

The Czech Labour Market in the Recent Economic Crisis: Does the Foreign Ownership Matter?

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1. Introduction

The recent economic crisis has hit the Czech labour market in a less severe way compared to other countries, nevertheless it is still important to analyse the Czech labour market in detail in order to identify the critical and break-even points during the economic cycle. In doing so, there are a lot of indicators available that could be used but actual labour market indicators used in the Czech Republic have not been sufficient to satisfy all users' needs and what is more, new user needs emerged. To be more specific, more attention has begun to be paid to empirical evidence on job and employee flows in the Czech Republic.

For the reasons mentioned above, the main objective of this paper is to investigate the possibility of wider use of linked employer-employee microdata of enterprises, jobs and persons from the Czech Average Earnings Information System (the Structure of Earnings Survey family) in order to be able to identify comprehensive and more accurate labour market indicators compared with the generally known basic set of indicators.

In the global world, the special focus is on the potential effects of foreign ownership on jobs and wages development in the recent downturn. The initial hypothesis is that the foreign-owned economic subjects may be more often subject to the excessive negative effect caused by the economic downturn compared with those of domestic ownership. Keeping this in mind, we quantify the extended set of employment indicators concerning job creation and job destruction as well as hires and separations according to the ownership of the economic subject and discuss which economic subjects have suffered the consequences of the current crisis.

Last but not least objective of this paper is to widen the list of Central and East European countries that use job and employee flows' measures to analyze the labour market at the macro- as well as micro-level. To author's knowledge, there is not any study focused on job and employee flows in transition economies using linked employer-employee data except Konings et al (1996).

The structure of the paper is as follows. Section 2 presents the dataset and methods used. The main empirical results are presented in Section 3. Section 4 concludes the paper.

2. Data and definitions

To analyze the impact of the recent economic crisis on the Czech labour market, the data contained in the Average Earnings Information System (ISPV) have been used. ISPV is a quarterly employer survey carried out by a private agency (TREXIMA, Ltd.) on behalf of the Ministry of Labour and Social Affairs since 1992. ISPV is based on stratified random sampling which has been in accordance with the European Structure of Earnings Survey methodology since 2006.

All the results presented in this paper are 2006-2010 annual measures that have been quantified for the dataset of economic subjects in the business sphere that employed more than 250 employees at least at one year taken into consideration. For being classified in the dataset, individual economic subjects have to meet the criteria of supplying the maximum quality data (i.e. without any error) over the whole period.

The threshold of 250 employees was set for the reasons as follows. Considering the size of economic subjects according to the number of employees, 44 % of economic subjects with more than 250 employees were classified according to the Czech Business Register into the foreign controlled corporations during the whole period. As for the subjects with up to 250 employees, this percentage was about 7 %. It may be supposed, that most of the foreign controlled economic subjects with less than 250 employees (especially those with none employees) were more likely set to veil their actual ownership, so the dataset consisting of subjects with more than 250 employees seemed to be the best one to show the ownership effect on job and employee flows during the economic crisis even if these subjects use more often the legal form of asset holding company residing in offshore centres to avoid taxes. The other reason for this 250 employees' threshold was an aim to classify economic subjects according to the ownership broken down to individual countries. The ownership of all the subjects in the dataset was classified on the basis of the information contained in the Czech Commercial Register or in annual reports of individual subjects. Doing so, shares of individual countries were calculated as well. In case that it was not possible to identify the de facto owner, the last known owner's residency was used. Anyway, further analysis has shown that own classification was necessary because of some out-of-date or incorrect information on institutional sectors in the Business Register. Czech owned subjects were defined as those with 50% and more Czech ownership. Foreign owned subjects were the other ones.

Linking of ISPV records was realized in two steps. First of all, the records concerning economic subjects were matched using the 8digit registration numbers (ICO) which have been assigned to the subjects by the public authorities. ICOs are unique so the direct linking could be used. Some of the employee records were matched using the employee's ID which has been assigned to an employee by an employer. Doing so, problems concerning instability of these IDs were encountered, so employee records were in most cases matched using statistical data linking procedures based on more variables (sex, age, etc.).

