the market.

From a development perspective the emphasis is placed on **the increase of specialists with interdisciplinary knowledge**. The need for IT professionals that, in addition to having quality IT/ICT knowledge, simultaneously understand the application systems for which a product is created will also increase on the market. Experts expect the increased need for IT professionals with knowledge of business, economics and management and other professional knowledge in connection with the development of financial informatics, informatics in commerce, construction and other branches of national economics.

The increased need for language skills and the ability of presenting to and communicating with the customer, getting to know his needs, the ability to present solution methods well and understandably are all predicted.
A decreased need for IT professionals is expected for administrators working with common operating systems and for hardware designers and operators on the condition that the reliability of products will continue to increase.

b) Monitoring the Need of IT Professionals on the Czech Labour Market

(2) The field of information and telecommunication technologies is showing a high speed of development and an increased movement of the workforce in this field. The need for IT professionals on the Czech labour market was monitored using a programme from LMC which includes the requests of employers on the most frequented Czech web servers www.jobs.cz , www.práce.cz.[24]

[24] This programme enables the offers of applicants to be monitored at the same time, but the direct confrontation of offer and demand is somewhat problematic for formal reasons, so we limit ourselves to monitoring advertised free information scientist jobs in this text, in context with the goals of the project.

A total of 24,775,670 available jobs (AJ)[25] were registered on the aforementioned servers during the period from January, 2006 to July, 2006. Jobs for university-educated specialists made up 21.4%; in absolute terms it amounted to 5,290,557 free jobs. The advertised jobs for the field of information systems and information technologies (designated in the model by the abbreviation IS/IT[26]) represented one quarter of the **advertised jobs for university graduates** and almost five percent from the total volume of free jobs.

Jobs for applicants with bachelor degrees and with university graduate degrees were offered for IT professionals, but employers were also looking for applicants for the positions of university specialists with scientific qualifications. The offered jobs for applicants with bachelor degrees applied more to technical positions for the operation and support of IT/ICT systems, requests for a postgraduate education were meant for scientific experts for the development of new technologies and connected concepts.

Table 17 **The Number of Available Jobs for IT/ICT Specialists**

Total Number of AJ for University Graduates		For IT/ICT Specialists from this amount	
Absolute	Relative	Absolute	Relative
5,290,557	100	1,333,538	25.2

(3) If we look at the relative frequency of advertised jobs in the IS/IT field **according to the required level of university education** we find that the most jobs were meant for bachelor degree holders (i.e. operators) - they made up almost one third of all monitored bachelor jobs.

Not quite one quarter (23.9%) of the offered jobs were comprised of jobs for applicants with graduate degrees in the IT/ICT field and it is interesting that **one quarter of the advertised jobs for IT professionals (25.2%) required another level of specialised (post-graduate) education in addition to a university degree.**

Table 18 **The Numbers of Advertised Jobs according to University Education**

Requested Education	**Total AJ**		**IT/ICT Field**	
	Absolute	Relative	Absolute	Relative
Bachelor	867,242	16.4	276,035	31.8
Graduate	4,416,602	83.5	1,055,536	23.9
Postgraduate	6,713	0.1	1,333,538	25.2

If we compare the structure of the overall advertised jobs for university graduates with jobs meant for the IT/ICT field according to the required education, two basic tendencies are clearly shown:
- Double the requests for applicants with bachelor degrees;
- Many times more requests for scientific qualifications, or for another type of post-graduate education.

(4) It is possible to categorise available jobs for IT professionals into three main areas - they are represented as follows.

[25] The number of free jobs is understood to be the number of calendar days for which the individual jobs were advertised.
[26] We will use this abbreviation later on in the text of this chapter.

Table 19 **Available Jobs according to Specialised Orientation of IT Professionals**

	Absolute	Relative
Projects and Consultation	370,535	34.8
System and HW Administration	255,168	23.9
Application and System Development	438,707	41.2
Total	1,063,707	100

It is apparent from this that the highest demand is for applicants for jobs in the area of application and system development, which corresponds to the demands on the applicant's educational level.

When analysing the requests for a **specific profession** in the last month of the monitored period[27] we reach the conclusion that:

- The most sought-after position in the area of "**Projects and Consultation"** was that of Project Manager. The demand for this job made up almost half (42.7%) of all offered jobs in the given sector. The positions of IS/IT Developer (11.5%) and IS Analyst (8.3%) followed after a considerable gap. The demand for other professions attained even lower numbers.

- In the area of "**System and HW Administration**" the employers' demands were also oriented on a managerial post - specifically on the position of IT/ICT Director (11.4%). The next most sought-after professions of this segment were for Database System Consultants (8.9%) and Application Administrators (7.2%),

- The majority of the experts sought after in the area of "**Application and System Development" is for the positions of Programmer** (43.5%) and IS/IT Developer (26.5%).

The confrontation of the supply of applicants with the demand by employers in the model used does not provide an accurate depiction of the situation on the labour market[28] and it is therefore necessary to be very cautious when interpreting the information. Nevertheless, the comparison showed that the needs of the employers are oriented on technical professions, while the offers by applicants are more economical in nature.

During the period monitored, the number of jobs offered exceeded the number of applicants for IT professionals. In the monitored LMC programme there were, on average, eight job availabilities for IT/ICT specialists for each applicant.

In the field of **Projects and Consulting** a significant contrast between the needs of the employers and the supply of applicants for the professions of IS Consultant, IS/IT Designer, and IS Analyst was observed.

In the field of **System and HW Administration** the greatest deficit of applicants was recorded for the professions of Database System Consultant, OS Consultant and Database Administrator.

[27] During the analysis it is important to note that the data includes the demand during one month, which can be influenced by fluctuations on the labour market.
[28] The reasons are specified in the underlying study where the demand by employers and supply of applicants is analysed.

In the field of **Application System Development** there was a lack of applicants monitored primarily for the professions of Programmer and IS/IT Designer.

Monitoring the available jobs with the use of the LMC model confirmed the high interest of Czech employers for technical professions, with the demand for IT/ICT experts in the section oriented on university-educated specialists is one of the highest in the Czech on-line advertisements.

c) Statistical Analyses on the Status and Development of Employment in the Group of IT/ICT Specialists

(5) We used the Selective Workforce Survey (SWS) data sets published quarterly by the Czech Statistical Office for the analysis of the current status and development of employment in the group of specialists in computer technology. Specialists in computer technology are identified according to KZAM codes there. It specifically concerns these groups:

213 - Scientists and specialists in the area of computer technology
- 2131 Computer System Designers and Analysts
- 2132 Programmers
- 2139 Other specialists working with computer technology

312 - Technicians working in the area of computer technology
- 3121 Consultancy in ICT (Information and Communication Technologies)
- 3122 Computer Equipment Operators
- 3123 Operators of Industrial Machines, NC Machines
- 3129 Other Technicians in ICT

When working with SWS sets it is necessary to remember that it is a selective set which is made in a random manner. While it offers the possibility of specifying the overall frequency of the selected groups by applying it to the entire population, the resulting frequency does not have to be a reflection of the actual ratios in the population. An interval of reliability in which the given probability of the actual frequency ranges can be specified for the selected SWS frequency. For selected subsets with a size of approx. 50,000 people their size with a probability of 95% ranges in the interval of 50,000 ± 4,000. It is important to remember that the specified values are only approximate.

IT/ICT specialists work in **all branches of the economy**. Most of them are classified in branch K of the CZ-NACE classification, which are activities in the area of Real Estate, Renting and Business Activities. This branch includes, among others, activities in the area of computer technology, research and development and other business activities. In 2005 40.8% of the total number of IT/ICT specialists worked in this sector. The other most important branches are manufacturing, where 26% of all IT/ICT specialists work, public administration (9%), financing (5%) and trade (4%).

(6) **The educational composition** in 2005 was very diverse. University-educated IT/ICT specialists were 41.5% of all employees in the sector. In the following table we present the education of IT/ICT specialists that have a share above 5% of the overall amount:

Table 20 **Educational Structure of IT/ICT Employees**

Education	Relative Frequency in 2005
High School Graduate, Field of Electrical Engineering	15.0%
University, Field of Electrical Engineering	14.0%
High School Graduate, Field of Engineering	9.7%
University, Other Technical Fields	7.9%
High School Graduate, Field of Economics	7.7%
High School Graduate, Other	7.5%
High School Graduate, General Preparation	6.7%
University, Field of Economics, Trade	5.6%

(7) **The development of the total number of IT/ICT professionals** can be determined from the annual aggregate SWS sets from 1994. **Between 1994 and 2002** the number of specialists in IT/ICT technologies had an **increasing trend** with an average growth rate of 2.22% annually.

After 2002 the increase turned into a decrease. We found a decrease in all those employed between 2002 and 2004 amounting to 18,000 people. The decrease is too large to have been caused by a selection error. The number of university-educated specialists also decreased by 4,200 during this period. During a deeper analysis it was found that the decrease occurred in the KZAM-R group of 212, which are technicians in the area of computer technology.

The **age cohort analysis method** was used for a more detailed analysis of the development of the number of IT/ICT specialists over time. This consists of a defined five-year age cohort and in monitoring their size at the beginning and end of the five-year period. If there would be no changes in employment or departures from jobs for other reasons, we could expect, for example, that the size of the age cohort from 25-29 years of age in 2000 will be roughly the same as the size of the 30-34 years of age cohort five years later in 2005.

In reality this is not the case. It was ascertained that the cohort of 30 to 34-year-old IT/ICT specialists decreases considerably during the following five years and the two subsequent cohorts 35-39 years old and 40-44 years old increase by a similar size. A decrease in the cohort of 30 to 34-year-old IT/ICT specialists arose when observing the cohort of 30 to 34-year-olds in 1998 and comparing this to the size of the cohort of 35 to 39-year-olds in 2003. It was the same when observing the cohort of 30 to 34-year-olds in 1999 and comparing this to the size of the cohort of 35 to 39-year-olds in 2004 and the same process took place after comparing the cohorts in 2000 to 2005. It was discovered that the average decreases are 11%. Between 2000 and 2005 the decrease of the cohort of 30 to 34-year-old IT/ICT specialists actually reached 21%. An analysis of the sets of economically inactive and unemployed does not demonstrate that the IT/ICT specialists would have gone into this category. The observed decrease thus cannot be explained by entering into unemployment, to maternity leave or similar reasons. **Thus we can speculate that these people left the sector or went abroad.**

Knowledge obtained by an attempt to analyse the flows of the workforce, where we made use of the fact that 20% of the SWS set is changed every quarter, leads to the idea that these specialists are leaving for other countries. IT/ICT specialists that went through the monitoring in the quarter were looked for with the result that a change in profession can only explain 17.8% of those leaving the records. The rest of the early departures from the monitored SWS cannot be explained on the basis of the information gathered.

(8) **The model for estimating education needs** analyses the labour market and in the medium-term future estimates the possibility of finding suitable employment for graduates that are entering the labour market. The model estimates the demand for work in previously defined professional and educational groups in the next five years and the size of the demand for work in educational groups confronted with the influx of graduates in the same period.

The model anticipates the further development of the employment categories made up of IT/ICT specialists with the codes KZAM 213 and 312.

The estimated total number of IT/ICT specialists between 2005 and 2010 will increase with an average growth rate of 4.6% annually. The model **predicts approx. 22,000 new jobs for IT professionals in this period.**

Employees from the Institute for Further Education provided an estimate of the number of university graduates in the branches of Informatics and Computer Technology. It amounted to about **18,000 new university-educated graduates in the years 2006 to 2010.**

From this it can be concluded that university-educated specialists will have a good chance to obtain employment in the sector, it can be expected that they will often replace the high-school graduates that are currently working in the branch. The chances of high school-educated IT/ICT technicians to obtain employment in the branch will be apparently lower in the future.

CHAPTER THREE
The Working Migration of IT/ICT Specialists from the Czech Republic to other Countries

a) The Opinions of Surveyed Experts

(1) The vast majority of the surveyed experts **do not consider the foreign migration of Czech IT professionals to be a serious social problem.** The reason is their above average salary and the possibility of "working remotely for foreign countries."

The "**intellectual migration**" - a state where the professionals remain in the Czech Republic, but transform their knowledge outside the Czech Republic in the frame of multinational cooperation, leading to a "drain" of know-how. It is not possible to prevent this phenomenon in the current globalising society, but it is possible to prepare for the reciprocal influx of "smart brains" to the Czech Republic.

From the perspective of the **demand for Czech experts in foreign countries** the interest is concentrated primarily on specialists with experience. This concerns operators as well as project leaders, senior managers and IT/ICT "brains" (e.g. top-rate IT/ICT specialists in Switzerland are offered Swiss citizenship without any problem).

The foreign migration of IT professionals is related to the size of the company in which they work; multinational companies have branches all over the world and that directly suggests sending people to other countries.

