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Impact of Foreign Direct Investment on the Labour Market in the Czech Republic and other European Countries

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Proclamation:

I hereby declare, that I wrote my diploma thesis on the topic " Impact of foreign direct investment on the labour market in the Czech Republic and other European countries" by myself and that all used literature and other sources are properly marked and listed in the enclosed references.

In Prague, 30th November 2006

Acknowledgements

Abstract

In the theoretical part this paper analyzes current economic literature about the effects of FDI. It also identifies the main problems and solutions of the European labour market. "Flexicurity" as applied in the Scandinavian countries offers enough flexibility for entrepreneurs, but at the same time provides a safety net for those who can not help themselves. High regional disparities in the Czech Republic are caused by centralization of economic activities around capital, inconvenient structure of the labour force, lacking regional centers but also dislike to work.

In the empirical part using panel data within the period 1997 – 2004 for the Czech manufacturing, this paper gives the evidence of the effects of FDI on a labour market in a host country. MNEs increase wages as well as productivity through spillovers in domestic firms. The increase of productivity through capital/labour substitution was rejected. The productivity grew faster than wages and thus did not cause unemployment. MNEs helped to create efficient jobs opportunities, reallocate resources from the less to higher productive and thus enhanced the total employment. On average foreign job creation was accompanied by one third of domestic job destruction. Displacement effect decreases in time and differs among industries. Comparing domestic and foreign companies we found that MNEs produce with increasing external returns to scale, whereas domestic firms, produce with decreasing external returns to scale, but with increasing internal returns to scale.

Anotace

V teoretické části tato práce analyzuje současnou ekonomickou literaturu o efektech PZI. Dále identifikuje hlavní příčiny a řešení Evropského trhu práce. "Flexicurity" aplikována skandinávskými zeměmi nabízí dostatek flexibility podnikatelům, ale zároveň poskytuje záchrannou síť pro ty, kteří si neumí pomoci sami. Velké regionální rozdíly jsou způsobeny centralizací ekonomických aktivit okolo hlavního města, nevhodnou strukturou pracovní síly, chybějícími regionálními centry ale také nevůlí pracovat.

V praktické části užitím panelových dat z let 1997 až 2004 v českém průmyslu, tato práce podává důkaz o efektech PZI na trh práce v hostitelské zemi. V důsledku efektu přelévání, nadnárodní společnosti zvyšují mzdy a produktivitu v domácích firmách. Hypotéza o zvyšování produktivity prostřednictvím substituce práce kapitálem byla zamítnuta. Produktivita práce rostla rychleji než mzdy a proto nezpůsobila nárůst nezaměstnanosti. Nadnárodní společnosti pomáhaly vytvářet efektivní pracovní příležitosti, realokovat zdroje od méně k více produktivním a tímto zvyšovat zaměstnanost. Vytváření pracovních míst zahraničními firmami bylo v průměru doprovázeno destrukcí jedné třetiny těchto míst v domácích firmách. Efekt protahování se liší v čase a mezi sektory. Porovnáním domácích a zahraničních firem se zjistilo, že nadnárodní společnosti vyrábějí s rostoucími externími výnosy z rozsahu, zatím co domácí firmy, produkují s klesajícími externími, ale rostoucími interními výnosy z rozsahu.

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Abbreviations

CEEC	Central and Eastern European Countries
CZSO	Czech Statistical Office
FDI	Foreign Direct Investment
ILO	International Labour Organization
LFS	Labour Force Survey
MNE	Multinational Enterprises
SEZ	Special economic Zones
SME	Small and Medium Size enterprises

Introduction

Central and Eastern European countries have lately attracted more and more foreign direct investment. At the same time, they have been fighting with high rate of unemployment (especially Poland and Slovakia). Majority of politicians in transition economies advertise FDI as a panacea for all economic drawbacks using state agencies to attract as much investment as possible. According to the conventional wisdom FDI have a positive effect on economic growth and employment, because they decrease the shortage of capital accumulation and increase the productivity through spillovers and linkages. Investment incentives aim to attract investment in the less developed regions and level up regional disparities.

The main goal of this paper is the analysis of the effects of FDIs on the labour market in a host country. Do MNEs increase domestic wage? Do MNEs increase domestic productivity through spillovers? What is the size of the displacement effect? It also tries to identify the causes and solutions of the European, especially Czech unemployment and the role of investment incentives in the process. What is wrong with the European labour market? Is the American model better? What has to be done to achieve the goals set in the Lisbon strategy? Is the current incentive scheme applied by CzechInvest advantageous for the creation of healthy business environment? Finally it compares domestic and foreign firms and describes the principles of the labour market in the Czech industry. Are MNEs more productive than domestic firms? What kind of returns to scale do they produce with? Do foreign investments create more jobs than the domestic?

Using panel data within the period 1997 – 2004 for the Czech manufacturing, this paper gives evidence about the effects of FDI on a labour market in a host country. Traditional hypothesis are tested about whether FDIs increase domestic wage, productivity through spillovers or domestic capital/labour substitution and total employment. Using elasticity approach it also tries to measure displacement effect taking into account differences in time and industries.

Concerning methodology following procedures were used: comparative analysis of American and European labour market, transition and EU15 labour market, comparison of domestic and foreign firms in the Czech Republic, cross-sectional regression using fixed effect model (FEM) and the random effects model (REM).

The paper is organized as follows. Theoretical part is divided on the theory of FDI, labour markets and investment incentives. Practical part starts with a set of hypothesis that this paper aims to answer. It is followed by description of the data, comparison of foreign and domestic enterprises and analysing the results of the model. At last it gives answers to the about mentioned hypothesis and concludes.

1. Theory of foreign direct investment[1]

1.1. Definition of FDI

According to the Third Edition of OECD Benchmark Definition: "Foreign direct investment reflects the objective of obtaining a lasting interest by a resident entity in one economy ("direct investor") in an entity resident in an economy other than that of the investor ("direct investment enterprise")". The lasting interest implies the existence of a *long-term relationship* between the direct investor and the enterprise and a *significant degree of influence* on the management of the enterprise". Because of the international comparability, IMF recommends a 10 per cent of ordinary shares or voting stocks threshold, that should "…guarantee influence and participation in the management of an enterprise; *it does not require absolute control by the foreign investor*". Setting an explicit limit involves a risk of including also portfolio investment over 10% of shares and excluding some FDIs with a significant influence on the management lower than 10% of shares. This is a matter of further discussion.

FDI flows consist of[2]:

- "Equity capital, which is the foreign investor's purchase of shares in an enterprise in a foreign country

- Reinvested earnings, which comprises the investor's share of earnings not distributed as dividends by affiliates or remitted to the home country, but rather reinvested in the host country. Can be calculated as:

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[1] The majority of the ideas in the Theory of foreign direct investment section were found in a very book written by Moosa, Imad A., 2002, " Foreign direct investment -Theory, evidence and practice", Palgrave Macmillan Ltd, ISBN 1-4039-0749-8

[2] Moosa (2002)

Reinvested earnings = profit of the current year after tax + not distributed profit of the previous years – loss of the current year – uncovered loss from the previous years - dividends

- Intra-company loans, which refer to short-term or long-term borrowing and lending of funds between the parent company and its affiliates".

Not all national banks publish the data in this particular breakdown. Czech national bank, offers data about FDI divided on equity capital, reinvested earnings and other capital (comprises loans).

1.2. Types of FDI

We can distinguish between horizontal, vertical and lately a conglomerate of the previous ones, complex FDI. The crucial criterion for setting of the type is the transport.

Horizontal FDI tend to occur in case of high transport costs or other trade barriers. Producer prefers to replicate the production in a foreign country instead of export. Furthermore he can expand his economies of scale and strengthen his monopoly power. If e.g. telecommunication company would like to buy its competitor on a local market, antimonopoly office would review the process and maybe not allow this transaction in order to prevent monopoly power. If the company buys a company in another state, no one can object, as long as an international antimonopoly office does not exist. It can also save costs on R&D, brand building and other costs that are transferable to other affiliates.

On the contrary vertical FDI benefit from the fragmentation of the production chain in different countries, because of low transport costs. They are either backwards, exploiting natural resources, cheap and qualified labour force or forward using distributional nets. Fast growing transition economies in Central Europe present perspective markets for western but also Asian investors. When VW bought up Škoda it did not gain only well known brand, factories and high-skilled workers but also a well developed distribution chain of dealers. Czech Republic and Slovakia lying in the heart of Europe are a good distributional point to the whole Europe.

Investments in the last decade are more likely characterized by complex integration strategies, using advantages of both horizontal and vertical FDI. In a broad sense a MNE can allocate affiliates in a foreign country to save transport and trade costs and at the same time build up a factory in another county to exploit lower labour costs, thus following a complex strategy. In a narrow sense each investment in a foreign country is determined by several factors (see later determinants of FDI). If the transport cost is neither to high or low, investors are motivated by both horizontal and vertical advantages. The borders between the determinants of FDI have been blurred recently. [3]

From the host country perspective we can divide FDI on import-substituting, export-increasing and government-initiated. It is analogical to the division just mentioned above. Import-substituting FDI similarly to horizontal FDI occur in case of high transport costs and trade barriers, where producers substitute imports by the host country production. Export-increasing likewise vertical FDI are attracted by production factors differentials, where the investor exports to home or other countries. Both of these types improve trade balance, nevertheless worsen balance of income. Finally government-initiated are specific for each country, depending on the government's target. In Central Europe investment incentives are focused on the creation of new jobs and leveling up of regional disparities (see later). In other countries the main goal might be the elimination of balance of payments deficit.

1.3. Theories of FDI

The goal of this section is not to give a full account of all known theories, rather an overview of the mostly applicable. Because they are theories they do not apply wholly to the real world, but attempt to spot the principles in the decision making of the investor. Firstly we start with three main theories assuming perfect competition and then we turn to imperfect competition.

The differential rates of return hypothesis, assumes that capital flows from a low-return country into a high-return country. From the theory of investment we know that rate of return is always balanced by the risk. Risk averse people tend to be satisfied with lower returns in

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[3] For more information read Yeaple, Stephen Ross, 2003, "The complex integration strategies of multinationals and cross country dependencies in the structure of foreign direct investment," Journal of International Economics, Elsevier, vol. 60(2), pages 293-314, August.

low- risk investment whereas people looking for risk the opposite. Because this theory assumes risk neutrality, it is not reliable in explaining investor's incentives.

The portfolio diversification hypothesis deals with this problem. It assumes not only different rates of returns, but also different rates of risk. If we assume that most people have risk aversion, they will try to decrease the risk by portfolio diversification. As we shall see later country risk represents an important FDI determinant in transition economies.

Finally the market size hypothesis explains the investor's interest by the potential demand for his production. This can be measured either by country's GDP or purchasing power of the population. However the size does not have to be limited by state borders. In case of economic regions the size is determined by transport costs and possibility to export to neighbouring countries. In the deepening globalization, where the state borders are blurred, country size did not empirically proved to be a significant determinant of FDI.

As perfect competition does not exist in a real world, theories assuming imperfect competition dominated the research around FDI. The most famous is the so called OLI framework, consisting of organization, location and internalization theories.

Organization theory is based on the fact that some firm-specific intangible goods are difficult to sell, e.g. brand name, patents or managerial skills. Once invented there are no further costs in spreading it into the world, under the condition of transferability to other subsidiaries. Once MNE finds an efficient form of organization, production process, customer care or thinks of a good commercial, it can replicate it to other parts of the world, saving costs. Of course there is a danger of different cultures, languages where a process successfully used in one country can be completely contra productive in another country. There are also other forms of expansion, licensing or export. In case of licensing there is the risk of abusing the intellectual property or revealing the business secret to others. Increase of production, because of export expansion, can shift the company from a minimum to higher production line.

According to the location theory, FDI flows are caused by different factor costs. One of the most important factors attracting FDI in transition economies nowadays are low wages or better wage differentials between investor's and host country. However recent trends show that apart from the relatively cheap labour force, also qualification becomes more important.

Another factor attracting the FDI is the level of unionization of the labour market. If the trade unions are decentralized or very centralized (they know that they can trigger inflation) they require moderate pay growth and thus attract FDI. On the other hand trade unions asking for high pays and working standards discourage foreign investor's. As for Slovakia liberal labour markets and low corporate taxes influence investor's decision. In case of capital-intensive production, businesses can be attracted by raw materials or lower capital costs.

Internalization theory depicts "…firm's effort to replace market transactions with internal transactions." Time lags, bargaining, buyer uncertainty are the consequences of a market transaction, that an entrepreneur wants to avoid. If a final good producer imports intermediate goods from a foreign supplier, he always faces the risk that the supplier would not inform him about the delays, would not like to cooperate when solving the problems and can be uncertain about future cooperation.

The last theory worth mentioning is the product life cycle hypothesis, because of its relevance for current situation in transition economies. A product goes through three phases:

1. Introduction – in the first phase production is allocated in the home country, because coordination between R&D and production is needed. The product is new, innovative, attractive to consumers, not having competitor, thus income elasticity is low and producer can set high prices. Producer serves only local market.
2. Maturity- as the product is developed; it is exported to countries with similar levels of income. Competition arises, and producer indulges into FDI. He serves domestic and foreign markets either by exports or FDI abroad.
3. Senescence – the product becomes regular good with high elasticity of income. In order to survive the competition, producer has to allocate whole production abroad, gaining from the location advantages.

A good example is electronics. At the beginning products are invented in developed countries, because of high R&D costs. After a time production is automated and reallocated into developing countries decreasing production costs. Because of nominal and real convergence, new member states will loose location advantages and will be shifted into the second phase of the life cycle. In order to sustain competitive, countries should concentrate more on innovative technologies and compete western European countries in the first phase.

The literature about FDI is divided into two groups. The first one deals with determinants, the second one with its effects on investors or host country[4]. Effects are further distinguished on economic, political, social and on direct and indirect effects.

1.4. Determinants of FDI

Under perfect competition MNEs, situated in a low-return country, invest in a high-return country and thus equalize the levels of returns in both countries. However, the companies do produce in a real world with many imperfections and their decision where to set up their business is based on several factors.

The determinants of FDI for EU new member states are well compiled in the papers of Janicki & Wunnava (2004), Carstensen & Toubal (2003), and Bevan & Estrin (2000). Apart from the traditional determinants, such as market potential, low relative labour cost, skilled workforce, corporate tax rate there are transition-specific factors in transition economies. These include level and method of privatisation, country risk and. Level of privatisation is measured as the market share of private businesses in a country as a percent of GDP. The higher the level of privatisation, the more attractive the country is for FDI. Method of privatisation is expressed by a set of dummies representing different combinations of primary and secondary method of privatisation. The most favourable possibility for FDI is the Sales to Outside Owners only, whereas Managers and Employees Buy-outs discourage FDI the most. The country risk is expressed as the political risk index involving the ability of private entities to repay the debts or the danger of nationalization. This factor played an important role in the lag of Bulgaria and Romania. Very interesting was also the impact of announcements about the progress in the pre-accession negotiations. Bevan & Estrin (2000) found a positive influence of "good news" in the reports on the FDI inflows into the country.

Benacek & Visek (1999) studied determinants specifically for Czech industry on a sectoral level. Using data for 91 manufacturing industries in the year 1994 and trimmed least squares method they found out that 72% of Czech industries and 88% of incoming FDI are negatively

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[4] A good representative paper that analyzes the effects in a home country is Blomstrom & Fors & Lipsey (1997), which works with the data of Swedish affiliates in the US.

influenced by capital intensity of production and indirectly concluded that FDI are rather attracted by labour intensive industries. Furthermore, the investors prefer industries with high total factor productivity, increasing returns to scale (as a potential of high profitability) and high requirements of R&D. Apart from that, they conclude that in 1994 industries were still not restructured and there was the existence of two parallel tiers of efficient and inefficient companies.

1.5. Effects of FDI

The mostly studied direct effects of FDI in a host country are the effects on output, current account, trade flows, regional development, total employment and domestic productivity and wages.

1.5.1. Output

In line with the Solow growth model, output is generated by capital, labour and exogenous technological progress. If we assume a shortage of capital accumulation in most developing and transition economies and positive productivity spillovers, FDI should have a positive effect on the growth of output. MNEs also absorb the employees, who would otherwise remain unemployed, but also workers from domestic companies as we shall see later. Another way, how FDI can increase output is through"… improving efficiency of domestic resources by shifting them from less efficient to more productive sectors of the economy".[5]

On the contrary MNEs crowd out domestic firms and because only a part is reinvested at home, at the end they could lower capital accumulation. Furthermore, big multinationals, sometimes producing more then a country GDP, may concentrate monopoly power and thus decrease competition. According to Mello (1999), the intensity of improvement of the growth depends on the complementarity of foreign and domestic investment.

1.5.2. Current account

The effect on a current account is ambiguous and changes in time. In the first phase of investment machinery, equipment is imported from the investor's country and causes a trade

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[5] Moosa (2002)

balance deficit. After setting up a factory and starting with the production, goods are exported and improve a trade balance position. Slovakia is supposed to experience a trade balance surplus in 2009 after 15 years of deficits[6], because of strong exports of MNEs mainly in car industry[7], machinery and metals[8].

Another point influencing the impact is the firm's strategy. In case of high trade costs (transport costs, tariffs, insurance), an investor will decide to substitute imports by production in the host country. If the trade costs are low and the host country offers also location advantages (labour cost, taxes, distributional point), the investor will export goods to the home or other countries. In both cases it has a positive impact on a current account.

FDI can also deteriorate the current account position. Firstly, a part of the profits is reinvested in the host country, but a significant part is send back by remittances to the investor's country. This worsens the balance of incomes, which is a part of the current account. Secondly, if FDIs make domestic salaries grow faster than the productivity, aggregate demand overgrows aggregate supply and triggers imports from abroad. This happens of course only if there is a delay in the price level adjustment.

1.5.3. Regional development

Apart from the determinants mentioned above FIE considering an allocation of investment within a country takes into account also other factors concentrated around economic centres; e.g. infrastructure, quality of labour force and potential demand. This might deepen regional inequalities. 67 per cent of all FDI in Slovakia in 2005 were allocated in Bratislava region and 47 per cent of Czech FDI in Prague. Pavlinek (2004), studying the regional impacts in V4 countries especially in Czech passenger car industry, focused on some negative effects of FDI. In all V4 countries "FDI are allocated in their capital and metropolitan areas". Central European economies become more vulnerable to plant closures (VW Slovakia accounted for 19% of Slovakia's GDP in 1999, 14% of Czech exports are attributable to VW-Škoda)[9] and there is an important headhunting on the side of MNEs for local specialists. Fazekas (2003) using micro regional data in Hungary identified "post transitional winners and losers of local

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[6] Newspapers PRAVDA, 9.10.2006
[7] Volkswagen, PSA Peugeot Citroën and Kia
[8] US Steel – former East Slovakian Ironworks
[9] The Economist, 2001b:60

labour markets. Net job creation within the foreign firm sector was concentrated in high employment industrial regions". He also found large and increasing productivity gap between winner and loser regions. Investment promotion state agencies aim to distribute FDI more equally through investment incentives. Wren & Taylor (1999) give the evidence of UK, where well focused regional policy lead to a convergence of regional industrial structure in assisted areas.

1.5.4. Spillovers

Indirect effects can have a form of spillovers, linkages and employment substitution. The main difference between the spillovers and the foreign linkage is that the spillovers influence mainly the productivity, whereas the linkages influence the industrial structure of the host economy through changing demand, supply and prices.

The spillovers positively influence local firms through:
1. transfers of technology, organizational and management methods
2. demonstration-imitation effect
3. competition effect

The spillovers are divided into horizontal and vertical. The horizontal spillovers are concerned with local competitors. Vertical spillovers benefit other members of the production chain - suppliers (backwards spillovers) and distributors (forward spillovers).

There are some studies giving the evidence of positive correlation of an inward investment and an average value added per worker (Barrell & Holland, 2000). The problem with these results is the direction of causality (Javorcik, 2004). In other words, whether the investment increases productivity or the industries with high productivities are attracting foreign investment[10].

On the other hand, Djankov and Hoekman (2000) taking the Czech firm-level data for the period 1994-1997 revealed a positive effect of FDI on the productivity of acquired firms and Joint Ventures, but a negative spillover effect on the firms that do not have a foreign

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[10] Benacek and Visek (1999), found total factor productivity a very important determinant of FDI

partnership. Konings (2001) also found negative spillovers in Bulgaria and Romania and no spillovers in Poland.

Javorcik (2004) and Damijan & Knell & Majcen & Rojec (2003) offer an answer to the negative spillovers into the domestic-owned companies found in the 90s. "It is possible, though, that the researchers have been looking for FDI spillovers in the wrong place." Because of the competition on a horizontal level, MNEs are reluctant to reveal their know-how to other players of their market. Positive spillovers might be rather found on a vertical level, where the efficiency of MNEs also depends on the services of their suppliers and distributors. In order to keep their business running, they demand high quality standards and spill over their knowledge to other members of the production chain.

Similar to liquid, spillovers tend to be larger in case of bigger productivity differential.[11] This applies especially to the transition period, when many companies did not finish their restructuring. It also supports the argument that FDI are very helpful in the transition period.

1.5.5. Foreign linkages

Entering of FIE on a market changes demand and supply side of certain goods and thus their prices. Some of the inefficient firms are dropped out, other benefit from lower prices of intermediate goods and can join the market easier.

