THE IMPACT OF FDI INFLOW ON EMPLOYMENT IN V4 COUNTRIES[92]

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Abstract

Paper´s effort is to analyse the impact of FDI inflow on employment of V4 countries by using panel data. This method allows us to evaluate the effect of FDI inflow on vacancies creation. Further, we discuss and explain the role of FDI inflow in this process with the focus on particularities of the V4 countries labour markets. Finally, paper discusses implications of FDI analysis and tries to verify the positive effect of FDI inflow on employment in V4 countries.

Keywords: Employment, unemployment, Okun´s law, FDI inflow

Introduction

During last decades, economies are trying to attract the foreign direct investment (FDI) to create employment and enhance the nation´s purchasing power through higher wages. Understanding the determination of employment levels requires the recognition of the existence of factors that inherently cause employment to vary, such as age, fertility, education, labour laws, minimum wage levels, and changes in interest rates, productivity, terms of trade, and the openness of the economy. However, FDI flows have contributed significantly to the expansion of the productive sector and the innovation of production techniques.

The FDI have the potential to generate employment through direct hiring of people for new plants, which means they improve aggregate domestic employment through types of jobs created, regional distribution of new employment, wage levels, income distribution and skill transfer (Mickiewicz, Radosevic and Varblane (2000). These direct effects are accompanied by indirect or spillover effects. Indirect effects take place through movement of trained labour from foreign firms to other sectors as well as they create links with suppliers and service providers and through increase of incomes, which can also increase employment through higher levels of consumption, savings and investment. The integration of FDI into a local economy results in transmission of business culture, which includes corporate values, organisational structures and management practices (Mirza, 1998). Because FDI bring relatively new technology, its impact on employment depends on the interaction between productivity growth, output growth, and the specialization of labour.

Along with the improvement of skills, technology, productivity and trade, FDI may have the potential adverse effects on wages and employment in the host economy. The following are four different effects of FDI on job creation:

(1) Employment creation through new production capacity and new jobs.

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(2) Employment crowding-out: the inflow of FDI makes the competition more intense, which is why some domestic enterprises reduce employment to improve their competitiveness.

(3) Employment shift taking place in transfer workers to new enterprises.

(4) Employment loss: not efficient or not suitable workers for new corporate environment will lose their jobs.

Combining the positive and negative impact, UNCTAD in its report shows the direct and the indirect potential effect of FDI on the labour market as outlined in the following table.

Table 1: Potential effects of inward FDI on the quantity, quality and location of employment

	Direct		Indirect	
	Positive	Negative	Positive	Negative
Quantity	Adds to net capital and creates jobs in expanding industries	Acquisitions may result in rationalization and job losses	Create jobs through forward and backward linkages and multiplier effects in local economy	Reliance on imports or displacement of existing firms results in job losses
Quality	Pays higher wages and has higher productivity	Introduces practices in e.g. hiring and promotion that are considered undesirable	Spillover of "best practice" work organization to domestic firms	Erodes wage levels as domestic firms try to compete
Location	Adds mew and perhaps better jobs in areas with high unemployment	Crowds already congested urban areas and worsens regional imbalances	Encourages migration of supplier forms to areas with available labour supply	Displaces local producers, adding to regional unemployment, if foreign affiliates substitute for local production or rely on imports

Source: UNCTAD (1994).

Net effect of the FDI especially depends on the type of investments. Horizontal FDI are generally driven by market-seeking motives, while cost-saving motives are underlying vertical FDI. Horizontal FDI represent substitution between the foreign and domestic activities, mainly whether FDI is undertaken in the tradable goods sector. FDI replaces trade in the Heckscher-Ohlin framework so that horizontal FDI would have a negative effect on production at home country and positive at host country. When foreign companies search out new markets, the effects on employment is mixed as benefits came at a cost to local less productive companies.

On the other hand, companies seeking to export cheaply produced goods will positively influence the host economy as they create jobs and raise output without threatening domestic companies. Vertical FDI are supposed to involve "an element of complementarity between the firm's domestic and foreign operations" (Braconier and Ekholm 2000: 448). However, they may also involve labour substitution if upstream or downstream activities traditionally conducted at home are relocated to foreign affiliates. Net effects depend on whether cost savings through vertical fragmentation enable the parent company to improve its productivity and expand its market share, and on the degree of complementarity between foreign and domestic stages of production (Hanson et al. 2005).

Further complications for the prediction of the FDI effect on employment are brought by the chosen mode of entry. A positive employment impact on the host country is more assumed in case of Greenfield investment, which entails the creation of new manufacturing plants, as they create new production capacity and increase the demand for labour. Otherwise,

they may potentially bring labour-saving technologies which decrease the labour demand and crowd-out less competitive domestic firms making the net effect negative.