The above mentioned dataset consists of 713 economic subjects with average total employment of 550 thousand employees per year. As for the number of economic subjects, the Czech ownership was less frequent (43 %) than the foreign ownership (57 %). Further, foreign owned firms were larger (average employment 775) than Czech owned ones (average employment 600), so foreign owned firms employed 67 % of the total employment on average, and Czech owned firms 33 %.

Indicators of job and employee flows were defined according to Davis and Haltiwanger (1992). *Job creation* at time t was quantified as the positive difference between the total number of employees in individual economic subjects at the time t and $t-1$. *Job destruction* at time t was quantified as the negative difference between the total number of employees in individual economic subjects at the time t and $t-1$. *Hires* include all employees who were newly employed in the given subjects during the given period. *Hires* (i.e. new employees) at time t are those who were not identified in the economic subject at the end of the time $t-1$, but were identified at the end of time t . *Separations* include layoffs and quits in the given enterprises during the given period (i.e. all employees that left their jobs voluntarily as well as involuntarily). *Separations* (i.e. leaving employees) at time t are those who were not identified in the economic subject at the end of the time t , but were identified at the end of time $t-1$. The employers' and employees' points of views meet via the *net employment change* (that equals job creation minus the job destruction as well as hires minus separations) and other aggregate indicators (worker and job reallocation) defined e.g. by Davis et al (1996).

The table 1 shows that ownership matters as far as firm frequencies broken down to expanding, declining and stable firms are concerned. The ratio of expanding to declining firms was higher in foreign owned firms over the whole period except for 2009. In 2009, foreign owned firms were more often declining than Czech owned firms however the ratio in 2010 showed that the foreign owned firms – contrary to the Czech owned firms – were more often expanding than declining.

Table 1
Firm frequencies according to ownership

Ownership		2007	2008	2009	2010
<i>Czech</i>	Firms expanding	0.455	0.435	0.296	0.474
	Firms declining	0.516	0.552	0.701	0.516
	Firms stable	0.029	0.013	0.003	0.010
	Total	1.000	1.000	1.000	1.000
<i>Foreign</i>	Firms expanding	0.625	0.457	0.207	0.632
	Firms declining	0.355	0.528	0.778	0.356
	Firms stable	0.020	0.015	0.015	0.012
	Total	1.000	1.000	1.000	1.000

NOTE. Expanding firms are those that experienced job creation in a given year. Declining firms are those that experienced job destruction in a given year. Stable firms experienced any change in employment.

3. Results for the job and employee flows

Main results of the analysis carried out on the dataset from ISPV concerning job and employee flows are shown in tables 2 and 3. Table 2 shows the results for Czech owned firms and table 3 summarizes results for foreign owned ones.

Table 2
Job and employee flows: case of the Czech ownership

Year	2007	2008	2009	2010
Job creation	0.0303	0.0274	0.0197	0.0528
Job destruction	0.0437	0.0538	0.0953	0.0477
Hires	0.1217	0.1643	0.1371	0.1526
Separations	0.1351	0.1906	0.2128	0.1475
Net employment change	-0.0134	-0.0263	-0.0756	0.0050
Worker reallocation	0.2568	0.3549	0.3499	0.3001
Job reallocation	0.0740	0.0812	0.1150	0.1005

NOTE. To convert time-t measures to rates, we divide by the average of employment at time-t and t-1. Worker reallocation is the sum of all hires and separations in a given year. Job reallocation (job turnover) is the sum of all job creations and destructions in a given year.

Table 2 shows that the situation concerning job and employee flows in Czech owned firms has worsened since 2007 and the slump point came about in 2009. Slight recovery was observed in 2010 when the net employment change rate turned positive.

As table 3 shows, foreign owned firms experienced another development during the recent economic crisis compared to Czech owned ones. First, situation of foreign owned firms differed already at the beginning of the crisis – foreign owned firms experienced positive net employment change in 2007 but the Czech ones did not. For the whole period, foreign owned firms were the most dynamic ones as far as worker and job reallocation are concerned. In 2009, crisis hit foreign owned firms in most severe way and levels of all indicators became nearer to those of Czech owned firms. In 2010, foreign owned firms recovered up to the 2007 level whereas they created jobs and hired new employees more often than Czech ones. Apparently, the recent economic crisis hit Czech owned firms in more severe way than the foreign owned ones.

