
Employment and state incentives in transition economies: are subsidies for FDI ineffective? The case of Serbia

Uros Delevic*

This study analyses the effects of government subsidies for foreign direct investment (FDI) on employment at the municipal level in Serbia. It finds that the positive correlation of subsidies with employment is limited to the creation of subsidized jobs. In other words, subsidies are ineffective in creating additional jobs, beyond the jobs created by subsidized multinational enterprises (MNEs). There is no crowding-in and there is some evidence of crowding-out in the least developed municipalities. The municipalities that received subsidized investments did not experience higher employment in comparison with the period of no subsidies and in comparison with municipalities that never received subsidized investments. Some positive effects emerge, with a two-year lag, in the municipalities which, conditional on the level of development, lowered wages. The key policy implication is that subsidy-driven FDI policy, based on financial subsidies per job created, does not lead to a sustained employment growth pattern. Policymakers might need to target high value-adding activities of MNEs that induce the creation of domestic value added.

Keywords: employment, foreign direct investment, local development, subsidies

1. Introduction

At the 2016 “EBRD Western Balkans Forum”, the Serbian prime minister made an announcement to foreign investors that “whichever country makes you a subsidy offer, come to us and we will give you even more, at least 5 per cent more” (EBRD, 2016). This was a continuation of 10 years of subsidy-driven foreign direct investment (FDI) policy. Despite pursuing policies based on subsidies¹ to attract FDI to Serbia over a lengthy period, systematic evidence on the effectiveness of such policy is lacking. Yet, Serbia is not the only country to implement subsidies as a flagship FDI policy. In the last 20 years, 95 per cent of all FDI policies around the

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¹ According to the Organisation for Economic Co-operation and Development (OECD, 2001), a subsidy is any state policy that interferes in the market by favouring or discouraging certain economic activity.

world favoured FDI with some sort of incentive (UNCTAD, 2011). Global trends in subsidies suggest that many countries provide some sort of incentives to attract FDI, but they differ in terms of scope, targeted activity, industry and final goal.

FDI subsidies boomed in the late 1980s in developed countries. For instance, multinational enterprises (MNEs) from the automotive industry in Japan expanded to the United States with the use of host-country subsidies ranging from \$11,000 per job for *Nissan* to \$50,000 per job for *Subaru*. The subsidizing policy spread to developing countries, as the example of India giving over \$200,000 per job created in the *Ford* factory shows (Thomas, 2010). The practice was later adopted by transition countries. For example, Central and Eastern Europe (CEE) radically liberalized FDI policies, and countries in the Visegrad² group started offering tax subsidies to attract FDI in the late 1990s (Beyer, 2002).

According to Incentives Monitor (2018), since 2010 \$200 billion worth of subsidies were given to companies that invested \$1.5 trillion to establish or expand operations, creating seven million jobs. It is reported that the two most common forms of incentives are tax holidays (50 per cent) and direct subsidies (40 per cent). Most governments aim to achieve greater investments and create jobs. The average incentive per job reached its maximum in 2013 at over \$48,000.

Although there is no evidence that subsidy-attracted FDI provide benefits to the local economy, the competition among countries to provide incentives to MNEs exhausts the country's financial capacity, so it is often characterized as a "race to the bottom". There is also little evidence that MNEs would not invest without subsidies (Halvorsen, 1995; Chor, 2009). Cantwell and Mudambi (2000) suggest that investment incentives can play a decisive role for investments only if MNEs are choosing between two locations with the exact (or very similar) characteristics. Otherwise, the power of subsidies to drive decisions about the location of investment is minimal.

The core academic literature in this field can broadly be categorized into two main streams. First are the "attraction-focused" studies that investigate whether subsidies (and what sort of subsidies) can attract FDI (Holland and Owens, 1996; Wells et al., 2001; Beyer, 2002; Lim, 2008) and how effective subsidies are for FDI attraction in different types of countries (developing, transition or developed) rather than on the effects of subsidized FDI on the local economy (Hintosova and Rucinsky, 2017; Simelyte and Liucvaitiene, 2012). Also, the literature examines whether subsidies can attract a specific type of (high value adding) FDI (Te Velde, 2001).

² <http://www.visegradgroup.eu>.

Second are “effects-focused” studies that investigate the impact of subsidized FDI on various social and economic characteristics of the host country, including human resource development, research and development (R&D) and innovation activity or engagement of MNEs with domestic companies (Oman, 2000; Burger et al., 2012). Most of the literature in the field focuses on investigating the relationship between FDI and growth of gross domestic product (GDP), and addressing subsidies only indirectly or at the aggregate level (Carkovic and Levine, 2005; Cambazoglu and Simay Karaalp, 2014).

Narula and Pineli (2018) mention that studies have investigated FDI and economic development by looking at aggregate income and not so much at employment. Along the same lines, Hungerford and Gravelle (2010) point out that studies that estimate the direct impact of subsidies on employment are lacking. This seems unfortunate, as fighting mass unemployment, especially in rural areas, has been stressed as the main policy concern driving the provision of subsidies. Onaran (2008) suggests that economies may experience growth in joblessness due to the increase in productivity of workers. Therefore, measuring growth in employment rather than GDP in relation to (subsidized) FDI narrows the scope of analysis and allows for disaggregated results and a better understanding of the impact of FDI on the labour market.

This study investigates employment and subsidies at the municipal level. The disaggregated analysis, at the municipal level rather than the macro-level approach, is motivated by the fact that FDI tends to concentrate on very specific, narrowly defined locations (Belderbos et al., 2020) and their effects on the local economy are mostly geographically confined (Iammarino and McCann, 2013). Furthermore, this focus makes it possible to identify heterogeneous effects of FDI across space, also based on levels of local development and absorptive capacity.

The main questions of this study are whether (1) subsidies are correlated with municipal-level employment and (2) whether the effectiveness of subsidies is dependent on the degree of development of the municipality.

Those questions have important policy implications. As noted above, this area of research is part of the broader investigation of the effects of FDI on host countries and of the effectiveness of subsidies. Surprisingly, the literature on the effects of FDI has rarely looked at the overall employment effects, despite the clear relevance of this aspect for policy. The study informs policymakers about the key features of subsidy schemes that can bring positive or negative results. The findings show how to restructure subsidizing policy in a way that could sustain employment growth. The policy implications carry broader applicability, even though they are based on data from Serbia. Other transition countries in the region have applied very similar FDI policies and also suffer from similar structural economic bottlenecks as Serbia.

Serbia, as a transition country, is an interesting and informative case. Despite decades of subsidy-based policy to attract FDI, no significant empirical work has been undertaken to analyse the effects of subsidizing policy on employment and regional development (Filipovic and Nikolic, 2017).

Serbia, as part of the former Yugoslavia (which also comprised Croatia, Bosnia and Herzegovina, North Macedonia, Montenegro and Slovenia) built a strong industry under an authoritarian regime that made it one of the most advanced European economies in the 1970s (Comisso, 1980).

After the war of the 1990s, the transition from a socialist economic order to a market-driven economy was turbulent. FDI was sought as a panacea to solve economic underdevelopment (Jensen, 2006). However, with the absence of strong institutions and the presence of widespread corruption, the potential of FDI policies was limited (Stiglitz, 2002).