Similarly to the spillovers, the linkages can be either forward or backward. "Firms may use intermediate goods produced by either domestic or foreign firms (backward linkages), and sell their products to either domestic or foreign producers (forward linkages)", Kippenberg (2005).

The Backward positive linkages are generated by MNEs, which is able to generate more employment in downstream domestic firms relative to a domestic firm at its place. The Positive forward linkage arises from a downward pressure on intermediate goods prices, which enables emergence of domestic firms in an upstream sector. The scale of the effect depends on the relation between the goods produced by MNEs and the domestic firms.

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[11] Driffield, Taylor (2000).

Substitutability empowers the competitive effect whereas complementarity enhances the production effect.

Kippenberg (2005) found out, that linkages in the Czech Republic "have a strong influence on the sectoral composition and depend on sectoral characteristics". Labour-intensive industries (e.g. manufacturing of food, textile, wood, machinery and equipment) are influenced much more then capital-intensive industries (e.g. mining, manufacturing of refined petroleum and chemical, basic metals and metal products). This conclusion goes hand in hand with that of Benacek,Visek (1999), who concluded that capital intensity is a crucial negative determinant of FDI in the Czech industry.

1.5.6. Employment and wages

As we have seen, the increase of an output is possible only in the case of idle resources or reallocation to more efficient use. If the government pursues a policy of full employment, FDI will not affect unemployment rate. Developing and transition economies usually have these free resources and are rather complementary to the foreign capital. A foreign investor can increase employment either by Greenfield investment or M&A of a company. The former is supposed to be more enriching.

MNEs have usually higher productivity and can offer higher wages relative to domestic enterprises (Driffield, 1996)[12], hence take over employees from local companies. This process is known in the literature as the labour substitution or displacement effect. Narrow definition includes only the employees who left domestic firm and started to work in a MNE. Broad definition involves all jobs lost in domestic sector due to FDIs. In other words, not only the workers who were drawn by MNEs (narrow definition) but also jobs that were cancelled due to the competitive effect.

One could argue that these new job opportunities are then offered to less skilled unemployed, but as Pavlinek (2004) states "… in southern Bohemia where unemployment rate stood at 5 percent in 2001, domestic firms were fighting for skilled workers such as locksmiths, turners, toolmakers and welders, with MNEs being much more successful".

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[12] He found out an average productivity advantage of MNEs in the UK to domestic firms of at least 14 per cent and a wage differential of 7 per cent.

Secondly higher wages are spilled to domestic sector, but the domestic productivity does not grow that fast. With an entry of FIE, domestic firms have to increase wages immediately, in order not to lose employees, where as spillovers and linkages need some time to come into effect. With a limited budget an entrepreneur must lay off some workers.

Apart from the labour substitution there is also factor substitution at work. Because of higher costs of labour, an employer substitutes the labour for capital and thus increases the domestic productivity of labour. This can offset the current loss in employment. (Driffield, 1999)

As for the skill structure FDI tends to increase the use of skilled workers and also the wage inequality. This can be a result of the use of more advanced technology and the orientation of MNEs on sectors with higher value added, which in turn demands skilled workers. However the most plausible explanation seems the capital-accumulation-outsourcing hypothesis. Rich MNEs from the North move their low-skilled production to the poor South, because of lower costs. From the Southern perspective, that is on a lower level of development, these activities present a production with high-skilled workers. This outsourcing leads to an increase of demand for skilled workers on both sides and expand scissors between skilled and unskilled wages.

Another approach is presented by Yabuuchi (1999). Based on Ricardo and Hecksher-Ohlin theorems of international trade he found out that FDI enhances employment and social welfare, only if MNEs uses specific factor.

2. Theory of the labour market

2.1. Indicators of the labour market

According to ILO there are three main indicators: employment, unemployment and participation rate. To identify particular groups ILO uses division of the entire population according to table 1.

Population aged 0-14	Economically not active			14.7%
				34.5%
Population aged 15 or more	Economically active	Employed in national economy	Employed in civil sector	46.7%
			Members of armed force	0.1%
		Unemployed		4.0%

Table 1 – Categorization of the population on the labour market with the relative representation in the Czech Republic (the 4th quarter of 2005), Source: CZSO

Labour Force Selective Survey (LFSS) compiles data from 62 thousand selected respondents (53 thousand respondents are aged 15 or more) every week. Indicators are calculated as follows:

$$Employment\_rate = \frac{employed}{working\_age\_population}$$

$$Unemployment\_rate = \frac{unemployed}{employed + unemployed}$$

$$Participation\_rate = \frac{employed + unemployed}{working\_age\_population}$$

Working age population means people between 15 years and retirement age (usually 64 years). "As employed are considered all persons aged 15 or more who worked at least one hour in the reference week, including students, apprentices or house persons if they get paid. The unemployed comprise all persons aged 15 or more who satisfied all of the following three conditions during the reference period:

1. were without work - i.e., were in neither employment nor self-employment
2. were actively seeking work. The active form of seeking work includes registration with a labour office or private employment exchange, checking at work sites, farms, market or other assembly places, placing or answering newspaper advertisements,

taking steps to establish own business, applying for permits and licenses, or looking for a job in a different manner

3. were currently available for work - i.e., were available during the reference period for paid employment or self-employment immediately or within 14 days"[13].

Most popular indicator of the labour market is the unemployment rate. It is negatively correlated to the employment rate. We can come across two different methods of data capture in the Czech Republic. LFSS as explained above and registered unemployment, based on the data about registered job seekers by Labour Offices. The main difference is that CZSO works with so called main status (means usual economic status), whereas LFS operates with a minimum of one hour of work in the reference week. The problem exists in several states of EU10 but also EU15. The relation between the two unemployment rates differs among countries and in time.
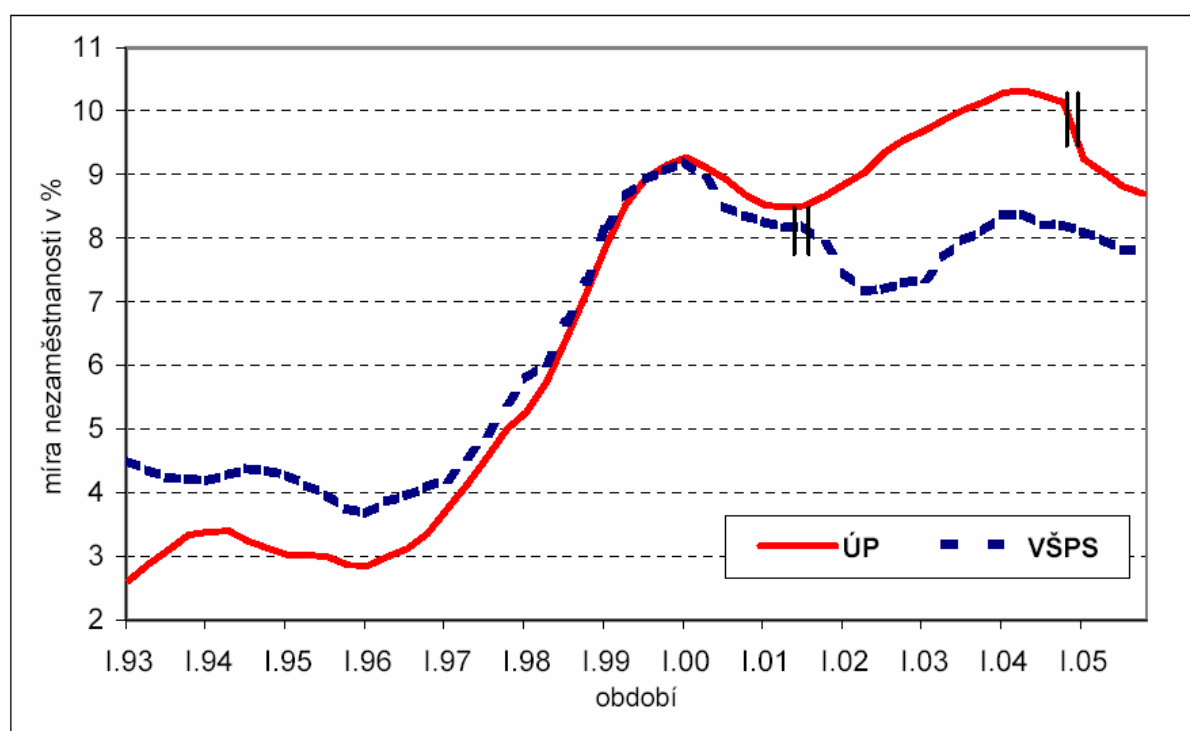
Graph 1 – Seasonally adjusted unemployment rate according to Labour Offices (full line) and LFSS (dotted line), Source: CZSO

Taking the example of the Czech Republic we can see a common increasing trend in both rates reaching the peak at the turn of 1999 and 2000. In 2001 the rates start to diverge and reached the second crisis in 2004. Divergence in 2001 can be explained by the fact that in high unemployment periods some of the registered applicants enhance their situation with

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[13] CZSO, 2006, "Labour Market in the Czech Republic 1993 – 2005", Ref.no: 1081 / 2006 - 2440

accidental short-time jobs, falling into the LSF but not into the registered unemployment statistics. Currently the registered rate is over the FLSS which is positive for international comparison, as LFS is used also by EUROSTAT. In Slovakia the relation is the opposite.

Another important characteristic of unemployment is its seasonality. Information about unemployment in quarters is sometimes misleading. Annual or seasonally adjusted data are more suitable for the real picture. At the beginning of a new year unemployment is usually the highest, because some of the jobs, can be done only in a good weather (builders, agriculture).Until June the rate continuously decreases until the beginning of July, when new graduates leave their universities. Absorbing of the labour force and seasonal work then once again decreases in autumn.
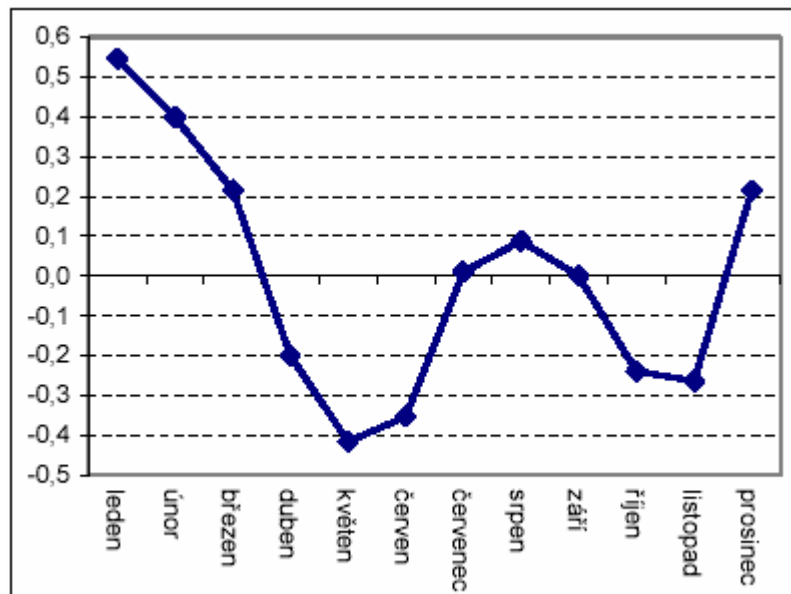
Graph 2 – Average seasonal indexes of registered unemployment, Source: CZSO

Participation rate as an indicator presents how many people from the working age population are willing to work. Low participation rates could also mean that the people are so well off, that they do not want to work anymore, which is of course not the case of transition economies. More usually low participation rates mean many high school and university students, long-term unemployed who had already lost the motivation to apply for a job, too many early retirements or household work. Low participation rates occur in times of recession, when there are weak chances to get job and students prefer to stay longer at the universities and some people refuse to look for a job at all. At the same time it also depends on administrative setting of the retirement age and length of maternal leave. In the worst case low participation rates could be a sign of vast shadow economy.

2.2. European labour market

After the Second World War, European countries had low unemployment rates of 2 to 4 percent. In the 70s unemployment started to grow and have not stop till the early 80s, where it sustained until now (see Graph 8). At the beginning economist thought that the increase was caused by petrol shocks and decrease in productivity, but as the time passed by they had to look for another explanation.

Even after a half century of integration, Europe is very diverse nowadays. There are low unemployment countries as the UK, Austria or Ireland and continental countries reaching up to 10 percent rates. There is Spain with its dramatic decrease from 20% unemployment at the beginning of 90s to its 10 % today. Thus we have to be aware of the heterogeneity of the EU and take each country individually. However we can track some common features in the European labour markets.

Problems of the European labour market and social system could be summarized as follows:

1. High unemployment
2. Low participation rates
3. Inflexible labour market
4. Generous social system
5. Low labour mobility
6. Ageing Europe
7. Unequal opportunities

2.3. Comparison of the European and American labour market

Problems on the European labour markets are usually put in contrast with the "well functioning" US labour market. But is the American model the right way to go?

Freeman in his paper[14] presents a critical assessment of the US model adoration. From the mid sixties US overtook Europe in its employment rates and from eighties it is also better in the unemployment rates (see Graph 8). US with its less regulated and institutionalized labour market grew faster than Europe. At the same time however average annual hours worked

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[14] Freeman, R. (2004), "Are European Labour Markets as Awful as All That?" LSE, Centre for Economic Performance Discussion Paper No. 644.

increased in the US and decreased in Europe. Would French with theirs 35 hours working week want to work more? Or would the Germans want to give up their generous unemployment benefits? The answer is no.

What is the employment gap caused by? Statistics show that the main difference lies in the young and elderly employment. Because of paid higher education, most of the US university students have to work during the studies, whereas higher education in EU is usually free. There is a common trend in the US of young working mothers with a child younger than one year. As more and more women give up their household duties, "marketization" of household work becomes more often. Instead of cooking at home, US family goes to restaurant or hires a gardening company to mow the lawn. Early retirement in the EU decreases employment rates in the 55-64 group. All of the factors mentioned above lead to lower employment rates in the EU, which does not have to be necessarily related to lower social welfare.

Arguments speaking for the European model are the higher increase of real wages and lower wage dispersion in Europe. One of the main pillars of the European model is redistribution, from the rich to the poor in order to attain cohesion among and within the member states. Wage dispersion in the US is much larger not only between low and high skilled workers, but also among narrowly defined groups e.g. of top level managers. Immigration in the US plays also important role, as the immigrants are willing to work for minimum wages.

Institutional differences are in the collective bargaining coverage and employment regulations. Unionization is much more common in the EU than in the US. More than 75% of workers in the EU are covered by collective contracts, comparing with 14% in the US.

Finally labour mobility in Europe is lower than in the US. The main reasons are different language, culture, family ties and the risk aversion. From the theory of optimum currency areas we know, that common currency is advantageous for economies with similar structure and adverse shocks or high mobility of factors of production, able to move from the recession to the expansion area. Neither of both is true in Europe, especially in the case of new member states, reaching up to 10% growth rates. This casts doubt on the efficiency of European Monetary Union.

Freeman concludes, that "EU labour market fails on the quantity side of the market in the volume of created for those who seek work. But the US labour market fails on the price side of the market in the pay for those who work and economic security for those who do not". We have to be aware of the fact that macroeconomic indicators do not always depict the quality of life in a particular country.

2.3.1. Causes of the European unemployment

In 1973 and 1979 the whole world was hit by petrol shocks, price of oil and production costs increased. In order to sustain some profit, entrepreneurs had to decrease wages and keep employment. Conversely workers demanded higher wages after 1968 labour unrest in Europe. Furthermore productivity decreased and as a consequence unemployment rates around Europe speed up. Everything was ascribed to the petrol shocks, but as unemployment did not come down to its initial level after everything was over, economist had to find other explanation.

During recession, countries pursued institutional changes to moderate the negative impact on the population. Governments implemented employment protection for those who had work and generous unemployment benefits for those, who did not. Employment protection increased the bargaining power of the workers, increased labour costs, prolonged the unemployment duration and decreased employment rates. Generous unemployment benefits discouraged workers to look for a job. Consequently both sides of the labour market lost intention to create matches. As institutions did not reverse their measures even after the overcome of the recession (high unemployment benefits in Germany), unemployment have persisted till these days. [15]

Another reason might be the ongoing globalization which increases competition in the goods market, lowers trade barriers and altogether leads to a more turbulent environment. There is greater job destruction and job creation and therefore also a higher optimal unemployment rate to keep the labour markets in equilibrium.

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[15] To get more information read Blanchard O. (2006), "European Unemployment: the evolution of facts and ideas", *Economic Policy*, (January 2006): 5-59.

2.3.2. Ageing Europe consequences[16]

Current fertility rate of 1.4% does not provide for a sustainable level of population in the EU. Apart from the fact that Europe is dying out, there are also consequences on the labour market and social system. First of all pensions present costs for the whole society. Retirement age increases[17] and more and more people engage in private funds, to secure their future existence. The pattern of consumptions changes in favour of caring services, medical treatment or fashion and tourism for elderly people. Dissavings increase as pensioners start running down their health rather than accumulating. Of course also the vintage of human capital increases. In high management positions it is positive, as old people present lots of experience and it is not an exemption that companies keep their employees even after the retirement age for part-time as advisors. But at the same time elderly people are not that adaptable, they can not operate with new technologies, do not learn that quickly and in manual jobs become easily tired. Finally the political power of the old gets stronger and they influence decision making in their favour. It means support parties that offer high pension benefits and want to tax the young ones. It is endurable to a certain level, but after a time tax payers might decide to remove to a country with lower taxes, and there will be nobody left to pay for the old ones. Shifting the costs to the next generation, gives no solution and reform of the pension system becomes necessary.

EU tries to tackle this problem through selective immigration policy. Furthermore European Council in Stockholm (2001) agreed to increase the employment of 55-64 workers to 50% and in Barcelona (2002) to increase the average retirement age by 5 years till 2010. It is questionable whether this will have a desirable effect or just increase the unemployment rate of elderly. Without creation of further jobs, old people will be unable to compete with the young.

2.3.3. Equal opportunities on the European labour market

Equal opportunities in the EU were for the first time anchored in the foundation Treaty, saying that workers should get "equal pay for equal work". As only gender discrimination

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[16] Next two sections were inspired by prof. Nick Adnett lectures on labour and social policy, M.A. Economics of International Trade and European Integration, academic year 2005-2006
[17] Lately retirement age increased in the UK from 65 to 68 for men and from 60 to 65 fro women

was subject to hard law Amsterdam treaty made amendments in the field of race, ethnicity, religion, belief, disability, age and sexual orientation.

Discrimination can be divided on pre and post discrimination and horizontal and vertical discrimination. Pre discrimination takes place before and during an interview or recruitment process. Once the employee is in the firm, he or she can come across unequal treatment by the superior. Vertical discrimination means that an employee can not be promoted to a higher post, whereas horizontal discrimination closes certain sectors of economy for discriminated person.

There are several theories explaining discrimination. Consumer discrimination lies upon the will of a consumer not to be served by a person with a specific sign. E.g. a man can refuse to have a haircut by a homosexual. Gender discrimination can also exist because of self-fulfilling prophecies or social norms. As women assume that technical jobs are mainly occupied by men and that there is reluctance on the side of the employers to employ women, they loose self-confidence and have "depressed expectations". They do not invest in relevant education and the prejudice comes true. The same argument could be used in explaining high unemployment levels of young Muslims on the edges of the cities in France. As they saw that their parents were unable to find a job, though good education, they ceased striving for good performance as well.

It is questionable, whether age discrimination is really discrimination, as age directly relates to the workers performance. Anyway there should be a responsibility of the employer for his employee. Let us imagine a worker working for one employer for 30 years and than he will be suddenly sacked in the age of 55 with any chance to find another job. The employer should carry the social cost of his pension, e.g. in a form of some benefits for the employee.

Gender gap is worse in Southern countries, with a difference in employment of 30%. However UK has also a gender pay gap of 24%. On the other hand women are generally more satisfied with their job. Gender discrimination in Central and Eastern European countries is relatively low; however Czech Republic, Slovakia and Romania fight with ethnical discrimination of Roma.

2.4. European society models

European socio-economic model stands on three pillars: responsibility, regulation and redistribution. Responsibility covers not only responsibility to the person itself - individualism, but also responsibility to others, living in the same community or state. People try to prevent poverty, illiteracy, illnesses, unemployment and provide education, health service and elderly care. European labour markets are in general regulated with labour law, collective bargaining and social dialogue.

EU with the competition policy tries to create a fertile business environment to support emergence of new enterprises especially SMEs. Furthermore in the frame of Common Trade and Agricultural Policy regulates product markets in order to "protect" domestic producers.

Finally EU states are on average more redistributive and social than the US. High taxation is accompanied by generous transfers and social expenditures to the poor. Removing social differences on one side moderates social pressure but on the other hand discourages entrepreneurs from doing business.

There are differences in the level of implementation of the three pillars among the member states. Commonly we distinguish three groups of countries with similar characteristic in the EU: Scandinavian, Continental and Liberal model. The Scandinavian model main feature is a high level of redistribution. People pay high taxes and government provides generous safety net. There is a strong position of unions and an active employment policy. Sweden, Finland, Netherlands, Denmark and Norway belong into this group. Continental model is represented by Germany, France, Italy, Belgium and Austria. It is similar to the Scandinavian model, but it does not support social inclusion that much and do not have active employment policies. Of course there are exemptions like Austria in the group, with a low unemployment rate. Liberal model can be break down into two groups. The first group represented by the UK and Ireland is called Anglo-Saxon model. It pursues liberal approach of laissez-faire with low taxes, social benefits and decentralized trade unions. The second group embracing Greece, Portugal and Spain called Mediterranean has also low redistribution, but caused by the supportive role of family ties. Finally after the accession of the 10 new member states, transition model could be introduced as well. In order to compare employment and unemployment rates in each model see Graph 8.

