

Available online at www.sciencedirect.com

ScienceDirect

Procedia - Social and Behavioral Sciences 124 (2014) 219 – 228

Procedia
Social and Behavioral Sciences

SIM 2013

The impact of FDI on entrepreneurship in the European Countries

Claudiu Tiberiu Albuлесcu^{ab*}, Matei Tămăşilă^a^aManagement Department, 'Politehnica' University of Timisoara, Remus Street, 14, 300191 Timisoara, Romania^bCRIEF, University of Poitiers, Rue Jean Carbonnier, 2, 86022 Poitiers, France

Abstract

This paper considers the impact of foreign direct investments (FDI) on the entrepreneurial activity in 16 European countries. Data for the early-stage entrepreneurial activity are provided by the Global Entrepreneurship Monitor (GEM), which made also a distinction between necessity- and opportunity-driven entrepreneurs. We assess the role of both inwards and outwards FDI for the period 2005-2011. Our results show that the inwards FDI positively influence the opportunity-driven entrepreneurs while the outwards FDI have a positive influence on the necessity-driven entrepreneurs and a negative impact on the other category of entrepreneurs. The results regarding the FDI impact on the opportunity-driven entrepreneurs are strongly robust in terms of panel data expansion and control variables. Our findings show also that the opportunity entrepreneurship is associated with more developed, innovation-driven economies, while the necessity entrepreneurship characterizes the European efficiency-driven economies.

© 2014 The Authors. Published by Elsevier Ltd. Open access under [CC BY-NC-ND license](http://creativecommons.org/licenses/by-nc-nd/4.0/).

Selection and peer-review under responsibility of SIM 2013 / 12th International Symposium in Management.

Keywords: Entrepreneurship; FDI; Panel models; European countries.

1. Introduction

As the entrepreneurial activity is considered the main engine of economic growth, the entrepreneurship literature historically focused on the identification of entrepreneurship determinants, including the economic context, government policies, entrepreneurial culture and the operating environment. Only recently researchers have started to assess the effects of the foreign direct investments (FDI) on the new firm setup (Ayyagari & Kosová, 2010). This

* Corresponding author. Tel.: +40-743-089-759.

E-mail address: claudiu.albulescu@mpt.upt.ro, claudiual@yahoo.com.

effect is expected to be two-fold (Doynthch & Epperson, 2012). On the one hand, domestic firms are expected to benefit from the know-how that multinational enterprises transfer, but also from the demand creation (positive spillovers). On the other hand, the domestic entrepreneurs are expected to suffer from negative externalities because of increased competition and of technological barriers to entry (negative spillovers). Both the demand creation effect and the entry barrier effect were documented in the empirical literature.

Nevertheless, to the best of our knowledge, none of the studies approaching the impact of the FDI on the entrepreneurship makes the distinction between necessity driven entrepreneurs (*nde*) and opportunity driven entrepreneurs (*ode*). This particular emphasis is theoretically attractive because the expected impact of the FDI may be different, depending on the motivation for entrepreneurship. Therefore, the first contribution of our paper is represented by the assessment of FDI impact on both necessity and opportunity-driven entrepreneurs.

Most of the scholars have focused on the host country effect, analyzing the impact of the inwards FDI on the new firm creation. However, the role of the outwards FDI is also important in terms of entrepreneurial activity as they may act as a driver for necessity entrepreneurs. This category of entrepreneurs is represented by persons who lose their job or do not find any job on the market. They are trying to ensure their revenues by starting a business. The fact that a part of the domestic capital leaves the country or the region in order to find investment opportunities abroad (outwards FDI), can then stimulate the necessity entrepreneurial activity. Thus, the second contribution of our paper consists in the analysis of the impact of both inwards and outwards FDI on the entrepreneurial activity.

The extensive literature studying incentives and impediments to firm entry and exit associates the entrepreneurial activity with the setup of new firms (Kim & Li, 2012). Indeed, the regular way to assess the entrepreneurial activity regards the persons operating new businesses. However, this measure does not take into account the persons involved in the process of starting businesses (nascent activity). The GEM statistics cover early-stage entrepreneurial activity (*tea*) which combines nascent and new entrepreneurial activities. Consequently, the third contribution of the paper is represented by the use of *tea* for assessing the entrepreneurial activity. The last contribution is associated with the empirical methodology. While most papers conduct single-country analysis, the present work relies on a panel data approach for 16 European countries, for the period 2005-2011 (strongly-balanced panel). We employ several macroeconomic control variables as the growth rate and the GDP per capita, but also a series of control variables which represent the entrepreneurial attitude, as the fear of failure, and the entrepreneurial intentions. In order to test for the robustness of our results, we extend in the first step the original panel for the period 2001-2011. In the second step, we extend both the time dimension (2001-2011) and the panel dimension, including in the analysis four European countries for which data are available starting with 2007.