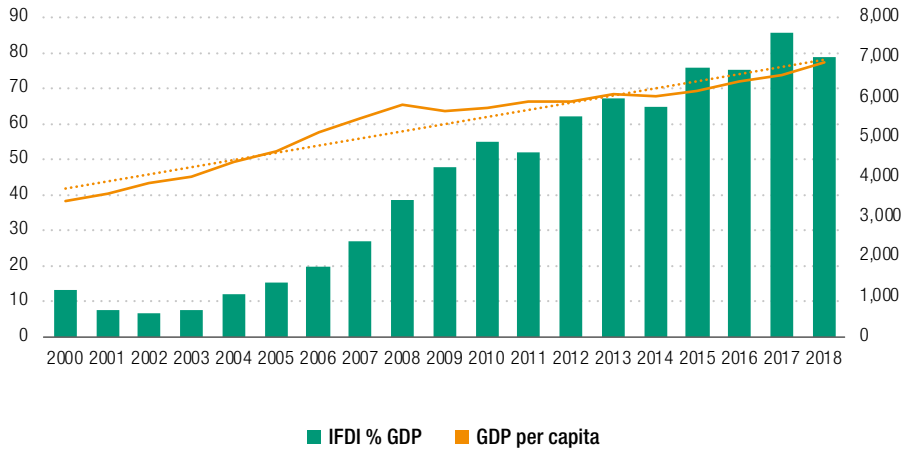
The specific feature of capital flow and the labour market in Serbia, and more generally in the Balkan peninsula, is low capital accumulation and high structural unemployment (Madzar, 2017). On top of this, capital markets are extremely shallow and underdeveloped, while interest rates in the money market are substantially above the European average (EBRD, 2017). In such circumstances, attracting FDI seems to be of crucial importance for the economy.

In the period after 2000, the Serbian economy was characterized by mass privatization of state-owned enterprises, including both firms that had been making losses and those that had been highly profitable or even natural monopolies. This is one of the specific features of FDI in Serbia and the Balkan region. The privatization process attracted the first wave of FDI inflows. According to UNCTAD (2019), FDI inflows in Serbia grew from \$52 million in 2000 to more than \$4 billion in 2018, and inward FDI stock grew from 13 per cent of GDP in 2000 to 79 per cent of GDP in 2018. However, with modest GDP growth, GDP per capita has grown from under \$4,000 to just under \$7,000 over those 18 years, as shown in figure 1

It may be argued that attracting FDI has been the main industrial policy of Serbia since 2000. However, this policy has been designed to address the symptoms of regional underdevelopment, such as high unemployment, instead of true causes, such as technological backwardness. An important question, therefore, is the extent to which providing monetary incentives for FDI is going to make up for the lack of other relevant factors such as human capital and institutions (Delevic and Heim, 2017).

The rest of the chapter is organized as follows: Section 2 provides a theoretical grounding for subsidies and a literature review of empirical findings of the expected impact of FDI on economic growth and employment. Section 3 is devoted to a

Figure 1: Serbia: inward FDI stock, share of GDP and GDP per capita (per cent and dollars)



Source: The author, based on UNCTAD data.

description of the data and empirical analysis of the relevance of state subsidies for municipal-level employment. Section 4 is devoted to the results and discussion of empirical findings. The conclusion and policy implications are provided in section 5.

2. Literature review

The literature review section is organized on three main lines of discussion. First, there is a review of the specific literature dealing with subsidies for FDI, modalities of subsidies and their effects in different countries. Second, there is a consideration of the literature that deals with the effects of subsidized FDI and the justification for such policy from the economic development point of view. Third, absorptive capacity is discussed from the point of view of the specific contextual conditions that might influence the impact of subsidized FDI on employment.

2.1 Subsidies as determinants of FDI

The concept of ownership (or firm-specific), internalization and location advantages – the “OLI framework” introduced by Dunning (1981) – explains the drivers of FDI. Ownership advantages provide firms with the ability to compete internationally.

Those are things like advanced technology, specific managerial knowledge and skills. Location advantages explain the benefits that can be derived from the use of ownership advantages in specific locations outside of the home country of the MNE, such as labour cost, infrastructure and proximity to other markets. The availability of competitive labour is one of those location-bound characteristics that determine FDI. Finally, internalization advantages explain why ownership advantages that are used in foreign locations are used internally by the firm itself (thus becoming MNE) rather than being licenced to a local enterprise (Dunning, 1981).

The literature has identified various drivers of inward FDI, including macroeconomic, institutional, infrastructure and human capital factors but also exchange rates, taxes and openness to trade (Blonigen, 2005). Government policies aimed at attracting FDI (such as fiscal and financial subsidies) are one of these important determinants. Agiomirgianakis et al. (2004: 84) consider subsidies particularly important for the attraction of MNE investments in order to capture "growth-enhancing effects of FDI on employment".

Bellak et al. (2008) suggest that subsidies come as a result of a government's intention to fix market failures in a situation where there is a large discrepancy between the social and private rate of return on investments. However, very often, politically motivated subsidies are used in the absence of market failures since governments are under political pressure to be portrayed as job creators (Christiansen et al., 2003).

Governments engage in subsidizing policy by influencing investment location, scale, type and mode of entry. Subsidies differ in the form of provision: direct (financial) subsidies, meaning direct payments from the government to a company, and fiscal (or tax) subsidies, meaning tax exemption or tax reduction from a company's payments to the government (OECD, 2017). There are also regulatory incentives, meaning that MNEs are exempt from following certain national regulations (Bellak et al., 2008). The literature also distinguishes employment and investment subsidies, depending on whether government incentives are driven by MNEs' type of investment or by high labour employment.

The key arguments in favour of subsidies are that they attract FDI and encourage investors to set up operations in countries which otherwise they would avoid. According to Solis (2011), subsidies are an effective instrument for FDI attraction only if primary determinants of FDI are in place, such as high institutional and macroeconomic stability, basic infrastructure and availability of (skilled) labour. Even though more subsidies do not automatically mean more FDI, there are views that investment incentives, such as subsidies, might be important to motivate first-mover investors in countries where few foreign investors operate (Cass, 2007).

Furthermore, investments are usually attracted by low taxes, and fiscal subsidies are even more attractive. Hungerford and Gravelle (2010) suggest that fiscal subsidies encourage investments because the cost of investment is lower, which allows greater and automatically cheaper output.

More profit after tax means more capital for future investments, so new employees can be hired. There is also an expectation that greater aggregate demand for labour would drive average salary upwards. Therefore, investment subsidies are also indirectly employment and salary subsidies. The employment-stimulating subsidies are directly targeting greater employment, with the state paying the salaries (or part of salaries) of workers employed by a private firm (Ayyagari et al., 2010).

Hintosova and Rucinsky (2017) argue that there is a significant but incremental impact of subsidies on FDI flows. They show that fiscal rather than financial subsidies stimulated greater FDI inflows to Slovakia. Arsic (2010) also suggested financial subsidies are the least effective compared with other forms of incentives (such as fiscal subsidies and subsidized loans). This is explained by the high costs that the state budget bears immediately and the uncertain income in the future.

The critics suggest that subsidies for FDI worsen other development factors, such as entrepreneurial culture, competitiveness and the budget deficit (Solis, 2011). It is argued that the use of subsidies to attract FDI is a waste of money that should instead be used to advance transparency and true institutional reforms. Incentives can be seen as a substitute for high institutional quality, in environments where property rights are not adequately protected (Christiansen et al., 2003). At the same time, politicians usually extol FDI due to the immediate effects of new plants on employment (Greenstone and Moretti, 2003).

Investment costs are higher in countries that are more corrupt, so MNEs perceive government incentives as a way to overcome those barriers (Cuervo-Cazurra, 2008). Therefore, the existence of financial and fiscal subsidies may be a sign of the bad quality of public goods and services and of less educated workers. Coyne (2015) suggests that policymakers in the United States were targeting large companies with subsidy packages, which led to the crowding-out of small and medium-sized businesses. For example, Wal-Mart had received \$1.2 billion in subsidies by 2013 but for every 100 jobs it created, another 50 jobs disappeared due to other non-subsidized companies closing down.

In most cases, the empirical evidence is not supportive of the idea of subsidies for FDI. The vast majority of studies concentrated on examining whether subsidies led to more FDI inflows. In the case of Serbia, Bojovic (2017) questions the efficiency of subsidies. The study investigated whether the state overpaid for subsidies, i.e. whether the same amount of subsidized FDI and the same number of FDI-created jobs would have occurred with fewer subsidies. The method allowed an

assessment of efficiency – whether the same amount of input (subsidies) would generate a greater output (investment). Using the data envelopment analysis method, Bojovic found that about 70 per cent of subsidies would have produced the same level of investments and jobs. In other words, 30 per cent of subsidy payments were wasted.