2.5. Perspective of the European socio – economic model

Accession of the new member states in 2004 revealed and highlighted problems of the old Europe. Low taxes, cheap and skilled labour force, flexible labour markets and tighter social systems compete with western countries and attract more investors. Even though Gerhard Schroder wanted to blame new member states for the investors outflow from Germany, finally he had to admit that the fault is on their side. Current social system in continental EU is unsustainable and adds to national debts. High wages and employment protection discourages employers to take on workers. Motivation of the unemployed to look for a job or get on training is low. Exclusion of immigrants supports pressure in the stricken areas. Simply there must be something done in order to sustain the system and start fulfilling Lisbon strategy.

Blanchard in his survey[18] offers set of recommendations to overcome current situation:

1. Employment protection should take place on an economic rather than administrative level. Employers should internalize part of the social costs caused by unemployment.

2. Protection of workers, not jobs. "This means providing unemployment insurance, generous in level, but conditional on the willingness on the unemployed to train for and accept jobs if available".

3. Low-skilled workers should be promoted by decrease of non-wage costs and negative tax (in the UK known as the working families' tax credit). Instead of paying unemployment benefits, for those who would find a job the employer would have to pay lower social insurance and the employees would get a credit.

4. Expansionary monetary policy. Inflation in the last decade reached very low levels, what means that the actual unemployment rate is very close to the natural unemployment rate. "ECB inflationary goal of 2% is very low because of three reasons:

   a. Conventional measures of inflation are usually overestimated by 0.5-1.5%, because they do not take into account quality improvements (e.g. increase of the PCs quality)

   b. Low inflation does not allow decreasing real wages in case of recession and thus causes unemployment. Increase of price level is better accepted by the employees as a decrease in their nominal wages. It was estimated that the optimal level to capture the ups and downs of an economy is 2%.

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[18] Aiginger, Gruger (2005), Blanchard (2006)

        c. Risk of deflation, increasing real interest rates and consequently restriction of the economy". [19]

Above mentioned arguments add up an optimal inflation target of 2.5-3.5%. Another argument for an expansionary monetary policy is the fact that reforms are easier to be pursued in times of growth and prosperity.

Strict convergence inflation criterion troubles also some of the new member states willing to enter the EMU. Slovakia entering the ERM II in November 2005, is aiming to join EMU in 2009. The economy is doing well, with an external debt of 34.5 % and state deficit around 3%. The growth of almost 10% in the last quarter surprised even the most optimistic economist. In October 2006 inflation average of the three least inflationary countries was 0.77% with 1.5% fluctuation we come to 2.27% limit. Slovakia at the same time had an inflation rate of 3.1%, thus not fulfilling the inflation criterion. As the new Prime Minister Robert Fico declared, the government is definitely decided to meet the criteria in 2007. With a restrictive monetary policy of the Slovak National Bank, it is probable that the inflation will be cut down to 2%. But is this artificial adjusting of the inflation healthy for the Slovak economy?

No. Transition country with a different structure of economy and growth rates 3.5 times higher then the EU[20] needs larger monetary base to cover new transactions. As the Central bank can not exactly predict the economy growth, it should leave enough space for unexpected movement and not strangle the economy. Furthermore liberalization of administrated prices of gas, electricity, water, rent and post services contributes to the growth of inflation in transition countries. In other words convergence criteria do not take into account the heterogeneity of countries in the EU25 and hinder the growth of transition economies.

From the perspective of the European society models we could look for a remedy for the aching European model in the most successful European countries belonging to the Scandinavian model. Their labour markets offer enough flexibility for entrepreneurs to be able to follow the needs of the market, but at the same time provide a safety net for those who

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[19] Pentecost Nick, lectures on the Economics of European Integration, M.A. Economics of International Trade and European Integration, academic year 2005-2006
[20] PRAVDA, 16th November 2006, "Slovenský rast atakuje 10 percent"

can not help themselves (e.g. disabled people, long-term unemployed). The combination of the both is called "flexicurity." It is characterized by active labour market policies, high priority for new technologies and R&D, removing of regional disparities and creation of clusters.

Aiginger and Gruger[21] give some policy recommendations about the "Reformed European model".

Old model of European Welfare	The Reformed European Model
Welfare pillar	
Security in existing jobs	Promoting mobility, assistance in finding a new job
High replacement ratios	Incentives to accept new jobs (return to labour force)
Structural change in existing firms (often large firms)	Job creation in new firms, service, self employment
Comprehensive health coverage, pensions, education	Coverage dependent on personal obligations
Regulation of labour & product markets	Flexibility as a strategy for firms and as a right for employees
Focus on stable, full-time job	Part-time work as individual choice (softened by some rules)
Early retirements	Encouraging employment for elderly workface

Policy pillar	
Focus on (price) stability	Focus on growth and new technologies
Asymmetric fiscal policy (deficits)	Fiscal prudence (but flexible in crisis)
Incentives for physical investment	Research, education, and new technologies are the basis
Subsidies for ailing firms (public ownership)	Industrial areas, university nexus
Industrial policy for large firms	Start ups, venture capital, services
Local champions, permissive competition	Enforce current strengths (cluster and regional policy) and competition

Table 2 – Old Model versus Reformed European Model, Source: Aiginger, Gruger (2005)

To sum up "the reformed European model has three elements: social and environmental responsibility, flexibility and technological promotion"[22]. Active employment policy should

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[21] Aiginger, Gruger (2005)
[22] Aiginger, Gruger (2005)

"Make work pay" as lately adopted in Slovakia through decrease of replacement rate[23]. High taxes should be in line with expenditures, not causing an external debt. Support part time and temporary work as an individual decision of a life style. Focus on services and new technologies, rather then obsolete productions (Philips in Hranice na Moravě). FDI could be a useful tool in implementing the reformed European model. MNEs put pressure on the liberalization of the labour market; they create new jobs, especially through greenfield investment. Furthermore they could bring new technologies and increase labour productivity. Everything depends on the type and allocation of FDI.

2.6. Labour markets in the transition countries

After the fall of the iron curtain transition economies faced the same set of problems. Output fall at the beginning of 90s was followed by opening up of the economies and inflows of FDI. Because all of these states were previously more or less centrally planned transformation brought it pros and cons. People who understood the change and coming consequences, could come easily to capital and start doing their business. Also young people not deformed by the socialist doctrine adapted very quickly to the new system. However there were also many people, who lost their jobs and the certainty to get a job. They were not used to the competition on the labour and product market. Giant national enterprises, employing thousands of people went bankrupt or were taken over by foreign capital and went through a restructuring, accompanied by a wave of lay offs. Former Soviet satellites were dependent on the Soviet Union which dictated what had to be produce. All the transition economies had to go through the phase of reorientation to the west and restructuring of the economy, making lots of the people's skills obsolete. Apart from that a tendency to shadow economy was inherited from the former regime.

There are three reasons for the essential unemployment existence in the transformation from centrally planned to a market economy. Firstly bargaining power of the socialist strong unions is moderated and gives space to the emergence of entrepreneurs. Secondly as the artificially created positions vanish, productivity and thus real income increase. Finally it is important in the shift from the state to the private employment. Matching or flow approach[24] explains the creation of efficient combinations between vacancies and available workers. If an

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[23] Ratio of income in unemployment and income in employment
24 Burda, Michael C, 1992, "Unemployment, Labour Market Institutions and Structural Change in Eastern Europe," CEPR Discussion Papers 746, C.E.P.R. Discussion Papers.

unemployed finds a vacancy so called match is created. The matching function positively depends on the existing vacancies but also available workers. If there is no unemployment there are no workers to be matched with and thus transformation to private employment is impossible. The question at the beginning of the transition was how to regulate the release of workers in the state enterprises in order to sustain low unemployment rates. The solution was seen in neither shock nor go slow treatment, selective closing of big ineffective enterprises, job matching, information exchange and active promotion of entrepreneurial activity.

Another factor that influences the matching function is the gross expenditure for firm and net revenue for worker. Both of the characteristics are combined in an indicator called the tax wedge[25]. If we take an average graduate salary in the Big four companies of 30 000 CZK, net wage is 22 000 CZK but the final cost for employer is 40 000 CZK[26], so arriving at an estimate of 41% tax wedge in the Czech Republic (Similar in Slovakia). Comparing with other European countries we still have an advantage relative to the Continental model. Nevertheless also here could be the way, how to support employment, especially in decreasing the final cost for the employer.
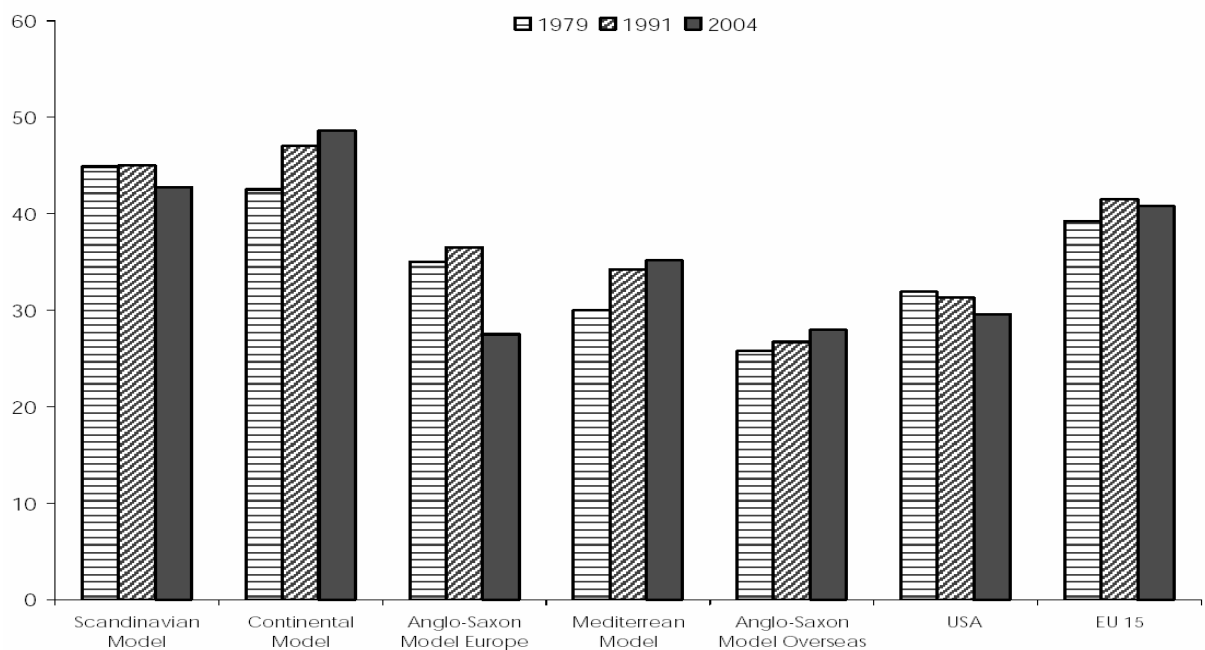
Graph 3 – Tax wedge in European models, Aiginger, Gruger (2005)

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[25] $\text{Tax wedge} = \dfrac{\text{Gross expenditure for firm - Net wage}}{\text{Gross expenditure for firm}}$

[26] Only few employees really know, how much they really cost for an employer

Although situation differs[27] in each particular country, we can observe some common problems on the labour market in the transition economies:

1. low-employment rates
2. high unemployment rates, especially long-term unemployment
3. regional disparities
4. shadow economy

2.6.1. Employment

In order to compare development of the labour market in transition countries and old Europe let us take a representative sample of V4 and old member states unweighted average. Graph 6 shows levels of employment in different age groups. Looking at the total employment New Member states are lying behind the old Europe by 7 %. However Czech Republic is doing well and has lower employment only in the 15 to 24 group. This is characteristic for all transition countries. Significant decrease of the youth employment might be caused by two factors. Firstly better economic conditions allowed more students to study on a university, without working at the same time. Secondly many young people went working abroad, sometimes also without working permission. Increase in the elderly group in the Czech Republic is due to the growing retirement age. In 1996 retirement age was set on 60 years for men and 57 for women without a child. Every year 2 months for men and 4 months from women are adder to the retirement age, coming to 63 fro both in 2012. In other countries retirement age increased as well. In Slovakia new pension reform also allows pensioners to draw pension and work at the same time.

Countries	Total		Employment rate (15 to 24 years)		Employment rate (55 to 64 years)	
	1998	2005	1998	2005	1998	2005
European Union 15	61,4	65,2	38,2	39,8	36,6	44,1
New Member States	60	56,9	32,5	24,2	30,9	33,8
Czech Republic	67,3	64,8	41,5	27,5	37,1	44,5
Hungary	53,7	56,9	33,9	21,8	17,3	33
Poland	59	52,8	28,5	22,5	32,1	27,2
Slovakia	60,6	57,7	35	25,6	22,8	30,3

Table 3 – Employment rates in the EU15 and New Member States, 1998 and 2005, Source: Eurostat

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[27] Czech Republic overtook as a first New Member country state Portugal

2.6.2. Unemployment

Second problem is called unemployment especially long-term unemployment. Short term unemployment does not have to be always negative. It can occur when switching the employer or preparation for another job in case of restructuring. It is said that the probability to find a job in the first for months for shortly unemployed is 1:4. On the other hand probability for unemployed longer than 1 year the probability is only 1:10. There is research about so called "stigmatization" of long term unemployed or who unwillingly left their jobs. Potential employer looking on the CV realising that the applicant was laid off is reluctant to employ him, because he suspects him to be problematic. Workers who did not work longer than 1 year are supposed to loose their working habits, discipline and are not suitable candidates. Apart from that after 2 months unsuccessfully looking for a job applicants start to feel discouraged and after one year reconcile with their faith being useless in society. Other problems with alcohol and mental problems come as aftermath. Therefore low minimum wage and unemployment benefits are important to enable the creation of low-paid jobs. Because low – paid job is better then high – paid unemployment.

Case of Slovak Republic illustrates the problem of long – term unemployment well. Harmonized unemployment level reached its minimum record in the second quarter 2006 of 13.5 % comparing with 16.2 % in the previous year. Reforms yielded the results and economy starts to create new jobs. But can we expect this 3 percentage points decline also in the next years? The answer is no. As the economy expands the best applicants with qualification, experience, responsibility are taken from the labour office. But are the entrepreneurs willing to employ long-term unemployed with basic education and no skills. Though high unemployment of 10-20% in eastern Slovakia it is an enormous problem to find usable hand workers like builders, welders or just responsible workers who would not steal from the employer. With a long – term unemployment rate of 12%, Slovakia will never achieve an unemployment rate of 7% than in the Czech Republic. Slovakia comes to an ironical situation, where despite high unemployment rate; there will be shortage of workers. Coming Bulgaria and Romania accession could help improve situation in Slovakia. Other solution could be seen in so called "churning" or activation policies of training and conditioning of social benefits.

2.6.3. Regional disparities

Another important problem is regional disparities. Equal distribution of the economic activity and health is essential for the overall social welfare and casts other light on other macroeconomic indicators. E.g. Slovakia with its growth of 6,5 % in 2006 belongs to the mostly growing economies in the EU. At the same time growth is accompanied by increase of wage differentials not only geographically but also according to the profession. East Slovakia is the fourth among 252 regions in the EU with the highest unemployment rate of 23,1 %[28]. Only three French former colonies o Reunion, Guadeloupe and Guyana are before. Comparing with 5,3 % unemployment rate in Bratislava the gaps are tremendous. Positive is that large FDI e.g. KIA[29] in Žilina help to decrease the differences.

In order to moderate different economic levels around Europe EU uses about 30 % of its budget for structural and cohesion funds. Regional differences on a NUTS 3 level are smaller in EU10 than in the EU15. This result is mainly caused by a higher number of states in EU15 and also heterogeneity. In the EU 15 we can find developed states like UK and Scandinavian countries, but also Spain and Portugal, which are on a similar level to EU10. Also within the states we can spot significant differences between South and North of Italy, East and West in Germany or Flemish and Walloon part in Belgium. On the contrary transition economies are more homogeneous with the main difference in V4 and Baltic states. Increasing trend of dispersion in transition economies is due to the inflow of FDI, which usually concentrate in the capitals and others economic centres.

Well pursued investment incentives should lead to a distribution of FDI into less developed regions, suffering high unemployment. As we might see latter promotion agencies aim to create jobs in regions with unemployment rate of 50% higher over the average, but even though disparities in Czech, Slovak Republic and average of new member states increased in the last 5 years. This could be accounted to an inappropriate incentives policy, but also to the investor's priorities, to invest in the capitals, with well developed infrastructure, enough skilled labour and potential demand. On the contrary EU15 succeeded in decreasing differences among regions, though varying from state to state.

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[28] PRAVDA, "Východ Slovenska zostáva perifériou únie", 16.11.2006
[29] Currently employing 1600 employees, what is supposed to double by 2010, decreased unemployment to 7,5 % in Žilina region

Dispersion of unemployment
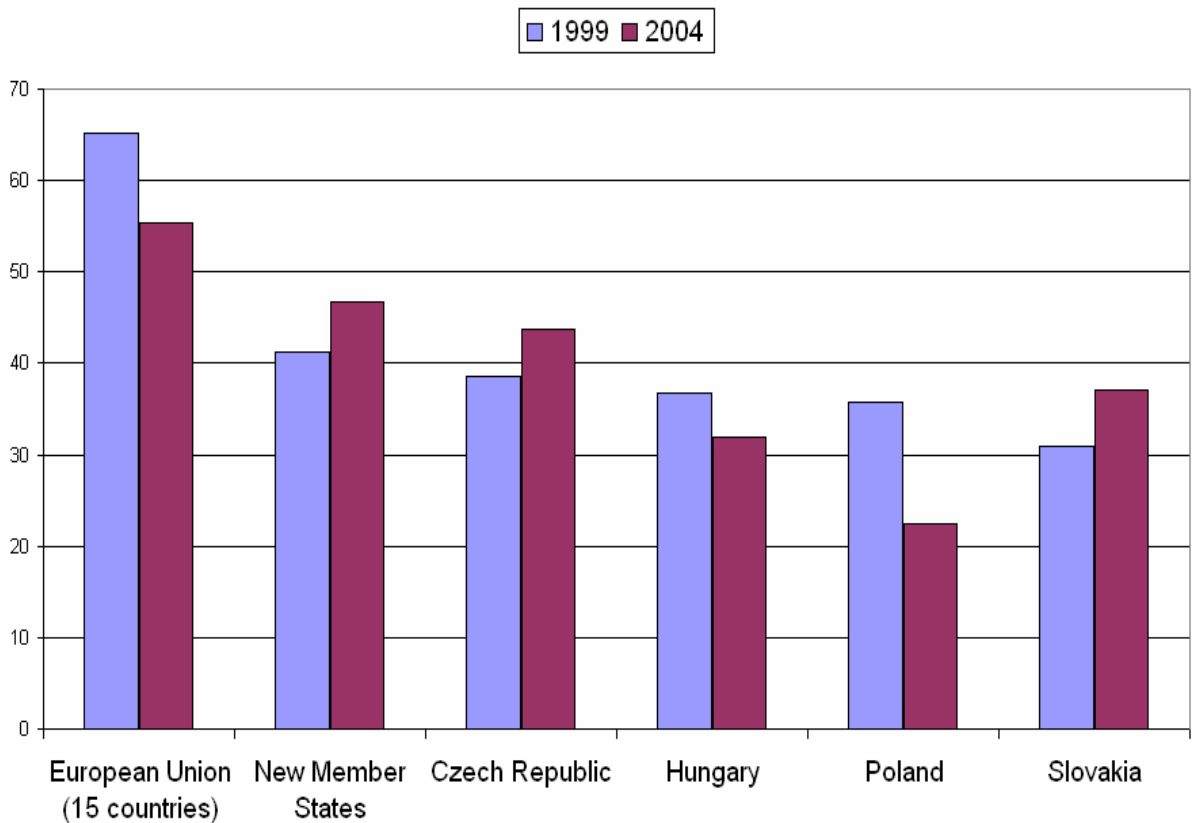
Graph 4 – Dispersion of regional (NUTS levels 2 and 3) unemployment rates [30], Source: Eurostat

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[30] **Dispersion of regional (NUTS levels 2 and 3) unemployment rates**, expressed by the coefficient of variation of regional unemployment rates, is the square root of the weighted variance of regional (NUTS level 2, NUTS level 3 respectively) unemployment rates, divided by the unemployment rate at national (European, respectively) level. It gives a measure of the regional (NUTS level 2, NUTS level 3 respectively) spread of unemployment rates.

The weighted variance of unemployment rates is defined as:

$$Var\left(\frac{x_i}{y_i}\right) = \sum_i \left(\left[\frac{x_i}{y_i} - \frac{\bar{x}}{\bar{y}}\right]^2 \cdot \frac{y_i}{\sum_i y_i} \right)$$

(*)

where x_i represents unemployed persons in region i, y_i economically active population in region i, $\bar{x}$ and $\bar{y}$ represent the averages of x_i and y_i, and $\overline{x/y}$ the unemployment rate at national (European, respectively) level (i.e. $\sum_i x_i / \sum_i y_i$). The coefficient of variation of unemployment rates is the square root of the variance stated above (*) divided by the unemployment rate at national (European, respectively) level $\sum_i x_i / \sum_i y_i$.

