KATHOLIEKE
UNIVERSITEIT
LEUVEN

DEPARTEMENT TOEGEPASTE ECONOMISCHE WETENSCHAPPEN

RESEARCH REPORT 0120

DOES FOREIGN DIRECT INVESTMENT CROWD OUT DOMESTIC ENTREPRENEURSHIP?

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D/2001/2376/0120

DOES FOREIGN DIRECT INVESTMENT CROWD OUT DOMESTIC ENTREPRENEURSHIP?

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Abstract

In analyzing firm entry and exit in the small open economy of Belgium, this paper empirically shows that import competition and foreign direct investment crowd out domestic entrepreneurs on product and labor markets. These results are in line with theoretical models of entrepreneurial choice in open economies that have explicitly included the effects of international competition on the formation of domestic entrepreneurs. The empirical analysis demonstrates that the inflow of foreign direct investment in Belgium reduces entrepreneurship measured through the entry of new domestic firms, while increasing domestic exit in the short term. Moreover, the results suggest that the decision of foreign firms to enter and/or exit a small economy is mainly determined by international conditions and less by domestic market conditions.

JEL-codes: F23, L10, M13.
Keywords: FDI, entrepreneurship, entry/exit

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Financial support of DWTC (project SE/01/003) and Onderzoeksfonds (project OT/96/03) are gratefully acknowledged.

1. Introduction

Theoretical models of firm formation have typically endogenized the supply of entrepreneurs in a closed economy setting, thereby concentrating on the personal characteristics of entrepreneurs including entrepreneurial capability (Lucas (1978), Oi (1983)) and risk attitude (Kanbur (1979), Kihlstrom and Laffont (1979)). Focusing on open economies Grossman (1984) theoretically showed that import competition and foreign direct investment (FDI) hinders the formation of the 'entrepreneurial class' in developing countries. International competition causes the number of domestic entrepreneurs to fall since it leads to lower international prices on product markets and a crowding out effect of local ventures by foreign firms on the local labor market.

Empirical work has operationalized entrepreneurship through the creation or establishmentof new firms. However, it has largely neglected the impact of foreign direct investment on local entrepreneurship, as most empirical applications in the entry/exit literature were developed in national industry contexts. While recent research increasingly distinguished between domestic and foreign entry/exit, it has not yet analyzed the direct interdependence between domestic and foreign entry. Instead previous work has extensively studied the differential impact of entry/exit barriers and incentives for domestic versus foreign entry/exit (Gorecki (1976), Shapiro (1983), Baldwin and Gorecki (1987), Khemani and Shapiro (1988), Geroski (1991), Mata and Portugal (1997.

By not taking into account these effects of FDI, previous studies on entry in (small) open economies may have produced biased results. Belgium for example, traditionally characterized by high import shares and a large presence of foreign multinational firms (MNEs) in manufacturing industries, has consistently reported lower (domestic) entry rates than other European countries (Eurostat (1998)). In a more recent period, Belgium showed a net outflow of FDI together with a simultaneous increase in the number of domestic firms. Although Sleuwaegen and Dehandschutter (1991) in their study on entry in Belgium, have extended the typical national industry context of most entry studies and showed the importance of European-wide growth and profit opportunities, they neglected the effect of international exposure through import competition and foreign direct investment as factors impeding the entry of domestic firms.

The aim of this paper is to empirically assess the impact of international competition on domestic entrepreneurship, and to analyze if foreign firms have crowded out domestic entrepreneurs in Belgium. The empirical analysis also considers positive effects of FDI on entry in line with theoretical models in the international business literature which demonstrate possible complementary effects between foreign and domestic firms (Rodriguez-Clare (1996), Markusen and Venables (1999)). Because of networking and spillover effects, foreign firms may actually stimulate local entrepreneurship.

While the crowding out effect of FDI on local entrepreneurship has mainly been discussed in developing countries (Caves (1996)), this paper analyzes this effect in the context of Belgium, an open industrialized country. Given the similarity between Belgium and other EC countries like Ireland and Spain (Sleuwaegen and De Backer (2000)), the results of this analysis are not necessarily limited to Belgium but may carry over to other open economies.