The incentives programme in Slovenia aimed to attract FDI, tie MNEs to the local environment and foster linkages between foreign investors and domestic Slovenian companies, and transfer knowledge and technology from MNEs to local companies. However, Burger et al. (2012) found that subsidies for FDI did not stimulate the cooperation of MNEs with local suppliers, and that, on average, the education level of workers employed by MNEs was lower than that in local Slovenian companies.

Transition countries, such as Slovenia, Romania, Poland and the Czech Republic, have also used fiscal subsidies and subsidized loans (where part of the interest rate is covered by the state) to attract FDI. Cass (2007) suggests that the richer the country and the more progressive in terms of transition towards market economy, the more funds it devotes to subsidies. However, when all types of subsidies are accounted for, the share of subsidies in GDP is the highest in Serbia (1.5 per cent), compared with Poland (0.8 per cent), the Czech Republic (0.78 per cent) and Slovenia (0.66 per cent), which are the winners of transition (Arsic, 2010).

A very prominent example in FDI attraction is the Czech Republic, which went successfully through the transition process, using investment incentive programmes and experiencing high FDI inflows. Mallya et al. (2004) examined the effectiveness of incentives for FDI in the Czech Republic by looking at the share of FDI that was attracted by subsidies. The survey reveals that the existence of direct subsidies for FDI motivated only 10 per cent of responding investors. Therefore, it is concluded that FDI incentives had a marginal contribution to the crowding-in of other investments (of only 3 per cent).

Also, according to Simelyte and Liucvaitiene (2012), two very similar countries in terms of location advantages, the Czech Republic and Poland, offered similar subsidy packages to investors; however, even though the Czech Republic is more than three times smaller (in terms of population) and has a 20 per cent higher average monthly salary than Poland, it attracted twice as much FDI per capita as Poland. Therefore, Simelyte and Liucvaitiene (2012) insist that a business-friendly environment is the key to attracting FDI.

Overall, it can be argued that there are at least three reasons why subsidies as an instrument for FDI attraction may be problematic. First of all, subsidies are unsustainable. Countries resort to subsidization policies in the absence of strong institutions and other necessary location advantages (Dorozynski et al., 2015). High-quality investors hesitate to invest in risky places, so countries offer subsidies

as compensation for weak institutions (high corruption) (Hausmann and Fernandez-Aria, 2000). MNEs attracted by subsidies (and not by local knowledge or other business infrastructure) tend to disinvest when state subsidies are exhausted, which makes investments unsustainable in the long run. Great availability of incentives would induce companies to move frequently, to more incentive-generous locations (Christiansen et al., 2003).

Second, subsidies for FDI are unfair, as they imply state interference in market competition. Since foreign MNEs are usually larger and more technologically advanced than local small and medium enterprises (SMEs), subsidies provided to MNEs put local companies in an unfavourable position, which disrupts market competition. Local companies usually cannot meet the government's criteria for subsidies, in terms of investment and employment requirements; thus, one should consider the competitive disadvantage that FDI subsidies impose on SMEs (Jensen, 2004).

Finally, subsidies are not clear. Although there are criteria for subsidy allocation, investors negotiate with civil servants for non-monetary benefits, such as urban land for building. According to Dorozynski et al. (2015), providing land, sorting out legal ownership and connecting to utility infrastructure is often even more costly and complicated than providing financial subsidies. This opens the door for corruption and political influence. Civil servants are likely to use subsidies and take credit for investments in (re)election periods, disregarding economic necessity (Nathan and Malesky, 2010).

2.2 FDI and economic development

The reason why governments subsidize FDI is the expectation that FDI will lead to GDP growth, and if such growth is observed, governments tend to believe that their FDI policies work (Borensztein et al., 1998). However, the notion of economic growth is substantially different from that of economic development. As suggested by Stiglitz (2002), one does not necessarily lead to another. Kuznets, (1967) who introduced the measure of GDP, himself warned that it is an *overly gross* measure inadequate for the measurement of life quality and human capital development. GDP can grow with poverty; it can also grow while national health indicators fall. Economic growth is just a monetary measure of the economy's capacity and market value of all goods and services.

In contrast, economic development requires sustainability, meaning inclusive development encompassing education, health, innovation and efforts to lower social inequalities. Therefore, the attraction of FDI with subsidies may not be considered successful if it is accompanied only by higher GDP growth rates. The

FDI policy and the way governments use subsidies are crucial determinants of the potential impact of FDI on economic development (Agosin and Machado, 2010).

There is a theoretical explanation of why FDI (and subsidized FDI) are expected to have an effect on employment. According to Dunning (1981), depending on the quality level of investments, MNEs will require skilled or unskilled labour and increase the demand on the labour market. The inflow of foreign capital, with the appropriate state policies, may also mean the inflow of foreign technology and knowledge. These may spill over to domestic firms (which have direct links with MNEs), but also produce externalities for all other market actors.

Thus, workers that have been given access to foreign technologies and know-how serve as carriers of tacit knowledge through labour mobility contribute to the formation of new business, so-called “spin-offs” (Blomstrom, 2006). The entry of technologically more advanced companies may benefit domestic companies in terms of productivity spillovers and may induce crowding-in of new firms. This phenomenon occurs when FDI stimulates new downstream or upstream investment that would not have taken place in its absence (Agosin and Machado, 2010).

Enabling local companies to upgrade their technological capabilities and indirectly create new jobs through forward or backward linkages with the domestic sector is the most important potential externality, as jobs beyond those created by MNEs make FDI sustainable and beneficial for the host country (Dunning, 1981).

Hungerford and Gravelle (2010) suggest that empirical testing about the effectiveness of subsidies in stimulating FDI-generated employment may be successful but that the costs for the state, on average, have been higher than the benefits. Empirical studies usually disregard “invisible” costs beyond the amount of subsidies; those include the costs of public administration that deals with this issue (Christiansen et al., 2003). Subsidized FDI may generate employment but this cannot compensate for social inequality, since subsidizing means taking money from all workers (taxpayers) and directing it towards business owners, not the socially vulnerable.

One of the very few studies that investigates a question similar to the one examined here is Patrick (2014), which asks whether increasing the availability of state incentives for private companies will support local employment growth in the United States. In short, the study found that some states attract businesses due to their location-specific advantages. Those businesses will also benefit from financial subsidies, but it is job growth that allowed local governments to pay more subsidies, not the other way around. Increasing the availability of subsidies for private companies may increase capital but not create jobs. According to Patrick (2014) investments attracted with subsidies created overcapacity in the United States, creating negative (or neutral) employment effects.

Moreover, MNEs are also likely to displace domestic companies, though the *crowding-out* effect. This often happens if FDI enters a sector where it is competing with domestic forms and uses its ownership advantages or dumps prices to push the competitors out of the market. The crowding-out effect is particularly present in transition countries (Becker et al., 2015). This is detrimental for the local economy as it leads to the disappearance of potentially productive domestic companies. This may lead to the monopolization of some industries and isolation of domestic businesses (Kokko and Thang, 2014).

2.3 Local absorptive capacity and subsidized FDI

Economic theory does not give an unambiguous answer to whether greater absorptive capacity means greater spillovers from FDI, as there are explanations that the greater the distance from the technological frontier, the greater is the chance to capture spillovers from MNEs. However, Castellani and Zanfei (2006) argue that large technological gaps may suggest that the difference between domestic and foreign technological capabilities are so big that local companies cannot learn anything. Moreover, Girma (2005), among others, found that technologically more advanced companies are more capable of capturing technological spillovers from MNEs. There is productivity convergence with MNEs when domestic companies have a higher absorptive capacity.

The impact of (subsidized) FDI on employment will depend to a great extent on the absorptive capacity of the local economy (Reiter and Steensma, 2010). Absorptive capacity, per se, does not attract FDI. It is a local condition that allows economies to leverage FDI. It refers to the ability of a domestic company to identify, assimilate and exploit foreign technologies (Girma, 2005). Among domestic companies, the capacity to absorb foreign technologies determines their capacity to increase output and employ more workers, thus contributing to their municipality's employment.