A vast majority of those asked are convinced of **return migration.** IT professionals will, with a few exceptions, return to the Czech Republic and use contacts made in the local environment.

b) The Attitude of Information and Communication Technology Employees on Working Migration to Other Countries

(2) In the months from March to October 2006 a survey of workers employed in the area of information technologies was carried out in the Research Institute for Labour and Social Affairs (RILSA) in cooperation with the University of Economics.[29]

[29] In the second stage of the project solution an on-site, questionnaire survey of students in the IT/ICT branch was implemented. The sample contained 483 students from the IT/ICT branch from five various universities in the Czech Republic. Specifically they were the Masaryk University in Brno, the West Bohemian University in Plzeň and the Czech Technical University's Faculty of Electrical Engineering, Charles University's Faculty of Mathematics and Physics and the University of Economics in Prague The selection sample contains 10% of the basic set of all students of any IT/ICT branch. The results of the survey of students corresponds to the basic trends of IT/ICT employee migration tendencies (migration destination, duration of foreign migration, migration motives, barriers …), the level of the migration potential of IT/ICT students is roughly 10% higher. More detailed analyses (just like the results of the medical student results) will be published in professional literature and in the media.

The subject of the questionnaire survey was IT/ICT workers in a wide spectrum of professional specialisations from programmers, through SW architects to IT/ICT salesmen, from various types of organisations (from IT/ICT companies, through the IT/ICT Departments of companies and universities), with Prague dominating (83%) in the regional representation in the entire Czech Republic. The survey took place by filling in an electronic questionnaire,[30] which was completed by a **total of 276 IT/ICT employees.**[31]

The selected sample of information technology employees cannot lay claim to being representative and it is important to understand it as a **probe of attitudes to foreign employment migration** for a specific, highly-qualified group of professionals that were judged as being at a high risk for migration. **The objective of the survey** was to determine the level of potential risk of Czech IT/ICT specialists leaving the Czech Republic for other countries.

(3) **Almost every other surveyed IT/ICT employee (43%)** is thinking about work abroad. Most of those who are considering it are employees working in **Czech branches of international companies followed by employees of large companies** and those that **already have foreign study or work experience** and are in contact with colleagues from abroad in their current work. An inclination for migration is also connected with better English skills and with a smaller number of children.

(4) **The level of feasibility (probability) of the migration intention** is apparent from the following data.

For IT/ICT employees that have stated that they are considering working abroad, migration is not pressing for 40% of the cases, since they have not taken any specific steps and are not even preparing to do so.

On third of the "potential migrants" have not yet done anything either, though according to their statement they are preparing to do so.

The remaining quarter of the respondents with a positive attitude towards migration have already taken some specific steps. This most often concerns looking for employment through the Internet, obtaining information on the possibilities of employment or looking for help from relatives and friends. Migration is most probable in this group.

These most probable migrants make up roughly one tenth (11.2%) of all those questioned. In this case it can be expected that these employees will leave the Czech Republic in the foreseeable future with more or less probability.

Four percent of all the respondents already practically have "one leg in the other country" since their job search has already had concrete results (e.g. a signed contract or living accommodations set up in the other country).

[30] The questionnaire was located on the Internet at the address http://vupsv.periskop.cz, information on the research (with a request for filling in the questionnaire) was published at the address www.csii.cz

[31] According to data from the Czech Statistical Office (the Selective Survey of the Workforce, 2005) almost 80,000 computer specialists worked in the Czech Republic in 2005. The greatest concentration was in Prague where over twenty thousand were working.

Generally, the more specific the activity mentioned, the lower the number of IT/ICT workers that have done it.

(5) In relation to the **length of the foreign stay** positively-oriented workers most often specified a length of a foreign stay from one to two years.

Four percent of all the IT/ICT employees surveyed and less than one tenth of the "potential migrants" (9.2%) declared permanent migration. The results indicate that "permanent migrants" are more active in terms of the concrete activities that they have performed in connection with the foreign migration. It was ascertained that 64% of the declared permanent migrants have already taken concrete steps in order to realise the migration and the rest are preparing to do so. In this case it really is the phenomenon of the "brain drain."

(6) **English-speaking countries** are a **clear priority** from the perspective of the most frequented **migration destinations. Great Britain and Ireland** are in first place for IT/ICT employees **followed by the USA/Canada and Australia/New Zealand.** Great Britain and Ireland are apparently the favoured destinations of Czech specialists thanks to the problem-free access to their labour markets for Czech citizens. Other states of the European Union followed at quite a distance.

The main **reasons for the selection of the given country** are the possibility of working in one's field, the expected high wages, the knowledge of the local language and the possibility of further developing this language and better working conditions. On the other hand relatives and friends in the given country and the proximity of the country to the Czech Republic are seen as unimportant reasons.

IT/ICT employees consider a signed employment contract, precise and detailed information on the country they intend to leave for and the possibility to leave with one's family or partner to be **the most important factors influencing the migration decision**. Having friends or colleagues in the country in question that could provide support at the beginning is an unimportant factor.

For workers in the IT/ICT branch the most important **motives** for potential migration abroad were: a higher **wage, obtaining an international perspective and contacts and improving a foreign language.**

(7) **In relation to the barriers to potential foreign migration** it can be said that for most respondents there is not a single barrier. For IT/ICT employees the most important factors that prevent respondents from leaving for another country to a certain extent were: separation from family and good employment in the Czech Republic. Satisfaction with one's professional life generally has an important significance for the foreign migration of specialists. The second strongest barrier for IT/ICT employees - strong ties to the family - is identical with the migration barrier of the entire Czech population.

On the other hand it was found that **the knowledge of a language was not a problem for IT/ICT employees**.

Potential migrants from the group of IT/ICT workers differed from the rest of the population in that separation from the family and employment in the Czech Republic was less of an

obstacle. High expenses connected with working abroad were seen as more significant, on the other hand.

(8) **From the total number of surveyed IT/ICT employees 28% specified a study or work experience from another country;** most often a short-term stay in the framework of an international company in which the respondent is or was working, a professional stay outside company studies abroad, permanent employment in the field for another company, language stays outside of company studies or a student employment residency.

The most frequent places for obtaining foreign experience were the United States, Great Britain, Germany and other European Union countries.

In relation to **language skills** English clearly dominates among IT/ICT workers. More than 91% of the IC/ICT employees stated, in a subjective appraisal, that they use it either fluently or actively. The knowledge of other foreign languages is considerably lower.

The knowledge of the English language noticeably influences the selection of the destination countries for potential migration - The first four places are Great Britain, Ireland, the USA and Canada or Australia and New Zealand.

The working **contacts with colleagues in other countries** also partially correspond with this. Almost 60% of the surveyed IT/ICT employees specified contacts with colleagues abroad. They were most often working contacts with colleagues from Great Britain, the USA or Canada and from other European countries. Germany was also in a leading position in this regard. These facts are testimony to the significant manifestation of globalisation in the IT/ICT field.

CHAPTER FOUR
Income Motivation of IT/ICT Specialists for Foreign Working Migration

a) The Opinions of Surveyed Experts

(1) IT/ICT specialists do not have sufficient motivation in the form of higher wages for foreign migration. They have an adequate salary in the Czech Republic and it is probable that they would have to accept a lower position in another country. These facts also explain the lower interest of Czech IT professionals in Germany's "Green Cards for IT/ICT Experts" programme.

The social prestige of IT professionals in the Czech Republic is on a high level and their **wage assessment, which is above average in relation to the other profession groups in the Czech Republic,** also corresponds to this. While there are considerable wage differences between IT/ICT specialisations, they are justified according to the experts.

When introducing the most modern technologies for commercial use it is necessary to train specialists with a certificate valid in all European countries. Thus a commodity of specialists arises on the global labour market. If the trained specialists are to work in the Czech Republic, it would be necessary to bring their earnings into line with the European level. At the current time the earnings of IT/ICT workers are balanced between the Czech and European levels and the attractiveness of work abroad is thereby significantly decreased for IT/ICT workers.

b) Professional Analysis of Income Relations of IT/ICT Employees in the Czech Republic and their Colleagues in Selected EU Countries

(2) According to the current analyses, the earning (income) motivation can be one of the factors in the complex of incentives for the migration of the IT/ICT-profession from the Czech Republic to other countries. In the last survey (RILSA, 2006) almost 75% of the respondents from the area of IT/ICT expect that their financial situation will improve in the event of leaving for another country (46% of the respondents expect a considerable improvement and about 26% of those surveyed expected at least some improvement).

(3) These connections ensue for the wage relations between countries on the basis of the findings of surveys and analyses already made and the intentions of specialists from the area of IT/ICT to work abroad:

First: the predominant part of IT/ICT-specialists consider temporary work migration to be most suitable, most often in the range of from one to two years or up to five years[32] and with a return to the Czech Republic. The income tax in the destination country and contributions to social and health insurance and living expenses (consumer expenses) will be covered from the earnings provided abroad to the local level of consumer prices for oneself and for any other

[32] Two fifths of the respondents expect a working stay from 1 to 2 years according to the last survey and one fifth from 2 to 5 years.

people that are staying with the employee abroad and are financially-dependant on the migrant.

It follows from this that the **relations (differentials) of the actual purchasing power of net (available) earnings between the Czech Republic and the country of temporary residency** are **decisive for the income motivation and earnings advantage of a foreign work migration (see below for more details).**

Second: The migration of IT/ICT-specialists for work from the Czech Republic to other countries is **commonly realised on the basis of an offer by foreign employers**. The migrants consider signing an employment contract before departing to be important. The fact that a large number of companies in which the specialists work are foreign companies or with international interest and companies with Czech capital cooperating with foreign countries in various manners is a specific characteristic influencing the nature of the working stay and the salary rates. Thus some of the migrants are sent abroad to study or for short-term work and some are given a position in foreign branches of multinational companies, usually in connection with career advancement. Specialised agencies mediate employment contracts and conditions to only a smaller extent. The level of salaries practically always corresponds to the system and level of remuneration applied abroad. Workers/migrants thus enter the "primary" labour marker protected by labour law and contractual relations (including collective contracts).

(4) Comparing the **average gross nominal earnings of programmers** between the Czech Republic and the analysed foreign countries shows that foreign earnings are considerably higher than Czech earnings (even if there are considerable differences among the countries).[33]

Table 21 **The Average Gross Nominal Earnings of the "Programmer" Profession in the Czech Republic and in Compared Countries (CZK/month) and their relation (the Czech Republic = 1.0)**

	Monthly Earnings in CZK[34]	Relation (Czech Republic = 1.0)
Czech Republic	34	1.0
Germany	111	3.2
Austria	96	2.8
Ireland	81	2.4
Great Britain	123	3.6

The statistical data for the "Programmer" profession in the period from 2002 to 2004; rounded to the nearest thousand CZK; see Appendix 9 for more details

An important finding of the international earnings comparison analysis is the fact that the domestic earnings position of IT/ICT-specialists in the Czech Republic and in the compared countries is considerably asymmetric.

In the Czech Republic the gross (nominal) monthly earnings of an IT/ICT profession currently (2004) ranges from about 34 to 41 thousand CZK and are far above average. They reach approximately twice the national average income standard.

[33] The relation of the gross earnings of other specialised IT/ICT-professions (designers, computer system analyst, network administration, engineer, etc.) is similar.
[34] Converted from the national currency using the average annual exchange rate to CZK.

Table 22 **Relations of Gross Income for the "Programmer" Profession and the Average Earning Standards in the Czech Republic and in Compared Countries**

	Annual Gross Income, 2004, in Euros		
	Programmers	Average Income Standard	a : b
	a	b	c
Czech Republic	12,912	6,566	2.0
Germany	41,628	41,046	1.0
Austria	36,000	32,872	1.1
Ireland	30,504	30,170	1.0
Great Britain	46,248	39,985	1.2

In other countries the income level of these professions hovers right around the national average income standard (ranging from a coefficient of 1.0 - Germany, to 1.2 - Great Britain). It also characterises the data on income for the "programmer" profession and its relation to the national average income standards.[35]

The higher domestic income position of the IT/ICT-professions in the Czech Republic is evidently primarily connected to the operation of a large number of foreign multinational companies doing business in the area of IT/ICT. These companies provide specialists from the area of computer technology earnings closer to the absolute level of earnings in Western European countries. This leads to an increase in the level of earnings for specialists in the entire IT/ICT sector in the Czech Republic. In 2006 half of the surveyed IT/ICT-specialists gave an average gross monthly income of over 40 thousand CZK.[36]

Overall, however, the relations of the gross nominal earnings **provide inaccurate and strongly misleading information on the income advantage of foreign work migration.** Migrants are often disappointed by the markedly lower financial benefits compared to the expectations created according to the relations of gross earnings. It follows from the consumer price level (living expenses) abroad. The proportion of gross earnings does not reflect those factors that currently bridge the income level of the Czech Republic in comparison with foreign levels and significantly influences the factual intensity of the motivation for work abroad.

(5) **The first factor is the summary tax rate on gross earnings;**[37] in % of the gross wage it amounts to 27% in the Czech Republic, 43.5% in Germany, 32.3% in Austria, 18.2% in Ireland and also 26.3% in Great Britain.[38] By applying these rates the gross income is converted to net nominal income.

[35] With regard to the availability and methodological comparability for all countries used in the comparison, the national average income standards are taken from the OECD publication "Taxing Wages 2004-2005." It represents the average gross income of a single childless manual worker in the industry and services branches (branches C to K according to the CZ-NACE classification).

[36] Survey RILSA 2006.

[37] The summary tax rate is understood to be the percentual rate of deductions from the gross wage given by the sum of the income tax rate and the rate of mandatory contributions to social and health insurance; By deducting the summary tax rate the gross earnings (wage, salary) are converted to net earnings.