Table 3
Job and employee flows: case of the foreign ownership

Year	2007	2008	2009	2010
Job creation	0.0788	0.0387	0.0220	0.0878
Job destruction	0.0284	0.0509	0.0962	0.0298
Hires	0.2117	0.1885	0.1451	0.2272
Separations	0.1613	0.2007	0.2193	0.1693
Net employment change	0.0504	-0.0122	-0.0742	0.0580
Worker reallocation	0.3730	0.3892	0.3643	0.3965
Job reallocation	0.1072	0.0896	0.1183	0.1176

NOTE. To convert time-t measures to rates, we divide by the average of employment at time-t and t-1. Worker reallocation is the sum of all hires and separations in a given year. Job reallocation (job turnover) is the sum of all job creations and destructions in a given year.

As far as foreign owned firms are concerned, the results according to individual owners' countries of origin were quantified as well. Job and employee flows rates of foreign owned firms were influenced mostly by the EU countries (above all EU15) that formed 90 % (82 %) of foreign firms. EU15 countries were represented above all by Germany (27 % of EU15 firms), the Netherlands (20 %) and Austria (11 %). Both level and trend of job and employee flows were almost the same for EU15 owners as for foreign owners as a whole. Besides German and Austrian owners, owners from other Czech neighbouring countries (Slovakia or Poland) formed negligible part of all EU owners. As far as non-EU countries are concerned, most of the owners came from the USA and Japan. Although each of these countries represented only 1 % of foreign firms, development of job and employee flows are worth mentioning. U.S. and Japanese owners experienced on average higher job and worker reallocation compared to other foreign owners. Job destruction rate in U.S. (Japanese) owned firms equalled 0.007 (0.002) in 2007, increased to 0.184 (0.099) in 2009 and fell to 2007 level in 2010. Job creation rate in U.S. (Japanese) owned firms was 0.133 (0.115) in 2007, decreased to 0.013 (0.022) in 2009, and exceeded the 2007 level in 2010.

The results showed that job destruction varied more than job creation for EU15, U.S. as well as Czech owned firms between 2007 and 2010 which corresponds to cyclical asymmetry investigated by Davis et al (1996). The highest standard deviations were observed in U.S. owned firms where job creation varied by 0.053 percentage points (pp) and job destruction by 0.074 pp. The EU15 owners experienced lower variation, namely 0.021 pp for job creation and 0.025 pp for job destruction. The lowest variation was observed in Czech owned firms where job creation varies by 0.012 pp and job destruction by 0.020 pp during the period 2007-2010. In accordance with Stiglbauer et al (2002), this cyclical asymmetry cannot be confirmed as far as Austrian owned firms are concerned, because these firms showed lower variation of job destruction (0.007 pp) than of job creation (0.020 pp).

Comparing worker and job reallocation of both Czech and foreign owned firms, we can see that there were on average about 3.5times as many worker than job reallocations.

Contrary to other European countries, especially to the Scandinavian countries (e.g. Belzil, 2000 or Ibsen and Westergaard-Nielsen, 2005 for Denmark), job reallocation rates for our dataset indicate to be very low. These rates are even lower than Boeri and Cramer (1992) observed in Germany or Stiglbauer et al (2002) in Austria or Konings et al (1996) in Poland. These results might be astonishing but they rather confirm an assumption that Czech labour market is not flexible in general. Of course, for meaningful comparison the dataset as well as time span should be the same.

The situation concerning job and employee flows can be sketched in by table 4 that compares monthly gross wage median of three categories of employees, namely of those staying with the economic subject over the whole year (stable employees), those hired and separated. Average monthly gross wage showed similar trends but standard deviations were too high to make the use of average reasonable. To be more specific, average monthly gross wage of stable employees in Czech owned firms was 25,743 CZK (coefficient of variation, CV 0.88) on average in the period 2007-2010 compared to 29,752 CZK (CV 0.93) in foreign owned ones. Average wage of employees hired into Czech owned firms was 19,655 CZK (CV 0.68) and into foreign owned firms 22,424 CZK (CV 1.00) in this period. Employees separated from Czech owned firms used to be remunerated with an average wage of 20,748 CZK (CV 0.81) and from foreign owned firms with an average wage of 23,901 CZK (CV 1.03). These results show that average wage (as well as variation) of stable and new employees was on average higher in foreign owned firms than in Czech owned ones. Employees separated from foreign owned firms used to be paid better than those separated from Czech owned firms.

