Policy Brief

CERGE-EI

The impact of territorially concentrated FDI on local labor markets
Evidence from the Czech Republic

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Research Objectives

The economic growth of a region or a country is positively associated with the presence of FDI, as documented by literature on FDI spillovers. On the other hand, there exists limited literature supporting a popular view of FDI as an important tool in generating employment and improving labor market outcomes. Governments regard FDI as beneficial and adopt various policy strategies in order to initiate FDI inflow into a country. Besides systematic measures such as improving infrastructure, legislature and removing administrative barriers, policymakers resort to various incentives schemes, e.g. tax holidays, designation of industrial zones or direct financial subsidies per each created vacancy. These incentives are financed from public money; therefore, a taxpayer's obvious question is whether these incurred costs are smaller than presumed positive impacts on local labor market. Thus, a rigorous empirical analysis of FDI impact on local labor market outcomes is a necessary prerequisite for efficient policymaking and the aim of this study is to analyze the impact of one-off large territorially concentrated FDI inflow on local labor market outcomes such as the unemployment rate, aggregate hazard rates from unemployment and the employment rate.
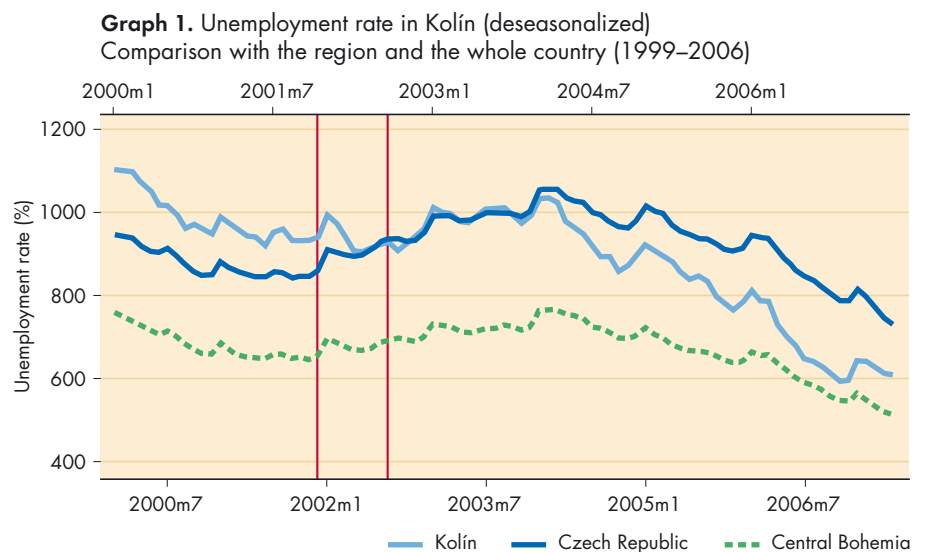
In the Czech Republic, a systematic investment incentive scheme is in effect since 2000[1] when a program providing investors into manufacturing sector with financial subsidies was established. As a part of this program, the Toyota-Peugeot (TPCA) joint investment project in the Kolín district in the Středočeský region (announced in December 2001) has been granted financial support. This green-field investment in the automobile sector has not only been the largest one-off inflow of FDI in the Czech Republic between 1993 and 2006 (reaching 23.5 billion CZK) but it has also received the largest investment incentives (the ceiling has been set to 3.525 billion CZK – 15 percent of the investment – and during years 2004 and 2005 almost 0.6 billion CZK was paid for created vacancies and retraining workers).[2]

Empirical Analysis

Visual inspection of the unemployment rate in Kolín compared with the Czech aggregate unemployment rate shows a sharper decrease in unemployment rate in Kolín after the investment announcement and the start of the hiring process than in an average district (see *Graph 1*). The downward slope of the overall unemployment rate indicates a favorable overall macroeconomic trend and illustrates that a major part of the decrease in Kolín unemployment rate

Graph 1. Unemployment rate in Kolín (deseasonalized) Comparison with the region and the whole country (1999–2006)

Source: District Labor Offices
The first line marks the announcement of the investment, the second line start of hiring

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[1] Administered by the government agency CzechInvest
[2] Source: CzechInvest

Table D.1 The impact of the TPCA investment on local labor market outcomes

	Impact				Reference
years considered as a transition period	0	1	2	3	
outflow rate	2.58*	3.10*	4.76*	5.51*	13.69
inflow rate	-0.02	-0.04	-0.09	0.16	1.40
unemployment rate	-1.74*	-2.14*	-3.11*	-3.79*	9.48
employment rate	3.75*	4.29*	5.65*	6.20*	59.91

* – significant at 5% significance level

Notes: Values denote the the impact of the plant opening on the outflow rate (the outflow divided by the stock of unemployed), the inflow rate (the inflow divided by the stock employed), the unemployment rate (unemployed divided by the labor force) and the employment rate (employed divided by the total working-age population) in percentage points change. Column 'reference' offers a comparison of the magnitude of the impact to reference rates represented by corresponding labor market indicators for Kolín as for 2001 (the year prior to the announcement of the investment project). Standard errors are robust and clustered from the data. Significance levels: *** 0.1%, ** 1%, * 5%.