[38] With regard to the different domestic income status of the IT/ICT-professions in the Czech Republic mentioned in the text and in comparison with foreign countries, the tax rate specified for the Czech Republic is for above average earnings and for average earnings in the other countries.

The second factor that is currently acting most intensively towards bringing the level of earnings and their real purchasing power closer together (generally, and thus for IT/ICT-specialists as well) between the Czech Republic and the compared countries is the national consumer price level, or the relations between these levels. The gap of the Czech level of consumer prices with relation to the compared countries is considerable. The consumer prices in these countries oscillate around twice that of the Czech price level.

(6) The overall effect of the tax reductions and the level of consumer prices lead to an expression of the comparable (parity) real purchase power of the average net income, i.e. the financial amounts available, on average, to an IT/ICT-specialist in the individual countries. The amount is expressed in thousands of CZK per month. For the "Programmer" profession these amounts in the individual countries are:

Table 23 **Comparable Real Purchasing Power of the Average Wage in the Czech Republic and Compared Countries (thousands of CZK per month)**

	Thousands of CZK per Month
Czech Republic	25
Germany	32
Austria	34
Ireland	30
Great Britain	47

In the individual compared countries products and services in the volume expressed by a financial volume in CZK can be obtained (purchased) by the net income achieved (with the relative level of this country's household final consumption expenditures towards the Czech Republic). A somewhat higher level of products and services can be acquired for the average net income in Germany, Austria and Ireland than in the Czech Republic (in the equivalent of 5 to 9 thousand CZK, i.e. from 18 to 37%). **The difference, of course, is not so significant as to create an intensive stimulus for the migration of programmers to these countries. Exceeding the purchase power of available income achieved in the specified countries is not substantial with regard to financial and personal expenses that a potential emigrant has when preparing and realising his migration.**

Great Britain has a greater gap of net real income compared to the Czech Republic. Net earnings are higher by 89%.

The purchase power of the average net income of the "Computer System Designer and Analyst" profession and the degree of related professions is entirely similar and in some relations even more constricted; **in the Czech Republic it is markedly close to the purchase power in Germany, Austria and Ireland.**

The disparity of the average net real wages between the Czech Republic and compared countries characterises the basic statistics of average relations and tendencies. The specific proportions can be considerably individualised. Both relations between a wage achieved by a specific IT/ICT specialist in the Czech Republic and abroad as well as variances between factual personal consumption and the expense structure of the household consumption have an effect. The degree of wage savings that the migrants tend towards (in the interest of transferring funds to the Czech Republic) is limited for these specialists by their social status abroad. Thus an average relation can be considered to be an acceptable approximation of prevailing relations.

(7) In summary it can be stated that the significant difference in the domestic position of average nominal earnings for the IT/ICT-professions between the Czech Republic and compared foreign countries (i.e. roughly double the average national level of the standard in the Czech Republic compared to the average in other countries) is the basic factor for the fact that the motivation of these professions to work in Germany, Austria and Ireland, as far as temporary (stay, return) migration is concerned, is on or under the threshold of income favourableness. Certain earning stimuli exist in Great Britain.

It is possible to express the hypothesis that, from the factors influencing the domestic level of income for the IT/ICT-professions in the Czech Republic, the fact that "work (i.e. projects, orders, the institutional organisation of, for example, foreign companies) come to the Czech Republic to the people who will perform it (i.e. IT/ICT-professions)" has a significant effect. This then has a favourable effect on the overall economic conditions of the companies and workplaces in the field of computer technology and influences the relatively low earnings motivation of IT/ICT-specialists to migrate to other countries for work.

B. SELECTED RESULTS OF THE QUESTIONNAIRE SURVEY ON THE ATTITUDES OF IT/ICT EMPLOYEES

B1. Survey Methodology and Selection of Respondents

In 2006 a survey of students and employees in the field of information technologies in the Czech Republic was carried out in the Research Institute for Labour and Social Affairs in cooperation with the University of Economics in Prague. This research was part of the wider research focussed on the risk of "brain drain."

Its objective was to determine the level of potential risk of Czech information and communication technology specialists leaving the Czech Republic for other countries.

The **questionnaire survey** on the foreign work migration of IT/ICT workers took place from March to October, 2006. The subject became the IT/ICT workers in a wide spectrum of specialisations (from programmers, through SW architects to IT/ICT salesmen) from various types of organisations (from IT/ICT companies, through the IT/ICT departments of companies and universities), with regional representation throughout the entire Czech Republic, with Prague dominating (83%) nevertheless.

The inquiry took the form of filling in an **electronic questionnaire** located on the Internet at the address http://vupsv.periskop.cz. Information on the research (with requests for filling in the questionnaire) were published on www.cssi.cz, contacts of problem solvers in IT/ICT companies an IT/ICT departments of various organisations and graduates of the Department of Information Technologies of the University of Economics were approached for cooperation, i.e. to pass it on to the eventual colleagues in work. Students of IT/ICT departments from various universities were also asked (see part C). The questionnaires were completed by a total of **276 respondents.**

The selected sample[39] makes no claim to being representative - it is purely a probe into the attitudes towards foreign work migration for a specific group of highly qualified specialist professionals at risk of migration.

[39] The surveyed specialists were most often employed as Developers or Programmers (24% of those surveyed). Other frequent positions were Project Manager / IT/ICT Manager (17%), System Administrator (11%), IT/ICT Consultant (11%) and Analyst (10%). Other positions were less frequent. Those surveyed worked most often in companies that developed their own SW (30%) and at system integrators (19%). They were also working for companies outside of the field of IT/ICT (18%) and also for SW sellers (11%), telecommunication companies (11%) and other types of companies from the IT/ICT field. More than half of the respondents worked for companies that were purely Czech (55%). On the other hand 34% worked in the Czech branch of a foreign company. The remaining 11% were employed in Czech companies with foreign participation. They were most often large companies with over 250 employees (26%) followed by medium-sized companies with 50-249 employees (26%), small companies from 10-49 employees (20%) and micro-enterprises (14%). Only 5% worked outside the commercial sector in non-state, allowance or budgetary organisations

B2. SELECTED SURVEY RESULTS

THE FOREIGN EXPERIENCE, LANGUAGE SKILLS AND INTERNATIONAL COOPERATION OF THE SURVEYED IT/ICT EMPLOYEES

Prior Academic or Working Experience Abroad

A total of 78 respondents (28% of the total number surveyed) specified a study or work stay abroad. This experience was most often:

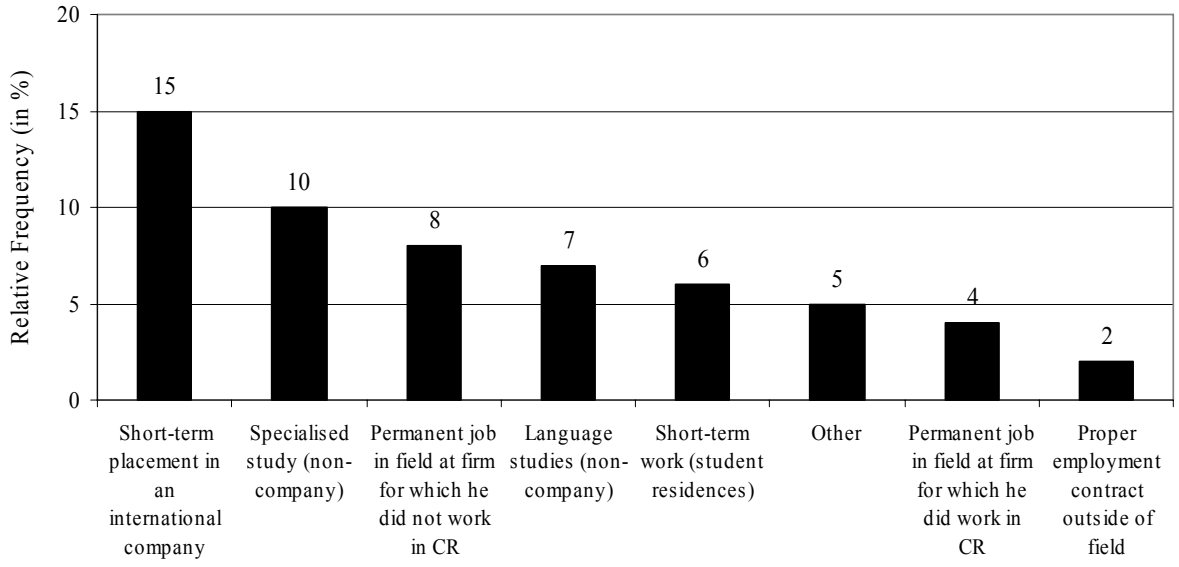
- **A short-term placement in the framework of an international company** in which the respondent is or was working (15% of all respondents),
- **Specialised non-company study** abroad (10%),
- **A permanent job in the field** at another company (8%),
- **Non-company language studies** (7%),
- **A student work stay** (6%).

Less often it was permanent employment in an international company in which the Czech branch was operating (4%), a proper employment contract outside the field (3%) or another work or study experience (see graph 7).

The most frequent **places for obtaining foreign experience** were the United States, Great Britain, Germany and other European Union countries.

The USA was the most frequent for student work stays or specialised studies, Great Britain for language studies, Germany for work in the field for another company and EU countries as a whole for short-term placement.

Graph 7 **Prior Academic or Working Experience Abroad (N=276)**



The length of the stay was differentiated with regard to the form of the foreign stay. The most frequent length of stay for short-term placements was from one to three months, for specialised studies 6 months, for permanent jobs in a company in the field 2 years, for language studies 1 month and for student stays 3 or 4 months.

Language Skills

The knowledge of international languages plays a special role in relation to finding employment on a foreign labour market. For these reasons the questionnaire determined the language skills of IT/ICT employees. The employees specifically evaluated their knowledge of five basic international languages (English, German, French, Russian, Spanish) using a four-stage rating system - fluent knowledge, active knowledge, passive knowledge, cannot use).

The knowledge of foreign languages demonstrated the **leading position of the English language -** a total of 45% stated that they speak English fluently and a further 46% actively. The knowledge of German was far behind in second place - only 4% of those surveyed stated that they know it fluently, 10% actively and 65% passively. Russian, French and Spanish then placed after another large gap. Other languages were a minority (we neglected the Slovak language due to its similarity). Only 31 respondents specified some other language, from which 11 employees specified Polish and 8 Italian.

Table 24 **Subjective Evaluation of Foreign Language Skills (N=276)**

	Fluent Knowledge	Active Knowledge	Passive Knowledge	Cannot Use
English Language	45.3	45.7	9.1	0.0
German Language	3.6	9.8	65.2	21.4
Russian Language	1.1	9.1	29.7	60.1
French Language	1.4	1.1	10.5	87.0
Spanish Language	0.7	1.8	8.3	89.1

Working Contacts with Colleagues Abroad

A total of 159 IT/ICT employees (58% of all surveyed) stated that **they have working contacts with colleagues from other countries.** These contacts were most often with colleagues from Germany (15%), Great Britain (12%), the USA or Canada (10%) and from other European countries (Slovakia, the Netherlands, Austria, France, Ireland, Belgium) and India (3%).

There were 400 contacts from various countries specified in total, which means that each employee that stated that he has contacts to colleagues abroad specified two to three countries. It is apparent from the result that more than half of all the IT/ICT experts surveyed are currently cooperating with colleagues in other countries. This is a high percentage, testifying to the international operations of their employers and the significant display of globalisation in the IT/ICT field.

THE MIGRATION POTENTIAL OF IT/ICT EMPLOYEES IN THE CZECH REPUBLIC

The migration potential of IT/ICT employees in the Czech Republic was determined by the central question of the entire survey: "Are you thinking about leaving to work abroad?" The share of positive answers is relatively high. **Almost every other surveyed IT/ICT employee (118 of the surveyed employees, exactly 43%) is thinking about work abroad.** Let's now take a closer look at this result.

There are statistically significant differences ($p<0.005$) between employees as far as foreign participation in the company in which they work is concerned. **Employees working in Czech branches of international companies consider work in other countries more than other groups.** Similarly **employees of large companies** are considering working abroad most of all. Conversely, employees from non-commercial organisations are considering this least of all. The differences here are also statistically significant ($P<0.01$). Other statistically important difference is based on the number of children. Considerably more employees with **a lower number of children** think about working abroad ($p<0.05$).