The alternative mode of entry that takes advantage of already established assets – through mergers and acquisitions – is assumed to be neutral to employment in the short run, as it is just a transfer of ownership, or even negative due to cuts in costs and increase efficiency in the newly acquired subsidiaries. FDI through mergers and acquisitions does not generate employment at the time of entry into the host economy, and may lead to lay-offs as the acquired firm is restructured. However, the greater efficiency and better quality may lead to more jobs in the long run.

ILO research shows that there has been a decline in the employment content of growth since the late 1990s, which means the rate of output growth required for net employment creation has risen. At the same time, the IMF has documented historically low levels of global savings and investment. The consequence is that the relationship between growth, investment and employment creation has weakened. There may be many reasons for this; one factor might by the type of foreign direct investment. According to previous World Investment Reports there was noted a rising share of FDI in form of mergers and acquisitions, rather than in Greenfield investments. High levels of foreign investment, therefore, could be consistent with minimal employment creation.

The remainder of the article is organized as follows. Section 2 describes the literature on the impact of FDI on employment. Section 3 lays out the data and the methodology. Section 4 presents the results, and Section 5 concludes.

Literature review

The economic literature has extensively examined the FDI flows to uncover its influence on growth and development and labour market. Evidence from case studies of FDI on the employment and wage impact are quite controversial. The effect on the host countries has been considered in different aspects. Most research has emphasized the effect on economic growth, wage levels, technology spillover, foreign trade, employment structure and employment in the host economy (Floyd 2003, Dicken 2007).

The impacts of FDI on aggregate employment at regional or world level have received little attention in the empirical literature. The studies at the aggregate level showing that increases in FDI do in fact lead to improvements in employment levels at the national level are the studies of Braunstein and Epstein (2002), Spiezia (2004), and Vacaflores (2011). Vacaflores (2011) examines the effect of foreign direct investment (FDI) on employment generation for a group of Latin American countries in the period 1980-2006 and finds that FDI has a positive and significant effect on the employment generation in host countries, which is driven by its effect on male labour force. This positive effect is particularly important for less developed economies, periods with low inflation, and for the later period of the sample, but suggests that only countries with high level of informality and those attracting low average inflows of FDI accrue this benefit.

Lee and Vivarelli (2004) point out that even if trade and FDI are expected to positively affect employment, employment creation cannot be automatically assured, as the employment effect can be very diverse in different areas of the world. Spiezia (2004) finds that the impact of FDI on employment is increasing with per-capita income for a group of 49 countries, but its effect is not significant for low-income developing countries. Vacaflores and Mogab (2012) find that the subsidiaries in Asia are the ones that respond to increases in FDI by the largest additions in employment, followed by subsidiaries in the Americas, but that only those subsidiaries in the Manufacturing and Service sectors present a statistically significant influence.

According to Liu (2011) research in China in secondary and tertiary industry for the period 1985-2008, growth of FDI in the long run would promote employment, and it is especially true for tertiary industry, where bidirectional linkage between FDI and employment exists; in the short term FDI has limited and even negative effect on employment, with the latter indirectly increasing the former.

Banga (2005) in its analysis for 78 three digit level industries in India have shown the impact of FDI, trade and technological progress on wages and employment. The findings show that the higher extent of FDI in an industry leads to higher wage rate in the industry; it has no impact on its employment. Similarly technological progress is found to be laboursaving.

To estimate dynamic labour demand functions for blue and white collar workers, Arellano and Bond (1991) refined a panel data analysis. Through the GMM estimator, they found FDI had a significantly positive, though quantitatively modest impact on manufacturing employment in Mexico. It also showed there was a positive effect on blue collar employment. But it was diminished with the increase of skill intensity of manufacturing industries.

Ramirez (2001) has shown that the technology transfers to Mexican economy from the parent companies are capital intensive in nature, resulting in a limitation in the long term employment creation in the automobile industry. However, in contrary to negative impact, the study by Ernst (2005) shows the concern of positive employment impact on the domestic economy. Concerning chemical products, an analysis of employment data of major TNCs confirms the relatively positive employment impact. The figures are relatively less favourable for Mexico. TNCs involved in computers and, in particular, electronics, created significant employment in Mexico during the 1990s in the chemical industry but figure for the year2000 has shown a declining trend in all the companies examined.

Most researchers conclude that there would be higher positive employment effects if the investment takes the form of Greenfield investment. On the other hand, there will have a limited, even negative effect on the employment level if foreign capital comes through mergers and acquisitions and buys privatized enterprises (Dicken, 2007).