The remainder of the paper is the following. Section 2 presents a brief overview of the literature on FDI – entrepreneurship relationship. Section 3 describes the stylized facts regarding the entrepreneurial activity in the selected European countries, the data and the methodology. Section 4 highlights the empirical findings. The last section concludes.

2. Literature review on entrepreneurship and FDI relationship

Our paper on entrepreneurship and FDI relationship expands the new research front regarding the determinants of entrepreneurship literature. On the one side, as Kim & Li (2012) show, the FDI – entrepreneurship relationship has been for the first time explored in the context of the spillover effects produced by inward FDI in host economies. Starting with McDougall (1960), the researchers have been interested in the relationship between foreign direct investment and a variety of economic development outcomes in the destination country, including the activity of local firms. The surveys have shown that FDI improve labor productivity (Liu et al., 2000) and increase the production capabilities of local firms (Hejazi & Safarian, 1999).

On the other side, as Ayyagari & Kosová (2010) states, a huge body of literature has focused on the determinants of entrepreneurial activity. Theoretical papers are oriented towards the entrepreneurial culture and gradual learning or to the role of technological innovation in supporting the entrepreneurial intentions (Jovanovic, 1982; Jovanovic & MacDonald, 1994; Ericson & Pakes, 1995). Empirical works consider in particular the role of the economic context and institutional framework in promoting the entrepreneurship.

The effects of the FDI on the entrepreneurship were assessed in particular in the last three decades, due to the internationalization of large and small firms (De Maeseineire & Claeys, 2012). Most of the studies focus on the role

of inward FDI on the host country entrepreneurial activity. The theoretical arguments are complementary but sometimes opposed and show that FDI can have both positive and negative spillover effects on new firms (Meyer & Sinani, 2009).

Positive spillover effects on host country firms are illustrated in terms of the diffusion of new technologies, management practices brought by the foreign-owned firms, creation of new markets, sub-contracting activities, access to critical resources or even financial support.

Foreign investment brings new products and services into the host economy, generating demand for these products. There are several implications of this positive spillover (Javorcik, 2004). First, the new products lead to the creation of new markets and entrepreneurial opportunities (horizontal effects). New domestic firms can offer comparable products by imitating their foreign competitors). Second, new firms may seek to exploit niche opportunities within sectors neglected by foreign-owned firms. Third, the new firms can learn from the failed attempts of foreign-owned firms to satisfy customers through the introduction of more appealing alternatives, being aware of the cultural features of their customers – demonstration effect (Caves, 1996; Pitelis & Teece, 2010).

Next, FDI provides managerial skills for the host country firms. The diffusion can occur directly through mobility of managers and workers when they are hired into the foreign-owned firms and subsequently move on to other local firms (Fu, 2012). Additionally, FDI provide support for trade flows, boosts export competitiveness and stimulates import-competing production (Christiansen & Ogutcu, 2002). They bring technical and informational externalities (Rodriguez-Clare, 1996; Meyer, 2004). Moreover, FDI permit access to financial resources (Urata & Kawai, 2000; De Maeseineire & Claeys, 2012). Finally, the FDI can help new firm extend their activities by sub-contracting activities or by developing collaborations for different activities (vertical effects).

Negative spillover effects can occur when foreign-owned firms compete for the same customers and “crowd out” domestic firms (De Backer & Sleuwaegen, 2003). Presence of foreign firms in an industry can have a negative impact on the entry of domestic firms by raising the technological barriers to entry (Ayyagari & Kosová, 2010). The entry barrier effect arises because foreign firms are often more technologically advanced than domestic firms, especially in emerging markets, and because they can better exploit economies of scale.

The presence of foreign investment may also spur additional upstream and downstream demand along the supply chain, what we call backward and forward linkages (Kim & Li, 2012). Backward linkages signify situations when foreign-owned firms integrate with locally owned suppliers to source raw materials needed for their products, whereas forward linkages occur when local firms purchase the goods and services produced by the foreign-owned firms.

Prior studies have reported both positive and negative spillover effects of FDI on entrepreneurial activity. Most of the previous works are based on single-country settings. Negative spillover effects or no effects were usually reported for the transition economies (Djankov & Hoekman, 2000; Konings, 2001; Sabirianova et al., 2005). Similar results were reported by De Backer & Sleuwaegen (2003), in their study of firm entry and exit across Belgian manufacturing industries. Contrary, Görg & Strobl (2002) find a positive effect of the FDI on the entry of new domestic firms in Ireland.