Table D.2 The impact of the TPCA investment on aggregate exit hazard rates

Unemployment duration	Impact	Hazard rate
unemployment duration	(1)	(2)
0–3 months	2.53*	46.98
3–6 months	3.15*	35.35
6–9 months	4.38***	38.51
9–12 months	0.29	27.13
>12	0.98	18.73

Notes: Column 1 presents the results of the estimation of the effects of the plant opening on the exit hazard rate out of unemployment (the probability of leaving the pool of unemployed during the following quarter of the year) for different unemployment durations. Coefficients report the impact on the exit hazard rate in percentage points. Column 2 offers a comparison of the impact to the reference hazard rate in Kolín during 2001 (the year prior to the announcement of the investment project). Standard errors are robust and clustered from the data. Significance levels: *** 0.1%, ** 1%, * 5%.

might be attributed to a positive performance of the whole economy. Therefore neither a simple comparison of the unemployment rate in Kolín before and after the investment nor a comparison with the average unemployment rate would measure the true impact; first, the estimate would be biased by the size of the overall trend and, second, Czech districts are heterogenous and the same factors may influence their performance differently. The trick is to identify what would have happened to the local labor market in Kolín in the absence of the plant opening. Specifically, a control group of districts is constructed[3] and we assume that a local labor market would have trended identically without the plant opening in Kolín and the control group. Possible residual heterogeneity among districts is accounted for by including variables describing industry and educational structure of a district. The true impact of the plant opening is then estimated as the difference between the relative change in outcomes in Kolín vs. control districts before and after the investment.[4]

The results indicate a positive and significant (both statistically and economically) impact on outflow rate from employment (increase by 2.6 percentage points) while the inflow rate into unemployment remains unaffected (see *Table D.1*), thereby implying a decrease in the average duration of unemployment and a positive effect on the local unemployment rate. The decrease

in average duration is driven primarily by the rise in aggregate exit hazard rates from unemployment with duration of less than 9 months, increasing by 2.5, 3.2 and 4.4 percentage points in three duration categories, respectively (see *Table D.2*). On the other hand, unemployment durations greater than 9 months do not display any significant impact of the investment project. This result illustrates that the plant opening helped to improve chances of short-term unemployed to find a job while the prospects of long-term unemployed remained as miserable as before. These changes in exit hazard rates translate into a statistically significant decrease in the total number of unemployed by 1.7 percentage points, corresponding to 1,260 unemployed people finding a job due to the investment project, which makes the impact of the investment project also economically significant. The impact on the employment rate is also positive as the employment rate

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increases by 3.7 percentage points following the TPCA investment. The productive age population (15–65 years of age) in Kolín during 2002–06 was approximately 68,000; this change, therefore, corresponds to an absolute increase in employment by almost

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[3] The control group has to be as similar to Kolín as possible, therefore districts with a similarly high propensity of hosting a high FDI inflow as Kolín are identified and, afterwards, a subset of those districts which actually did not receive a high FDI inflow is taken as a control group (propensity score matching technique).
[4] This technique is known as difference-in-differences analysis.

2,500 individuals[5] while the number of created vacancies reported by TPCA was 3,000. Comparing the estimate with the reported value, it should be noted that approximately one half of workers migrated from abroad or from other districts.[6] Presuming that most of these workers might not be captured in the data, the reported number should be adjusted to 1,500, giving a positive spillover of approximately extra 1,000 individuals who found a job due to the plant opening, but not in the plant itself. Various robustness checks such different specifications of time delay to account for a possible lag in the investment impact, alternative estimates of standard errors (bootstrapped from the data) and simulations of placebo interventions were applied and the results remain valid under different specifications.

Summarizing, spillover effects on the local labor market have outweighed possible crowding-out effects as 2,500 people found jobs due to the investment project, outnumbering the reported amount of vacancies adjusted by the migrants' share. However, the result that only short-term unemployed benefit from the FDI inflow is alarming. It confirms a negative aspect of unemployment persistence and asserts that the long-term unemployed remain intact by government-driven job creation schemes. Returning this group of unemployed into working process remains one of the main challenges of policymaking. ∎

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[5] The discrepancy between the number of unemployed finding a job and net employment generation may be explained by the out-of-labor-force individuals becoming employed.

[6] These workers may be underrepresented in the Labor Force Survey data as most of them still possess a different place of residence or lives in long-term dormitories which are not included in the survey.

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