As suggested by Konings (2001), the empirical findings of technological spillovers from FDI to the domestic sector in countries that subsidized investments, such as Bulgaria and Romania, have been found to be negative, mainly due to lack of absorptive capacity. FDI in countries far away from the technological frontier cannot lead to technological upgrading, regardless of the investment incentives package (Konings, 2001).

The implicit assumption is that the greater absorptive capacity of companies in specific municipalities of the host country, would allow them to cooperate and compete with MNEs and therefore induce greater employment in their municipality. Absorptive capacity can be proxied by the level of economic development or salaries as higher salaries, for the same level of development may proxy higher human capital, so absorptive capacity may be captured by the level of development of the municipality.

This discussion leads to uncertain predictions about the effectiveness of subsidies for FDI in bolstering employment in the host economy. However, the literature has highlighted that the effects of subsidized FDI are more likely to be positive in the presence of local absorptive capacity. As state subsidies are directed towards attracting more FDI, those municipalities that spend more on subsidizing FDI would be expected to have relatively higher employment compared with those that have not received subsidized FDI.

3. Data and methodology

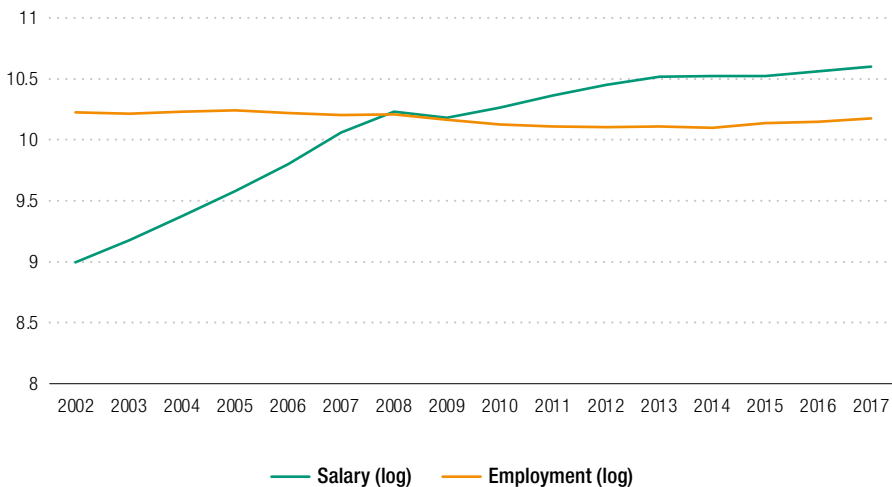
3.1 Data set

This paper tests the role of FDI subsidies on local employment using data provided by the Serbian Ministry of Economy and Finance, covering 62 municipalities in Serbia that have received state-subsidized greenfield FDI over the period from 2006 to 2017. It is a unique data set that has never been exploited in an econometric study. During the observed period, the Serbian Government provided subsidies for 222 investment projects launched by companies from 31 countries. The main recipients of all subsidies (70 per cent) were firms from only eight countries, namely the Netherlands, Italy, Germany, Switzerland, Austria, the Republic of Korea, Cyprus and the United Kingdom. In total, subsidized companies invested slightly less than €2 billion, and 70,000 jobs can be directly ascribed to this subsidized FDI. For those investments, the Serbian Government provided an additional €500 million. Only 5 per cent of all subsidies were paid to domestic companies.

The impact of subsidies is observed in comparison to the period of no subsidies (2002 to 2006) and also in comparison to another 65 municipalities that received no State-subsidized FDI between 2006 to 2017. The total number of municipalities is 127. Despite an intensive subsidizing policy that started in 2006, employment remained relatively flat from 2002 to 2017, as shown in figure 2, while net salaries increased until 2013 and then stagnated. With the two series in natural logarithms, and recognizing that a growth rate can be approximated by a difference in logarithms, figure 2 shows that wages increased by more than 150 per cent over the period 2002-2017.

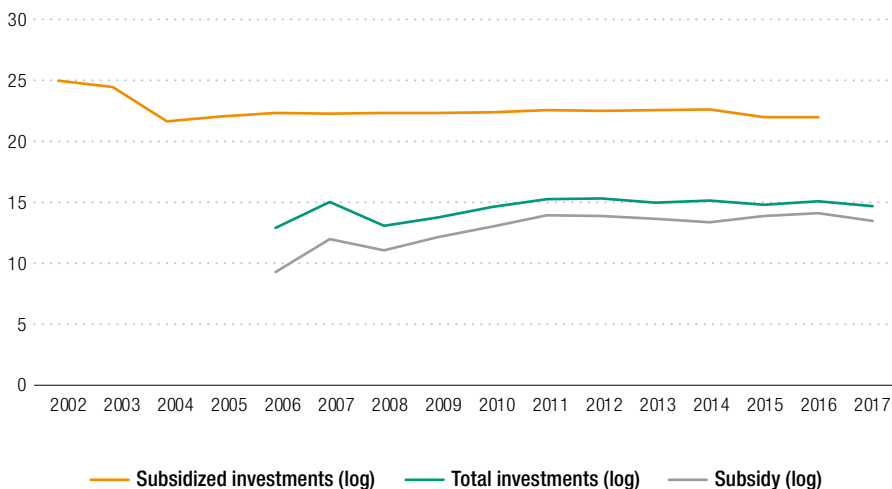
Only 3 per cent of all companies in Serbia (as of 2016) are foreign affiliates – 2,713 in all. Of that number, only 6 per cent used state subsidies, which means that 2,531 MNEs invested in Serbia without any government incentives. While the increase of subsidies over time is almost threefold, the amount invested by subsidized MNEs, as shown in figure 3 is far below the amount of total (non-subsidized) investments. However, it should be noted that the amount of subsidized MNE investments is larger than the subsidy itself. This follows from the nature of the subsidy scheme, presented in the next subsection.

Figure 2: The average salary and employment (log)



Source: The author, based on data from the Serbian Ministry of Economy and Finance.

Figure 3: Average investments and subsidies (log)



Source: The author, based on data from the Serbian Statistical Office.

3.2 Descriptive overview of the criteria for subsidy allocation

The terms and conditions for the attraction of direct investments³ lie in a legislative Act containing detailed criteria for the allocation of subsidies. Serbia provides financial subsidies based on capital investment, employment and the development level of the host municipality. Table 1 provides a basic summary of those conditions, which apply equally to foreign and domestic investors. The criteria for subsidy allocation are based on four levels of municipal development and on the three sectors (primary, manufacturing and services). The amount of allocated subsidy depends primarily on the amount of investment in tangible or intangible assets and the number of jobs created per investment project. Priority is given to labour-intensive manufacturing and less developed municipalities.

All municipalities are classified in four development-level categories on the basis of the municipality's GDP relative to national GDP. Municipalities classified as DL 1 are the most developed municipalities, with GDP above the national average; DL 2 is municipalities whose GDP is 80 per cent to 100 per cent of the national average; DL3 is municipalities whose GDP is 60 per cent to 80 per cent of the national average; and DL 4 is municipalities whose GDP is below 60 per cent of the national average.

For example, a company investing €500,000 and creating 50 jobs in the manufacturing sector (at, for example, €1,000 gross salary per month) in the most developed municipality (DL 1) is eligible for a direct subsidy of 10 per cent on total investment and 20 per cent subsidy on total gross wages. This means that the state subsidy is €60,000, according to the criteria ($500,000 \cdot 0.1 + 50,000 \cdot 0.2$).

The same company would have received for the same type of investment projects, a subsidy of €142,500 if it had invested in the least developed municipality (DL 4), since it is eligible for a direct subsidy of 25 per cent on total investments and a subsidy of 35 per cent on total gross wages, according to the criteria ($500,000 \cdot 0.25 + 50,000 \cdot 0.35$). In any case, the private investor is 100 per cent owner, even though the state invested 12 per cent of the total investment in the first case and 28 per cent of the total investment in the second case.