More recent studies test the effects of FDI on entrepreneurship using a panel data approach. While Doytch & Epperson (2012) has found that FDI positively affect entrepreneurship only in the middle income country group, Kim & Li (2012) state that the main positive impact of FDI on business creation is most salient in regions with weak institutional support. Their findings obtained from 104 countries panel analysis are consistent with the predictions that foreign direct investment positively relates to business creation, especially in the less developed countries, characterized by lack of institutional support, political stability and good quality of human capital.

Nevertheless, the contradictory results found in the literature can also be associated with the lack of distinction between opportunity and necessity driven entrepreneurs. In terms of inwards FDI, we expect positive effects for the overall entrepreneurial activity. In addition, new firms entrances increase once the entrepreneurs observe new opportunities in the market. Contrary, as the multinational firms create jobs, the impact of the FDI on the necessity entrepreneurs is a negative one. These hypotheses enable the reconciliation of the contradictory findings in the literature. In addition, we also look for the impact of outwards FDI. They should have an opposite effect on the new firm creation. When the domestic investors live the country to find new opportunities abroad (increased outwards

FDI), the opportunity driven entrepreneurial activity decreases, while the necessity one increases, as many persons do not find jobs and look for alternative revenues.

3. Stylized facts, data analysis and methodology

3.1. Stylized facts regarding the entrepreneurial activity in Europe

For the present study we use the GEM data for 16 selected European economies (Belgium, Croatia, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Netherlands, Norway, Slovenia, Spain, Sweden, Switzerland and United Kingdom). For the robustness analysis we extend in the first step the analyzed period from 2005-2011 to 2001-2011 and in a second step we extend both the analyzed period (2001-2011) and the number of panel (Latvia, Romania, Russia and Turkey). The country choice was based on data availability in the GEM database.

The GEM survey includes at present more than 198,000 people from 69 economies, out of which 29 are located in Europe. The central measure of GEM is the total entrepreneurial activity rate (*tea*), which consists of the percentage of individuals aged between 18–64 years in an economy who are in the process of starting or are already running new businesses. The entrepreneurs may have different motivations for starting a business, being pushed or pulled into entrepreneurship. The first category is represented by the necessity driven entrepreneurs (*nde*) and covers persons who do not have other work options and need a source of income. The second category includes individuals who became entrepreneurs because they find an opportunity or because they may desire greater independence in their work or seek to maintain or improve their income (*ode*). Notice that, even if the two aforementioned categories are calculated as percentage of the total entrepreneurial activity rate, their sum is not 100% as there are questioned individuals who consider that they are not belonging to one of the said categories.

Usually, the entrepreneurial activity is more intensive in the innovation driven economies, which are more developed (see Fig. 1). We obtained further information above the economic development – entrepreneurship relationship by analyzing the necessity and opportunity entrepreneurs. The number of opportunity entrepreneurs increases with the economic development (assessed based on the GDP per capita), while the number of the necessity entrepreneurs decreases.

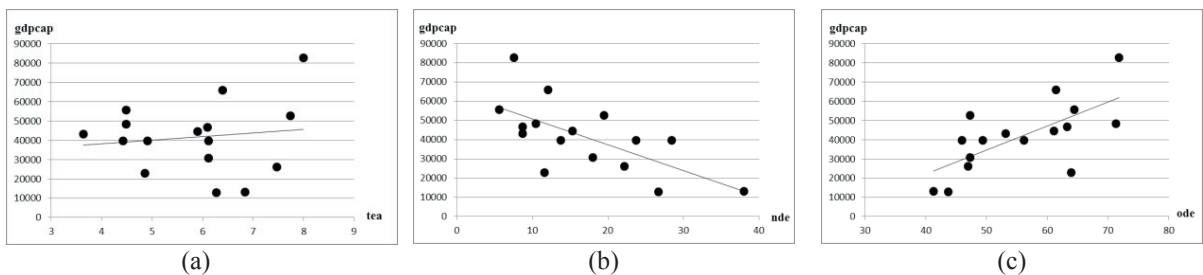


Fig. 1. Scatter plot on the economic development – entrepreneurial activity correlation: (a) *tea*; (b) *nde* (c) *ode*

It is also interesting to observe how the economic context influences the entrepreneurial activity in the European countries. Normally, growth period are favorable for investments and thus for the opportunity-driven entrepreneurs, while crisis periods, associated with the job lost, determine peoples to find alternative sources of revenues, becoming then necessity entrepreneurs. However, there is no clear evidence regarding the economic context and the crisis' impact on these categories of entrepreneurs.