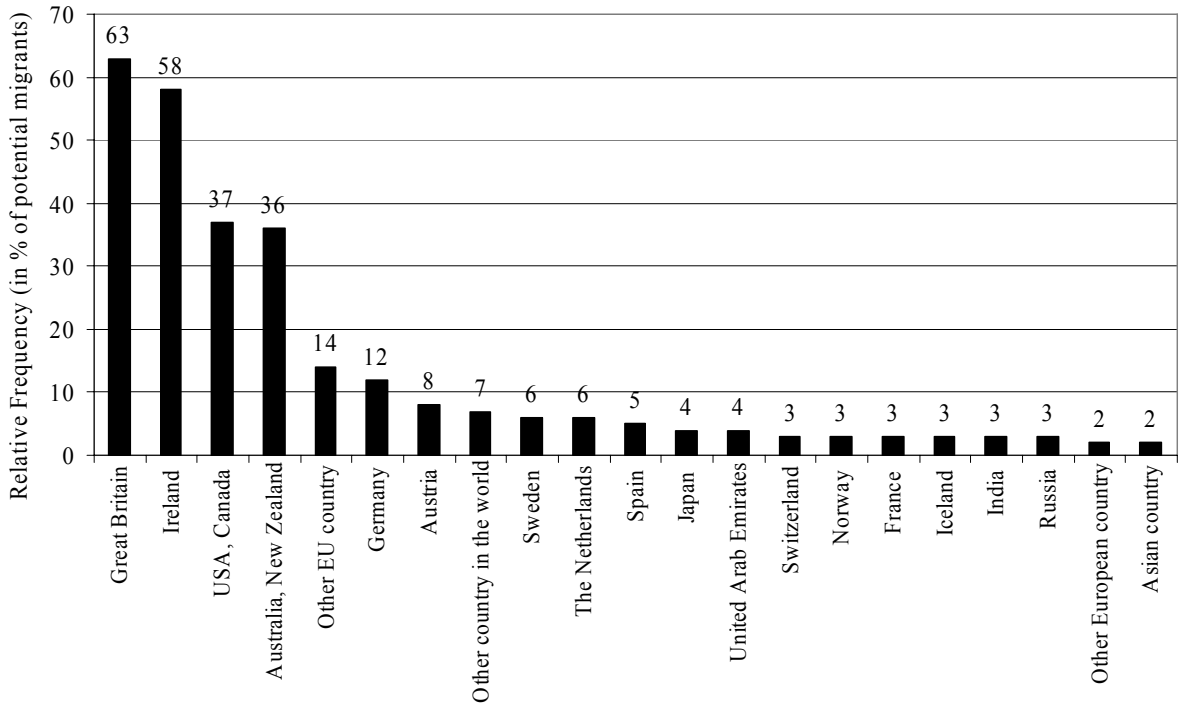
Conversely, there are no statistically significant differences for sex, current income, family/partner status, age, highest-achieved education or length of time working in IT/ICT.

THE MIGRATION DESTINATION COUNTRIES FOR IT/ICT EMPLOYEES AND THE REASONS FOR CHOOSING THE DESTINATION COUNTRY

We were also interested in which countries are the most frequent for potential work migration. The respondents were asked to specify three countries to which they have the most substantial intentions to leave for (thus the total does not equal 100%, though it does point to the preference of the countries). The results are presented in Graph 8.

English-speaking countries are a clear priority from the perspective of the most frequented migration destinations. **Great Britain** (63%) **and Ireland** (58%) are in first place **followed by the USA/Canada** (37%) **and Australia/New Zealand (36%).** Great Britain and Ireland are apparently the favoured destinations of Czech specialists thanks to the problem-free access to their labour markets for Czech citizens. Other states of the European Union followed at quite a distance. Germany was marked most often (12%) followed by Austria, Sweden, the Netherlands and Spain. Other countries play a less important role.

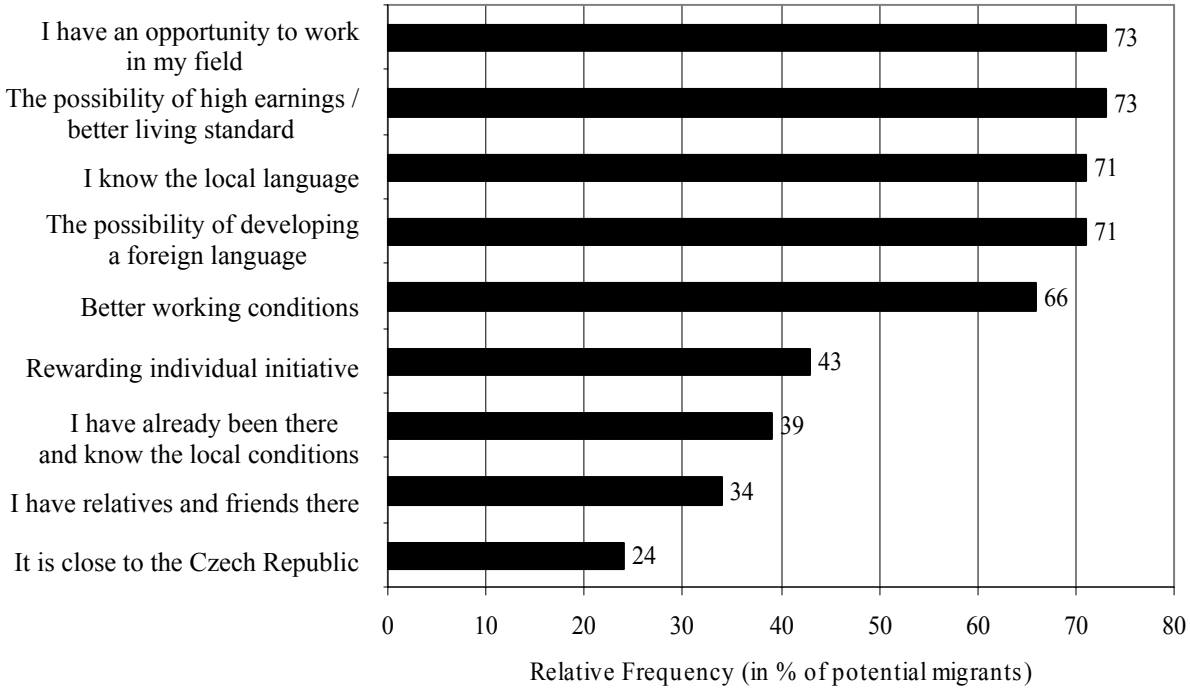
Graph 8 **Destination Countries for Potential Work Migration**



Reasons for Choosing the Destination Country

The reasons for choosing the destination country were determined by the question: "For what reasons did you choose the aforementioned countries?" The results are presented in Graph 9.

Graph 9 **Reasons for Choosing the Given Destination Countries**



Five main reasons appear to be very important in the hierarchy of **reasons for the selection of a specific country. The possibility of working in my field** (73%) and **the possibility of high income** and thereby providing a higher living standard (also 73%) were in first place. Reasons connected with languages were in third and fourth place. The fact that they **know the local language** is a reason for 71% of the potential migrants as is the fact they **can continue to develop it** for the same amount. Two thirds also specified **better working conditions.**

The remaining reasons can be considered to be less important. The reason of relatives and friends in the given country was second last (unimportant for 66% of the respondents). This verifies the information obtained in the survey of migration attitudes of the total Czech population - **relatives and friends do not play an important role when choosing the destination country** and the creation of Czech minorities is a very rare phenomenon abroad. **The proximity of the country to the Czech Republic** was entirely and clearly the **least important motive** (unimportant for 76% of the potential migrants).

THE SPECIALISED AND PROFESSIONAL CHARACTER OF POTENTIALLY MIGRATING IT/ICT EMPLOYEES, THE CHARACTERISTICS OF THEIR EMPLOYERS

Statistically significant differences are between those **that have foreign study or work experience** and those that do not. Employees that studied or worked abroad are considering migrating significantly more ($p<0.01$). People who **have contact with colleagues from other countries in their current job** are also thinking about leaving for another country more ($p<0.005$) when compared with those who do not have contact with foreign colleagues. There is also a significant difference ($p<0.001$) between employees with various skill levels of the English language. Employees with **better English** are thinking more about working abroad. All of these differences are captured in Table 25. Conversely there are not significant differences for the period in which they are working in IT/ICT, therefore we are not even presenting it in the table.

Table 25 **Considering Leaving to Work Abroad - Professional Characteristics**

	N	Relative Frequency (in %)
Studied or Worked Abroad		
Yes	78	55.1
No	198	37.9
Work Contacts		
Yes	159	50.3
No	117	32.5
English Skills		
Fluent Knowledge of the Language	125	52.8
Active Knowledge of the Language	126	40.5
Passive Knowledge of the Language	25	4.0

Characteristics of Employers in Relation to Work Migration

There are statistically significant differences ($p<0.005$) between employees as far as foreign participation in the company in which they work is concerned. **Employees working in Czech branches of international companies consider work in other countries more than other**

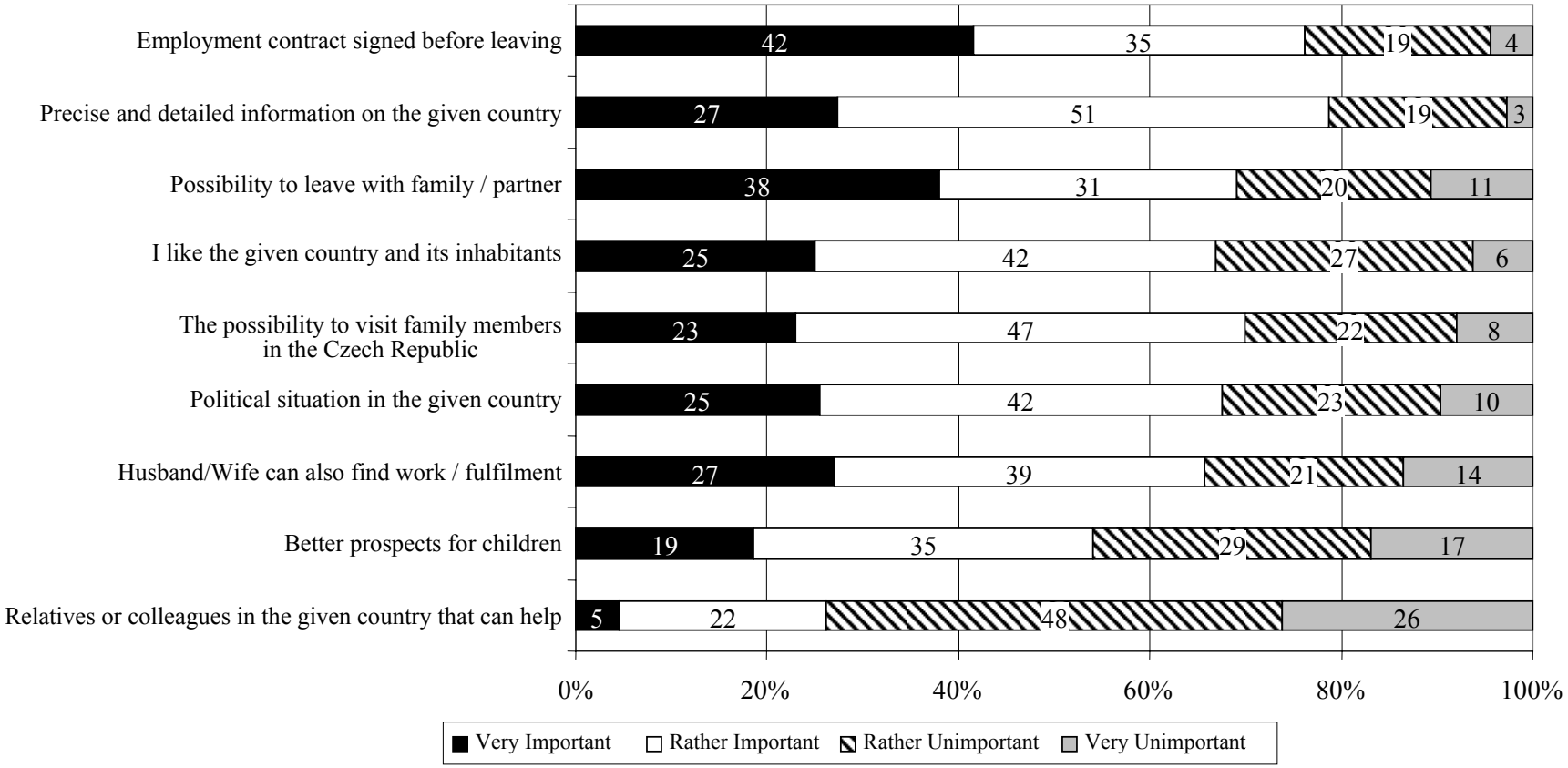
groups. Similarly **employees of large companies** are considering working abroad most of all. Conversely, employees from non-commercial organisations are considering this least of all. The differences here are also statistically significant (P<0.01). Meanwhile the form of foreign participation and the size of the company are significantly correlated.