2.6.4. Shadow economy

Shadow economy involves: "...all currently unregistered economic activities which contribute to the officially calculated (or observed) Gross National Product.", (Schneider F., 2003). The difference between shadow and black economy is that shadow economy covers otherwise legal transactions with the exemption that they shirk on taxes and social insurance, whereas black economy concerns drugs, prostitution an other organized crime.

Transition economies inherited a long tradition of informal economy. If somebody decides to work with or without a contract, he always compares the revenue with potential risk to be caught. Consequently if the tax wedge is too high, worker decides to work without contract. This speaks for low taxes and social insurance. It is known that after the introduction of flat tax Russia, actually the taxes revenues increased, because the risk comparing with the potential revenue became too high.

Disadvantages of shadow economy include loss of taxes, bad treatment of the worker and imperfections on the product market, as firms employing without contract gain certain advantage. Scale of the shadow economy differs around Europe. From the transition economies Czech Republic has the lowest rate of 12 % followed by Slovakia, Poland and Hungary in 1999. After the EU accession the situation improved, but still the main source of immigrants from Ukraine stays open.
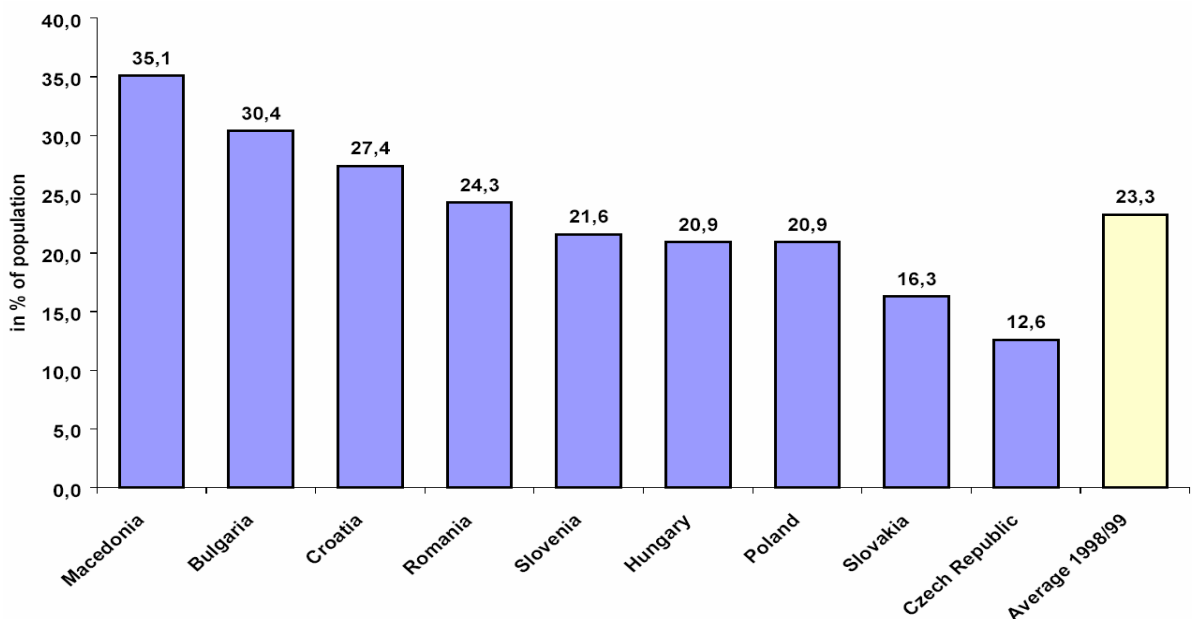
Graph 5- Shadow Economy Labor Force in % of (Working Age) Population in Central and Eastern Europe, 1998/1999, Source: Schneider F. (2003)

3. Investment Incentives

Investment incentives are used to attract and direct the flows of FDI:

1. geographically to the least developed regions
2. according to the selected sectors of economy, e.g. technological centres
3. to achieve a certain goal, e.g. increase the employment

The crucial point of investment incentives is the ability to distinguish between the investors who are willing to come even without the incentives and those who would otherwise invest in another country. Giving incentives to the former one is only useless wasting of public money, eagerly abused by the investors. Incentives can be distinguish on tax and non-tax incentives and whether they apply to anybody (general) or only to a selected group of investors (specific).

Tax incentives:

1. Low corporate tax -
2. Tax holidays or tax relief
3. Allowance on VAT
4. Accelerated depreciation
5. No tax on real estates

Non-tax incentives:

1. Tariffs
2. Support of New Job Creation
3. Contribution to requalification and training
4. Advantaged loans
5. Support of Technology Centres and Centres of Business Support Services
6. Grants for buying capital(land, buildings, machinery)

Apart from that, some countries like China and India create so called Special Economic Zones (SEZ), which are areas with a specific regime of taxation and trade barriers usually with prepared infrastructure. The actual incentive mix varies from country to country determined by the government objectives and competition on the market.

At the very beginning I would like to comment a common prejudice that incentives discriminate domestic firms in favour of big foreign corporations. Literally this is not true, as in most of the incentives scheme the condition of nationality does not play any role. What matters is the size and effect of the investment, i.e. how much will be reinvested and how many vacancies will be created. The lack of capital accumulation in transition economies causes, that the incentives are usually drawn by MNEs. But if there would be a Czech investor able to reinvest the minimum limit for granting incentives, he would have the same chance to be successful. One could argue, that at the end still domestic firms are disadvantaged, but that just mirrors current situation in transition economies. The question could be set in a different manner. Are the MNEs or SMEs the bearer of the employment and economic growth? On one hand SME having a lower productivity employ more people, but on the other big corporations are those, who increase the productivity and enjoy economies of scale. In the world of globalization and open markets SME are not always able to compete. A good example of the incentives for SME is Eastern Germany. Most of the programs are constructed for start-ups of crafts and small family businesses trying to help build up their own existence.

Impacts of investment incentives are a very controversial topic. Governments setting up investment promotion agencies try to persuade the public about the necessity of FDI in the economy and rightness of their tools. On the other side liberal economists[31] see it as a serious market disturbance, disadvantaging groups not involved. The following text gives an overview of the pros and cons emerging from investment incentives.

The main advantage of investment incentives is the regulation of the FDI flows into the country. Of course not all investments are influenced, but it can add to the fulfilment of country's objective. Investment can be redirected to regions with the highest unemployment and moderate regional disparities. Or they can selectively attract sectors with high potential (Technology Centres and Centres of Business Support Services). Support of job creation and training improve the state of human capital in a country.

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[31] Sorsa Piritta, 2003, "Special investment incentives may come at a high cost to the economy", Capital, issue No.9, 8-14 March, 2003

Conversely disadvantages are not very well known among common people[32]. Apart from the public expenditure, which could be used more effectively they give space to corruption, bureaucracy and market disturbances. General incentives are more preferable than the specific ones as they improve the position of everybody and do not disturb the free market and effective allocation. Each exemption gives opportunity to its abuse. This could be well illustrated on the tax exemptions, where the final tax paid depends not on the profit but on the creativity of the tax advisor.

The least recommended incentives are tax holidays and tax relief. Firstly they lead to erosion of the tax base. Secondly they give chance to corruption and abuses. Entrepreneurs not involved in the incentive scheme are willing to shift their profits from their company to the exempted ones. Finally they motivate the firms to a short-term investment. Investors calculate the incentives into their business plans and once the tax holidays are over, they decide to move to another country offering better incentives.

Incentive packages for investors became a common standard in the transition economies. Countries fighting for the investment often bid up levels, which would not be otherwise necessary. Because of the competition between the countries they give the investor the possibility to abuse the scheme. Cooperation at least in the V4 could improve the positions of the countries.

Instead of creating exemptions in the form of special incentives, general improvement of business environment and decrease of taxes for everyone is a better way how to attract investment without any negative externalities. The most recommended incentives are lowering of tax burden, accelerated depreciation and tax credits, allowing decreasing the taxable income base by capital costs.

To sum up incentives should be transparent, predictable and equal.

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[32] The author was very surprised as he found out, that the overall cost of one job created in KIA Zilina was SK 2 mil.

3.1. Investment promotion in the Czech Republic

Investment promotion in the Czech Republic is provided by CzechInvest, the Investment and Business Development Agency with the objective"…to advise and support existing and new entrepreneurs and foreign investors in the Czech Republic."[33]

The scheme is divided on:

1. Manufacturing
2. Technology centres and business support services (services with high added value, demanding skilled labour, e.g. call centres)
3. Support of new job creation

Tools used in manufacturing:
"CORPORATE TAX RELIEF

- Full tax relief for 10 years (newly established companies)
- Partial tax relief for 10 years (expanding companies)

JOB-CREATION GRANTS

- 100,000 or 200,000 CZK per employee depending on the district unemployment

TRAINING AND RE-TRAINING GRANTS

- 35% of the costs of the training in the regions where the unemployment rate is higher than the country's average"

Tools used in the Technology centres and business support services
"SUBSIDY TO BUSINESS ACTIVITY

- Up to 40% (60% in the case of small and 50% in case of medium enterprises) of the eligible costs, which are: Investment into tangible and intangible fixed assets purchased within the first 5 years or two-year salaries of employees employed within the first 3 years

SUBSIDY FOR TRAINING AND RE-TRAINING

- Subsidy up to 35% of the specific training costs and 60% of the general training costs. Maximum subsidy of 100,000 CZK or 150,000 CZK for one job position depending on the number of job positions created."

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[33]Following investment scheme is cited from www.czechinvest.cz

Every half a year Czech Invest issues regional map of max public support (mostly 40 %) and a map where newly created jobs program can be applied. In the next part we will concentrate only on the job creation program as it is directly connected to the topic

3.2. The Job Creation Support Program for regions worst affected by unemployment

The program concerns support for the creation of new jobs and training and retraining of employees. There are several conditions to be met, in order to qualify for the incentive:

1. "Foundation or expansion of existing production
2. Allocation in a region with an unemployment 50 % over the average
3. Minimum of investment of CZK 10 Million in tangible and intangible goods, CZK 5 Million from own capital
4. Creation of at least 10 new jobs
5. Environmentally friendly
6. The incentive recipient has to be the first owner of the tangible fixed assets in the Czech Republic, except in the case of real estate
7. Retain the investment and the number of newly created jobs for at least 3 years after the time the conditions are fulfilled for the provision of support" [34]

The last two conditions aim to motivate investors to long-term investments and to build ties with local companies. Whether period of 3 years is enough is questionable. If the maximum public support is 40% of all relevant costs, three years are not enough to bring their fruits. The first ownership of the fixed assets guarantees that the capital is not obsolete and appointed to run-out in the Czech Republic, as in the case of Philips.

As we will see in the empirical part impact of FDI on the employment is not straightforward. Increase of productivity decreases the demand for labour force and displacement effect reduces employment in the domestic firms. The following text tries to analyse the effects of the Job Creation Support Program on the unemployment level in two traditionally high unemployment regions in the Czech Republic: Ústecký and Moravskoslezský region.

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[34] www.czechinvest.org, Summary_Job Creation Programme_Czech Rep..pdf

Czech Republic is divided into 14 NUTS 3 and 8 NUTS 2 regions. Regional disparities are well illustrated in table 4. The most affected are the border regions of Northwest, Northeast and Southern Moravia. Going to the centre the situation improves, with the highest economic level in Prague. Czech Republic thus has a traditional distribution of economic activity on the centre and periphery.

There are several reasons for the differences among regions. Low economic level in the Ústecký and Moravskoslezský region are firstly caused by the stagnation of the main production sectors of mining and quarrying and unfinished restructuring of the heavy industry. Second reason is the inconvenient structure of the population. Age of the applicants is the lowest in the Czech Republic. Consequently achieved education is on a very low level. Two fifths of the applicants in the Northwest have finished only a basic school and only 1.5 % finished university. In comparison with the republic average of 4 % and 8 % in Prague the region can not compete in skilled and high-skilled FDI. Finally population is scattered into small towns and villages that makes commuting to work more difficult.
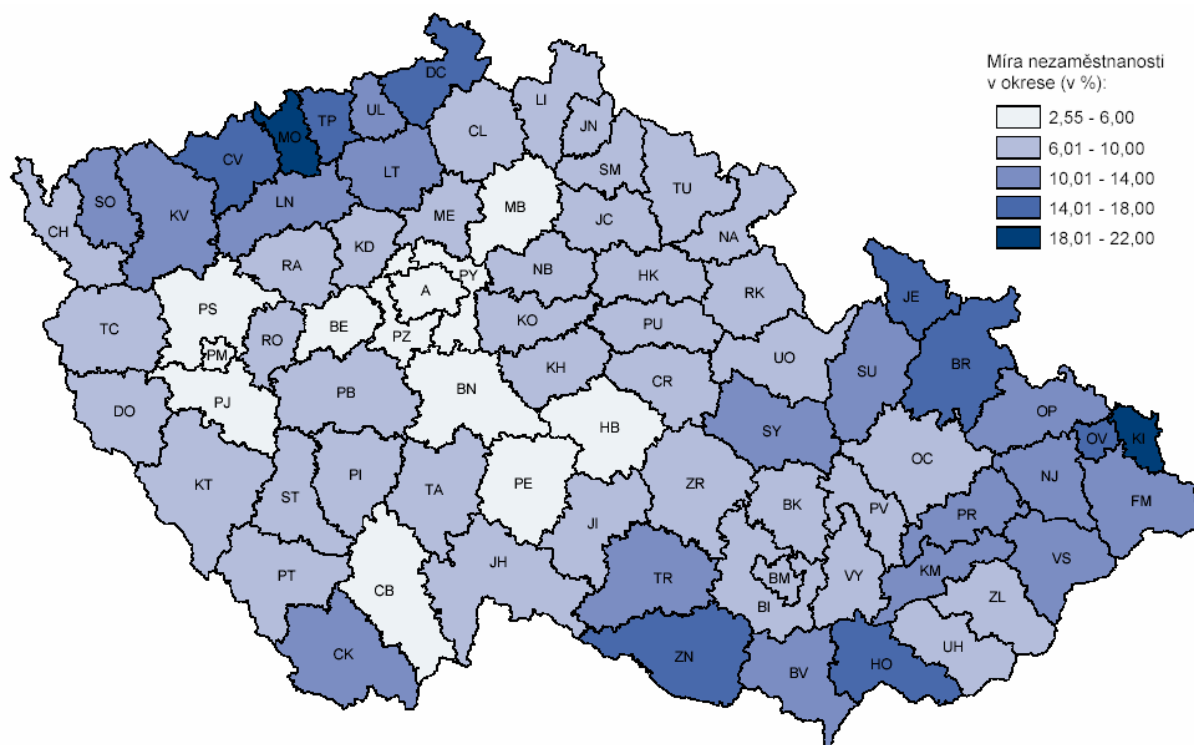

Table 4- Map of unemployment rates in districts (on 31.12.2005), Source: CzechInvest

The distribution of investment and jobs creation of the companies drawing incentives in 1993 – 2006 was successfully redirected to regions suffering the highest unemployment. Data form Table 5 show that apart from the central Bohemia where more than 22 thousand of vacancies were created, the most investment went to Ústecký, Moravskoslezský and Jihomoravský region. This can be appointed as a success of the CzechInvest activity in the last decade. However we must be cautious about the conclusion. Investments were also attracted by low labour cost and available work force in the less developed regions. Furthermore the table does not take into account other investment not involved in the incentive scheme.

1993 - 30. 6. 2006	Companies	Invesment (mil. USD)	Newly created job
Praha	38	597	9,008
Jihočeský	24	588	5,649
Jihomoravský	*100*	*1,423*	*18,144*
Karlovarský	10	256	1,070
Kraj Vysočina	30	1,070	7,552
Královéhradecký	29	717	8,237
Liberecký	27	660	4,181
Moravskoslezský	*91*	*2,589*	*17,027*
Olomoucký	39	792	8,930
Pardubický	24	1,316	8,478
Plzeňský	41	776	8,199
Středočeský	*95*	*3,497*	*22,412*
Ústecký	*114*	*2,921*	*19,127*
Zlínský	26	545	3,451
Total	**687**	**17,747**	**141,464**

Table 5 – Number of companies, size of investment and newly created jobs in companies which draw incentives in the Czech Republic by region in the period 1993-2006, Source: CzechInvest

More comprehensive picture about the impact of the program can be achieved by looking on the development of unemployment in the selected districts in the two regions (see .graph 11 and 12)

Ústecký region is traditionally number one in the unemployment from 1995. Districts of Most and Louny are swapping in the highest unemployment rate in the Czech Republic. At the beginning of 90' heavy industry centres like Most achieved to keep their unemployment

levels low, because of the inertial effects of big enterprises. However continuing restructuring brought massive lay offs. New technologies made labour force obsolete or to specific to use in the particular region. On the other hand agricultural cooperatives in Louny went bankrupt right at the beginning of transformation and were not offset by other industries. Following graph shows that the unemployment in Ústecký region went through similar development as the whole Czech Republic, however with even worse downturns. Unemployment in all districts decreased in 1992 because of the decrease of unemployment donations and slightly in 2001, but from 2003 it is on the old path of growing by 2 % a year. Development in Moravskoslezský region was similar. Agriculture was enrooted in the districts of Bruntál, Frýdek-Místek and Opava. Quarterly data show the seasonality.

But is the fault always on the demand side of the labour market to generate new jobs? For example in the district of Karviná with a long-term unemployment rate of 18 % and 30 applicants waiting for one vacancy, there is sometimes a problem to find a worker. Czech citizens are unwilling to work for relatively low wages in menial professions. Every fifth employee in the mining and agriculture industry is a foreigner, usually coming from Ukraine.

Five years ago there were queues standing for jobs in TESCO for CZK 50 an hour. Nowadays big chains are having problems in recruiting students for CZK 50 an hour. Czech Republic follows the path of Western European countries, where manual jobs like cleaners, kitchen porters, sewers or cashiers are refused by the domestic inhabitants and made by foreigners from East Europe. Good craftsmen speaking at least a basic English moved to England earning five times more than at home. President of the company Daikin producing air conditioning Yoshiaki Bando, says:" Domestic labour market is already exhausted. Our demand always exceeds supply. The ratio of Czech and foreigners in our company is 7 to 3. Zdeněk Černý, boss of the company Otass, recruiting the Slovaks for Škoda Auto is even stricter:"It is a national dislike to work." [35]

We can summarize that the unemployment in the Ústecký and Moravskoslezský region followed the path of the overall economy, determined by transformation and business cycle rather then incentives influence. We can theorise, whether the situation without the incentives would be even worse, but this is a matter of a more sophisticated model. On the supply side of

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[35] DNES, 27.11.2006, „Práce, která Čechům nevoní" Economic sheet, page B1,

the labour market the impact of Job Creation Support Program is constricted by the displacement and competition effect. On the supply side inconvenient structure of the inhabitants and too high claims of the applicants is a problem.

The first step in removing the regional disparities should be the increase of education in less-developed regions. Forming schools for training in crafts, currently demanded on the market instead of incentives could be the key. At the end of the day investor will prefer an area with enough skilled labour force specific for his production, to CZK 100 000 per job. Furthermore extension of European Transport Networks to these regions would make it easier both for the investor and commuters. Finally decrease and conditionality of unemployment benefits would help increase the motivation of unemployed to accept a job.

4. Effects of FDI on the labour market in the Czech industry

This paper aims to answer following hypothesis and thus describe principles of the labour market in the Czech industry.

H1: MNEs increase domestic wage.

H2: MNEs increase domestic productivity through spillovers

H3: Foreign employment reduces wage differential between domestic and foreign wages

H4: MNEs make domestic wages grow faster than domestic productivity and thus cause decline of employment.

H5: MNEs increase domestic productivity through domestic capital/labour substitution

H6: MNEs increase total employment

H7: MNEs decrease domestic employment through displacement effect

4.1. Data

Czech Statistical Office (CZSO) provides annual panel data on the Czech manufacturing industry plus mining and EGW (Electricity, gas and water supply). The whole set is divided into 14 sectors according to NACE classification and cover years 1997 – 2004 (Table 1). Altogether we come to 112 observations, what is enough to run reasonable regression.

Some of the variables distinguish between domestic and foreign firms what offers a possibility to analyze the impacts of a foreign entry on a domestic market. The criterion for the classification for FIE is a 50% threshold foreign majority share. In 1998 and 1999 foreign

investors with a foreign share of only 10 – 50 % made for 47% of foreign equity volume and 30% of number of foreign companies[36]. According to this information a big chunk of usually acknowledged FDI is avoided. Because of the reasons of international comparison it might be better to have the data with 10% threshold. But for the purpose of this paper, in which the impact on production processes, management and spillovers are important, these data are suitable.

Aggregate variables include non financial enterprises and natural person regardless to their size or ownership mode. MNEs involve only non financial enterprises without natural person in a foreign ownership.

There is a problem of inconsistency in the methodology of compilation of the data. From 2001 the data have been collected from administrative sources. Because of the reluctance of CZSO workers, it was not possible to find out more about the change in methodology and the impact on inconsistency. However the test of robustness[37] shows that the change did not significantly bias the results.