This paradoxical situation is made possible because of the pure expectation of the government that the taxes paid by the investor and linkages with the local companies will create additional employment and fiscal income. However, no such condition is set in the contract. The only condition is that the investor needs to achieve its full employment (that has been agreed under the subsidy allocation criteria) within three years of the date of application for subsidies, or a maximum of five years, if requested by the investor.

³ <https://ras.gov.rs/podrska-investitorima/zasto-srbija/podsticaji-za-investiranje>.

Table 1: The criteria for subsidy allocation

Criteria	Sector	Municipality development level			
		I	II	III	IV
Minimum jobs created	Primary	25	25	25	25
	Manufacturing	50	40	30	20
	Services	15	15	15	15
Minimum investment	Primary	€ 200,000	€ 200,000	€ 200,000	€ 200,000
	Manufacturing	€ 500,000	€ 400,000	€ 300,000	€ 200,000
	Services	€ 150,000	€ 150,000	€ 150,000	€ 150,000
Maximum subsidy for investments (in tangible or intangible assets or for gross wage expenses after full employment for the investment project has been achieved)		10%	15%	20%	25%
Maximum subsidy for investments over €50 million		– Maximum 25% for an amount over €50 million – Maximum 17% for an amount over €100 million			
Maximum subsidy for gross wage expenses* *maximum per job created		20% €3,000	25% €4,000	30% €5,000	35% €6,000
Additional per-job subsidy for labour-intensive manufacturing on gross two-year wage expenses		– Over 200 jobs created , extra 10% – Over 500 jobs created , extra 15% – Over 1,000 jobs created, extra 20%			

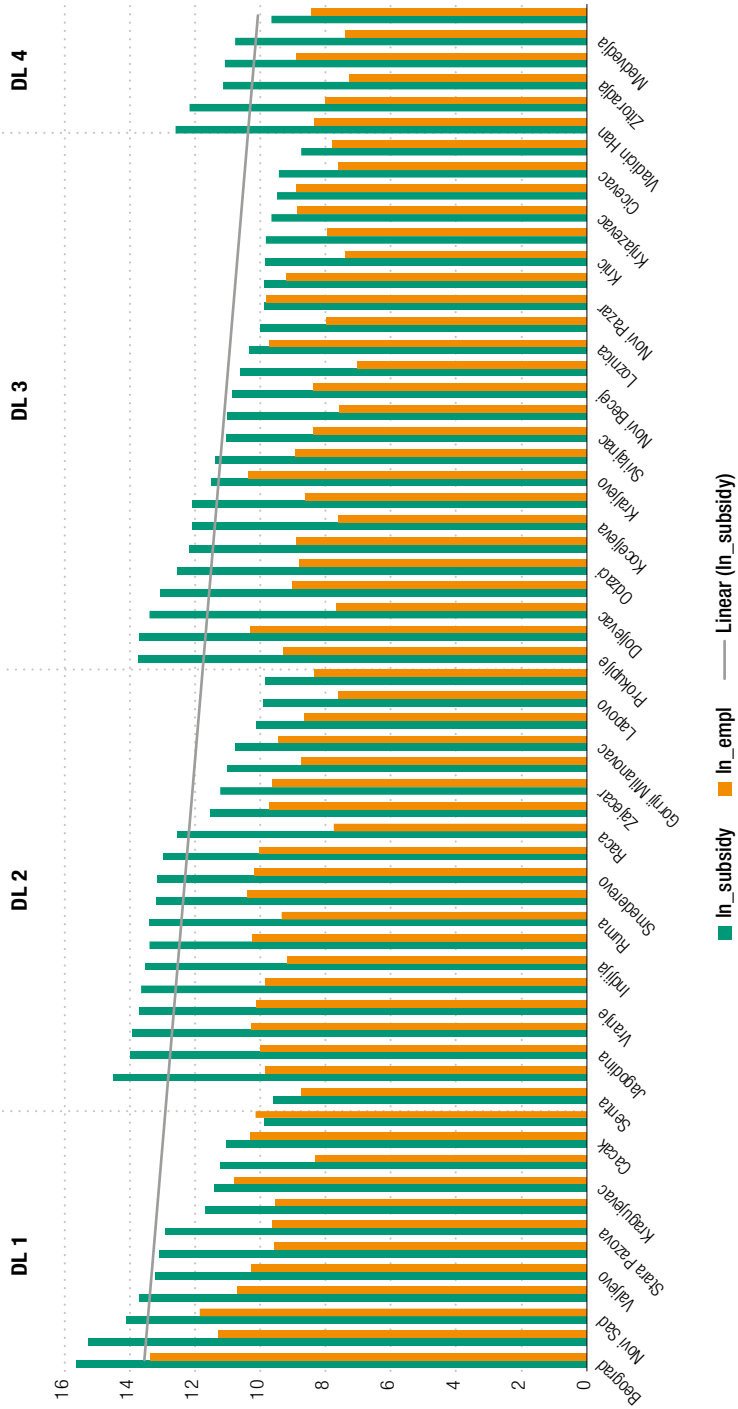
Source: The author, based on data from the Serbian Ministry of Economy and Finance.

In addition, an investor needs to keep operations in the agreed municipality and maintain the level of agreed employment for at least five years for big companies and three years for SMEs. Should this not happen, the government can activate the (previously received) bank guarantee and receive the money back. However, for the allocation of a basic subsidy, there are no conditions regarding the investor's cooperation with domestic companies or worker qualifications.

It is worth mentioning that more developed regions received more subsidies. Figure 4 shows the distribution of average subsidies and level of employment, by municipality development level (DL 1 through DL 4). Most of the subsidies were given to MNEs investing in the most developed municipalities (DL 1). The level of employment decreases from the most developed to the least developed municipality.

However, there are municipalities in both development categories (DL 1 and DL 4) that received a similar level of subsidies (such as Vladicin Han and Stara Pazova) but experienced a very different level of employment. The highest employment level in DL 4 (municipality of Prijepolje) is the same as the lowest employment level in DL 1 (municipality of Senta). Although it may seem that, on average, lower subsidies mean lower employment, the level of municipal development, i.e. local context and absorptive capacity play a huge role in explaining employment.

Figure 4: Subsidies and employment trends (log)

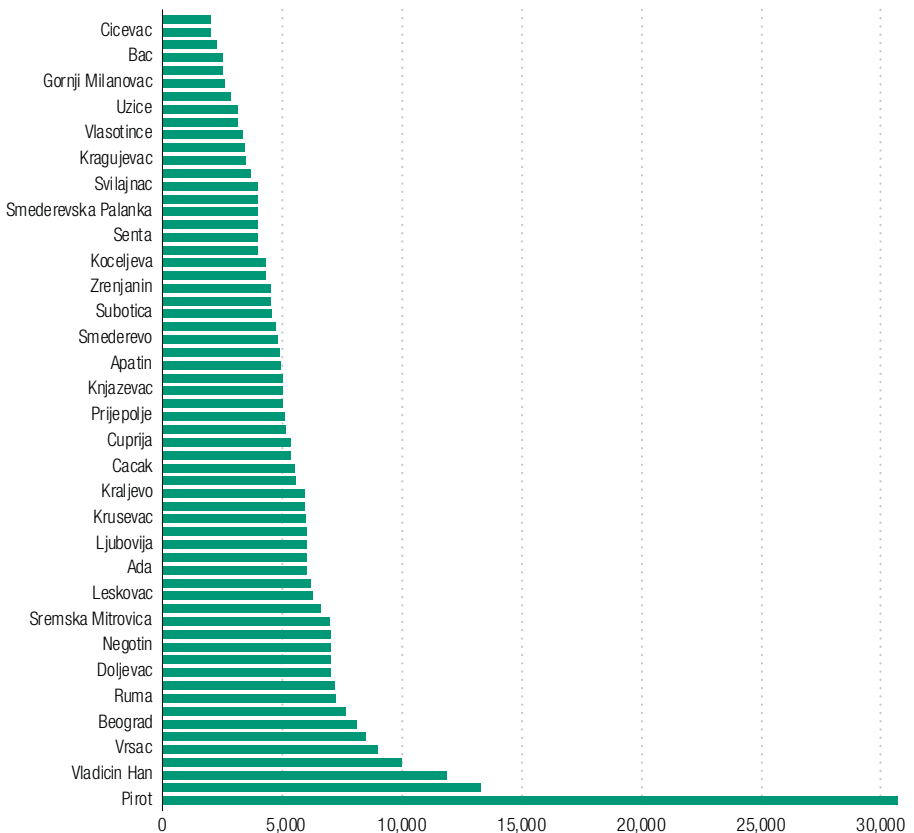


Source: The author, based on data from the Serbian Ministry of Economy and Finance.