Table 4
Monthly gross wage median by ownership category

Category of employees	Ownership	Monthly gross wage median [CZK]			
		2007	2008	2009	2010
Hires	Czech	16,387	17,572	17,539	17,464
	Foreign	17,557	17,913	17,564	18,162
Separations	Czech	16,221	17,098	18,066	18,886
	Foreign	17,151	18,210	20,059	19,879
Stable employees	Czech	20,500	21,878	22,217	22,870
	Foreign	23,267	24,495	24,026	25,159

As far as monthly gross wage median shown in table 4 is concerned, different tendencies in wage median development between Czech and foreign owned firms can be observed. First, wage median in Czech owned firms was lower than in the foreign owned ones over the whole period regardless of the category of employees. As for Czech owned firms, wage median of stable employees has increased since 2007. New employees have been hired into Czech owned firms for lower wage since 2008 and employees with increasing wages have been separated since 2007. Results concerning foreign owned firms correspond to those of job and employee flows, i.e. foreign owned firms experienced deeper downturn in 2009 but they seem to have recovered in 2010. Contrary to stable employees in Czech owned firms, wage median of stable employees in foreign owned firms declined in 2009, but in 2010 wage median grew faster (104.7 %) compared to stable employees in Czech owned firms (102.9 %). New employees were hired for lower wage in 2009 compared to 2008, but the turning point set in 2010 and wage median of new employees exceeded the 2007 level. As for separated employees, wage median increased until 2009 when employees with highest wages separated. Turning point set in 2010, too, and employees with lower wages compared to 2009 separated. The results may implicate that both Czech and foreign owned firms have stopped to overpay new employees and separated those with lower qualification compared to stable employees but with higher qualification compared to those separated at the beginning of the crisis.

4. Conclusions

The main objective of this paper was to investigate the possibility of wider use of linked employer-employee microdata in the Czech Republic with the special focus on the potential effect of foreign ownership on jobs and wages development during the recent economic crisis. To analyze the impact

of the economic downturn, the dataset of economic subjects employing more than 250 employees from the Czech Average Earnings Information System (the Structure of Earnings Survey family) was used.

The main findings of this paper can be summarized as follows. First, the foreign ownership really matters. Foreign owned firms (that run their business in the Czech Republic) experienced another development of job and employee flows compared to Czech owned firms during the period 2007-2010. The recent economic crisis hit Czech owned firms in more severe way compared to those foreign owned – both Czech and foreign owned firms experienced deep downturn in 2009 but foreign owned firms recovered up to their before crisis level in 2010 whilst Czech owned ones did not. Job and worker reallocation rates remained lower in Czech owned firms compared to foreign owned ones. Second, the cyclical asymmetry was confirmed for U.S., EU15 and Czech owned firms. Job destruction rate did not vary more than job creation rate only in case of Austrian owned firms which corresponds to previous studies. As far as remuneration is concerned, the results showed that monthly gross wage median (as well as average) in Czech owned firms was lower than in the foreign owned ones over the whole period regardless of the category of employees.

This study proved that indicators concerning job and employee flows are more accurate labour market indicators compared with the generally known basic set of indicators because they make the macro- as well as micro-insight possible. Furthermore, various avenues for future research were suggested. It would be interesting to investigate the relationship between job and employee flows of individual countries and firms originated in these countries but doing their business in the rest of the world. Correlation between rates concerning job and employee flows of these subjects might be high, as the results in this study indicated e.g. for Austria.

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ABSTRACT

In the global world, the special focus of the proposed paper is on the potential effects of foreign ownership on jobs and wages development in the recent downturn. The initial hypothesis is that the foreign-owned economic subjects may be more often subject to the excessive negative effect caused by the economic downturn compared with those of domestic ownership. Keeping this in mind, we quantified the extended set of employment indicators concerning job creation and job destruction as well as hires and separations according to the ownership of the economic subjects running their businesses in the Czech Republic in the period 2007-2010 and discussed which economic subjects have suffered the consequences of the recent crisis.