Table 26 **Considering Leaving to Work Abroad - Employer Characteristics**

	N	Relative Frequency (in %)
Foreign Participation in Company		
Branch of Foreign Organisation in Czech Republic	92	57.6
Purely Czech Organisation	150	36.7
Czech Organisation with Foreign Participation	31	32.3
Size of Company		
Large Enterprise (250 or More Employees)	99	56.6
Medium Enterprise (50-249 Employees)	72	40.3
Small Enterprise (10-49 Employees)	54	29.6
Micro-Enterprise (up to 10 Employees)	38	34.2
Allowance, Budgetary or Non-Profit Organisation	10	20.0

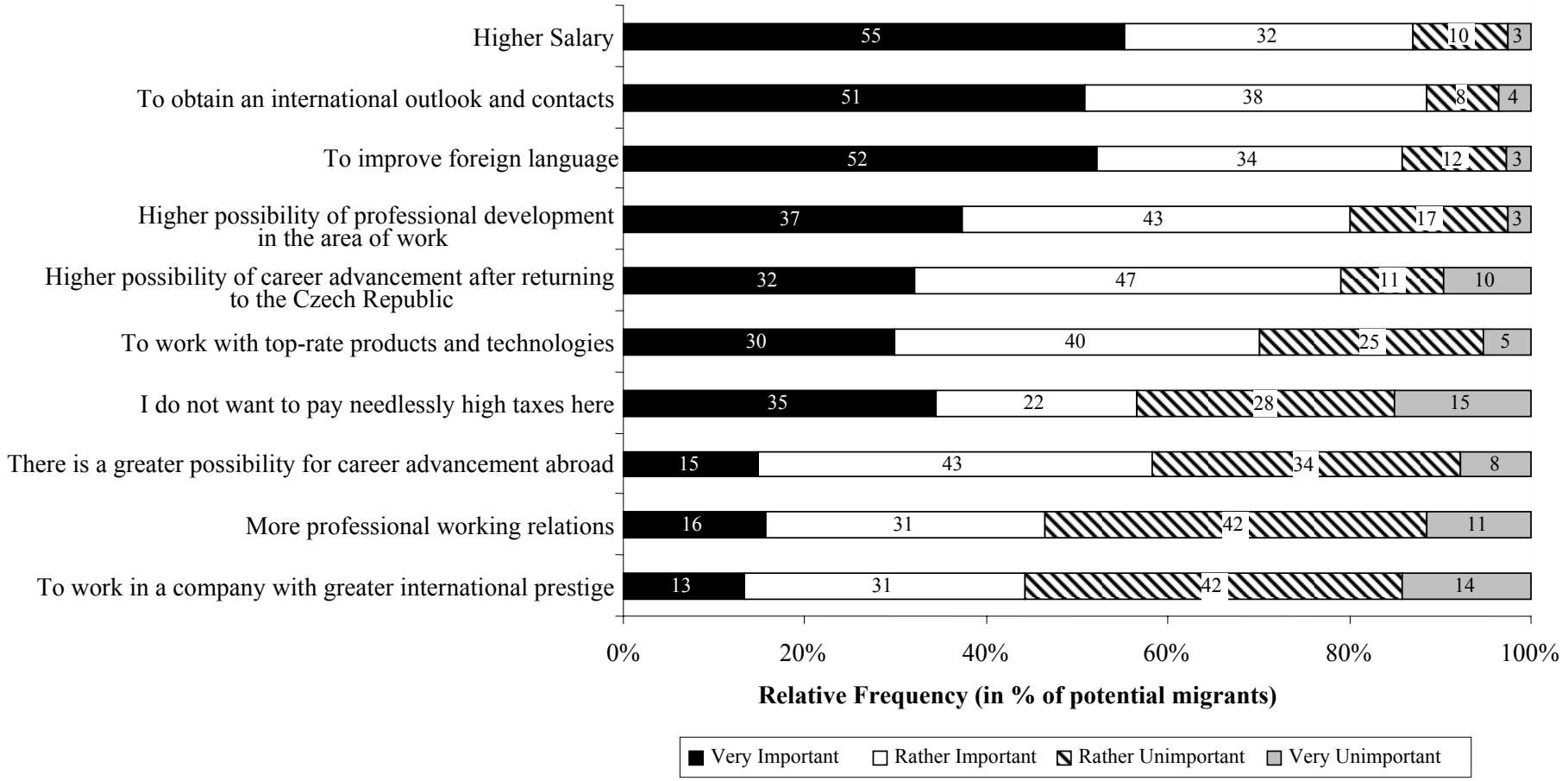
FACTORS FOR MAKING MIGRATION DECISIONS

Graph 10 **The Importance of Factors for Leaving for Other Countries for Longer than 1 Year**



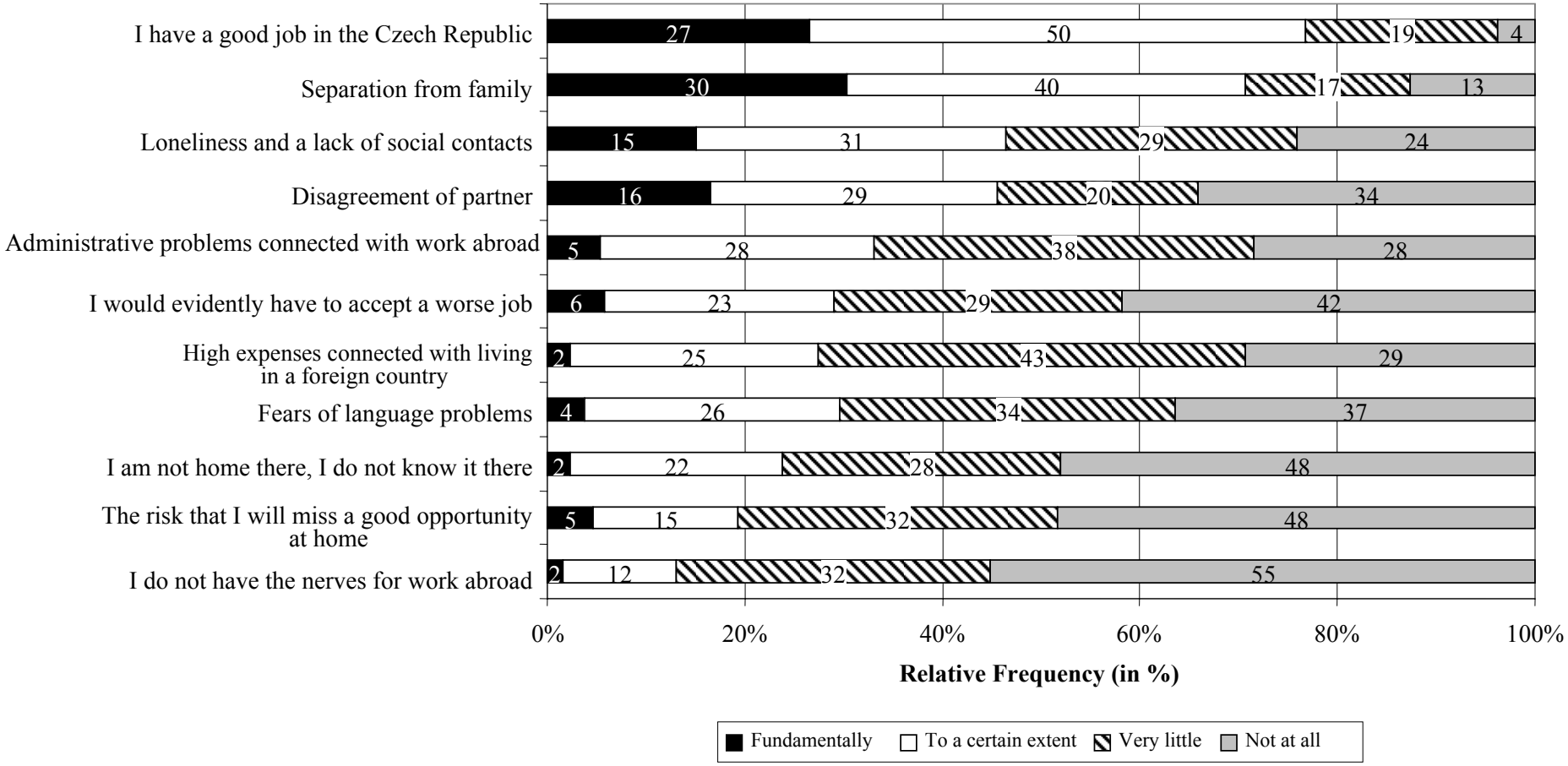
MIGRATION MOTIVES

Graph 11 **Motives for Work Abroad**



BARRIERS TO MIGRATION

Graph 12 **Factors Preventing Leaving for another Country (N=270)**



SUMMARY - CONCLUSIONS

Part I - DOCTORS

Statistical analyses and other research in 2006 **did not confirm the hypothesis of a shortage of Czech doctors.** In an international comparison the Czech Republic is at the average for the OECD countries in terms of the number of general practitioners per capita, and is well above the average for the number of specialised doctors. Full surgeries in the Czech Republic are more a reflection of more frequent visits to the doctor (see the statistical comparison with the majority of OECD countries) than a consequence of any critical shortage of Czech doctors. Nevertheless, in practice individual medical facilities are lacking doctors, primarily:

a) for specific specialisations - monitoring of vacancies for doctors in selected hospitals confirmed a shortage of doctors in geriatrics, ophthalmology, pathology and diagnostic radiology, and some medical facilities experience difficulties in recruiting specialists in internal medicine, paediatrics, stomatology and surgery;
b) in specific regions (the situation in North Bohemia in particular is critical);
c) in various types of medical facility (teaching hospitals versus district hospitals, private versus public healthcare…).

Over the last ten years the total number of doctors has risen by an average of 2 % each year; doctors who retire are replaced by new graduates from medical faculties. The situation for stomatologists is problematic given the age structure of the group, the anticipated higher proportion of stomatologists due for retirement, and a disproportionately small number of dentistry graduates.

An economic analysis **confirmed that income motivates Czech doctors to work abroad.** Doctors with average earnings in other countries have significantly greater purchasing power than general practitioners with average earnings in the Czech Republic (in Ireland that is 60% higher, in Germany 80%, in Austria 120% and in the United Kingdom 250% - the highest figure).

An empirical field survey of the opinions of doctors and students in their senior years at medical faculties on their potential emigration **did not however confirm that emigration by Czech doctors will be dramatic.** Although the general emigration potential of doctors and medical students is high (approximately three times higher than the average for the Czech population), the probability of such plans being implemented is significantly lower for both groups. A higher probability is ascribed to approximately a third of respondents with a positive attitude to emigration, but that is only realistic for approximately one-tenth to one-fifth of respondents.

The **target countries** chosen are almost the same as for the majority population (United Kingdom, Ireland and Germany). A field survey of doctors and medics confirmed as **motives for migration** the prospect of higher incomes and other motives that are typical for emigrating professionals: professional growth, gaining an international overview, the opportunity to work with the latest medical technology and modern diagnostic and treatment procedures, making professional contacts, etc. In contrast with the majority population, emigration among doctors may also apply to experienced specialists in higher age groups (in the 50-55 age range one in eight doctors questioned were considering working abroad).

Both field surveys confirmed **that doctors (and future doctors) only work abroad temporarily** and plan to return to the Czech Republic. Given that, the **problem of emigration by doctors does not appear to be alarming for the time being.** There is every indication that **cascade-style emigration** can be expected: a certain number of doctors will leave the Czech Republic and a certain number will return, and doctors from poorer countries will move to the Czech Republic.

Part II - IT/ICT professionals

A specific aspect of migration flows by IT professionals is the globalisation of the economy. Migration flows for IT professionals and the direction of their international mobility are determined to a large extent by the movement of international corporations and global technology centres. At present it is possible to localise a number of important technology centres for hi-tech sectors based on information technologies that recruit worldwide and relocate IT specialists in line with their demand.

IT professionals in the Czech Republic work in all sectors of the economy. Less than half of all IT professionals have university education. The number of university-educated IT graduates has remained practically unchanged for the last five years, but is expected to rise significantly (as much as doubling) in the near future. **In an international comparison** the Czech Republic is slightly below average for the number of IT graduates with tertiary education, while in comparison with the other **new member states** it is above average.

The increasing need for IT professionals is already apparent on the Czech market, but the shortage is not critical and is only evident in certain areas, specialisations or for employers' specific needs - e.g. an emphasis on cross-sector knowledge, application skills, communication and presentation skills and languages. **Monitoring of IT vacancies** confirmed that employers' interest in IT professionals is high, especially for university-educated specialists. A quarter of all on-line job advertisements for university graduates are for IT specialists. Employers are interested in applicants with bachelor's degrees, master's degrees and doctorates to develop software systems.

The prediction for **future trends** in information technologies in the Czech Republic, as in other countries, is for rising employment. According to a model for predicting education needs, the number of new vacancies for IT professionals will be higher than the number of new IT graduates. IT specialists are not expected to have any problems finding good jobs in the Czech Republic.

A comparative analysis of average nominal earnings for Czech IT professionals and their counterparts in selected EU countries reveals that earnings in comparable IT professions abroad are close to the average earnings in those countries, while in the Czech Republic they are significantly higher than average earnings. Given **above-average earnings for IT professionals in the Czech Republic, the motivation of IT professionals to emigrate for work is relatively low.** Experts in the sector were of the same opinion. Another limiting factor for emigration by IT professionals is that their work is not tied to any specific location: they can work for foreign employers without needing to relocate, and many foreign companies have offices in the Czech Republic.

Surprisingly, however, **a field survey of potential emigration plans** revealed that IT professionals and students were relatively willing to emigrate. English-speaking countries (United Kingdom, Ireland, USA/Canada and Australia/New Zealand) where clearly the priority for IT professionals. Potential émigrés are evidently well informed of the opportunities that the globalisation of the economy offers in their sector. It seems that the opportunity to experience different environments and cultures, make professional contacts and gain an international overview is just as important for them as for other professions. In addition, as English is used universally in the sector, the language barrier is less significant for IT professionals. Work abroad is most sought by IT professionals working in Czech branches of foreign companies, employees of large multinationals and employees (students) with experience abroad.