Within each development category, high subsidies have not always been followed by high employment. In DL 3, the level of employment fluctuates regardless of subsidy level, so there are cases where two very similar municipalities (in terms of economic development), such as Novi Pazar and Knic, received the same amount of subsidies for FDI but that led to very different levels of employment.

Figure 5 shows the distribution of the ratio of subsidies per job among municipalities that received subsidized FDI. With the exception of municipality Pirot, most of the municipalities received subsidies per job in a range between €2,000 and €8,000, with the average subsidy per job across all municipalities, from 2006 to 2017, at almost €6,000.

Figure 5: Average subsidies per job per municipality from 2006 to 2017 (€)



Source: The author, based on data from the Serbian Ministry of Economy and Finance.

3.3 Methods

The longitudinal dimension of the data set makes it possible to control for time-invariant differences, which is important for understanding causal relationships between FDI subsidies and employment. The data set suggests estimation techniques that allow accounting for unobserved heterogeneity by individual municipality, using either random or fixed-effect econometric models. In theory, since a whole population of municipalities is observed, the fixed-effects model would normally be recommended; in addition, the Hausman⁴ tests support this model. All independent and control variables are observed in the current year and are also lagged up to two years in robustness checks, thereby reducing concerns of simultaneity or reverse causality. The one and two-period lagged values are included in the main results with the subscript $t-1$ and $t-2$. Appendix I provides a table with descriptive statistics and correlation coefficients. An analysis is undertaken with the use of Stata software and the following equations:

Equation (1)

$$\ln(\text{empl})_{it} = \alpha + \beta_1 \ln(\text{subsidystock})_{it} + \beta_2 \ln(\text{netsal})_{it} + \beta_3 \ln(\text{pop})_{it} + \beta_4 \ln(\text{investstock})_{it} + \beta_5 \ln(\text{jobstock})_{it} + \beta_6 \ln(\text{totalinveststock})_{it} + \mu_i + \varepsilon_{it}$$

Equation (2)

$$\ln(\text{empl})_{it} = \alpha + \beta_1 \ln(\text{subsidystock})_{it} + \beta_2 \ln(\text{subsidystock})_{it} * d_1 + \beta_3 \ln(\text{netsal})_{it} + \beta_4 \ln(\text{pop})_{it} + \beta_5 \ln(\text{investstock})_{it} + \beta_6 \ln(\text{jobstock})_{it} + \beta_7 \ln(\text{totalinveststock})_{it} + \mu_i + \varepsilon_{it}$$

where the subscript i refers to municipalities and the subscript t refers to the year under observation, ε is an error term and μ refers to fixed effects.

3.4 Variables

The dependent variable is employment (empl), at the municipal level, measured by the total number of employees per year. The main independent variable is the subsidy stock (subsidystock), measured as the cumulative level of subsidies per year. There are six additional control variables, including jobs stock (cumulative number of jobs created by subsidized MNEs), investment stock (cumulative level of investments made by subsidized MNEs) total investment stock (all other non-

⁴ With a Hausman test it is formally tested whether a fixed- or random-effects model is preferred. The test showed that the random estimator is not consistent, since it is still possible to reject the null hypothesis that the fixed and random estimators are equal ($P = 0.00$).

subsidized investments), population (pop) and average net salary per municipality (netsal). All variables are expressed in logarithms so that coefficients can be interpreted as elasticities. In addition, four municipal levels are controlled for through municipality development level. This variable (DL) interacts with subsidy stock in equation (2) because it makes it possible to control whether the effect of subsidies for FDI on employment is affected by the development level of the municipality.

Looking at employment as a potential positive externality from FDI, the extent to which it is exhausted is leveraged by contextual conditions such as average salary, employee education, population or total investments, i.e. the economic development level of the municipality. According to Girma (2005), greater absorptive capacity encourages greater externalities from MNEs. The more advanced the municipalities (in terms of their contribution to national GDP), the more absorptive capacity they have and thus the more likely to benefit from FDI. The description of all variables and data sources are provided in table 2.

Table 2: Variables

Variable	Label	Explanation	Source
Dependent	Employment	The natural log of total employment (an absolute number of employed labour)	Serbian Statistical Office
Independent	Subsidy stock	The natural log of subsidy stock – a cumulative level of subsidies, i.e. the sum of subsidies over time (from 2006 to 2017).	Serbian Ministry of Economy and Finance
	Municipality development level	A discrete variable that denotes municipality development level, based on the municipality's GDP relative to average national GDP. It takes the following values: 1 – most developed municipalities whose GDP is above the national average; 2 – municipalities whose GDP is 80% to 100% of national average; 3 – municipalities whose GDP is 60% to 80% of national average; 4 – municipalities whose GDP is below 60% of national average.	
Control	Job stock	The natural log of job stock – a cumulative level of jobs created by a subsidized MNE	Serbian Statistical Office
	Investment stock	The natural log of a cumulative level of investment made by a subsidized MNE	
	Population	The natural log of total population per municipality	
	Total investment stock	The natural log of total cumulative (non-subsidized) investments per municipality	
	Average net salary	The natural log of the average net salary per municipality	

Table 3: The impact of subsidies for FDI on employment

Variables	t					One-year lag	Two-year lag		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
					ln_empl				
In_subsidystock	0.00341*** (0.000754)	0.00292*** (0.000731)	0.00195*** (0.000746)	0.0180** (0.00744)	0.0228*** (0.00729)	-0.00276 (0.0112)	0.00538 (0.0111)	0.00948 (0.0114)	0.00328 (0.0116)
In_netfsal	-0.259*** (0.0229)	-0.261*** (0.0226)	-0.262*** (0.0226)	-0.262*** (0.0226)	-0.270*** (0.0258)	-0.260*** (0.0225)	-0.268*** (0.0258)	-0.136*** (0.0262)	-0.0327 (0.0262)
In_pop		0.140*** (0.0304)	0.139*** (0.0304)	0.139*** (0.0304)	0.0601 (0.0368)	0.135*** (0.0304)	0.0519 (0.0370)	0.0373 (0.0377)	0.0214 (0.0375)
In_investstock				-0.0141** (0.00652)	-0.0187*** (0.00641)	-0.00571 (0.00734)	-0.0114 (0.00734)	-0.0162** (0.00750)	-0.0134* (0.00765)
In_jobstock						0.0278** (0.0112)	0.0228** (0.0109)	0.0300*** (0.0112)	0.0407*** (0.0118)
In_totalinveststock					0.00847** (0.00406)			0.0106** (0.00416)	0.00985** (0.00430)
year dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	8.812*** (0.0111)	11.11*** (0.204)	9.693*** (0.379)	9.711*** (0.379)	10.27*** (0.461)	9.726*** (0.378)	10.33*** (0.462)	9.282*** (0.471)	8.564*** (0.469)
Observations	1,999	1,999	1,871	1,871	1,626	1,871	1,626	1,623	1,499
R-squared	0.475	0.509	0.545	0.546	0.468	0.548	0.469	0.366	0.297
Number of municipalities	127	127	127	127	127	127	127	126	126

Note: Standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1.