While the direct impact of FDI on employment has inconclusive answer, FDI may create positive indirect impact on employment generation. However, research on the indirect effect of FDI on employment is very limited. The estimates of impact of FDI in U.S. by Glickman and Woodward (1989) using the survey data from the Bureau of Economic Analysis (BEA) have shown a substantial increase in employment between 1982 and 1986.In terms of the indirect effect, Sjöholm (2008) studied the relationship between FDI and technology and found a clear linkage between the employment and technology. On the one hand, new technology may make firms more competitive which permits them to grow and employ more workers. On the other hand, new technology may also decrease demand for labour by substituting the low skilled employees with fewer high skilled employees. Hence, the change of technology policies will affect the job creation. Moreover, firm ownership also is an important part of job creation.

Mickiewicz, Radosevic and Varblane (2000) showed that the bigger diversity of types of FDI is more favourable for the host economy. There is higher potential that it will lead to more diverse types of spillovers and skill transfers. If policy is unable to maximise the scale of FDI inflows then policymakers should focus much more on attracting diverse types of FDI.

Finally, we can conclude that the quantification of the overall impact of FDI on employment is still uncertain from both theoretical and empirical points of view. To the extent that FDI contributes to economic growth then it may be contributing indirectly to the creation and improvement of employment.

Methodology

Literature on relationship between unemployment and FDI inflow is not reflecting the Okun´s law as the possibility to explain the level of unemployment or its change at the macroeconomic level. This basic law of economics considers the economic growth as the main and only factor of changes in unemployment. According to Knotek (2007), Okun´s law may be formulated in three versions.

First is the difference version that means:

change in unemployment rate = a + b * real output growth

This may be also expressed as:

$\Delta UR_t = a + b^* gGDP_t$

Second, gap version that is given by following equation:

UR_t = c + d * gap between potential and actual output

or: $UR_t = c + d * GDPgap_t$

The last, third version is dynamic approach that assumed that the unemployment rate is given not only by current, but also previous economic growth, as well as by former unemployment rate. Then, the equation may be written as:

$UR_t = c + \beta_1 * gGDP_t + \beta_2 * gGDP_{t-1} + \beta_3 * UR_{t-1}$

Considering the growth of output as the main factor influencing unemployment rate, the question that arise is what is the impact of FDI inflow on unemployment, respectively employment? To answer, we decided to use Okun´s law with additional variable – FDI inflow. Data we have used cover period 1993 – 2012. We have examined three versions of Okun´s law using panel data for V4 countries. Variables used in each version differ.

In difference version, dependent variable is change in unemployment rate measured as percentage point change. Independent variables are GDP growth and log of real FDI inflow. Equation may be expressed as:

$\Delta UR_{i,t} = c + \beta_1 * gGDP_{i,t} + \beta_2 * logRFDI_{i,t} + \varepsilon_{i,t}$

In gap version of Okun´s law, dependent variable is expressed as unemployment rate in percentage points. Independent variable Gap is calculated as difference between potential and actual output in logarithm. Potential output was calculated by Hodrick – Prescott filter. Second variable is the log of real FDI inflow.

$UR_{i,t} = c + \beta_1 * Gap_{i,t} + \beta_2 * logRFDI_{i,t} + \varepsilon_{i,t}$

Dynamic version of Okun´s law assumed that unemployment rate depends not only on current, but also on previous variables of GDP growth and FDI inflows, as well as on previous unemployment. We use the same variables as in previous variants. The equation may be written as:

$UR_{i,t} = c + \beta_1 * gGDP_{i,t} + \beta_2 * gGDP_{i,t-1} + \beta_3 * UR_{i,t-1} + \beta_4 * logRFDI_{i,t} + \beta_5 * logRFDI_{i,t-1} + \varepsilon_{i,t}$

To estimate results, mainly coefficients of our interest associated with FDI inflows, we have used statistical program Gretl.

Estimation results

Estimation results of our panel regression are presented in Table 2. In all three models, panel regression with fixed effect was the most appropriate. Regressions give us following results. We confirm the significance of GDP growth and GDP gap in influencing the unemployment; it means that Okun´s law is valid also in V4 countries. GDP growth or GDP gap is significant on 1% level in all versions, except for the one year lag of growth in dynamic version. Even here, its statistical significance is on 10% level. The most important finding that has come from all regressions is no significant impact of FDI inflow on unemployment. Variable FDI inflow is not significant in any Okun´s law variant. The results seem to be surprising. However, if we look deeper to the structure of FDI inflow to V4

countries, a huge inflow was realized through privatization. Greenfield investments become part of these economies mainly after the losing effects of former privatization. These reverse impacts on unemployment given by a different form of FDI inflow cause such ambiguous results. We may conclude that there is no significant impact of FDI inflow on unemployment in V4 countries. The only factor that influences unemployment is the GDP growth, respectively GDP gap.