Only a negligible proportion of potential IT emigrants (and future IT professionals) envisages **permanent emigration.** In view of the know-how they can acquire in advanced hi-tech sectors abroad, that could ultimately benefit the Czech Republic.

APPENDICES

1. Registered Number of Doctors from 1995 to 2005 According to Sex and Age

Year	Sex	Age Group										Total
		- 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	
	M	1,983	1,821	2,317	2,822	1,800	1,204	879	1,082	779	464	15,151
1995	F	2,358	1,632	2,671	2,997	2,321	1,972	929	629	215	67	15,791
	T	4,341	3,453	4,988	5,819	4,121	3,176	1,808	1,711	994	531	30,942
	M	2,060	1,720	2,136	2,661	1,905	1,206	874	909	764	511	14,746
1996	F	2,417	1,647	2,510	3,062	2,287	2,108	1,031	632	260	84	16,038
	T	4,477	3,367	4,646	5,723	4,192	3,314	1,905	1,541	1,024	595	30,784
	M	2,039	1,807	2,084	2,721	2,261	1,415	994	862	822	570	15,575
1997	F	2,343	1,727	2,291	3,186	2,395	2,259	1,249	626	307	107	16,490
	T	4,382	3,534	4,375	5,907	4,656	3,674	2,243	1,488	1,129	677	32,065
	M	1,924	1,795	1,905	2,404	2,360	1,392	961	734	788	603	14,866
1998	F	2,200	1,719	2,082	3,093	2,530	2,173	1,435	602	369	123	16,326
	T	4,124	3,514	3,987	5,497	4,890	3,565	2,396	1,336	1,157	726	31,192
	M	1,864	1,819	1,814	2,309	2,540	1,450	1,064	679	782	666	14,987
1999	F	2,127	1,881	1,941	2,986	2,762	2,155	1,662	605	400	147	16,666
	T	3,991	3,700	3,755	5,295	5,302	3,605	2,726	1,284	1,182	813	31,653
	M	1,708	1,878	1,721	2,194	2,617	1,655	1,065	700	755	675	14,968
2000	F	1,931	1,946	1,874	2,764	2,943	2,223	1,776	699	421	161	16,738
	T	3,639	3,824	3,595	4,958	5,560	3,878	2,841	1,399	1,176	836	31,706
	M	1,688	2,014	1,683	2,097	2,606	1,846	1,124	743	677	748	15,226
2001	F	1,877	2,029	1,923	2,612	3,035	2,221	1,923	841	450	211	17,122
	T	3,565	4,043	3,606	4,709	5,641	4,067	3,047	1,584	1,127	959	32,348
	M	1,641	2,108	1,742	1,979	2,522	2,043	1,260	788	615	760	15,458
2002	F	1,935	1,966	2,003	2,356	3,127	2,278	2,036	991	441	264	17,397
	T	3,576	4,074	3,745	4,335	5,649	4,321	3,296	1,779	1,056	1,024	32,855
	M	1,646	2,125	1,858	1,956	2,449	2,357	1,364	873	605	814	16,047
2003	F	2,042	1,979	2,030	2,184	3,086	2,464	1,996	1,197	469	307	17,754
	T	3,688	4,104	3,888	4,140	5,535	4,821	3,360	2,070	1,074	1,121	33,801
	M	1,658	2,100	1,902	1,886	2,427	2,607	1,461	1,007	553	865	16,466
2004	F	2,065	1,888	2,215	2,080	2,994	2,721	2,010	1,399	466	344	18,182
	T	3,723	3,988	4,117	3,966	5,421	5,328	3,471	2,406	1,019	1,209	34,648
	M	1,642	2,027	1,978	1,817	2,313	2,715	1,679	1,005	576	877	16,629
2005	F	2,157	1,729	2,346	2,024	2,801	2,925	2,090	1,480	541	368	18,461
	T	3,799	3,756	4,324	3,841	5,114	5,640	3,769	2,485	1,117	1,245	35,090

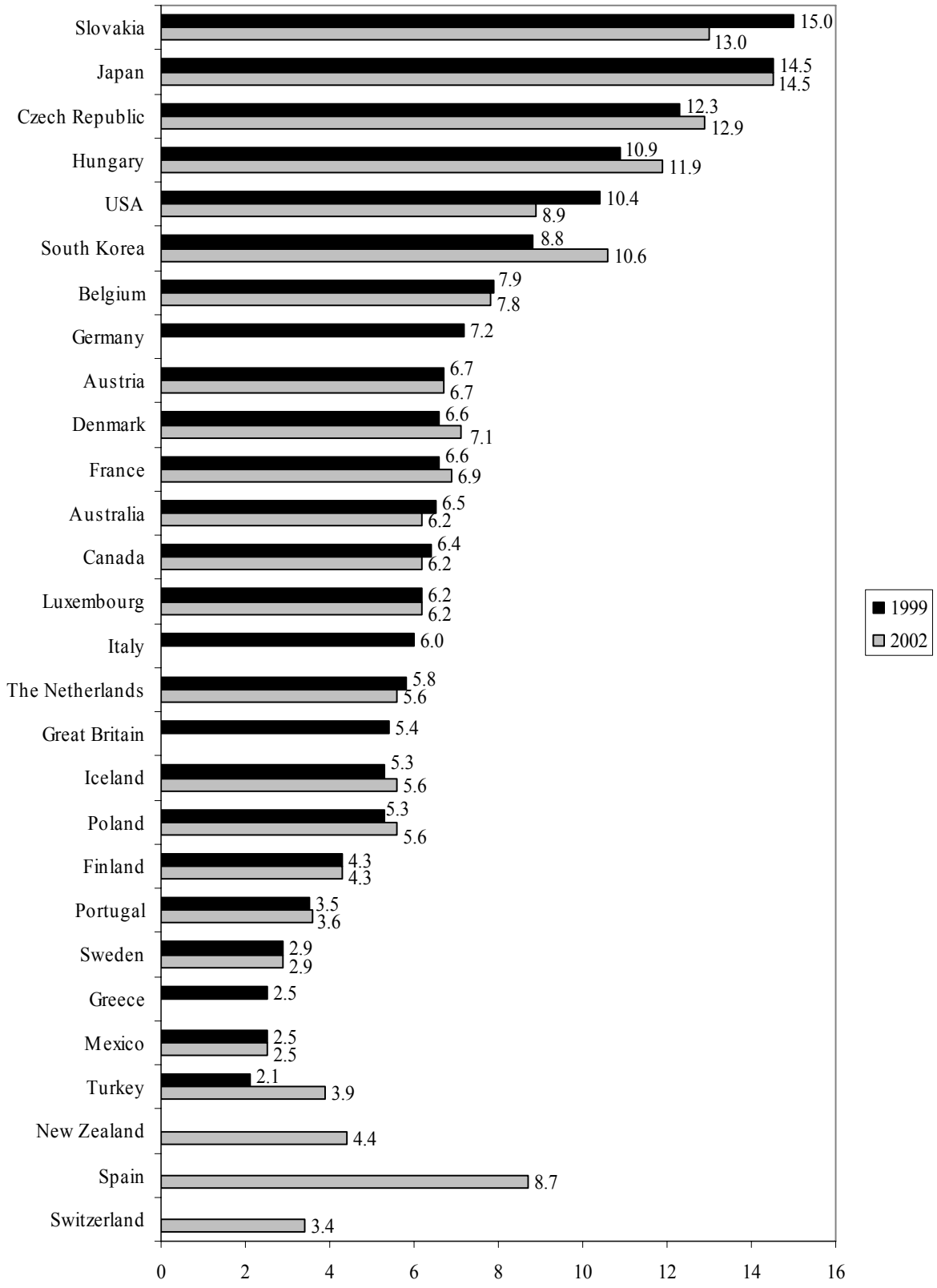
Source: Institute of Health Information and Statistics of the Czech Republic, Prague

2. Registered Number of Dentists from 1995 to 2005 According to Sex and Age

Year	Sex	Age Group										Total
		- 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	
1995	M	139	156	236	623	337	248	141	126	54	15	2,075
	F	305	231	705	1,386	754	536	183	60	9	3	4,172
	T	444	387	941	2,009	1,091	784	324	186	63	18	6,247
1996	M	135	158	183	604	373	248	159	118	59	13	2,050
	F	290	249	524	1,457	783	598	228	74	14	4	4,221
	T	425	407	707	2,061	1,156	846	387	192	73	17	6,271
1997	M	146	170	165	531	473	270	196	107	67	21	2,146
	F	302	279	366	1,401	914	669	282	81	20	7	4,321
	T	448	449	531	1,932	1,387	939	478	188	87	28	6,467
1998	M	135	155	149	404	570	261	225	93	73	24	2,089
	F	289	273	271	1,188	1,121	684	348	89	28	6	4,297
	T	424	428	420	1,592	1,691	945	573	182	101	30	6,386
1999	M	132	152	160	292	633	275	247	91	81	21	2,084
	F	275	285	257	933	1,322	698	428	106	34	4	4,342
	T	407	437	417	1,225	1,955	973	675	197	115	25	6,426
2000	M	136	155	161	232	628	327	231	114	84	26	2,094
	F	242	302	265	730	1,404	753	486	132	38	8	4,360
	T	378	457	426	962	2,032	1,080	717	246	122	34	6,454
2001	M	138	158	169	188	604	370	241	136	80	32	2,116
	F	221	312	291	540	1,472	782	539	176	43	13	4,389
	T	359	470	460	728	2,076	1,152	780	312	123	45	6,505
2002	M	159	157	170	158	527	454	251	162	64	40	2,142
	F	202	313	303	379	1,407	895	595	211	50	13	4,368
	T	361	470	473	537	1,934	1,349	846	373	114	53	6,510
2003	M	174	155	166	146	404	559	256	193	67	53	2,173
	F	220	296	305	279	1,197	1,111	630	277	60	20	4,395
	T	394	451	471	425	1,601	1,670	886	470	127	73	6,568
2004	M	201	172	169	163	297	626	276	226	77	57	2,264
	F	254	283	321	268	945	1,317	660	344	79	21	4,492
	T	455	455	490	431	1,242	1,943	936	570	156	78	6,756
2005	M	213	182	174	168	239	623	320	219	96	65	2,299
	F	279	262	336	283	736	1,412	708	387	101	26	4,530
	T	492	444	510	451	975	2,035	1,028	606	197	91	6,829

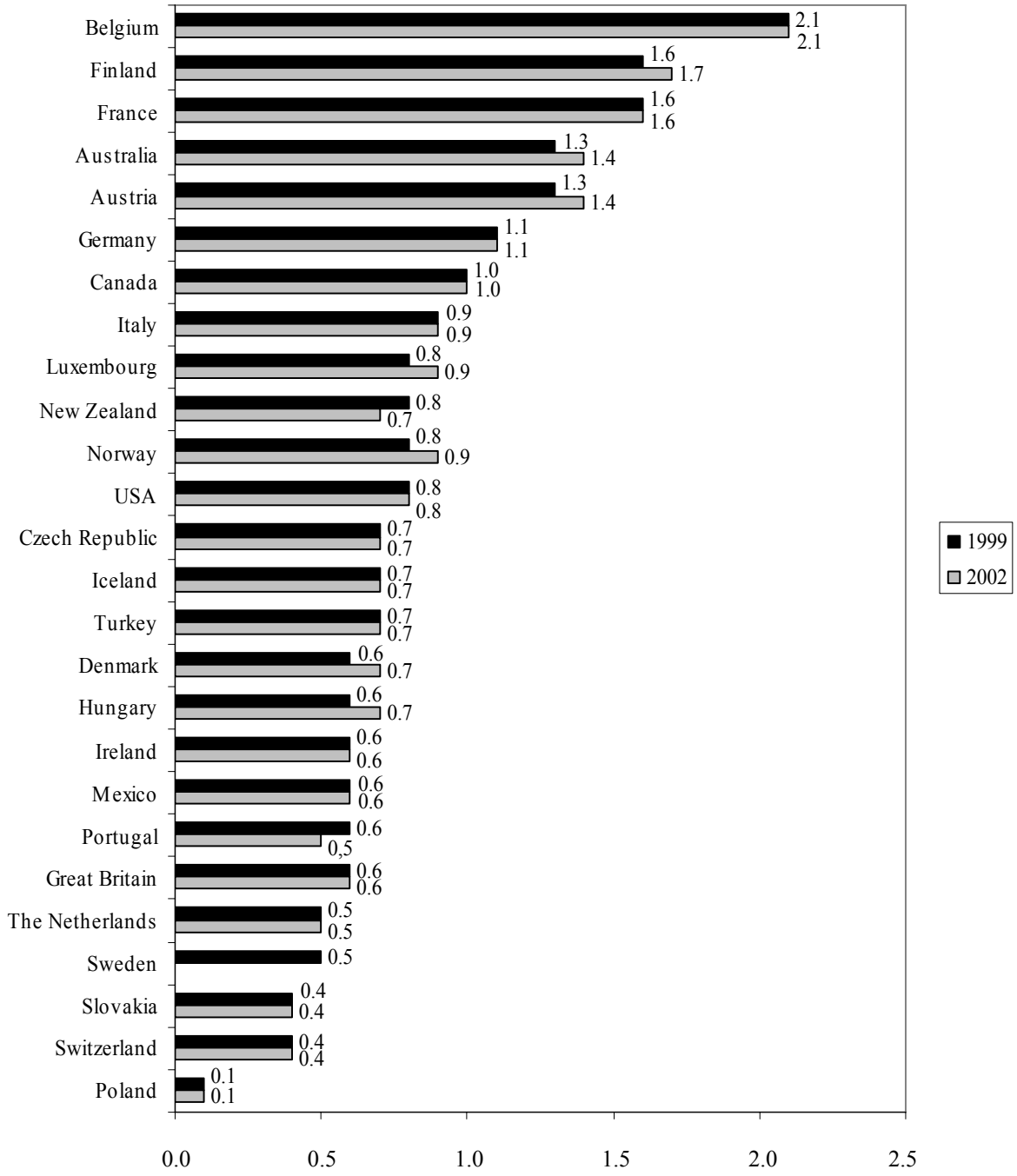
Source: Institute of Health Information and Statistics of the Czech Republic, Prague