No.	Index	Abbreviation	Sector
1	C	Mining	Mining and quarrying
2	DA	Food	Manufacture of food products; beverages and tobacco
3	DB	Textiles	Manufacture of textiles and textile products
4	DC	Leather	Manufacture of leather and leather products
5	DD	Wood	Manufacture of wood and wood products
6	DE	Paper	Manufacture of pulp, paper and paper products; publishing and printing
7	DG	Chemical	Manufacture of chemicals, chemical products
8	DH	Rubber	Manufacture of rubber and plastic products
9	DI	Nonmetal	Manufacture of other non-metallic mineral products
10	DJ	Metal	Manufacture of basic metals and fabricated metal prod.
11	DK	Machinery	Manufacture of machinery and equipment
12	DL	Electric	Manufacture of electrical and optical equipment
13	DN	Special	Manufacturing not mentioned above
14	E	EGW	Electricity, gas and water supply

Table 1- NACE double digit classification of manufacturing industry, Source: CZSO

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[36] OECD, 2001, "OECD Reviews of Foreign Direct Investment -Czech Republic"
[37] Dividing the whole sample on two groups (1997-2000 and 2001-2004) gives the same results as for the whole sample

4.2. Description of variables

Most of the variables were at their disposal in a separate form and are denoted *f* as foreign, *d* as domestic and nothing for total at the end of each variable name (e.g. empf = employment in MNEs). *D* at the beginning of a variable name denotes differential.

Following abbreviations were used in the regressions:

EMP	Number of employees[38]
PAY	Annual wage=wages and salaries, excl. other personnel costs per year / EMP
VA	Book value added
PRO	Productivity = VA/EMP
SALE	Turnover
SALEDE	Average sales in sector = Domestic sales/number of domestic enterprises
CAPITAL	Tangible fixed assets (excl. land and subsoil assets)
ACAPITAL	Acquisition of tangible fixed assets per year
ENTERPRISES	Number of enterprises
RND	Total Intramural Business Enterprise Expenditure on R&D
KL	Capital-labour ratio = CAPITAL/ EMP
EMPVA	how much labour is needed for production of one unit of value added = EMP/ VA
CAPITALVA	how much capital is needed for production of one unit of value added = CAPITAL/ VA
PENETRATION	Penetration ratio= SALEF/ SALE
TIME	A time series ranging from 1 to 8 for each year

Table 6 – Abbreviations used in the regression analysis

Capital intangible fixed assets were also at disposal, but because of the problems with measuring they are not included. It is difficult to evaluate e.g. value of a brand, know-how or software. There are certain methods in accounting[39], which try to estimate it, but they are aware of the variance and incomparability among the firms.

Value added per employee is not a perfect proxy for expressing productivity because it includes also profit, but no better variable was at disposal. The capital-labour ratio is an

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[38] Employees are defined as all categories of permanent, seasonal or temporary employees, who have a contract and get a wage for their job. I.e include manual workers, as well as managers and other white collars

[39] Methods used for evaluating a brand:
1. evaluation based on costs related to the building of a brand
2. evaluation based on market (comparing the value of similar brands)
3. omission of the license fee
4. method of economic utility (is calculated as a sum of discounted future revenues due to the brand)

indicator of the factor intensity of production. The penetration ratio measures presence of MNEs in a sector. The higher the penetration the more foreign firms are attracted be certain sector.

5. Comparison of foreign and domestic enterprises

The panel data have two dimensions, in this case time and sectors. Before we start, we have to keep in mind, that each industry has different characteristics and could change differently according to the overall trend. We also have to pay attention to the definition of foreign and domestic enterprises in the methodology of the data. Companies with foreign share more than 50% include in this case only enterprises, not natural person who usually cannot enjoy economies of scale. They have less employees, lower VA and productivity. Because of missing explicit data for domestic firms, they are calculated as a difference of total and foreign. This worsens the comparability of the foreign and domestic data, as the foreign ones include only enterprises and the domestic include also foreign and domestic natural persons.

In general FDI inflows had an upward trend in the last decade, pulled mainly by Machinery and equipment (see graph 12). In 1997 and 1998 inflows were curbed by the ongoing recession. In the following period there are growing sectors (Machinery, Metals, EGW), which offset other less attractive sectors (e.g. Textiles, Mining, Chemical). FDI were attracted by low labour costs in contrast with western European countries, skilled labour force and convenient income tax (24% in 2006).[40]

Czech industry was doing well since the recession in 1998. The continuous growth of production was pulled by three sectors: metal, electrical and optical equipment and car industry (Toyota/PSA, Volkswagen, and Hyundai). All three industries experienced double digit rates of growth. In electrical and optical industry labour productivity rose by 23.7%, whereas wage costs grew only by 13% in the first half of 2004. In the whole manufacturing industry the productivity rose by 13.1%, whereas the costs only by 4.8%.[41] Despite the overall decrease of employment in industry, employment rose in these three sectors.

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[40] Dufek (2004), hourly labour cost was 8 times lower then in Germany, 7 times lower than in Austria and 6.4 times lower then in EU-15 in 2004
[41] Dufek (2004)

The Recent trend in transition economies shows an orientation on car industry. Vast greenfield investments create a lot of jobs in the high unemployment areas and help to improve regional disparities. On the other hand, strong concentration only in one sector makes the whole industry more volatile. Different industries have different business cycles and as a whole level up ups and downs of each sector.

Furthermore, with increasing living standards in Central European countries investors will start reallocating the production in other less developed countries (e.g. Romania, Bulgaria or Ukraine). In the time of growth economies should try to attract sectors with a higher value added and skilled labour, in order to keep the competitive advantage in the future.[42]

On the other side, they were stagnating industries: leather, mining, textile and food. Each country has its own production function. The car industry presents a lucrative sector for new member states, but not anymore for example for Germany or UK. A significant part of this industry has been already reallocated to transition or developing countries, where the cars are produced at lower costs. The same matters for Czech Republic. Czech textile can not compete with Chinese imports without European tariffs and quotas, which are slowly removed under the pressure of WTO. The decrease of employment in these industries releases labour force to other sectors with higher productivity.

Let us start with a set of short time series, showing the trends on the labour market in the Czech industry in the years 1998-2004. For each year, the value is calculated as a sum through all sectors. Missing values in Mining and EGW prevent calculation for year 1997.

The whole production in current prices almost doubled within those 7 years (see graph 6 in the enclosure). The continuous growth in the whole industry was pulled by strong foreign enterprises. Although the domestic employment fell constantly, because of an increase in productivity, the level of domestic sales remains the same through the whole period.

The overall employment fell by 200 thousand workers within 1998-2004, mainly due the domestic sector. There is an obvious trend of substitution of domestic to foreign employment

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[42] The growth potential of Slovakia is estimated till 2010. After this date Slovakia will have to find other ways of attracting FDIs, then a cheap labour force.

on graph 7. This goes in line with the increasing flows of FDI into the Czech industry and also supports the hypothesis about displacement effect.

Two following graphs 7 and 8 confirm the thesis about higher wages and productivity in MNEs. Nominal wages and productivity enjoyed sustainable growth. Domestic firms mimic foreign both in the growth of wage and productivity. This gives the first intuition about rejecting hypothesis 4 that assumes higher growth of wages than productivity and thus decreases employment.

Another point of view is that of sector perspective. As mentioned above sectors may differ in various features. There are heavy industries (EGW, Chemical, Mining) and more labour-intensive industries (Leather, Textiles, Food, Electrical and optical equipment, See graph 9) Some sectors attract more FDI[43], have higher productivity and expenditures on R&D or are more concentrated than others. All this characteristics predetermine firms to different patterns of behaviour.

At first let us have a look on the determinants of labour market[44] first. As for sale, despite increasing inflows of FDI in the last years, MNEs still did not dominate domestic market. The only two exemptions are electrical and optical equipment where such big investments as Philips, Matsushita Panasonic and lately IPS Alpha and Hitachi took over the shares and rubber with Continental AG, Knauf Insulation and Bauer (Nike).

Most people were working in metal, machinery and food industry. On average, there are 94 employees working in one MNE and 24 in a domestic company. Despite the above mentioned problem of natural persons, we can assume that foreign companies tend to be larger and employ more people than local companies.

In theory, the wage equals the marginal product of labour and also in our dataset wage strongly depends on the productivity. EGW presents a paradox here. Because of a very strong capital-intensiveness of production and monopoly power, it is the one and only sector where domestic productivity is higher then in a foreign part. One could assume that also wages would be higher, but it is not true. This only confirms the preposition that MNEs pay higher

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[43] Measured by penetration index = ratio of foreign to overall sales
[44] Variables for each sector were calculated as an average of the 8 years.

wages. A second paradox is the mining industry, where the productivity is lower, but wages are higher in domestic comparing with foreign companies. This might be the result of strong trade unions in mining. The productivity gaps are largest in food (3 times), rubber and non-metal (2times). Wage gaps are not that significant (largest in food) and support H7.

Finally, let us review the determinants of FDI. Benacek & Visek (1999) found out, that foreigners preferred labour intensive-sectors to capital-intensive at the beginning of transition in 1994. The privatization have not been finished by then, heavy industries were still running in their old schemes, waiting for their restructuring, most of which were the matter of state monopoly. Giant enterprises had big stock of capital in their accounting, although obsolete or too specific to use. Foreign investors were also afraid of environmental liabilities resulting from a purchase of an old factory, which might be higher then the actual price of an enterprise.

Almost ten years later the situation changed substantially. Following the results of a simple regression, foreign investors are willing to invest in capital-intensive and high R&D expenditures industries. In an advanced phase of transition, investors gained trust and are not afraid of investment into capital. Most of the sectors went through the period of restructuring and promise good returns on investment. The productivity did not prove as an important determinant of FDI inflows. This is a result of the above mentioned problem of causality direction. MNEs can choose a low productivity sector, because they see the lack of competition and possibility of expansion there. On the other hand, the investors will be looking for high-productivity industries, with the hope of important technology spillovers. In the EU pre accession period penetration had an increasing trend, which follows the increased interference with European states.

The differences in the results are caused by the following factors. Firstly, Benacek & Visek (1999) use firm-level data on 250 companies, creating about 80% of all FDIs. Secondly, foreign investments in heavy industries were hampered by the coupon privatisation and preventing from so called "sold out of family silver".

The main goal of the coupon privatisation was to do it quickly and to engage common people as much as possible. People were given a set of vouchers for a symbolic price, which they could invest in any company offered in the relevant round. Apart from that there were

Investment Privatization Funds (IPFs), which bought out the shares and concentrated the equity. Approximately one half of the enterprises selected for the first wave for privatisation were privatized on the basis of privatization projects (direct sale to domestic or foreign firm, public auction…)[45]The second half which went through vouchers, needed some time to concentrate their shares in IPFs and after be sold to MNEs. Only in 1997, in the so called "third wave"[46] of privatisation MNEs took over domestic enterprises.

"Sold out of family silver" is a term used for the protection of selling big domestic enterprises abroad in the first half of the 90' by the government. In the period of uncertainty, government wanted to protect strategic enterprises from a foreign takeover in order not to become dependent after 40 years of independence. It was possible that gas, electricity and natural resources enterprises could have been bought up by Russians, which could present eastern influence.[47] Only after realizing that domestic owners were incapable to restructure and restore the production, the government let foreign capital in.

```
PENETRATION
            Estimated    Standard
Variable   Coefficient     Error       t-statistic    P-value
LNKL        .162339      .085046        1.90884       [.060]
LNPRO      -.132471      .090877       -1.45770       [.149]
LNRND       .021579      .963123E-02    2.24050       [.028]
YEAR2       .033455      .027302        1.22539       [.224]
YEAR3       .067057      .026126        2.56667       [.012]
YEAR4       .193481      .027926        6.92836       [.000]
YEAR5       .221445      .035765        6.19165       [.000]
YEAR6       .227512      .039093        5.81978       [.000]
YEAR7       .233585      .047273        4.94121       [.000]
YEAR8       .279594      .057051        4.90078       [.000]
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6. The model

There are two main approaches in studying the panel data, the fixed effect model (FEM) and the random effects model (REM)[48], both of them having pros and cons. FEM allows us to consider differences among units or in time explicitly, which would be useful, as each

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[45] Svejnar J. and Singer M., 1994"Using Vouchers to Privatize an Economy: The Czech and Slovak Case," Economics of Transition, Vol. 2, No. 1, 1994, pp. 43-69
[46] Third wave of privatization is not an official name it is rather market concentration of shares in the hands of big investors
[47] In 2004 polish PKN Orlen bought up majority of UNIPETROL, that aggragates most of the chemical industry in the Czech Republic
[48] Also called variance components effect

industry is specific. On the other hand it is variables consuming. REM is more economical in degrees of freedom, but it requires meeting several assumptions. The decision about the model will be made upon Hausman's test[49]. Type of the model in a text is distinguished by constant at the end of regression in case of REM and no constant for FEM. Because of the different sizes of industries and increasing trend in time series, there is a conjecture of heteroscedasticity. TSP is suitable software, when dealing with panel data, because it automatically calculates Hausman's test at the end of each regression is able to adjust standard errors to heteroscedasticity-robust and has no problems with processing of unbalanced data.

The following section presents a set of equations and their results and tries to give answers to the hypothesis mentioned above. Firstly a production function is introduced to analyze the productivity of factors and returns to scale in domestic and foreign firms. Another three equations compile characteristics of labour market. Structure and notation of these equations is similar to Driffield (1999)[50].

6.1. Production function

In theory there are three types of production functions, depending on the way "knowledge" or technological progress enters production. Solow growth model uses the so called labour-augmenting or Harrod-neutral progress *Y=F (K, AL)*. If knowledge enters in the form *Y=F (AK, L)* technological progress is capital-augmenting. If it enters in the form *Y=AF (K, L)* technological progress is Hicks-neutral.[51]

Because we do not have technological progress divided into domestic and foreign we use Hicks-neutral technological progress in the Cobb-Douglas production function:

$$Y = A \, K^{\alpha} \, L^{\beta}$$

Where L denotes employment, K capital and A technological progress in this case RND.

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[49]H_0: FEM and REM estimators do not differ substantially
  H_1: non H_0
  If H_0 is rejected we are better off using FEM
[50]I decided to apply this model, because of similarity of data available and the possibility of calculation of displacement effect. However he used static model.
[51] Romer David, Advanced macroeconomics, Boston : McGraw-Hill, 2001

$\alpha + \beta = 1$; constant returns to scale

If $\alpha + \beta > 1$; increasing returns to scale

$\alpha + \beta < 1$; decreasing returns to scale

```
LNSALE                                    Adjusted R-squared = .850180
            Estimated      Standard
Variable    Coefficient      Error        t-statistic      P-value
LNCAPITAL   .773432        .059793        12.9353          [.000]
LNEMP       .201671        .090457        2.22946          [.026]
LNRND       .054727        .022315        2.45248          [.014]
C           .878966        .926515        .948680          [.343]
```

All variables proved to be statistically significant. Adding up all coefficients we get to 0.98 giving almost perfect constant returns to scale. We can discover more, when dividing the firms on foreign and domestic.

If P-value<0.001 => ***, P-value<0.05=> **, P-value<0.01=> *

	LNSALED		LNSALEF	
	Coefficient	t-statistic	Coefficient	t-statistic
AdjustedR^2	0.882907		0.882774	
LNCAPITALX	0.451709	8.42313***	0.202802	4.12586***
LNEMX	0.323538	4.78312***	1.07371	15.9146***
LNRND	0.035742	1.6844*	0.00993528	0.326501
C	2.88863	4.00132	−1.87448	−4.89649
RTS	0.810989	decreasing	1.276512	increasing

Table 7 – Returns to scale in domestic and foreign companies in the Czech manufacturing

As we have already seen MNE labour productivity is higher in foreign firms. R&D did not prove significant here and also in the following regressions because of its aggregate form. An interesting result coming out of this regression is the character of returns to scale. Domestic firms because of lower productivities and lots of obsolete capital produce with decreasing returns to scale. Furthermore neglecting land and natural resources in the production function worsens domestic returns to scale, because Mining and EGW are mainly occupied by domestic firms. In line with the conclusion of Benacek, Visek (1999) MNEs are active in sectors with increasing returns to scale.

However we must pay attention here. Because we plug in values of the whole sectors and not particular firms, we can make a conclusion only about external returns to scale. We do not

know the size and number of firms in each sector in this model thus can not conclude about internal returns to scale.

6.2. Wage and productivity equation

First 4 hypotheses describe wages, productivity and the relation between them.

H1: MNEs increase domestic wage.

H2: MNEs increase domestic productivity through spillovers

H3: Foreign employment reduces wage differential between the domestic and foreign wages

H4: MNEs make domestic wages grow faster than domestic productivity and thus cause a decrease of employment.

In contrast with Driffield (1999) intensive forms of R&D and capital are used. Furthermore, we also introduce average sale of a firm in domestic sector, because worker's productivity depends on a firm's not sector's size. All results correspond with conventional wisdom. KL ratio that expresses capital endowment of labour in domestic firms positively influences domestic productivity and thus wages. Positive spillovers were stronger than competitive effects and foreign employment increases domestic productivity. A contrary result in Driffield (1999) could be explained by the complementarity of investment in Czech Republic. Introducing a dummy for year into the wage equation showed an increasing trend. Because the inflation was very modest in the last year, we can observe an increase in real wages. R&D proved to be insignificant in both equations. Even first or second lag, taking into account postponed effect, did not help improving the results.

```
LNPAYD                              Adjusted R-squared = .721239
          Estimated    Standard
Variable  Coefficient    Error       t-statistic    P-value
LNKLD     .222456      .031056      7.16312         [.000]
LNRNDL    .019320      .010553      1.83086         [.067]
LNSALEDE  .027255      .023712      1.14942         [.250]
LNEMPF    .127146      .013323      9.54337         [.000]
C         -2.88856     .200445      -14.4107        [.000]

LNPROD                              Adjusted R-squared = .898637
          Estimated    Standard
Variable  Coefficient    Error       t-statistic    P-value
LNKLD     .468517      .039993      11.7149         [.000]
LNRNDL    .015530      .013814      1.12420         [.261]
LNSALEDE  .013191      .029372      .449104         [.653]
LNEMPF    .111274      .018846      5.90432         [.000]
C         -1.66577     .278337      -5.98472        [.000]
```

In order to analyze internal returns to scale we use the average size of a firm in each sector. In both equations sales do not prove significant. If relaxing one of the strongest variable KL by introducing a less significant variable of domestic capital in a industry, sales gain on importance. Following regression shows that the higher the size of a company the higher the labour productivity, meaning increasing internal returns to scale in domestic firms. This gives an interesting conclusion about the production in domestic companies. They produce with decreasing external returns to scale, however with increasing internal returns to scale.

LNPROD			Adjusted R-squared = .574382	
Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
LNCAPITALD	.143059	.056868	2.51564	[.012]
LNRNDL	.032507	.020901	1.55527	[.120]
LNSALEDE	.172496	.048143	3.58302	[.000]
LNEMPF	.207797	.022312	9.31315	[.000]
C	-4.70298	.584337	-8.04840	[.000]

We have already proved that foreign wages are higher than domestic. Another interesting topic is whether the scissors are closing or opening up in time. Wage differential depends mainly on the productivity differential and foreign employment. More jobs in MNEs are forcing domestic producers to increase their wages as well. At the same time they increase productivity through spillovers and indirectly decrease the productivity differential.

Relative rather than absolute difference is used, because it expresses convergence better. Following results support H3 about the positive effect of foreign employment on convergence of wages, however they show an increasing trend in time.

DLNPAY = LNPROF-LNPROD			Adjusted R-squared = .862982	
Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
DLNPRO	.313905	.044855	6.99818	[.000]
LNEMPF	-.112465	.021147	-5.31815	[.000]
TIME	.025241	.452608E-02	5.57669	[.000]

The last question that was left to be resolved in this section is H4. The wages grew on average by 5.8 per cent whereas the productivity grew by 7.2 per cent. This result can also be tested on sectoral level. Graph 11 shows that only in food, nonmetal and rubber wages grew faster than productivity. These are exactly the sectors where the productivity differential is the largest.

The rejection of H4 could be explained by very low rates of inflation since 1999 and strong appreciation of Czech crown.[52] If we assume that the majority of MNEs are exporting their production, with increasing appreciation they had to offset this loss by a decrease of wages or rather slower growth of wages.

6.3. Employment equation

This section gives answers to the following hypothesis:

H5: MNEs increase domestic productivity through domestic capital/labour substitution

H6: MNEs increase total employment

As for variables, using an intensive form of capital causes negative relation, regardless of the factor substitution, because K/L already includes employment in its denominator. Therefore an absolute value of capital in domestic firms is more suitable for controlling of factor substitution. Sales in a sector are used, because we want to analyze employment in the whole sector, not only in one firm. It would be also appropriate to include a variable concerning business cycle like e.g. Hodrick- Prescot filter that estimates the deviation of the actual GDP (in our case sales) from the trend. However, because of a short set of time series and thus inaccurate estimate of trend the business cycle is not included in the regression.

There is no evidence for factor substitution in the Czech industry. This contrary result to Driffield could be explained by the fact that wages did not grow faster then productivity and thus employers had no intention to substitute labour for capital. One could think that the negative effect was mainly captured by the displacement effect, but even after removing *EMPF* from the equation, the complementary effect became even stronger.