4. Results and discussion

The findings presented in table 3 consider the effect of subsidies and other control variables on employment in the current year (time t) and in the next two years (when the independent variables are expressed at $t-1$ and $t-2$). As results from table 3 show, subsidies have a significant effect on municipality-level employment in columns (1) to (5). However, after controlling for jobs directly created by subsidized MNEs (column 6), the effect on overall employment vanishes, both in the year of subsidy approval and in the following two years.

It is worth noting that, as expected, average net salary paid in the municipality is negatively correlated with employment, suggesting that higher salaries lead to less demand for workers, whereas in column (3) population is positively correlated. This suggests that an increase in population, which may derive from internal migration, is associated with a growth in employment at the municipal level. In column (4) subsidized investments are significantly negatively correlated with employment. This is consistent with the idea that the more capital intensive subsidized investments are, the more workers are substituted with machinery, which leads to a decrease in employment.

In column (5), subsidies remain positive and significant even after controlling for total investment stock (all other non-subsidized investments). However, in column (6), in the presence of variable measuring jobs created by subsidized investments only, the effect of subsidies on overall employment becomes insignificant, which means that subsidies contribute only to the employment generated by subsidized investments. The result shows that a 10 per cent increase in subsidies would lead to an average 0.2 per cent increase in employment. It is worth mentioning that this outcome does not reflect multicollinearity issues, because, despite the high correlation between job stock and subsidy stock, multicollinearity would inflate the standard error associated with both variables, which does not occur here. The standard error of subsidy stock increases only slightly, but the estimated coefficient drops dramatically, this becoming not statistically different from zero. Conversely, the effect of job stock is quite precisely estimated, which would not have occurred in the presence of multicollinearity.

Finally, in column seven, when all independent variables are accounted for together, subsidies have no effect on municipality-level employment. At the same time, $R^2 = 0.54$, suggests the strong overall explanatory power of the model. Observing the impact of subsidies in the following two years (columns 8 and 9), there is no change in results.

Table 4 presents the results from equation (2), where the main independent variable, *subsidystock*, interacts with the municipality development level. Observing the results in the current year (t), there is a consistently negative and significant effect of

subsidies when interacted with municipality development level, suggesting that the more developed the municipality (DL closer to 1) the smaller is the negative impact of subsidies for FDI on employment.

Just as in table 3, the coefficient is the biggest in column (1), where the main effect – subsidy stock – is positive and significant. In columns (2) and (3), the average net salary and population have a negative and a positive impact, respectively. In column (4) subsidized MNE investments have a negative effect on employment. In column (5) MNE-created jobs have no effect on employment in the current year while this variable becomes positive and significant in the following years. In column (6), total (non-subsidized) investment stock remains the only positive and significant control.

The key point in the discussion of results is that if jobs created by subsidized investments are not controlled for, it would seem that subsidies have a positive effect on employment. Subsidized jobs add to the employment of the municipality, but the subsidized investment does not have an additional effect on employment that is not already captured by subsidized jobs.

On average, subsidies create some jobs, but they do not encourage crowding-in and do not create additional jobs. The positive effect of subsidies on employment is confined to those jobs created by subsidized investments. Therefore, subsidies do not seem to create a sustainable path for employment in the long run.

The important question is the consideration of the counterfactual: that is, whether the existing jobs would have been created without subsidies. This has been considered through the comparison of two groups of municipalities in Serbia – those that have received subsidized investment and those that have not.

Using the fixed-effect model it was possible to control for time-invariant characteristics, hence to compare employment not only in municipalities that received subsidies with those that did not receive them but also over time within the same municipality. The results suggest that the employment pattern is not significantly affected by subsidies, once the jobs directly created by subsidized activities are accounted for.

Besides, there is some evidence of crowding out in the least developed municipalities. This reinforces previously discussed arguments by Patrick (2014) and Coyne (2015) claiming that some subsidy-generated jobs in MNEs are neutralized by layoffs in domestic firms that do not meet criteria for subsidies.

In Serbia, subsidies contributed negatively to overall employment in the least developed municipalities, possibly because they led to the exit of domestic firms. This is in line with the insights from the literature which, in the case of Slovenia, show that subsidies for FDI did not result in cooperation between MNEs and the domestic sector (Burger et al., 2012). Subsidies were somewhat more effective

in more developed municipalities, consistent with the idea that there exists a complementarity between the absorptive capacity of the municipality and the efficacy of subsidies.

These results are related to the findings discussed in the literature review, as Hungerford and Gravelle (2010) suggest that subsidies are not effective in increasing overall employment. The greater subsidies for investments in underdeveloped areas do not contribute to a convergence in regional development, because underdeveloped areas are missing significant absorptive capacity, incarnated in developed human capital and business infrastructure, which is a necessary condition to leverage potential spillovers from FDI.

As suggested by Reiter and Steensma (2010), this may be due to the domestic sector's inability to absorb foreign technologies and consequently increase productivity and employment, or may be because MNEs are not even investing in technologically intensive projects so there is no potential for spillovers.

This study has contributed to the advancement of our knowledge on FDI subsidies and employment creation in a transition country setting in several ways. First, we now know that subsidizing policy is not an effective driver of employment spillovers from inward investment in a transition country context, which it is highly likely is due to institutional bottlenecks that make subsidies unsustainable, unfair and unclear, in the long run.

Second, the transition from a socialist economy to a market-driven one means that the domestic sector lacks substantial absorptive capacity, which is an essential factor in the facilitation of positive externalities from FDI. An industrial policy that increases the absorptive capacity and competitiveness of the domestic sector needs to be an integral part of the employment stimulation measures for FDI.

Third, knowledge about FDI subsidies is enriched by the finding that those municipalities that are most developed in terms of human capital and business infrastructure are the ones that benefit from MNE-generated employment, despite the greater provision of subsidies in less developed municipalities. Therefore, the provision of skilled labour seems more important for the attraction of MNEs and sustainable employment creation than financial subsidies.

The lower part of table 4 shows the implied effect of subsidies on employment in municipalities with different development levels. For example, everything else being constant, subsidies have a positive effect on employment only in the most developed municipality (DL 1). The implied effect of subsidies for FDI on employment showed that subsidies had a negative or neutral effect in all municipalities, apart from the most developed ones.

Table 4: The impact of subsidies on employment – municipality development level interaction

Variables	t				One-year lag			Two-year lag
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				In_empl				
In_subsidystock	0.0133*** (0.00172)	0.0107*** (0.00169)	0.0101*** (0.00173)	0.0278*** (0.00761)	0.0194 (0.0120)	0.0195 (0.0119)	0.0533** (0.0253)	0.0770*** (0.0247)
In_subsidystockxdl	-0.00428*** (0.000673)	-0.00339*** (0.000659)	-0.00354*** (0.000678)	-0.00360*** (0.000677)	-0.0340*** (0.000712)	-0.00230*** (0.000714)	-0.0369* (0.0194)	-0.0615*** (0.0190)
In_netsal		-0.244*** (0.0229)	-0.247*** (0.0226)	-0.248*** (0.0225)	-0.248*** (0.0225)	-0.256*** (0.0260)	-0.138*** (0.0264)	0.0477 (0.0368)
In_pop			0.126*** (0.0303)	0.125*** (0.0303)	0.124*** (0.0303)	0.0448 (0.0369)	0.0369 (0.0376)	0.00725* (0.00405)
In_investstock				-0.0155** (0.00648)	-0.0122 (0.00742)	-0.0155** (0.00742)	-0.0175** (0.00748)	-0.0128* (0.00732)
In_jobstock					0.0106 (0.0117)	0.0123 (0.0113)	0.0214* (0.0119)	0.00989 (0.0115)
In_totalinveststock						0.00756* (0.00407)	0.00949** (0.00414)	-0.260*** (0.0259)
year dummies	yes	yes	yes	yes	yes	yes	yes	yes
Constant	8.812*** (0.0110)	10.98*** (0.204)	9.708*** (0.376)	9.727*** (0.376)	9.732*** (0.376)	10.33*** (0.461)	9.322*** (0.469)	10.34*** (0.459)
Observations	1,999	1,999	1,871	1,871	1,871	1,626	1,623	1,499
R-squared	0.486	0.516	0.552	0.553	0.553	0.473	0.369	0.473
Number of municipalities	127	127	127	127	127	127	126	126
DL	Implied effect of subsidies in municipalities with different development level							
1	0.00902	0.00731	0.00656	0.0242	0.016	0.0172	0.0164	0.0155
2	0.00474	0.00392	0.00302	0.0206	0.0126	0.0149	-0.0205	-0.046
3	0.00046	0.00053	-0.00052	0.017	0.0092	0.0126	-0.0574	-0.1075
4	-0.00382	-0.00286	-0.00406	0.0134	0.0058	0.0103	-0.0943	-0.169

Note: Standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1.