All in all, the level of the development (*gdpcap*) and the economic growth rate (*gdpgpr*) represent our control variables. Beside, in order to check for the robustness of our results, we have included in the analysis two other control variables, which characterize the entrepreneurial intentions. The fear of failure (*fof*) is very important for the opportunity entrepreneurs and negatively influences their choice to start-up a business, while the entrepreneurial intentions (*ei*) are positively correlated with the entrepreneurial activity in all cases (a positive sign is then expected). The next section describes the data included in the analysis.

3.2. Data analysis

We construct a 16 countries panel for the period 2005-2011 (112 observations). Data related to the entrepreneurial activity are extracted from the GEM database, while the macroeconomic variables (including the FDI) are obtained from the UNCTAD database. The descriptive statistics of the variables, including their description and the expected sign for the explanatory ones, are presented in Table 1 below.

Table 1. Descriptive statistics

| Statistics | Mean | Max. | Min. | S.D. | Exp. sign | Definition and description | Sources |
|-------------------|-------|-------|-------|-------|-----------|---|---------|
| (1) <i>tea</i> | 5.86 | 9.9 | 1.9 | 1.64 | | <i>Total early-stage entrepreneurial activity</i> , which consists of the percentage of individuals aged between 18–64 years who are in the process of starting or are already running new businesses. | GEM |
| (2) <i>nde</i> | 16.88 | 50 | 3 | 10.17 | | <i>Necessity-driven entrepreneurs</i> , represent the percentage of those involved in total early-stage entrepreneurial activity because they had no other option for work. | GEM |
| (3) <i>ode</i> | 55.54 | 82 | 29 | 12.19 | | <i>Opportunity-driven entrepreneurs</i> , represent the percentage of entrepreneurs who are pulled into entrepreneurship because they recognize an opportunity that can improve or maintain their income or increase their independence. | GEM |
| (4) <i>infdi</i> | 12.2 | 14.04 | 8.89 | 1.33 | +/- | <i>Inwards FDI</i> represent the stock volume (billions of US dollars), expressed in natural log. They will have a positive impact on the overall entrepreneurial activity and on the opportunity entrepreneurs, while the impact on the necessity entrepreneurs will be a negative one. | UNCTAD |
| (5) <i>outfdi</i> | 12.11 | 14.42 | 7.62 | 1.9 | +/- | <i>Outwards FDI</i> represent the stock volume (billions of US dollars), expressed in natural log. | UNCTAD |
| (6) <i>gdpgr</i> | 1.24 | 6.96 | -8.54 | 3.24 | +/- | <i>GDP growth rate</i> . The influence is positive on the overall entrepreneurial activity and on the opportunity entrepreneurs, while the impact on the necessity entrepreneurs will be a negative one. | UNCTAD |
| (7) <i>gdpcap</i> | 10.51 | 11.5 | 9.22 | 0.51 | +/- | <i>GDP per capita</i> , expressed in natural log. A positive sign is expected for the opportunity-driven entrepreneurs and a negative one for the necessity-driven entrepreneurs. | UNCTAD |
| (8) <i>fof</i> | 33.94 | 54 | 15 | 7.38 | - | <i>Fear of failure</i> assessed for those seeing opportunities may prevent them from actually starting a business. A negative sign is expected in all cases. | GEM |
| (9) <i>ei</i> | 7.86 | 19.5 | 1.5 | 3.44 | + | <i>Entrepreneurial intentions</i> represent the percentage of the 18–64 age group (individuals involved in any stage of entrepreneurial activity excluded) who intend to start a business within three years. Even when individuals have favorable perceptions of entrepreneurship, they may nonetheless have few intentions to start businesses. A positive sign is expected in all cases. | GEM |

The correlation matrix is presented in Table 2.

Table 2. Correlation matrix

| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|-------------------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| (1) <i>tea</i> | 1.000 | | | | | | | | |
| (2) <i>nde</i> | 0.093 | 1.000 | | | | | | | |
| (3) <i>ode</i> | -0.012 | -0.722 | 1.000 | | | | | | |
| (4) <i>infdi</i> | -0.219 | -0.177 | -0.008 | 1.000 | | | | | |
| (5) <i>outfdi</i> | -0.221 | -0.307 | 0.112 | 0.946 | 1.000 | | | | |
| (6) <i>gdpgr</i> | -0.485 | -0.096 | 0.203 | -0.010 | -0.031 | 1.000 | | | |
| (7) <i>gdpcap</i> | 0.011 | -0.627 | 0.516 | 0.497 | 0.683 | 0.008 | 1.000 | | |
| (8) <i>fof</i> | -0.023 | 0.194 | -0.268 | 0.123 | 0.120 | -0.084 | -0.123 | 1.000 | |
| (9) <i>ei</i> | 0.191 | 0.233 | -0.090 | -0.193 | -0.245 | -0.052 | -0.290 | 0.337 | 1.000 |

As we can see, there is no important correlation between the dependent and explanatory variables (inwards FDI, outwards FDI and the GDP per capita are expressed in natural log). However, the correlation coefficient of the inwards and outwards FDI is very high..