```
LNEMPD                                  Adjusted R-squared = .975855
              Estimated     Standard
Variable      Coefficient    Error         t-statistic    P-value
LNCAPITALD    .153208       .091200        1.67992        [.096]
LNRNDL        -.047963      .019413        -2.47066       [.015]
LNSALED       .357828       .104371        3.42844        [.001]
LNEMPF        -.263321      .029135        -9.03789       [.000]
```

Conclusion about H6 is ambiguous, because FDI influence overall employment in various directions. The decrease of domestic employment was due to two factors. Firstly some of the

[52] Czech crown appreciated from 35 in 2000 to 28 in 2006 per EUR

firms were bough by M&A and domestic employment became foreign. In this case, the total employment did not suffer, only if it was accompanied by an increase in productivity. Secondly competitive pressure made some domestic producers to close their production. Finally even though part of the workers was taken from domestic firms, FDI in form of greenfield investment generates new jobs. Graph 15 Employment time-series in the Czech manufacturing, Source: CZSO/Author's calculationsshows that the total employment decreased in time, but because total sales increased total capital or labour productivity must have increased.

It is difficult to evaluate all the parallel impacts in numbers and the FDI effect on total employment is not clear. But from everything that was mentioned above, we can conclude that FDI helped to create efficient jobs, increased productivity in domestic sector and speeded up the reallocation of resources from less to more efficient.

6.4. Displacement effect

One issue that is neglected when praising the FDI effects on s host country is the displacement effect. It does not concern only manual workers, but also headhunting for managerial positions. Because of usage of industry level data, this model does not give an exact information, how many of workers in a foreign enterprise were taken from domestic firms, rather it illustrates the development in time and differences among industries. Furthermore, thanks to similar methodology it can compare the scale of this effect in transition (CZ) and developed economy (UK).

Following the method of Driffield (2000), displacement effect is calculated from the elasticity of labour substitution.

$$\eta = \frac{\dfrac{EMPD_t - EMPD_{t-1}}{EMPD_{t-1}}}{\dfrac{EMPF_t - EMPF_{t-1}}{EMPF_{t-1}}}$$

Where η denotes calculated elasticity (coefficient) and $EMPD_t$ and $EMPF_t$ domestic and foreign employment in year t. Final absolute decrease in domestic employment due to foreign investment is then calculated as:

$$EMPD_t - EMPD_{t-1} = \eta \times \frac{EMPF_t - EMPF_{t-1}}{EMPF_{t-1}} \times EMPD_{t-1}$$

Displacement effect *(DE_t)* in a year *t* is then a share of an absolute decrease in domestic employment due to foreign investment on total foreign employment increase. In this sense it does not express only workers taken from domestic firms but also jobs that were cancelled because of the competition effect. If DE >1, i.e. that e.g. 100 new jobs in MNEs decreased domestic employment by more then 100 jobs, thus had a negative effect on overall employment.

$$DE_t = \frac{EMPD_t - EMPD_{t-1}}{EMPF_t - EMPF_{t-1}}$$

The scale of the displacement effect strictly depends on the calculated coefficient of *EMPF*, which changes with different forms of regressions and ranges from 0.06 to 0.25. The goal is to find the most plausible form that matches the reality best. Because of the reasons of stationarity and comparability[53]; differential form seems to be the best candidate.

```
DLNEMPD                                 Adjusted R-squared = .543889
                   Estimated      Standard
Variable           Coefficient     Error         t-statistic    P-value
DLNCAPITALD        .045650        .030814        1.48147        [.143]
DLNRND             -.217124E-02   .635747E-02    -.341526       [.734]
DLNSALED           .238936        .052223        4.57532        [.000]
DLNEMPF            -.063690       .019009        -3.35046       [.001]
```

We can assume that the elasticity of labour substitution changes in time and also across industries. In order to pick up these differences set of dummies for groups of industries is set.

One important criterion that determines the scale of displacement in each sector is the wage differential. The greater the difference between domestic and foreign wages, the higher the probability that a worker is willing to change his position. Accordingly we can group industries into three groups, the industries with low, middle and high wage differentials[54].

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[53] Driffiled (1999) also uses differential form and allow us to compare the results in a developed and transition economy
[54] See graph 13

Low - white	Middle - grey	High - black
Mining	Chemical	Food
Textiles	Metal	Wood
Leather	Machinery	Paper
Electric	Special	Rubber
EGW		Nonmetal

Table 8 – Division of the sectors according to the strength of the displacement effect in the Czech industry

Industry dummies are generated as a multiply of *EMPF* and a sum of dummies in one group This way not level but slope for each group is changed. In other words we measure the difference of impact of foreign employment not the whole set of variables. Group elasticities are then calculated as the sum of *EMPF* and dummy coefficient. Following equation gives specific elasticities.