5. Conclusion and policy implications

As shown in the international investment reports (Incentives Monitor, 2018; OECD, 2001), there is a tendency among host countries to provide state incentives to attract FDI. The macroeconomic goal of subsidy-based FDI attraction is to increase employment and establish linkages with MNEs that should result in higher productivity in domestic companies. Ultimately, host countries aim to foster GDP growth by paying MNEs to employ workers and invest in the local economy.

The effect of subsidies on employment can be observed in three ways: (1) direct jobs created – jobs created only by subsidized investment; (2) indirect jobs created – additional jobs created owing to crowding-in and spillover effects; (3) jobs reduction – owing to crowding-out effect as the rest of the companies that are not subsidized decrease employment.

This study is based on data on financial subsidies, which have been an important part of economic policy in transition countries in the last decades. With the use of municipal-level data about subsidies in Serbia, the effect of subsidies on employment is analysed, controlling for other relevant factors.

The results support the idea that financial subsidies for FDI represent an ineffective way to stimulate employment as there is no significant effect of subsidies on employment (no crowding-in) beyond the jobs already created by subsidized MNEs. Moreover, the aim of subsidizing FDI was to direct investments to less developed municipalities, yet the most developed municipalities attracted the most investments.

Subsidies contribute only to the employment generated by subsidized investments. The result shows that a 10 per cent increase in subsidies would lead to an average 0.2 per cent increase in employment. However, the point of employment subsidies is to create jobs on top of what is subsidized, in the rest of the economy. Therefore, one could say that this is the failing part of subsidizing policy – that subsidies are ineffective in creating a positive employment growth pattern.

The limitation of this study that should be acknowledged is that the generation of job spillover effects, as suggested by Mudambi (1999), may need a longer time than what was observed in this study. This is particularly the case if subsidies increase the extent of the affiliate's embeddedness and contribute to making the investment "sticky". In this perspective, it is the sequential investment that the country seeks, which are worth much more in development terms than the initial investment.

Future research may be needed to advance this analysis and evaluate the effectiveness of FDI policy in even greater detail by assessing how much employment would have been generated if subsidies were used for some other sort of (public)

investment, instead of targeting the attraction of MNEs. Should data availability allow, it would also be important to consider an array of policy measures used to attract FDI, rather than just financial subsidies.

The findings from this study carry important implications for policymakers and fill some gaps in the literature. Although policy recommendations from this paper will inform policymakers in Serbia, they will have broader applicability. First, Serbia serves as an example for other transition countries in the region (namely Albania, Bosnia and Herzegovina, Croatia, Montenegro and North Macedonia). Second, the broader Eastern European region shares FDI policies adopted by Serbia. Countries such as Bulgaria, Romania and Ukraine have also aimed to achieve economic development by attracting FDI with subsidies (EBRD, 2017).

Since the beginning of FDI liberalization in transition countries, policy experts and the academic community have warned policymakers that uncontrolled globalization and the attraction of FDI, and the radical change of international trade rules, threaten to change the labour market dramatically. The introduction of subsidies for FDI was meant to contribute to this change by reducing unemployment, especially in rural areas (Iammarino, 2018).

This study suggests that the ability of subsidies to compensate for institutional and structural macroeconomic weaknesses is extremely limited and such a use is short-sighted. The current regulation on subsidizing policy in the example of Serbia is unsustainable, unfair and unclear. "One size fits all" logic is not applicable, since investors differ within sectors and incentives cannot be tailored by sector. Therefore, if policymakers are interested in sustainable employment growth, they need to comprehensively restructure the current FDI policy.

FDI policy should concentrate on attracting different types of investments, not just as much FDI as possible. The structure of FDI is crucial for greater effects on employment. This means encouraging high value-adding activities of MNEs that will not only create direct jobs but also allow spillover effect and indirect job creation within the domestic sector (Radosevic et al., 2003). The FDI subsidizing policy was relatively successful when it targeted knowledge-intensive FDI projects and upgrades of MNE activities towards high value-adding activities, as in the case of Ireland (Te Velde, 2001).

The findings of this study reveal the characteristics of FDI policy that do not work. It is focused on economic sectors and a number of jobs, and it does not make specific requirements for MNEs to cooperate with local companies and source a certain percentage of inputs locally. Since the findings confirm that this approach does not create a sustainable employment growth pattern, it can be suggested that some changes to this policy could lead to more significant employment creation.

- First, FDI policy should focus on specific activities within industries. Inward FDI should be encouraged but not with financial subsidies.
- Second, if investment-stimulating measures persist, in the long run they may be counterproductive as subsidies come at the expense of other socially important goods and services and compete with the private sector.
- Third, from the point of view of the theory of multinational enterprise, the most important externalities from FDI are spillovers and crowding-in effects, which are not achievable with subsidizing policy.
- Fourth, the whole region should adopt regional incentive control rules. The greater frequency and value of investment incentives lead to greater competition among countries for inward FDI. As a result, every country is driving up the subsidy ladder, trapped in a vicious cycle of catching up with the level of subsidy given by another neighbouring country.

Therefore, the key policy recommendation is to avoid generic subsidies and set priorities:

1. **Activities:** Establish criteria for incentives that prioritize the specific activity of MNEs (not just a sector, not just industry). Prioritize knowledge-intensive activities and base state incentives criteria on the potential for crowding-in of domestic companies.
2. **Linkages:** Provide a platform for linkages between MNEs and local suppliers. Offer special treatment for MNEs that supply a certain percentage of inputs from domestic companies and entrepreneurs.
3. **Labour:** Encourage MNEs that invest in (technical) employee training in fast-growing industries, in part by co-financing human resource development.
4. **Transparency:** Offer completely transparent and unified rules, corporate taxation, social contributions and income tax systems that are digitally available.

In structuring FDI attraction policy, it is important to investigate the interaction of all the parties involved, the government as a subsidy provider, the MNE activity and the domestic private sector. Yet, incentives can only complement a strong institutional environment and the rule of law. The incentives for FDI attraction can bring some results for economies but only if the domestic sector is at the core of economic policy. The continuous improvement of corporate governance and managerial knowledge and the fight against nepotism and corruption in the public sector are both imperative for greater FDI quality and quantity, specifically in transition countries.

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Appendix

Descriptive statistics and correlation coefficients

Observations	Mean	Standard deviation	Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1,999	2009.5	4.610925	(1) ln_empl	1							
1,873	64.044	36.23244	(2) ln_subsidystockxdl	0.3239	1						
1,873	8.586857	1.148449	(3) ln_subsidystock	0.3362	0.9993	1					
1,873	3.342421	6.197303	(4) ln_netsal	0.0763	0.4143	0.4171	1				
1,873	3.175724	5.895411	(5) ln_jobstock	0.3566	0.9877	0.9904	0.4122	1			
1,873	9.978357	0.5764915	(6) ln_investstock	0.3295	0.996	0.9965	0.4162	0.9822	1		
1,869	1.28788	2.451003	(7) ln_pop	0.9574	0.3284	0.3399	0.0991	0.3605	0.3326	1	
1,628	3.641138	6.735586	(8) ln_totalinveststock	0.6047	0.4514	0.4607	0.6892	0.4675	0.4603	0.5731	1