3.3. Methodology

In general the small businesses do not have enough financial resources to invest abroad. Consequently, we do not suspect a reverse causality problem regarding our interest variable and we do not use the lag of the independent variable in the regression as Kim & Li (2012) deed. However, an endogeneity problem can arise when we look to the economic growth rate and we accept it as a limit of our approach.

We have started our analysis looking for the panel data stationarity. The results of the four stationarity tests are presented in Table 3. As we can see, the tests performed show in general that our data are stationary.

Table 3. Stationarity tests

| Tests | <i>tea</i> | <i>nde</i> | <i>ode</i> | <i>infdi</i> | <i>outfdi</i> | <i>gdppgr</i> | <i>gdpcap</i> | <i>fof</i> | <i>ei</i> |
|---|------------|------------|------------|--------------|---------------|---------------|---------------|------------|-----------|
| Levin–Lin–Chu (2002) – Adjusted t* | -4.40*** | -5.05*** | -2.97*** | -26.13*** | -14.34*** | -4.56*** | -17.16*** | -9.92*** | -1.86** |
| Harris–Tzavalis (1999) – rho (statistics) | 0.11*** | 0.32*** | 0.29*** | 0.44** | 0.60 | 0.24*** | 0.47* | 0.12*** | 0.36*** |
| Breitung (2000) – lambda (statistics) | -1.88** | -1.57* | -1.36* | 0.99 | 2.64 | -3.63*** | 0.51 | -3.82*** | -2.15** |
| Im–Pasarán–Shin (1997) – tilde (statistics) | -1.60* | -2.63*** | -1.34* | -3.50*** | -3.48*** | -1.78** | -1.03 | -1.95** | -2.59*** |

*, **, ***, mean stationarity significant at 10 %, 5 % et 1 %. Notes: (i) For all tests, the null hypothesis is that all the panels contain a unit root; (ii) For the Im–Pasarán–Shin (1997) test, we have marked the time trend and subtracted cross-sectional means. In case of *ode* variable, the Levin–Lin–Chu (2002) test shows the stationarity in the presence of a time trend, while for the Breitung (2000) test, we have subtracted the cross-sectional means and suppress the panel-specific means.

The fixed effect panel model is usually used for assessing the entrepreneurship determinants. Fixed effects underline disparities between countries. A new development of this classical model is the panel negative-binomial model, which accounts for violations in the assumption of homoscedasticity and, in the same time, provides the flexibility to address unobserved heterogeneity (Hausman et al., 1984). Nevertheless, as Allison & Waterman (2002) show, this method does not, in fact, control for all stable covariates. We then test a simple fixed effect model, but also a random model, having in mind the fact that the structure of our sample shows a N<T situation (the number of countries is higher that the number of periods). In addition, for the robustness check we do not have strongly balanced panels (lack of data for the beginning of the period) and the random-effects models address these aspects. In order to avoid the broken panel problem, when entrepreneurship data were missing (Germany - 2007; Ireland - 2009; Sweden - 2008, 2009 and Switzerland - 2006, 2008), we have used the linear interpolation. A Hausman test was performed in order to select the most appropriate model between the fixed and random effects. The general tested equations for fixed and respectively for random effects are:

$$Y_{i,t} = \beta_0 + \beta_1 X_{i,t} + \alpha_i + e_{i,t} \quad (1)$$

where: $Y_{i,t}$ is the dependent variable (*tea*, *nde*, *ode*); β_0 is the intercept; α_i represents all the stable characteristics of the countries; $X_{i,t}$ represents the vector of independent variables; β_1 are the coefficients; $e_{i,t}$ is the error term.

$$Y_{i,t} = \beta_0 + \beta X_{i,t} + \alpha_i + \mu_{i,t} + \varepsilon_{i,t} \quad (2)$$

where: μ represents between-entity errors; $\varepsilon_{i,t}$ is the within-entity error.

4. Empirical results

We have conducted, as mentioned above, three sets of analyses. The first set is represented by the 16 countries panel, for the period 2005-2011 (Panel A). The second set of analysis contains the same number of panel, but extends the period to 2001-2011 (Panel B). The third set includes 20 countries for the period 2001-2011 (Panel C). For each category of analyses we have tested the fixed and the random effects (the Hausman test was performed in order to choose the best model), having in mind the determinants of the total entrepreneurial activity (*tea*), of the necessity-driven entrepreneurs (*nde*) and of the opportunity-driven entrepreneurs (*ode*).