Table 2: Estimation results for Unemployment

Difference version [d_UR]			Gap version [UR]			Dynamic version [UR]		
$gGDP_{i,t}$	-0.32208 (0.0575303)	***	$Gap_{i,t}$	39.9791 (6.90439)	***	$gGDP_{i,t}$	-0.278512 (0.0568416)	***
$logRFDI_{i,t}$	-0.0855872 (0.124881)		$logRFDI_{i,t}$	0.141867 (0.212864)		$gGDP_{i,t-1}$	-0.116221 (0.0645639)	*
- 76 observation in Difference and Dynamic version, 80 in Gap version - dependent variable in square brackets - standard errors in parentheses - ***, **, * - statistical significance on 1%, 5%, and 10% level						$logRFDI_{i,t}$	-0.0289653 (0.118617)	
						$logRFDI_{i,t-1}$	-0.186915 (0.124912)	
						$UR_{i,t-1}$	0.872422 (0.0523062)	***

The main effort of the paper is to analyse the impact of FDI inflow on employment. Let´s look to the same issue of FDI impact from another point of view. We already know that FDI inflow has any significant impact on unemployment rate. Although there is a negative relationship between unemployment and employment, both may be influenced by different factors. For example unemployment rate count only with unemployed people those are active in looking for new jobs, but not with those who are not. Or, these people have to be registered in any employment office. This is common methodology of unemployment measure in V4 countries. Although there are some differences, we expect that the FDI inflow will have no significant impact on employment, as well as the results show it has on unemployment rate.
One of the advantages of FDI inflow is claimed to be job creation. New jobs should then cause decrease in unemployment rate. If the main factor influencing unemployment rate is GDP growth or GDP gap, the same factor should have impact on employment. Then, to examine the impact of FDI inflow on employment, we use the Okun´s law, but using employment to population ratio instead of unemployment rate.

Results of such panel regression represented in Table 3 are similar. We have found no effect of FDI inflow on employment formulated as employment to population ratio. Finally, we may conclude that FDI inflow has no significant impact on employment in host country.

Table 3: Estimation results for Employment

Difference version [d_E/P]			Gap version [E/P]			Dynamic version [E/P]		
$gGDP_{i,t}$	0.158515 (0.044523)	***	$Gap_{i,t}$	-31.6459 (5.18338)	***	$gGDP_{i,t}$	0.115825 (0.0453551)	**
$logRFDI_{i,t}$	0.144063 (0.0966461)		$logRFDI_{i,t}$	-0.175682 (0.159805)		$gGDP_{i,t-1}$	0.1074 (0.0495721)	**
- 76 observation in Difference and Dynamic version, 80 in Gap version - dependent variable in square brackets - standard errors in parentheses - ***, **, * - statistical significance on 1%, 5%, and 10% level						$logRFDI_{i,t}$	0.123195 (0.0955614)	
						$logRFDI_{i,t-1}$	0.0725727 (0.0994424)	
						$E/P_{i,t-1}$	0.906327 (0.0532794)	***

Conclusion

We use macroeconomic perspective to examine the effect of FDI inflow on employment by applying modified Okun´s law. We are conscious of some imperfections of such approach. There are two explanations in using this alternative. First, the lack of data on microeconomic level, so we were not able to distinguish between FDI inflow to Greenfield

investment and Mergers and Acquisitions (privatization) and changes in employment in these different types of foreign direct investments. Second, government and central agencies proclaim the growth of employment induces by foreign direct investment inflow. We are familiar with job creation in case of Greenfield investments. However, we cannot claim the positive effect of FDI inflow on employment for FDI as whole.

Theory of foreign direct investment says about the positive impact of FDI inflow on unemployment, respectively on employment. Besides, FDI inflow boosts economic growth. Investments create new jobs and subsequently decline unemployment. This broadly accepted claim is part of many researches, however with different results. Most of them conclude that the impact of FDI inflow depends on the form of FDI entering host country. Impact of FDI inflow on employment is positive in case of Greenfield investment and negative in case of privatization. The impact on economy as whole is so unclear.

We have examined the impact of FDI inflow on employment from the macroeconomic perspective. To do that, we have used data for V4 countries in period 1993 - 2012. Results show that there is no statistically significant impact of FDI inflow on employment. Due to these results, we cannot confirm positive effect of FDI inflow on employment in V4 countries.

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