3. Number of Visits to the Doctor per Person per Year



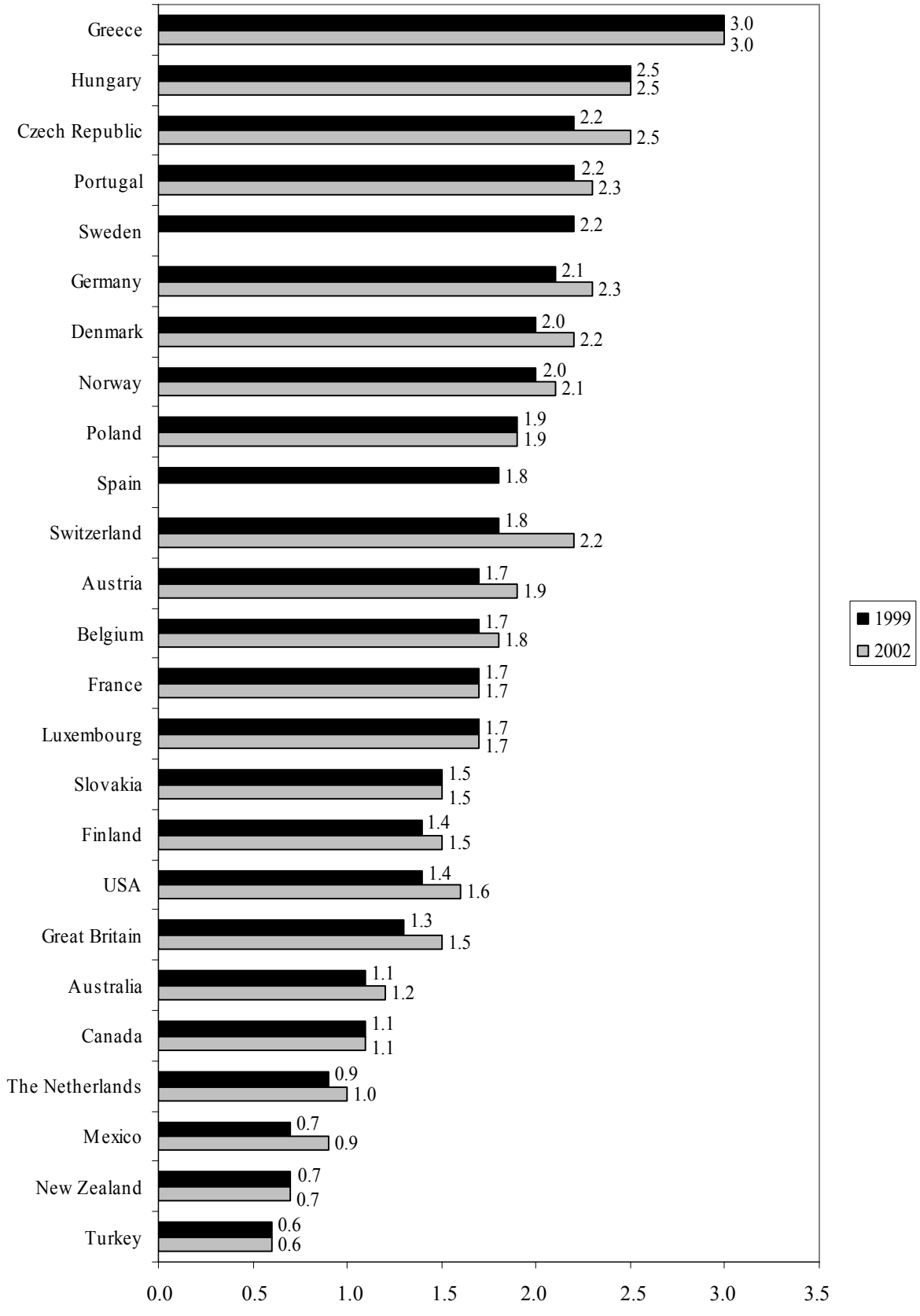
Source: OECD, Health Data 2004, 3rd Edition, Paris 2004

4. Number of General Practitioners per 1,000 Inhabitants



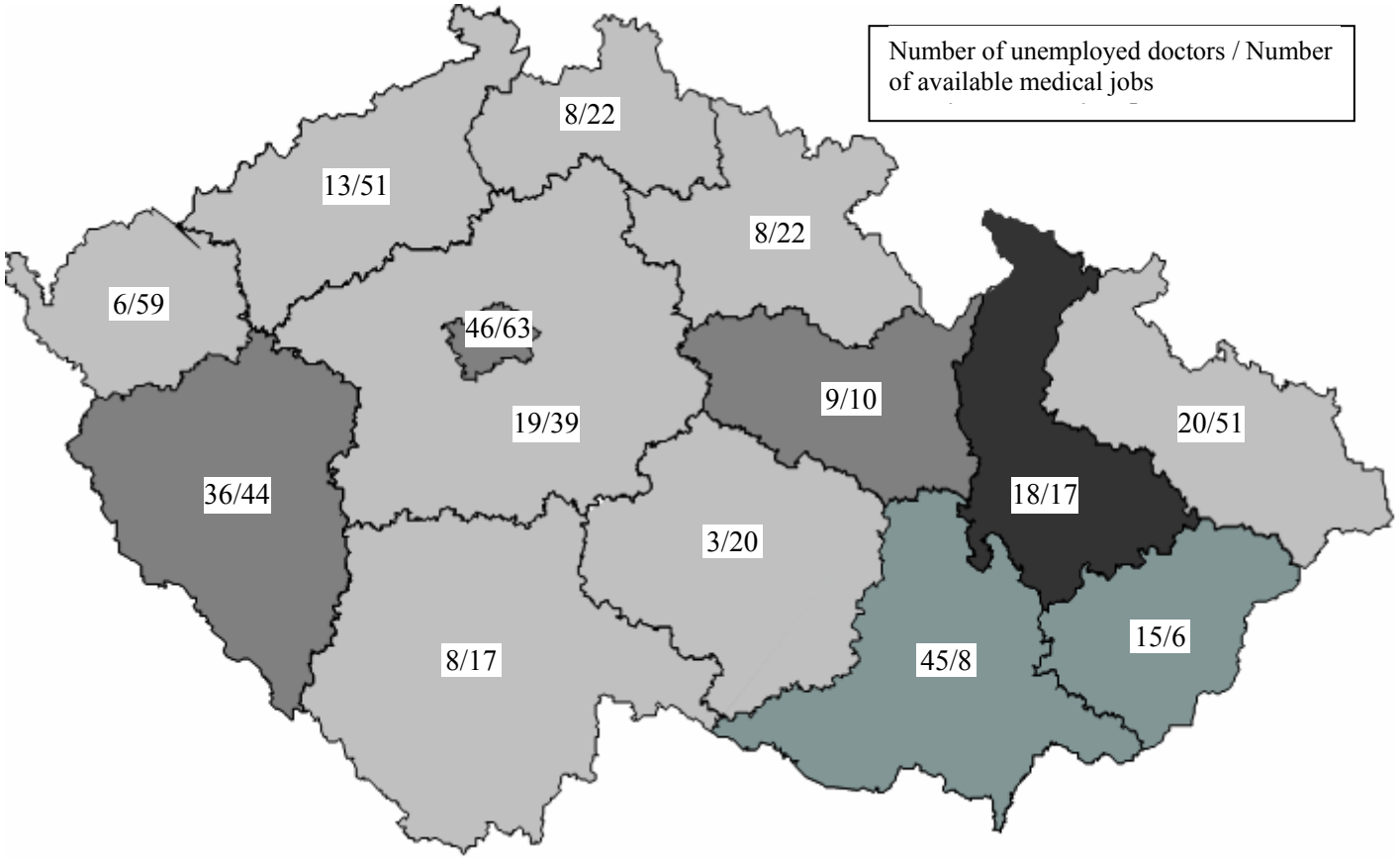
Source: OECD, Health Data 2004, 3rd Edition, Paris 2004

5. Number of Practicing Specialists per 1,000 Inhabitants



Source: OECD, Health Data 2004, 3rd Edition, Paris 2004

6. Number of Unemployed Doctors / Number of Available Medical Jobs



7. Information on IT Specialists in the Czech Republic

IT Specialists in Branches							
	1999	2000	2001	2002	2003	2004	2005
Agriculture, Forestry, Fishing and Fish Farming	266	46	152	402	157	55	195
Mining and Quarrying	807	1,287	1,125	516	657	373	357
Manufacturing	16,449	16,998	19,405	22,312	20,240	18,184	20,724
Production and Distribution of Electricity	2,317	2,715	2,886	2,506	1,056	1,061	1,756
Construction	1,228	1,248	1,782	2,043	2,541	1,609	759
Trade, Repair of Motor Vehicles	4,571	5,281	6,122	7,533	5,010	3,515	3,145
Hotels and Restaurants	117	86	303	37	97	160	0
Transport, Storage and Communication	3,617	6,357	6,966	5,886	3,859	4,400	4,988
Financial Intermediation and Insurance	5,808	4,145	5,036	5,709	3,304	2,759	4,157
Activities in the Area of Real Estate, Computers…	24,831	27,460	33,944	32,787	32,615	31,574	32,122
Public Administration, Defence, Social Security	4,514	4,435	5,162	6,303	6,842	5,797	7,160
Education	1,399	1,027	1,080	1,227	1,369	1,811	1,518
Health, Veterinary Activities and Social Work	926	497	828	1,812	1,114	693	1,107
Other Community and Social Services	1,246	901	1,125	1,918	2,439	959	747
Total	68,096	72,483	85,916	90,991	81,300	72,950	78,735
IT Specialists according to Education							
Education	1999	2000	2001	2002	2003	2004	2005
Basic or None	864	1,134	687	416	714	902	278
High School without Graduation	4,834	4,616	7,714	8,429	7,621	4,827	5,388
High School Graduate	36,149	40,068	45,036	46,430	39,540	35,446	37,454
University	26,249	26,303	32,308	35,633	32,470	30,793	34,847
Undetermined	0	426	292	315	955	982	768

Source: Informační společnost v číslech, Czech Statistical Office, 2006

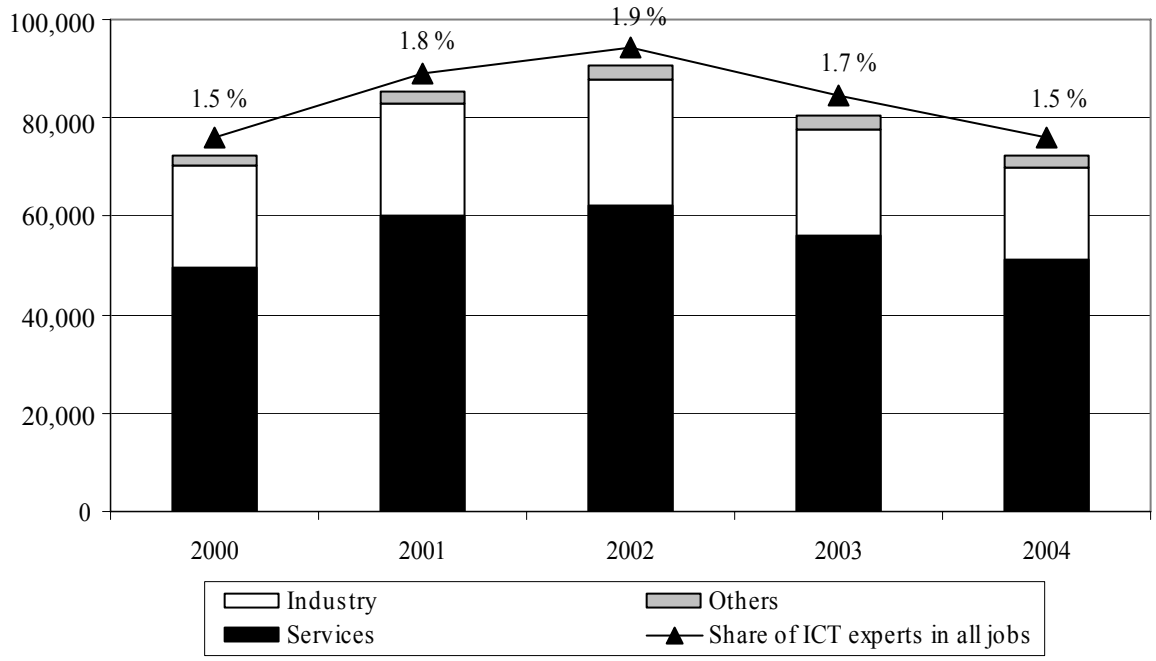
Students and Graduates in the Branches of Informatics and Computer Technology (CT) of a Tertiary Level of Education; 2001-2004