4.1. Main results

Table 4 presents the results for the Panel A, which represents the reference panel of our analysis. As we can see, inwards and outwards FDI do not influence the overall entrepreneurial activity (the coefficients are not significant). However, *tea* is positively correlated with the GDP per capita and with the entrepreneurial intentions. When we refer to *nde* and *ode*, the situation is different. Inwards FDI do not have an impact on the necessity-driven entrepreneurs (the coefficient is not significant), but the sign is the expected one. In the same time, the increase of the outwards FDI positively influences the necessity entrepreneurship. The fact that the capital leaves the country negatively affects job creation. Therefore, people who do not find a job became necessity entrepreneurs.

In case of opportunity-driven entrepreneurs, both the inwards and outwards FDI produce their effects. The entrance of multinational firms on the market stimulates the entrepreneurial activity (the demand creation effect). In the same time, the exit of big companies or of the capital is associated with the loss of interest for entrepreneurial activities. These results are in line with the theoretical background described in Section 2.

Table 4. Panel A

| Model | <i>tea</i> | | <i>nde</i> | | <i>ode</i> | |
|-----------------------------------|------------------------------|---------|-----------------------------|-----------|-----------------------------|-----------|
| | Fixed | Random | Fixed | Random | Fixed | Random |
| <i>constant</i> | -12.33 | -8.55 | 183.4*** | 203.5*** | -72.35 | -152.2*** |
| <i>infdi</i> | -0.23 | 0.26 | -2.44 | -2.59 | 11.81** | 5.01 |
| <i>outfdi</i> | -0.64 | -0.60 | 12.07*** | 4.87*** | -20.05*** | -7.41** |
| <i>gdpgpr</i> | -0.01 | -0.01 | 0.08 | -0.17 | 0.06 | 0.50** |
| <i>gdpcap</i> | 2.67** | 1.68** | -26.28*** | -19.85*** | 21.05** | 22.36*** |
| <i>fof</i> | -0.02 | -0.01 | -0.10 | -0.11 | 0.14 | 0.04 |
| <i>ei</i> | 0.20*** | 0.18*** | -0.38 | -0.13 | 0.04 | -0.11 |
| R ² | 0.12 | 0.13 | 0.01 | 0.35 | 0.01 | 0.37 |
| F test (p-values) | 9.01 (0.000) | | 11.83 (0.000) | | 6.06 (0.000) | |
| Hausman test (indicated model) | Prob>chi2 = 0.82 (Random) | | Prob>chi2 = 0.06 (Fixed) | | Prob>chi2 = 0.00 (Fixed) | |

4.2. Robustness check

In order to check for the robustness of the previous results, we extend in the first step the data sample. In case of *tea*, we have the same sign for the interest variables (FDI), but this time the relationship became significant. The inwards FDI slightly influence the firm creation, at 90% interval of confidence. Contrary, the outwards FDI have an opposite and very significant effect. The same situation can be seen in case of opportunity-driven entrepreneurs. As in the Panel A, the test performed on Panel B (Table 5) shows a positive influence from the *infdi* and a negative one related to *outfdi*. Nevertheless, in case of *nde*, the situation is totally different as compared to the previous results, fact which proves the lack of robustness for this particular category of results.

Table 5. Panel B

| Model | <i>tea</i> | | <i>nde</i> | | <i>ode</i> | |
|--------------------------------|---------------------------|-----------|---------------------------|----------|--------------------------|-----------|
| | Fixed | Random | Fixed | Random | Fixed | Random |
| <i>constant</i> | -12.64** | -10.27*** | 65.24** | 65.93*** | -72.35 | -152.2*** |
| <i>infdi</i> | 0.36 | 0.62* | 5.41* | 4.14** | 11.81** | 5.01 |
| <i>outfdi</i> | -1.27*** | -0.89*** | 2.37 | -2.13 | -20.05*** | -7.41** |
| <i>gdpgr</i> | -0.04 | -0.02 | -0.06 | -0.25 | 0.06 | 0.50** |
| <i>gdpcap</i> | 2.77*** | 1.74*** | -13.66** | -7.33*** | 21.05** | 22.36*** |
| <i>fof</i> | -0.04** | -0.03** | 0.00 | 0.05 | 0.14 | 0.04 |
| <i>ei</i> | 0.23*** | 0.21*** | 0.01 | 0.18 | 0.04 | -0.11 |
| R ² | 0.13 | 0.16 | 0.01 | 0.37 | 0.01 | 0.37 |
| F test (p-values) | 13 (0.000) | | 8.33 (0.000) | | 6.06 (0.000) | |
| Hausman test (indicated model) | Prob>chi2 = 0.33 (Random) | | Prob>chi2 = 0.09 (Random) | | Prob>chi2 = 0.00 (Fixed) | |

*, ** and ***, mean statistic relationship significant at 10%, 5%, respectively 1%.