```
DLNEMPD                              Adjusted R-squared = .575563
                    Estimated      Standard
Variable            Coefficient      Error        t-statistic  P-value
DLNCAPITALD         .041192        .030650          1.34396      [.183]
DLNRND              -.327679E-02   .641190E-02     -.511048      [.611]
DLNSALED            .208917        .049320          4.23596      [.000]
DLNEMPF             -.040242       .015011         -2.68091      [.009]
EMPF7_10_11_13      -.057199       .033942         -1.68522      [.096]
EMPF2_5_6_8_9       -.085969       .040777         -2.10828      [.038]
```

As we could assume, the displacement effect is the highest in the HIGH group, in which wage gaps are largest. Following table and Graph 13 – Displacement effect in the Czech manufacturing (1999-2004), Source: Author's calculations illustrate variation of displacement effect in time and sectors.

DE	Total	Low	Middle	High
Elasticities	-0.06246	-0.04024	-0.09744	-0.12621
1999	-0.51675	-0.29874	-1.05413	-1.04784
2000	-0.39557	-0.21872	-0.8464	-0.80095
2001	-0.23439	-0.13088	-0.48742	-0.40526
2002	-0.18436	-0.09442	-0.37666	-0.35833
2003	-0.17459	-0.08993	-0.34383	-0.3476
2004	-0.15963	-0.07893	-0.31283	-0.33113
Average	-0.27755	-0.15194	-0.57021	-0.54852
1997-2004	-0.3102	-0.17607	-0.56224	-0.70426

Table 9 – Calculated displacement effect across years and industries in the Czech industry

Labour substitution was significant in all years and groups of industries. MIDDLE and HIGH industries in 1999 reached a substitution over 100 %. Because the displacement effect is expressed here as a ratio of domestic jobs cancelled due to foreign employment to foreign employment increase, this can be interpreted by strong competitive effects in these groups of industries, where many domestic companies were crowded out by MNEs.

There is a declining trend in time, which can be explained by the levelling up of foreign and domestic wages and continuing restructuring. Overall displacement effect in the years 1998-2004 for Czech manufacturing industry plus Mining and EGW was 31%.

In 2006 Czech investment promotion agency – Czech invest had its first analysis[55] of the impacts of investment incentives in Moravskoslezký region done. Data from 12 MNEs, that draw investment incentives, were compiled and using input output analysis following results achieved.[56] The majority of the companies produced in the car industry, some in machinery and one in wood and food. All firms are doing their business in the sectors mentioned in MIDDLE and HIGH groups. As the estimations are very similar, it supports the sector division used in this paper also on a firm-level data.

Comparing the results with Driffield (1999), the displacement effect in the Czech manufacturing was 11 % higher, than in the UK in the period 1968-1992. There are three possible explanations. Firstly MNEs usually coming from developed countries have more similar structure, productivity and wages to the UK than to a transition economy. There is less intention for the worker to move to another employer, because of better wages and working conditions.

Another reason could be a small labour mobility within the Czech Republic. Usually young people, who know foreign languages, head to Western Europe with a vision of higher incomes. On the other hand people living in Czech Republic are not willing to commute or move to a region with higher jobs opportunities. It can happen that a MNE surrounded by high unemployment regions has problems to find suitable labour force and so has to offer higher wages to draw employees from local domestic firms. We could characterize Czech

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[55] "ýsledky analýzy dopadů investičních pobídek v Moravskoslezském kraji" Deloitte, April 2006
[56] Crossed red line in graph 3

Republic as a country with a high external labour mobility but a low internal labour mobility comparing with Western Europe.

Finally Driffield embraced only employment of operatives, whereas data used in this paper include also white collars. The managerial displacement effect is very often only apparent and overestimates the results. Many managers think about working for MNEs either in abroad or at home. Unless he would find a well paid job in the Czech Republic, he would move abroad. Thus manager displacement moderates brain drain of EU10 countries.

Another important issue is the kind of FDI that flows into the country. MNEs can invest into heavy machinery or high-tech technologies. From a long term and in many transition economies even short term perspective, obsolete production will loose competitive advantage and will be removed to other developing countries. In the last decade Czech Republic tried to encourage investments into more advanced manufacturing technology (AMT)[57]. Lately CzechInvest offers investment incentives focused on technological centres[58] and centres of strategic services[59] to attract businesses with higher value added.

To get a comprehensive picture of the structure of FDI Lefley at al. (2004) did a survey about the usage of AMT in the Czech manufacturing. Same method and questionnaire were used, as in two identical surveys in the US and UK before. Following results were achieved. There are fewer companies in CR that pursue the realization and evaluation of these projects than in the UK or US. Those firms that engage in this activities concentrate rather on "less sophisticated and less expensive systems". CR managers prefer short-term strategies "which makes it less likely that AMT projects would be accepted."

A good example is the largest FDI in CR according to the promised jobs created [60]- the LG Philips investment in Hranice na Moravě. In 2000 after generous investment incentives offered by government, the investor decided to settle down in the Czech Republic to produce traditional glass televisions. The company's goal was to shift the falling out of use production

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[57] Manufacturing process that embraces a computer control system, from the basic numerically controlled machine tools to fully computer-integrated flexible manufacturing systems (Lefley et al., 2004)

[58] Honeywell (electronics), Volkswagen, Lonza Group(Biotechnology), Inter Informatics (aeronautical), Matsushita Television Central Europe

[59] DHL (IT), Czech airlines, ExxonMobil (financial and accounting), Sun Microsystems International (IT), Accenture

[60] Creation of 3250 jobs announced in the investment project, source: www.czechinvest.cz (Investment projects of CzechInvest from 1993 till 30.6.2006)

to a transition economy, because of lower labour costs. In that time LCD and plasma monitors were at the dawn and specialist predicted another decade of use of traditional screens. Obviously technological progress was faster and the demand for classical TVs decreases rapidly nowadays. At the beginning of 2006 company closed its production and now tries to settle the debts. One of the claimers is also state because of the incentives.

In light of these findings we can conclude that FDI in the Czech Republic apart from their advantages has also some drawbacks that decrease the importance of FDI in CR. The increase of total employment, productivity and pressure to restructure is limited by significant displacement effect and orientation on low AMT investments.

7. Conclusion

The main goal of this paper was the analysis of the effects of FDIs on the labour market in a host country. It also tried to identify the causes and solutions of the European, especially Czech unemployment and the role of investment incentives in the process. Finally it compared domestic and foreign firms and described the principles of the labour market in the Czech industry.

In the theoretical part we analysed current economic literature about the effects of FDI. Further we identified the main causes of the European unemployment, with a special focus on the Czech Republic. The European unemployment has its roots in the period of petrol shocks, when governments implemented employment protection for those who had work and generous unemployment benefits for those, who did not. As institutions did not reverse their measures even after the overcome of the recession, unemployment has persisted till today.

Czech Republic and other transition economies are fighting with an increasing long-term unemployment. High regional disparities in the unemployment rates are caused by centralization of economic activities around Prague, inconvenient structure of the labour force, lacking regional centers but also dislike to work. Half of the FDI flows to the capital Prague, whereas only 6 % in the least developed region. The population in the less developed regions is older and with a much lower education. Two fifths of the applicants in the Northwest region have finished only a basic school. On the contrary even in high unemployment regions as Karviná, some vacancies can not be occupied in a long time, because of the fastidiousness of the applicants.

In the empirical part using panel data on a sectoral level for the period 1997 – 2004 in the Czech industry following results were found. MNEs increase wages as well as productivity through spillovers in domestic firms. Surprisingly productivity grew faster than wages and thus did not cause unemployment. The increase of productivity through capital/labour substitution was rejected.