Czech Republic, Total Number

	2001	2002	2003	2004
Total CT Students	**10,010**	**11,208**	**12,499**	**13,923**
Categorised according to the Highest Tertiary Level of Education				
Higher Specialised Studies at Higher Vocational School	1,790	1,657	1,764	1,685
Bachelor and Master Studies at University	7,758	9,028	10,140	11,613
Doctorate Studies at University	462	523	595	625
Total CT Graduates	**1,336**	**1,266**	**1,324**	**1,754**
Categorised according to the Highest Tertiary Level of Education				
Higher Specialised Studies at Higher Vocational School	419	356	272	462
Bachelor and Master Studies at University	882	881	1,025	1,242
Doctorate Studies at University	35	29	27	50

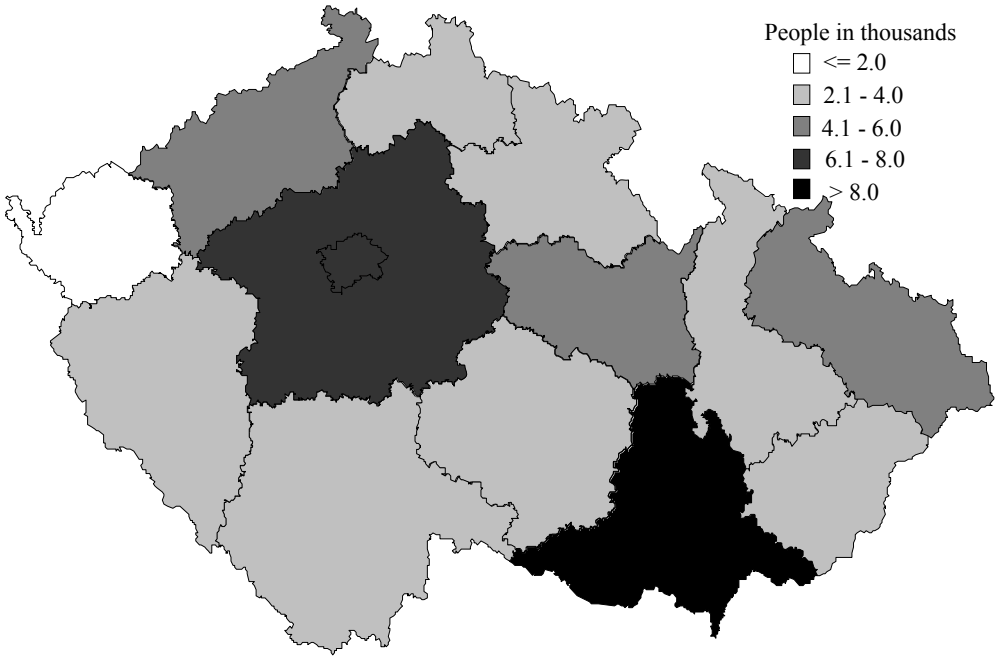
Source: Informační společnost v číslech, Czech Statistical Office, 2006

8. Computer Experts Employed in Individual Sectors and their Share in all Employment (%); 2000-2004



Note: Other Includes information for agriculture and construction
Source: Informační společnost v číslech, Czech Statistical Office, 2006

Specialists in the Area of Information and Communication Technologies; 2004 (in thousands)



Source: Informační společnost v číslech, Czech Statistical Office, 2006

9. A Comparison of the Average Monthly Level and Differentiation of Gross Wages and the Comparable Real Purchasing Power of Net Wages for the "Programmer" Profession between the Czech Republic, Germany, Austria, Ireland, Great Britain; Data for the Period from 2003 - 2004

L.	Profession	Identification Characteristics (Source, KZAM, year)[1]	Average Monthly Wage								Differentiation of Wages								
			Gross Nominal					Net Parity (Purchasing Power)[4]			Gross Nominal					Net Parity			
			National Curr.[2]	Euro[3]	CZK			CZK			CZK		Relation			CZK		Relation	
					Absolute	Relation		Abs.	Relation		Min.	Max.	Max./ Min.	Min.	Max.	Min.	Max.	Min.	Max.
						CR/F	F/CR		CR/F	F/CR				CR/F	F/CR			CR/F	F/CR
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
	Programmer																		
1	**Czech Republic**	A, 23132/04	34,315	1,076	34,315	100	1.00	25,050	100	1.00	25,324	48,933	1.93	1.00	1.00	18,487	35,721	1.00	1.00
	Dest. Countries - Statistical Data																		
2	**Germany (G)**	D,JP, 02/04	3,469	3,469	110,674	32	3.23	32,141	78	1.28	77,471	138,797	1.79	3.06	2.84	22,498	40,308	1.22	1.13
3	**Austria (A)**	D,JP, 10/03	3,000	3,000	95,712	34	2.79	34,268	73	1.37	67,045	120,032	1.79	2.65	2.45	24,004	42,975	1.30	1.20
4	**Ireland (Ir)**	D,H,03	2,542	2,542	81,100	42	2.36	29,663	84	1.18	71,784	90,395	1.26	2.83	1.85	26,256	33,063	1.42	0.93
5	**G. Britain (GB)**	D,BSÚ,03	2,617	3,854	122,958	28	3.58	47,373	53	1.89	86,149	154,233	1.79	3.40	3.15	33,191	59,423	1.80	1.66
	Employer Offers																		
6	**Germany (G)**	D,JP, 02/04	3,208	3,208	102,348	33	2.98	29,723	84	1.19	71,640	128,355	1.79	2.83	2.62	20,805	37,276	1.13	1.04
7	**Austria (A)**	D,JP, 10/03	2,616	2,616	83,461	41	2.43	29,882	84	1.19	58,640	104,670	1.79	2.31	2.14	20,930	37,475	1.13	1.05
8	**Ireland (Ir)**	E 04/05	2,292	2,292	73,124	47	2.13	26,788	93	1.07	66,456	79,760	1.20	2.62	1.63	24,307	29,173	1.31	0.82
9	**G. Britain (GB)**	E 04/05	2,000	2,946	93,989	36	2.74	36,212	69	1.45	70,480	117,467	1.67	2.78	2.40	27,155	45,257	1.47	1.27

Sources: *A: Ministry of Labour and Social Affairs: Average Earnings Information System (AEIS), commercial sphere, 1st to 4th quarter, 2004; B: Ministry of Labour and Social Affairs: AEIS, non-commercial sphere, 1st to 4th quarters, 2004; C: International Labour Organisation (ILO): Labour Statistics, 2005; D: Translitera: Poznatky o situaci na trhu práce a poptávce po kvalifikovaných odbornících a jejich mzdách ve státech V: Británie, Irsko, Německo, Rakousko, 2005; E: Vavrečková, J., Gazdagová, M.: Poptávka po českých kvalifikovaných odbornících v zahraničí (kvalitativní průzkum řízených rozhovorů s představiteli soukromých zprostředkovatelen práce), Research Institute for Labour and Social Affairs, 2005*

Notes and Footnotes: *1) Czech Republic: 2132: Number of Employment/Profession according to CZ-NACE; N,R: JP: JobPilotTest; Ir: H: According to source D information source Hays; GB: BSO: British Statistical Office; 2) Czech Republic: CZK, GB: British Pound, Other Countries: Euro; 3) Conversion of average exchange rate in 2004: CZK/Euro: 31.004, GBP/Euro: 0.679; 4)Net parity wages reflect the influence of the summary tax quotas (income tax, legal contributions to social funds and price levels towards the Czech Republic); 5) Czech Republic: Minimum: Value of first quarter (Q_1), Maximum: Value of Third Quarter (Q_3) of the profession's wage distribution; other countries: According to the information of the sources used.*

10. A Comparison of the Average Monthly Level and Differentiation of Gross Wages and the Comparable Real Purchase Power of Net Wages for the "Doctor" Profession and his specialisation between the Czech Republic, Germany, Austria, Ireland, Great Britain; Data for the Period from 2002 - 2004

L.	Profession	Identification Characteristics (Source, KZAM, year)[1]	Average Monthly Wage								Differentiation of Wages								
			Gross Nominal					Net Parity (Purchasing Power)			Gross Nominal					Net Parity			
			National Curr.[2]	Euro[3]	CZK			CZK			CZK		Relation			CZK		Relation	
					Absolute	Relation		Abs.	Relation		Min.	Max.	Max./ Min.	Min. F/CR	Max. F/CR	Min.	Max.	Min. F/CR	Max. F/CR
						CR/F	F/CR		CR/F	F/CR									
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
	Doctors																		
	Czech Republic																		
1	Doctor	A,B 2221,04	36,720	1,151	36,720	100	1.00	26,806	100	1.00	22,011	55,863	2.53	1.00	1.00	16,068	40,780	1.00	1.00
2	From these: Doctor with a Specialisation	B 22217,04	38,404	1,204	38,404	96	1.05	28,035	96	1.05	24,227	55,407	2.29	1.10	0.99	17,686	40,447	1.10	0.99
	Dest. Countries - Statistical Data																		
	Germany (G)																		
3	General Practitioner	D_2, FF,04	5,824	5,824	185,824	20	5.06	49,381	54	1.84	129,315	349,795	2.70	5.87	6.26	34,634	92,955	2.16	2.28
	Austria (A)																		
4	General Practitioner	D_2, FF,04	5,527	5,527	176,341	21	4.80	58,006	46	2.16	122,715	331,943	2.70	5.58	5.94	37,306	101,293	2.32	2.48
	Ireland (Ir)																		
5	General Practitioner	D_2, FF,04	4,297	4,297	137,081	27	3.73	43,152	62	1.61	95,395	258,041	2.70	4.33	4.62	30,029	81,229	1.86	1.99
6	Dentist	D_1, PSBB,02	4,297	4,297	137,091	27	3.73	43,155	62	1.61	110,667	196,206	1.77	5.03	3.51	34,837	61,764	2.17	1.51
	G. Britain (GB)																		
7	General Practitioner	D_1, BSÚ,03	5,528	8,141	259,730	14	7.07	94,874	28	3.54	173,153	346,308	2.00	7.87	6.20	63,249	126,499	3.94	3.10
	Employer Offers																		
	Germany (G)																		
8	General Practitioner	E, 04/05	4,500	4,500	143,568	26	3.91	38,152	69	1.45	127,616	159,520	1.25	5.80	2.86	33,913	42,391	2.11	1.04
9	Dentist	E, 04/05	5,000	5,000	159,520	23	4.34	42,391	63	1.58	153,139	165,900	1.08	6.96	2.97	40,695	44,910	2.53	1.10
	G. Britain (GB)																		
10	General Practitioner	E, 04/05	3,750	5,523	176,200	21	4.80	64,362	42	2.40	117,467	234,934	2.00	5.33	4.21	42,908	85,816	2.67	2.10
11	Surgeon	E, 04/05	6,083	8,959	285,483	13	7.78	104,412	26	3.90	195,794	375,894	1.92	8.90	6.73	71,519	137,306	4.45	5.37
12	Dentist, Anesthesiologist	E, 04/05	6,041	8,897	283,847	13	7.73	103,683	26	3.87	215,340	352,400	1.64	9.78	6.31	78,659	128,724	4.90	3.16

Sources: *A: Ministry of Labour and Social Affairs: Average Earnings Information System (AEIS), commercial sphere, 1st to 4th quarter, 2004; B: Ministry of Labour and Social Affairs: AEIS, non-commercial sphere, 1st to 4th quarter, 2004; C: International Labour Organisation (ILO): Labour Statistics, 2005; D: Translitera: Poznatky o situaci na trhu práce a poptávce po kvalifikovaných odbornících a jejich mzdách ve státech V. Británie, Irsko, Německo, Rakousko, 2005; D_1: Text part; D_2: Summary Overview; FF: Finfacts (Ireland); PSBB: Report of the Public Service Benchmarking Body (Ireland); British Statistical Office: British Statistical Office; E: Vavrečková,J., Gazdagová M.: Poptávka po českých kvalifikovaných odbornících v zahraničí (kvalitativní průzkum řízených rozhovorů s představiteli soukromých zprostředkovatelen práce), Research Institute for Labour and Social Affairs, 2005*

Notes and Footnotes: *[1] Czech Republic: 2221: Number of Employment (Profession) according to CZ-NACE List; [2] Czech Republic:K, GB: Bristish Pound, Other Countries: Euro; [3] Conversion of average exchange rate in 2004: CZK/Euro 31.004,GBP/Euro: 0.679; [4] The net parity wages express the influence of the summary tax quotas (total income tax and the employers' legal contributions to social funds) and the relation of household final consumption expenditure of the compared countries (G, A, Ir, GB) towards this level in the Czech Republic; [5] Czech Republic: Minimum: Wage value of first quarter(Q_1) distribution of employers in the given profession according to the wage level, Maximum: Value of third (Q_3) quarter distribution; [6] Data for A and Ir are not available*

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Jana Vavrečková and Collective

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