Finally, the last category of tests (Panel C) confirms our results for the opportunity-driven entrepreneurs (Table 6). As in case of Panel B, the fear of failure and the entrepreneurial intention are significant and have the expected sign only for the total entrepreneurial activity.

Table 6. Panel C

| Model | <i>tea</i> | | <i>nde</i> | | <i>ode</i> | |
|--------------------------------|---------------------------|----------|---------------------------|----------|--------------------------|-----------|
| | Fixed | Random | Fixed | Random | Fixed | Random |
| <i>constant</i> | -11.51** | -8.28** | 52.27** | 65.87*** | -73.39 | -108.2*** |
| <i>infdi</i> | 0.41 | 0.53 | 4.22* | 3.80** | 9.85** | 1.14 |
| <i>outfdi</i> | -0.89* | -0.66*** | 1.04 | -1.73 | -15.53*** | -3.67* |
| <i>gdpgr</i> | -0.04* | -0.04* | -0.26** | -0.35*** | -0.06 | 0.17 |
| <i>gdpcap</i> | 2.22** | 1.48*** | -9.55** | -7.44*** | 18.01** | 18.60*** |
| <i>fof</i> | -0.05*** | -0.03** | 0.00 | 0.04 | 0.09 | -0.02 |
| <i>ei</i> | 0.20*** | 0.19*** | 0.2 | 0.30** | -0.10 | -0.11 |
| R ² | 0.23 | 0.24 | 0.09 | 0.45 | 0.01 | 0.50 |
| F test (p-values) | 9.30 (0.000) | | 7.43 (0.000) | | 4.71 (0.000) | |
| Hausman test (indicated model) | Prob>chi2 = 0.85 (Random) | | Prob>chi2 = 0.24 (Random) | | Prob>chi2 = 0.01 (Fixed) | |

*, ** and ***, mean statistic relationship significant at 10%, 5%, respectively 1%.

To sum up our findings, we can state that inwards FDI positively influence the total entrepreneurial activity, while the outwards FDI have an opposite effect. However, the results are partially robust. In case of the necessity-driven entrepreneurs the results are contradictory from one panel to another and lack in robustness. Finally, the most important result of our research is related to the opportunity-driven entrepreneurs. Their activity is positively influenced by the FDI entrance and negatively influenced by the FDI exit. These findings are significant and very robust. As the *ode* activity is more prolific in the European developed countries, these countries benefit more in terms of entrepreneurial activity from the inwards FDI.

5. Conclusions

The empirical findings regarding the role of FDI in promoting entrepreneurial activity in host countries are mixed and sometimes contradictory. Beside, theoretical arguments often oscillate between positive and negative spillover of inwards FDI on the entrepreneurial activity. These results can be explained by the fact that different elements motivate a person to become an entrepreneur, triggering thus the distinction between necessity-driven and opportunity-driven entrepreneurs.

The purpose of our paper is to see to what extent the FDI influence the entrepreneurial activity, based on this delimitation. Consequently, we test the impact of the inwards FDI on the total entrepreneurial activity (assessed not

only in terms of new business creation but also in terms of ongoing process for a firm set up), and on the necessity and opportunity European entrepreneurs, using the GME database for the period 2005-2011. In addition, we also estimate the impact of outwards FDI on these categories of entrepreneurs. The robustness check is made by including in the analysis different control variables and by extending the original data sample.

Our results show that the impact of FDI on the overall entrepreneurial activity is relatively poor. However, when we make the separation between necessity and opportunity entrepreneurs, the findings became more conclusive. The outwards FDI positively influence the necessity driven entrepreneurs but these results lack in robustness. In case of opportunity entrepreneurs, the empirical findings are robust and show that inwards FDI positively influence this activity while the outwards FDI have an opposite effect. Indeed, the demand creation effect is very important for this category of entrepreneurs and this is the most important result of the present study. As the correlation between opportunity entrepreneurs and the level of countries' development is positive, inwards FDI enforce the entrepreneurial activity in particular in these European countries.

Our study can be further developed in different directions. First, depending on the availability of data, this effect can be checked at sectorial level. Second, it is important to make also the distinction between vertical and horizontal spillover effects and in the same time between backward and forward linkages. Yet, the differentiation between necessity and opportunity-driven entrepreneurs contributes to a reconciliation of the entrepreneurship literature regarding the FDI role in enhancing the entrepreneurial activity.