MNEs helped to create efficient jobs opportunities, reallocate resources from the less to higher productive and thus enhanced total employment. However total employment decreased in time mainly due to increase of productivity and also displacement effect in a broad definition. The displacement effect (DE) in this paper is defined as the total loss of domestic jobs due to FDI, i.e. all employees who changed their job and started to work in a MNE plus domestic jobs cancelled because of high competition. On average foreign job creation was accompanied by one third of domestic job destruction. There are industries e.g. Mining, Textiles, Leather, Electric, EGW were the average DE lay by 15% but also high displacement industries like Chemical, Metal, Machinery, where the average DE lay by 55%. Another interesting finding is the descending trend in time, as enterprises keep on resembling.

Comparing domestic and foreign companies we found that MNEs produce with increasing external returns to scale, whereas domestic firms produce with decreasing external returns to scale, but with increasing internal returns to scale. Foreign companies use to have higher productivities and pay their employees more. They are usually bigger and employ more people per company comparing with domestic firms.

Nevertheless we should always keep in mind, that MNEs are not charities, that build playgrounds for children and add to the social welfare free, but harsh market players who strictly follow their profits. Once the advantage of cheap labour force is gone they move away as well. The role of incentives in levelling up of regional disparities is indisputable, but is it always worth fighting for an investor?

In the light of these facts investment incentives in the future should be focused on more sophisticated productions and more than one decade perspective. Furthermore investment incentives offering should less resemble an auction among Central and Eastern European countries and should aim for a mutual cooperation in order not to be abused by big MNEs.

Policy implications

Removing of long-term unemployment can only be achieved by activation policies. This includes conditionality of unemployment benefits, negative tax or tax credit for workers with minimum wage and focus of the educational system on the preparation for jobs currently demanded on the labour market. Government should prefer general to specific investment incentives creating competitive, transparent and predictable business environment. Specific incentives should be used only for technology and business support services centres and subsidies for training and re-training. Clusters initiatives might help in concentration of scattered economic activities in the less developed regions.

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DATA

- http://www.czso.cz/csu/edicniplan.nsf/publ/8006-06-2000_2004
- http://www.czso.cz/csu/edicniplan.nsf/publ/8006-02-za_rok_1997_2000
- www.czechinvest.cz / Oznamene projekty k 30. 6. 2006.xls

9. Appendix

9.1. Division of capital calculation

I denote

D   domestic capital = capital of enterprises with no foreign share

F   foreign capital = capital of enterprises with a foreign share higher than 50%

TB   total capital = D+F taken from table

TC   total capital = D+F calculated

AD   Acquisition of domestic capital

AF   Acquisition of foreign capital

AR   Acquisition ratio = AD/AF in each year

ΔAR   Change of acquisition ratio in year t = AR_{t-1}/ AR_t

         If ΔAR>1 then D grew faster then F, and vice versa

DR   Division ratio in year t = $\Delta AR_t * DR_{t+1}$; Division in year 2004 = D / F is calculated

CZSO offers data of the total capital and acquisition of domestic and foreign capital. For the regression I needed an estimation of the division on foreign and domestic capital.

At the beginning I added AD and AF discounted by 10 percent and got a division in 2004. Because land and subsoil assets are not included in the capital, most of the capital equipment has a depreciation period less then 5 or 10 years. The sum of discounted acquisition for 8 years should give a good approximation of D and F. I added D and F and got calculated capital in total, which I compared with that in tables. I manually adjusted discount rates in each industry so as to approximate calculated total capital to that of tables in 2004. Now I got bench mark division in 2004 which I will use to retrospectively recalculate divisions in other years, taking into account the dynamics of acquisition. Firstly I calculated acquisition ratio, which says who was buying in each year more, foreign or domestic. Secondly I calculated the change of acquisition ratio, which shows the dynamics of acquisitions. If domestic firms were relatively buying more to foreign firms than previous year it is greater than 1, if on the other hand MNEs were more active, it is smaller than 1. This change in acquisitions of course influences the structure of the total capital that is captured in the division ratio.

We know:

F = T – D

DR = D / F

From the two equations it follows that:

D = (DR*T)/(1 + DR)

After getting the division ratios for all years it is not difficult to calculate domestic capital and by subtracting it from total table capital also foreign capital.

As for mining and EGW I used a slightly different method. Because of the capital intensity of these sectors I added weighted capital according to sale in the year 1997.

Final estimation has three qualities: foreign and domestic capital give total capital in tables, it takes into account the change of capital (acquisition of capital) and technology differences in each industry (different depreciation rates for each industry)

9.2. Graphs

Dispersion of unemployment
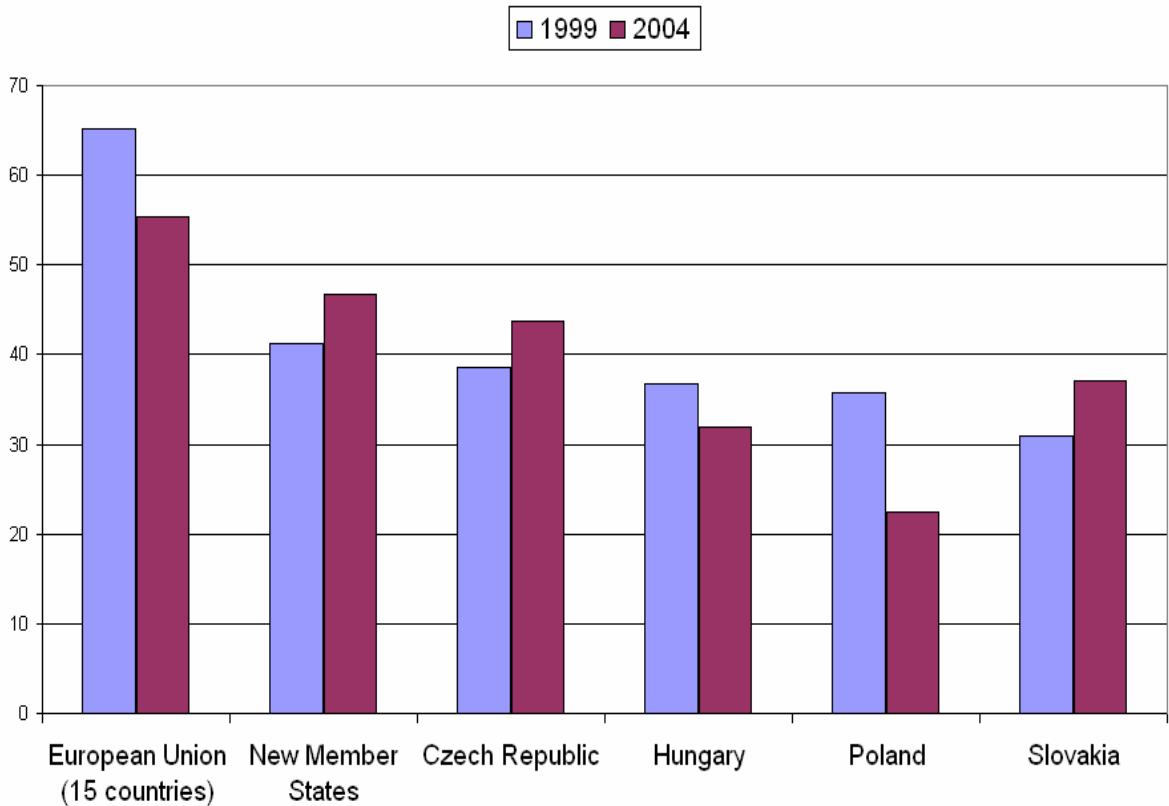
Graph 6 – Employment rates in the EU15 and New Member States (2005), Source: Eurostat
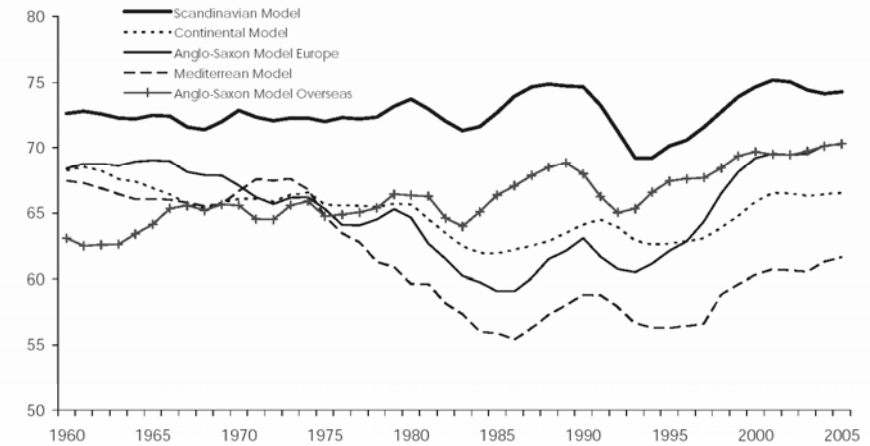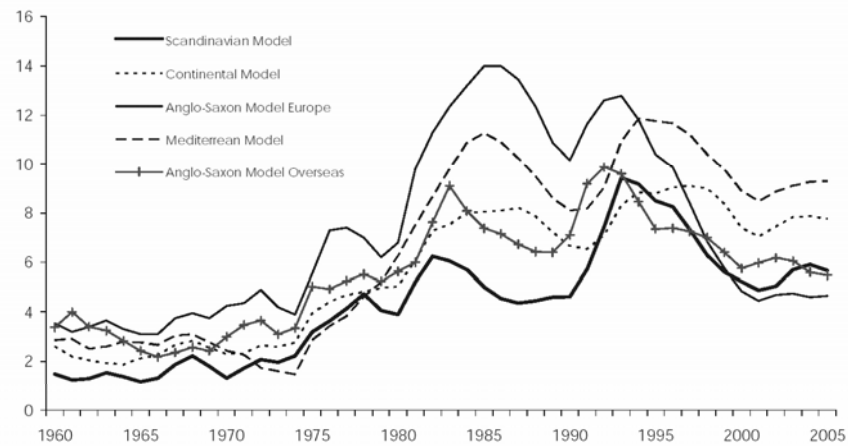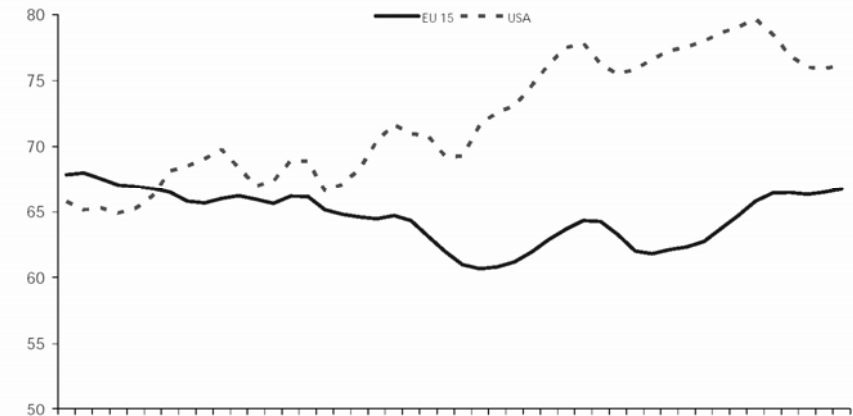

Graph 7 – Unemployment rates in the EU15 and New Member States (1991 and 2005), Source: Eurostat
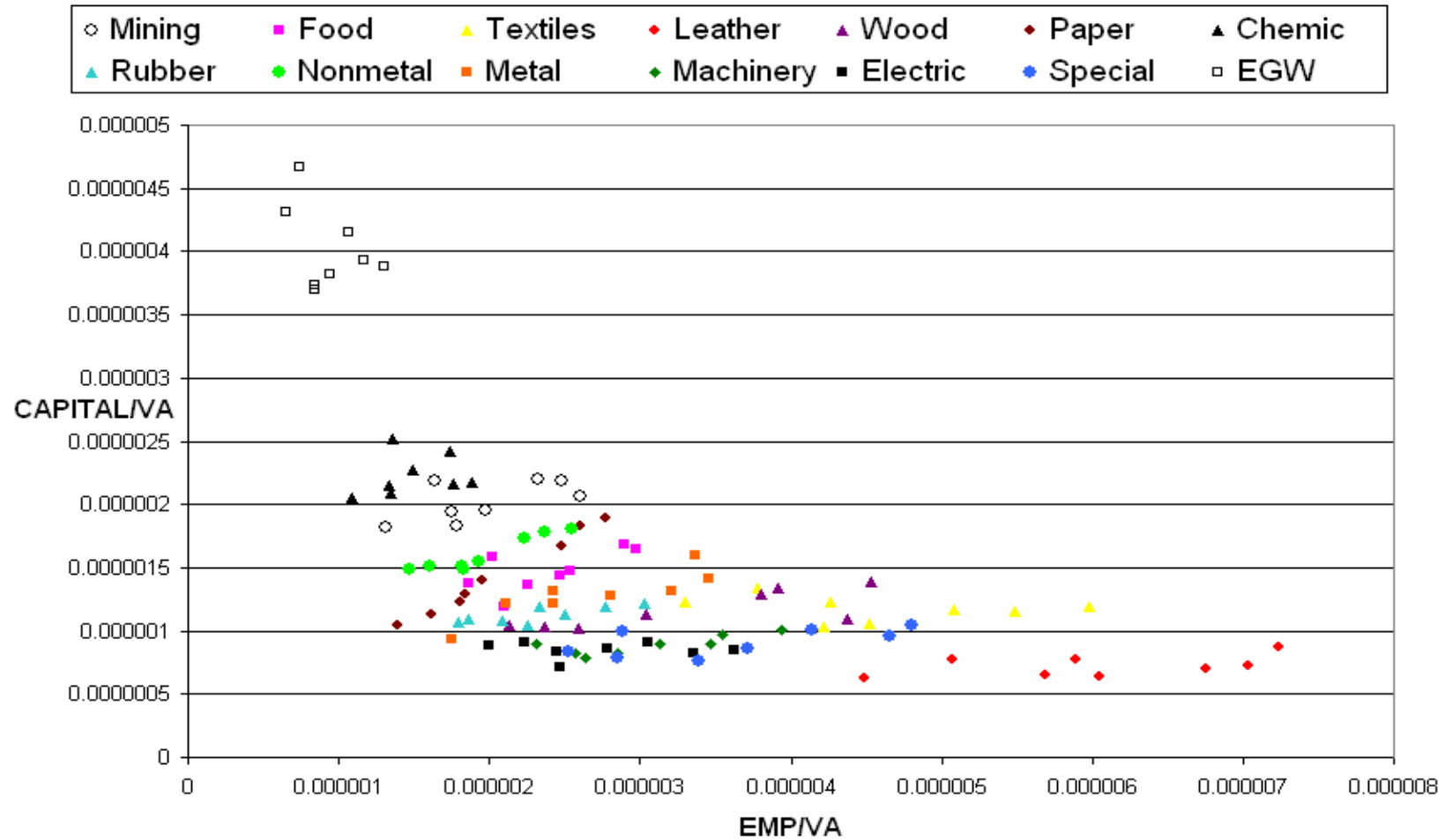
Unemployment rate
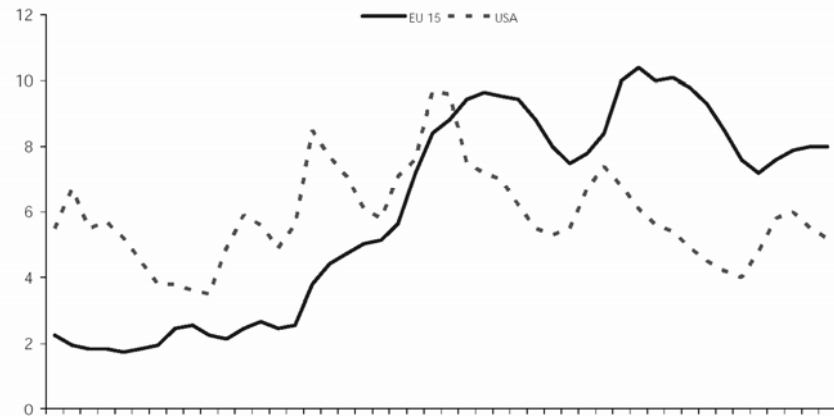
Employment rate

S: Eurostat (AMECO);
As to sub-aggregates unweighted average over countries; EU 15 reported (weighted).

Graph 8 – Employment and unemployment rates in the USA and European models (1960 – 2005), Source: Aiginger, Gruger (2005)

Graph 9 - Factor intensity of sectors in the Czech manufacturing (1997 – 2004), Source: CZSO/Author's calculations

Unempoyment in Ustecky region (annually for the period 1990-2003)

Legend: Děčín, Chomutov, Litoměřice, Louny, Most, Teplice, Ústí nad Labem
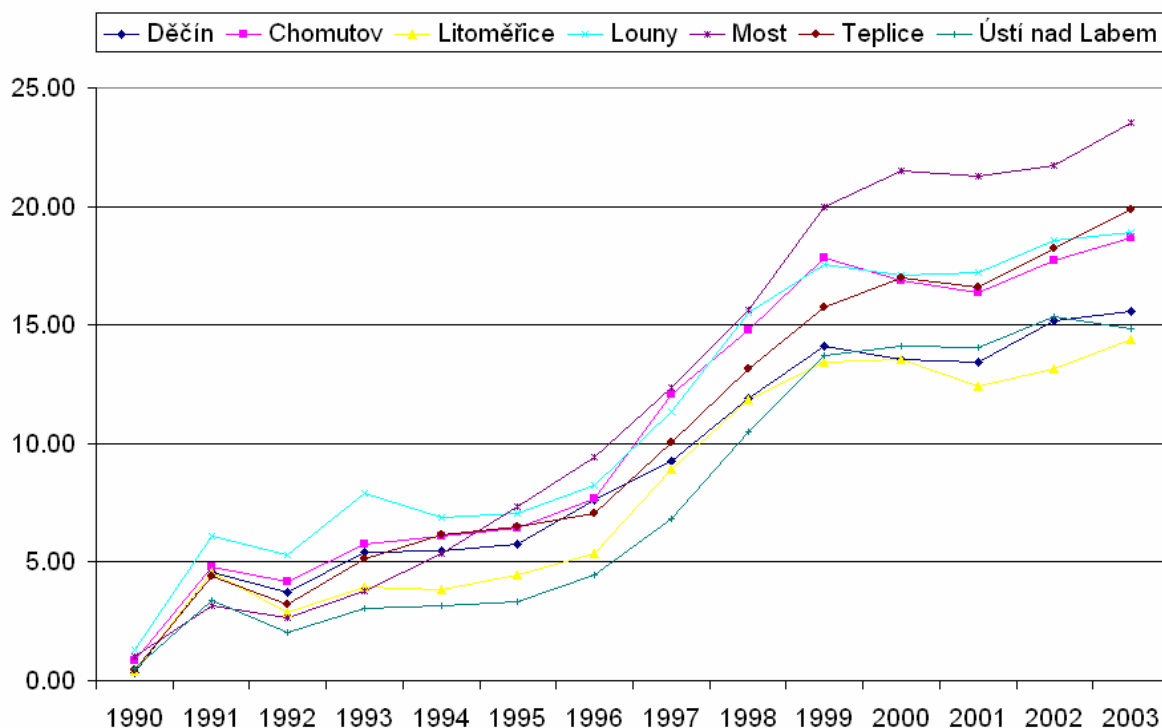
Graph 10 – Unemployment in the Ustecky region, Source: CZSO

Unemploymet in Moravskoslezský region (qurterly for the period 1991-2003)

Legend: Česká republika, Bruntál, Frýdek-Místek, Karviná, Nový Jičín, Opava, Ostrava
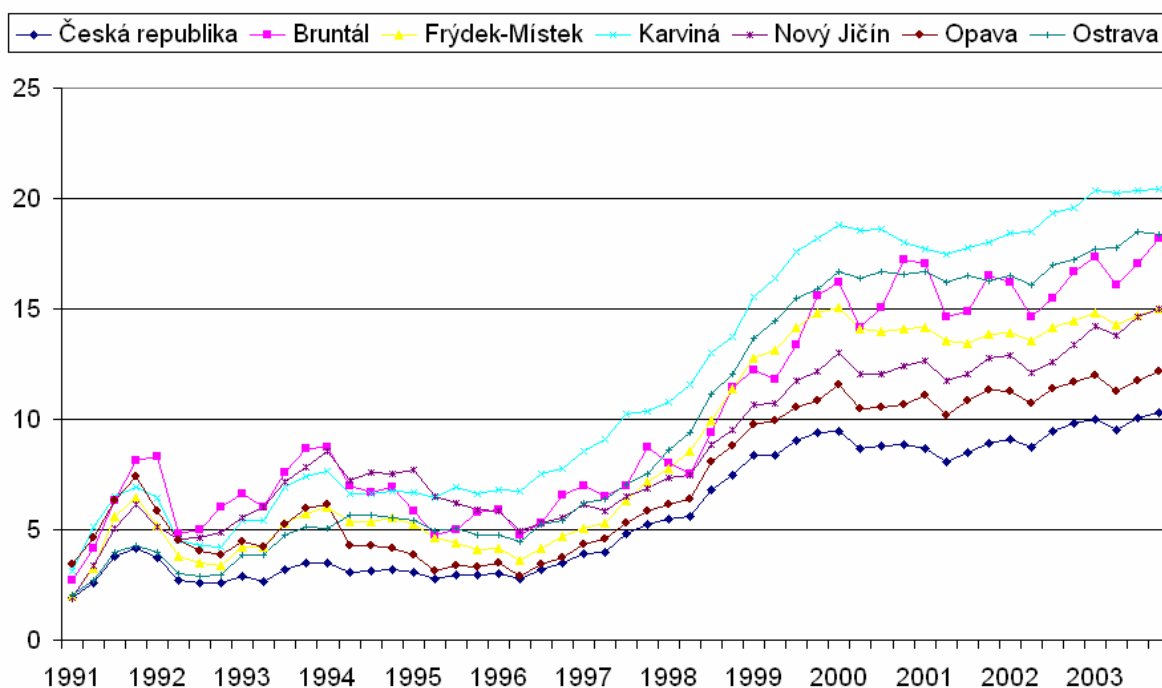
Graph 11 – Unemployment in the Moravskoslezsky region, Source: CZSO

Graph 12 – FDI inflows into the Czech Republic by industry (1993-2004), Source: Czech National Bank.
* Until 1997 data included FDI in equity capital, starting from 1998 data on reinvested earnings and other capital have been included in FDI flows.
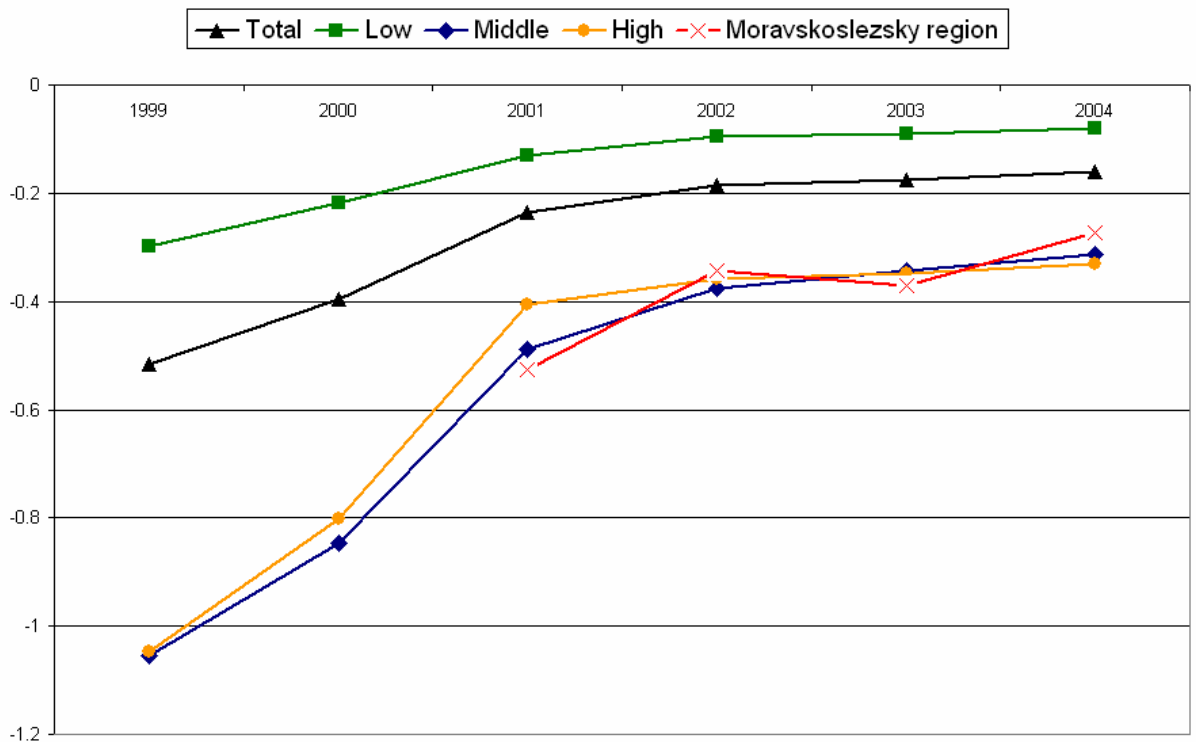
Graph 13 – Displacement effect in the Czech manufacturing (1999-2004), Source: Author's calculations
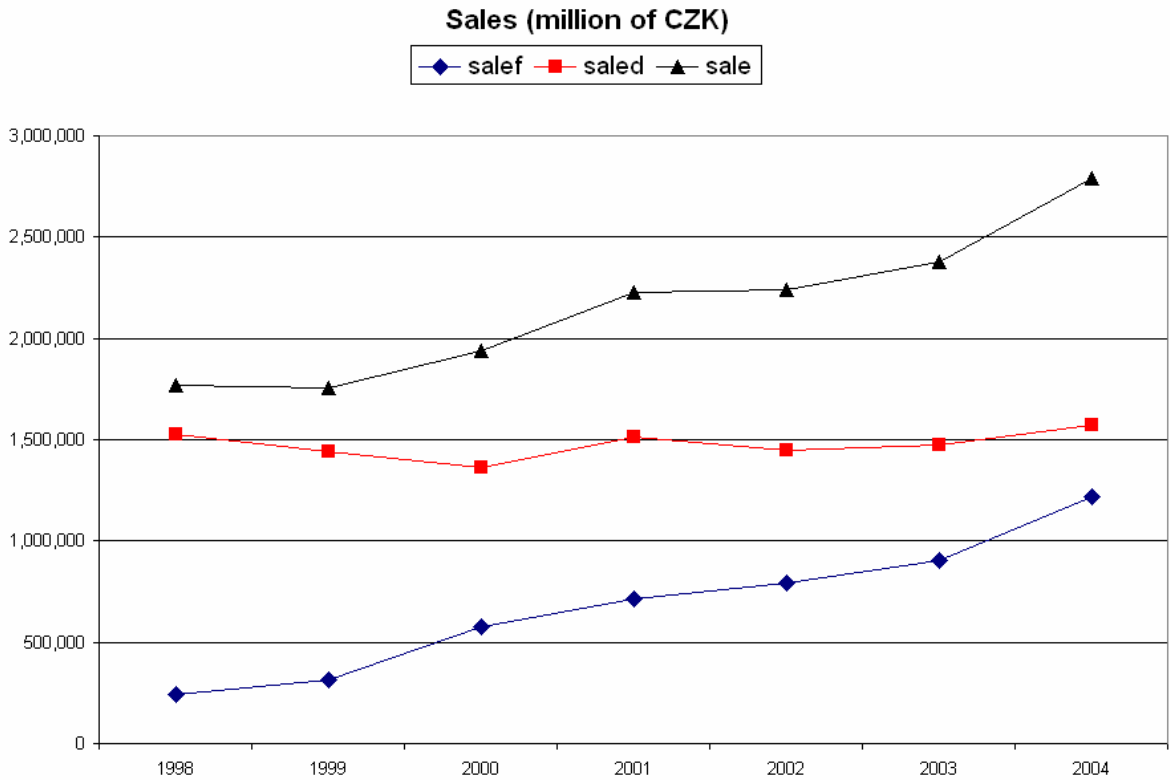
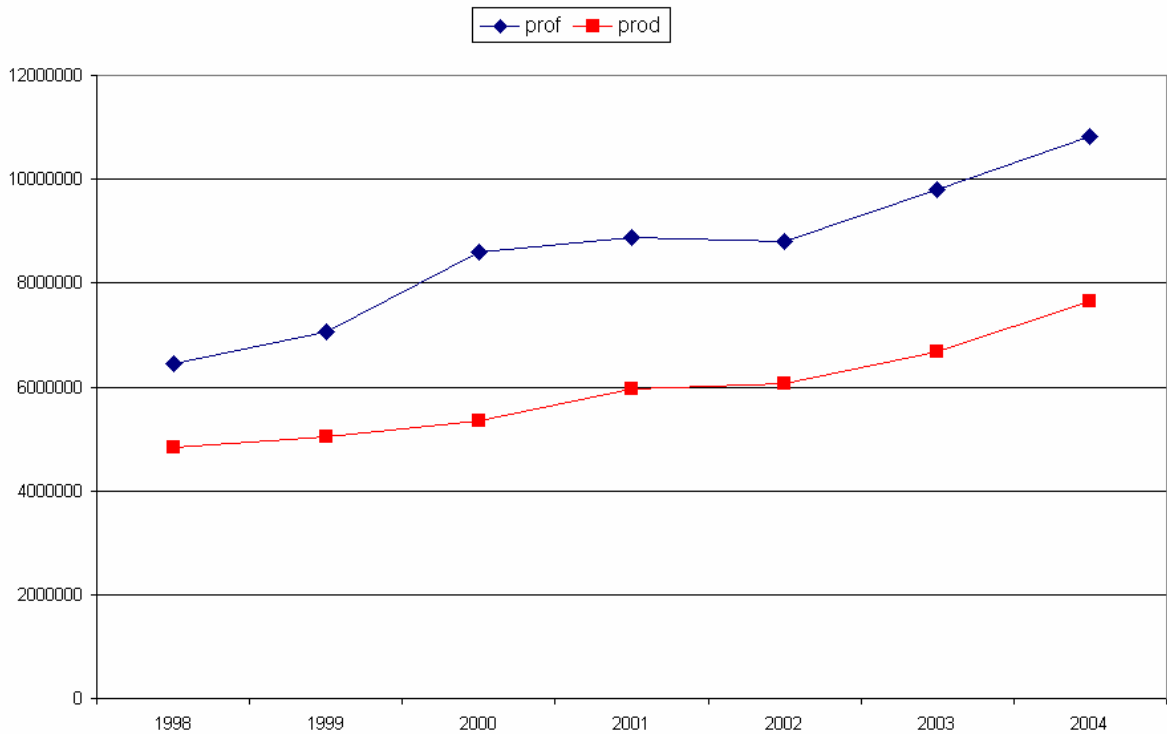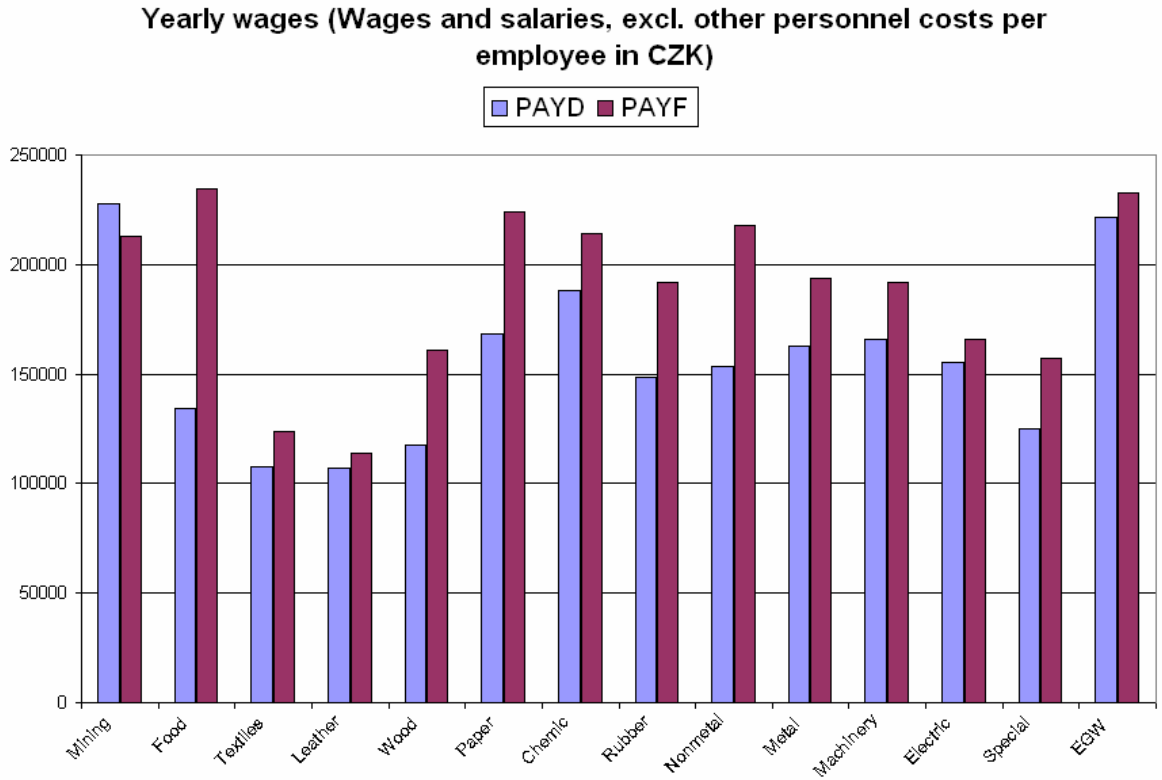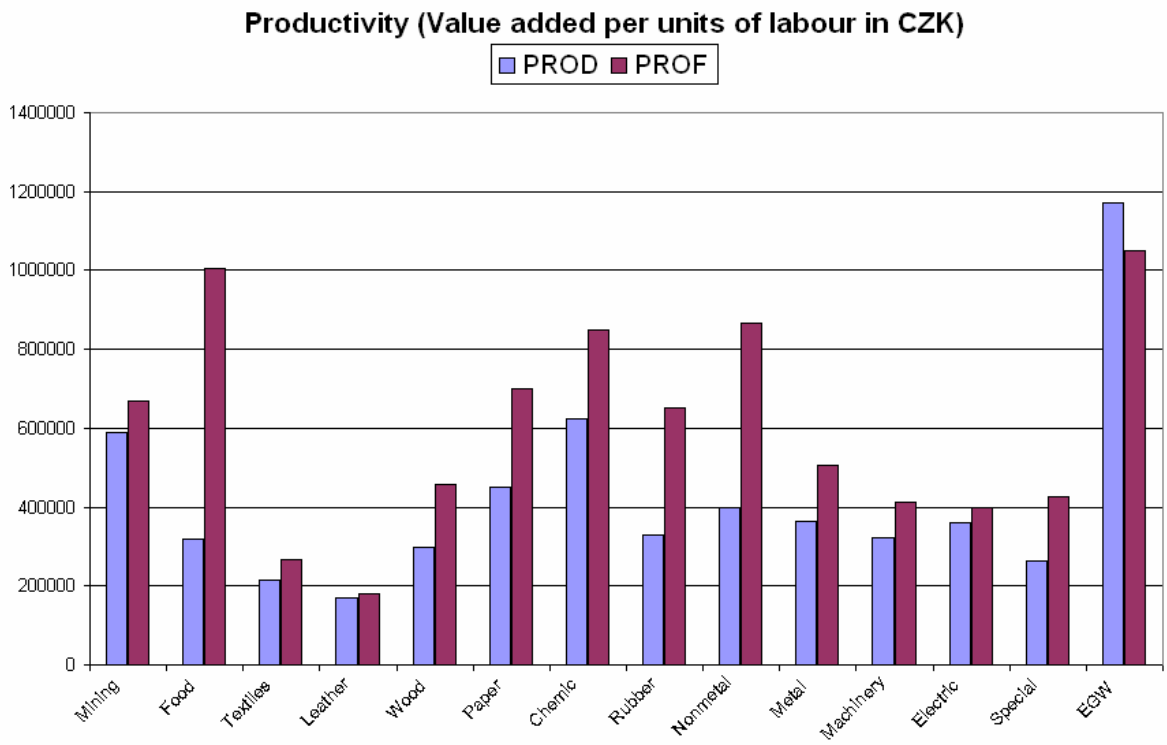**Graph 14 – Sales time-series in the Czech manufacturing, Source: CZSO/Author's calculations**
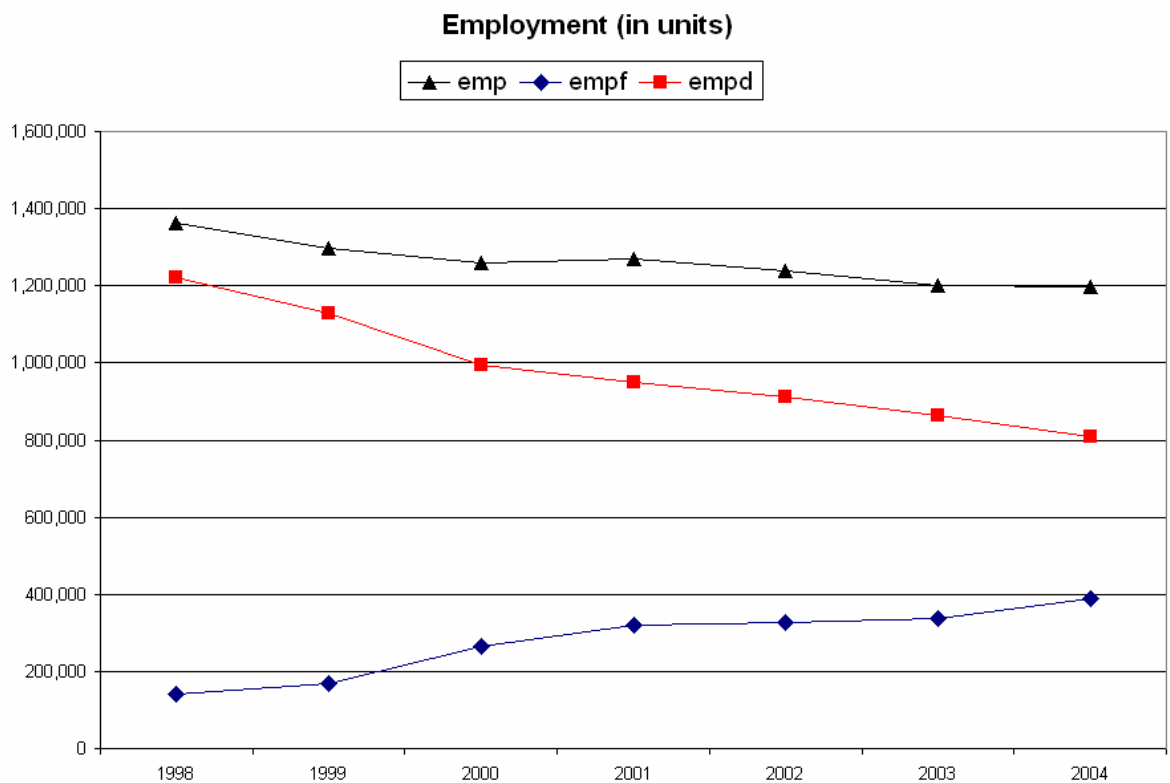
Graph 15 Employment time-series in the Czech manufacturing, Source: CZSO/Author's calculations
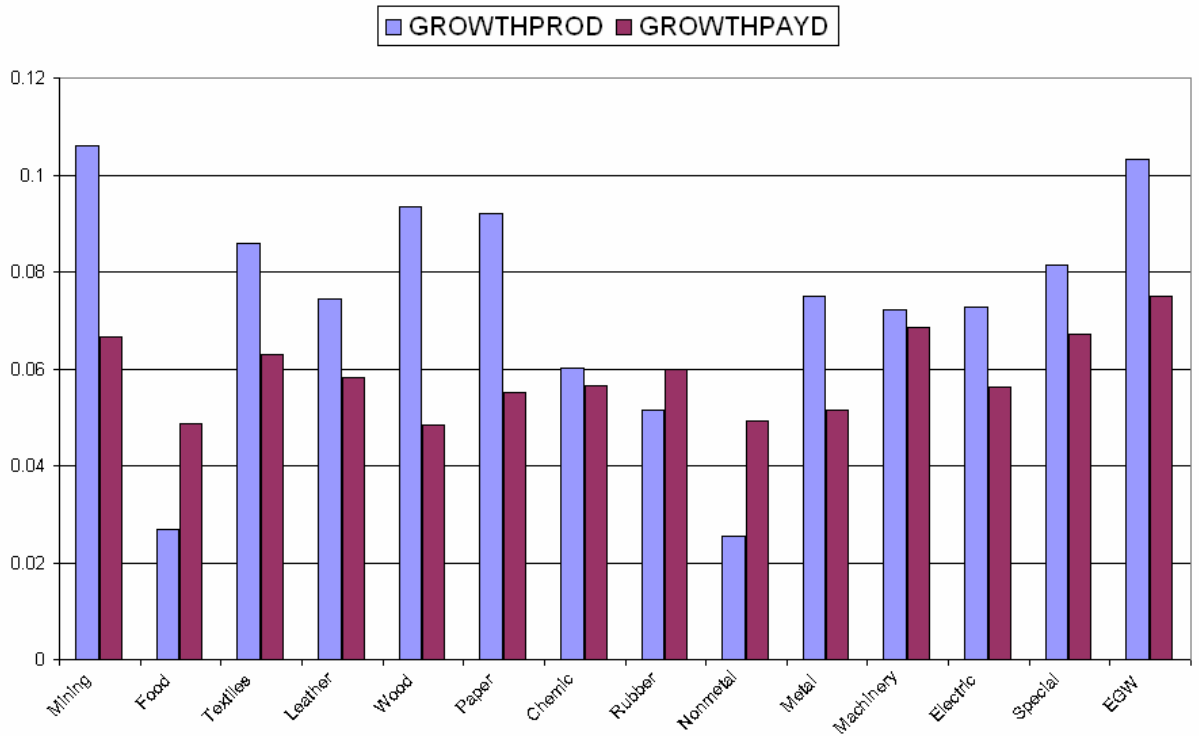
Graph 16 Yearly wages time-series in the Czech manufacturing, Source: CZSO/Author's calculations

Graph 17 – Productivity time-series in the Czech manufacturing, Source: CZSO/Author's calculations

Sales (in million CZK)

SALED ■ **SALEF**
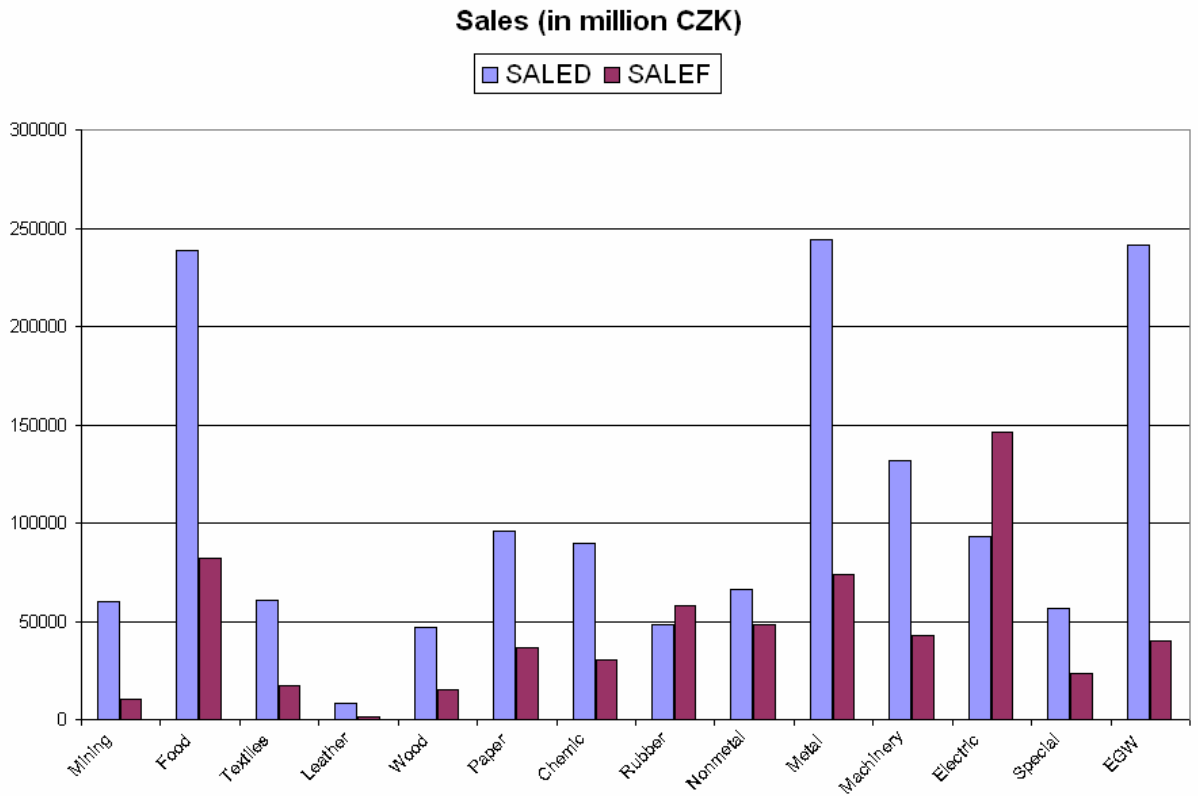
Graph 18 - Sales by sector in the Czech manufacturing, Source: CZSO/Author's calculations

Employment (average number of employees within 1997-2004)

□ **EMPD** ■ **EMPF**
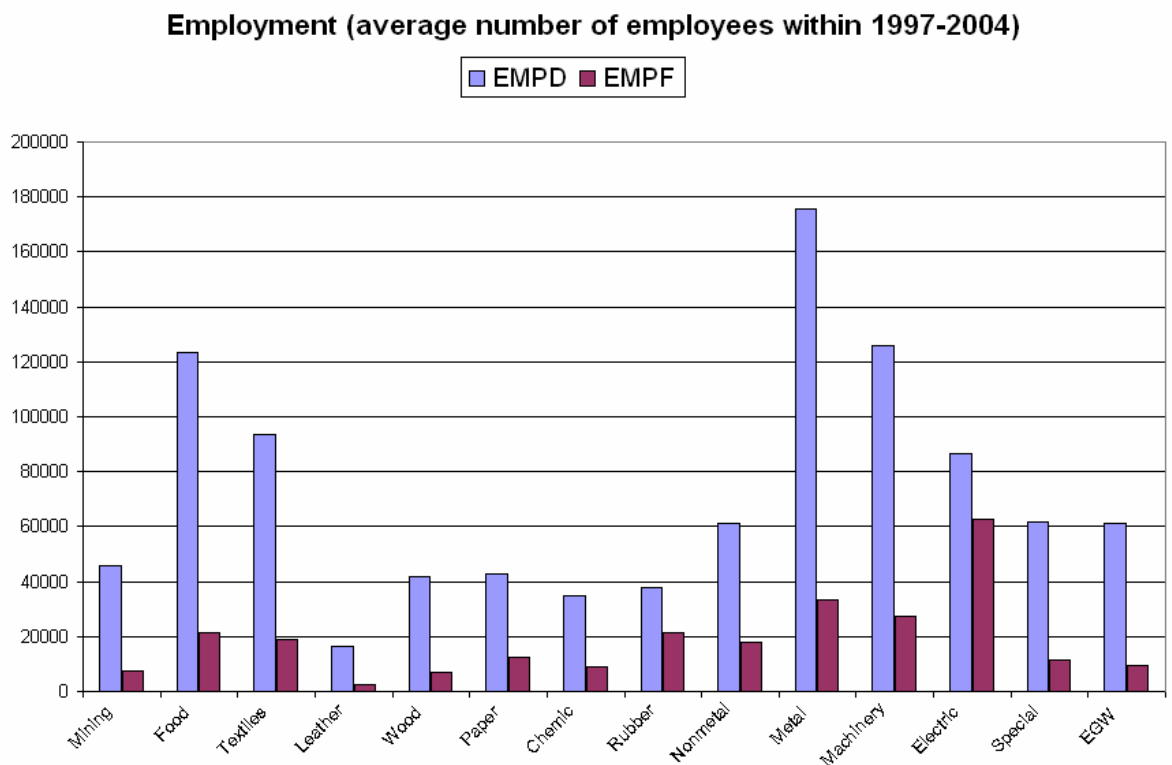
Graph 19 - Employment by sector in the Czech manufacturing, Source: CZSO/Author's calculations

Yearly wages (Wages and salaries, excl. other personnel costs per employee in CZK)

□ PAYD ■ PAYF

Graph 20 – Yearly wages by sector in the Czech manufacturing, Source: CZSO/Author's calculations

## Productivity (Value added per units of labour in CZK)

□ PROD ■ PROF

Graph 21 - Productivity by sector in the Czech manufacturing, Source: CZSO/Author's calculations

Growth of wages and productivity in sectors

☐ GROWTHPROD ☐ GROWTHPAYD

Graph 22 – Growth of productivity and wages in the Czech manufacturing, Source: CZSO/Author's calculations

Wage differential in foreign and domestic firms (average of 1997-2004)
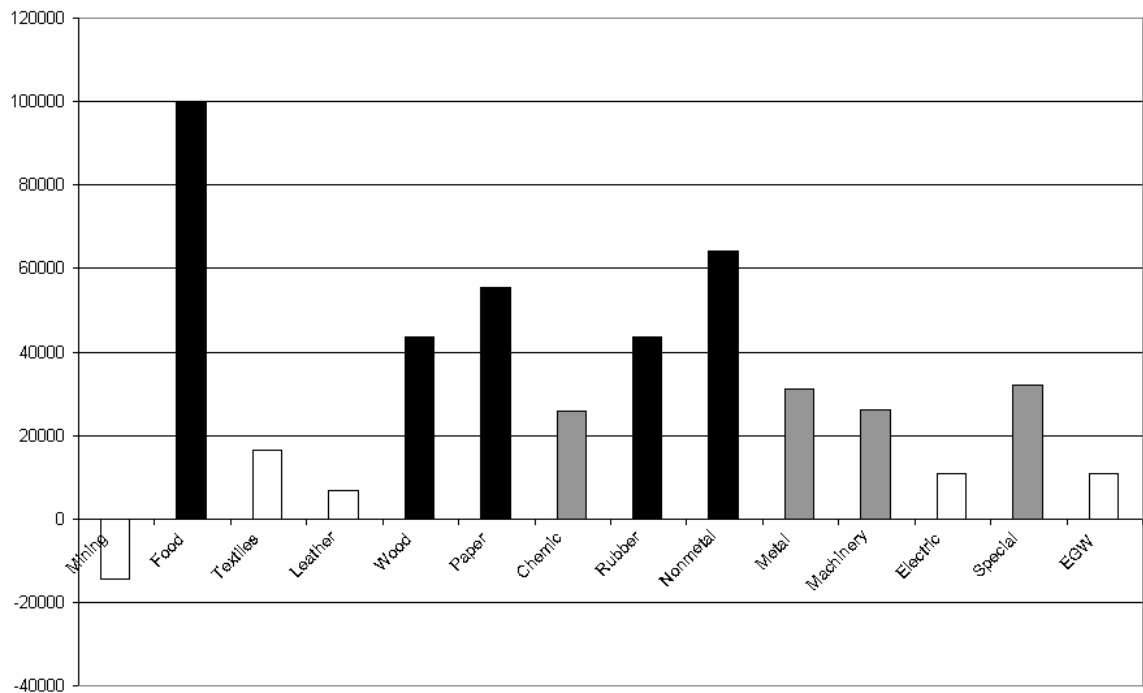
Graph 23 -Wage differential in foreign and domestic firms, Source: CZSO/Author's calculations