References

- Ayyagari, M. & Kosová, R. (2010). Does FDI facilitate domestic entry? Evidence from the Czech Republic. *Review of International Economics*, 18, 14–29.
- Doytch, N. & Epperson, N. (2012). FDI and Entrepreneurship in Developing Countries. *Global Science and Technology Forum Business Review*, 1, 120–125.
- Kim, P.H. & Li, M. (2012). Injecting demand through spillovers: Foreign direct investment, domestic socio-political conditions, and host-country entrepreneurial activity. *Journal of Business Venturing*, <http://dx.doi.org/10.1016/j.jbusvent.2012.10.004>, forthcoming.
- McDougall, G.D.A. (1960). The benefits and costs of private investment from abroad: a theoretical approach. *Economic Record*, 36, 13–35.
- Liu, X., Siler, P., Wang, C. & Wei, Y. (2000). Productivity spillovers from foreign direct investment: evidence from UK industry level panel data. *Journal of International Business Studies*, 31, 407–425.
- Hejazi, W. & Safarian, A.E. (1999). Trade, foreign direct investment, and R&D spillovers. *Journal of International Business Studies*, 30, 491–511.
- Jovanovic, B. (1982). Selection and the Evolution of Industry. *Econometrica*, 50, 649–670.
- Jovanovic, B. & MacDonald, G.M. (1994). The Life Cycle of a Competitive Industry. *Journal of Political Economy*, 102, 322–347.
- Ericson, R. & Pakes, A. (1995). Markov-Perfect Industry Dynamics: A Framework for Empirical Work. *Review of Economic Studies*, 62, 53–82.
- De Maeseneire, W. & Claeys, T. (2012). SMEs, foreign direct investment and financial constraints: The case of Belgium. *International Business Review*, 21, 408–424.
- Meyer, K.E. & Sinani, E. (2009). When and where does foreign direct investment generate positive spillovers? A meta-analysis. *Journal of International Business Studies*, 40, 1075–1094.
- Javorcik, B.S. (2004). Does foreign direct investment increase the productivity of domestic firms? In search of spillovers through backward linkages. *American Economic Review*, 94, 605–627.
- Caves, R.E. (1996). *Multinational Enterprises and Economic Analysis*. Cambridge Surveys of Economic Literature, (2nd ed.). Cambridge: Cambridge University Press.
- Pitelis, C.N. & Teece, D.J. (2010). Cross-border market co-creation, dynamic capabilities and the entrepreneurial theory of the multinational enterprise. *Industrial and Corporate Change*, 19, 1247–1270.
- Fu, X. (2012). Foreign direct investment and managerial knowledge spillovers through the diffusion of management practices. *Journal of Management Studies*, 49, 970–999.
- Christiansen, H. & Ogutcu, M. (2002). Foreign direct investment for development – Maximizing benefits, minimizing costs. OCDE, Global forum on international investment. Attracting foreign direct investment for development, Shanghai, 5-6 December.
- Rodriguez-Clare, A. (1996). Multinationals, linkages, and economic development. *American Economic Review*, 86, 852–873.
- Meyer, K.E. (2004). Perspectives on multinational enterprises in emerging economies. *Journal of International Business Studies*, 35, 259–276.
- Urata, S., & Kawai, H. (2000). The determinants of the location of foreign direct investment by Japanese small and medium-sized enterprises. *Small Business Economics*, 15, 79–103.
- De Backer, K. & Sleuwaegen, L. (2003). Does foreign direct investment crowd out domestic entrepreneurship?. *Review of Industrial Organization*, 22, 67–84.
- Djankov, S. & Hoekman, B. (2000). Foreign Investment and Productivity Growth in Czech Enterprises. *World Bank Economic Review*, 14, 49–64.
- Konings, J. (2001). The Effects of Foreign Direct Investment on Domestic Firms: Evidence from Firm Panel Data in Emerging Economies. *Economics of Transition*, 9, 619–633.

- Sabirianova Peter, K., Svejnar, J. & Terrell, K. (2005). FDI Spillovers and Distance of Firms to the Frontier. *Journal of the European Economic Association Papers and Proceedings*, 3, 576–586.
- Görg, H. & Strobl, E. (2002). Multinational Companies and Indigenous Development: An Empirical Analysis. *European Economic Review*, 46, 1305–1322.
- Hausman, J.A., Hall, B.H. & Griliches, Z. (1984). Econometric models for count data with applications to the patents R and D relationship. *Econometrica*, 52, 909–938.
- Allison, P.D. & Waterman, R.P. (2002). Fixed-Effects Negative Binomial Regression Models. *Sociological Methodology*, 32, 247–265.