2. Occupational choice, domestic entrepreneurship and foreign direct investment

Firm formation has traditionally been studied within occupational choice models, in which individuals compare the wage they can earn with the entrepreneurial income they can obtain if they start their own business. The first theoretical contributions essentially predict that the likelihood of individuals starting a new firm is a positive function of persons' managerial ability (Lucas (1978), Oi (1983)) and a negative function of persons' risk averse attitude (Kanbur (1979), Kihlstrom and Laffont (1979)). Models which do not only allow for differences in managerial/entrepreneurial ability between individuals but also for differences in worker ability (which are reflected in wage differentials), show however that the best potential entrepreneurs may end up as wage workers (Jovanovic (1994)).

The above studies have typically modeled the decision to become entrepreneur in a closed economy setting. An exception is Grossman (1984) who modeled firm formation in an open economy and analyzed the impact of foreign trade and investment on the formation of domestic entrepreneurs. Grossman showed that import competition and foreign direct investment causes the number of local entrepreneurs to fall as the result of lower prices on the product market which reduce the entrepreneurial income more than the wage income. As only differences in entrepreneurial skills are taken into account in this model, the most capable individuals become

entrepreneurs. While foreign direct investment is similar to import competition with respect to product market competition, the entry of foreign firms generates however an additional effect on domestic entrepreneurship since these firms also crowd out domestic firms on the labor market. This crowding out effect does not only result in a lower number of domestic entrepreneurs as discussed by Grossman, but also gives rise to a situation where the best entrepreneurs may become workers in the MNEs' affiliates once differences in worker ability are taking into account.

The additional effects of FDI on the labor market can be illustrated using Jovanovic's (1994) model of firm formation and extending it for the entry of foreign firms. In an economy with one consumption good and two homogeneous factors of production (supply of capital K and labor L), individuals decide to start their own business or work for someone else according to:

$$px_i\, F(k,\Sigma_j^l\, y_j) - rk - ,\Sigma_j^l\, wy_j \geq wy_i \qquad (1)$$

where F(k,l) is the firm's output, p the price of the consumption good, r the rental rate and w the wage per efficiency unit. Reflecting differences in entrepreneurial and worker ability between individuals, x_i and y_i represent respectively the entrepreneurial and worker ability of individual i, while $\Sigma_j^l\, y_j$ represents the sum of worker abilities of the l workers employed in the hypothetical firm. The left side of expression (1) is the entrepreneurial income the individual gets if he starts up his own business, while the right side is the wage income the individual earns if he chooses to become a wage worker. Profit maximization by firm owners leads to the optimal choices of capital (k) and labor (l) per firm, which together with the occupational choice expression in (1) and the factor market clearing conditions determine the optimal level of domestic entrepreneurs (m).

An inflow of foreign direct investment, which essentially entails new competition and the transfer of capital and technology exogenous to the conditions prevailing in the domestic market, changes the number of domestic firms in this economy. Since firm specific advantages transferable across borders enable MNEs to compete successfully in foreign countries with a 'better' production technology compared to local firms (OLI-paradigm (Dunning (1993)), the corresponding higher wages paid by foreign firms[2] skim the domestic labor market and decrease the labor supply for

[2] The 'better' technology and capital intensive production process make employees more productive in foreign companies than in domestic companies. Given the first order conditions, this higher productivity

domestic companies. Similar to Jovanovic's result with respect to an increase in the capital stock, comparative statics results show that the derivative of m with respect to labor supply L is positive[3] [4], meaning that an inflow of FDI causes the number of domestic entrepreneurs to fall. The crowding out of local ventures by foreign firms on the labor market leads to a stronger rise in wages than in entrepreneurial income[5], stimulating people to become worker instead of entrepreneur. At the same time this causes an increase in the average (domestic) firm size.

The inflow of FDI not only results in a lower number of domestic entrepreneurs but may also alter the distribution of individuals becoming entrepreneur. Foreign direct investment causes the best entrepreneurs to choose for worker, as MNEs want to hire the best individuals for managing their subsidiary and therefor implement a wage structure very favorable for people endowed with higher levels of entrepreneurial and worker ability. Assuming like Jovanovic that in a closed economy the best potential entrepreneurs happen to be also the best workers[6], the most capable persons are effectively drawn into entrepreneurship, i.e. the persons to the right of x_1 in figure 1[7]. The entry of foreign firms changes the earnings structure of entrepreneurs and workers as competition between foreign and domestic firms causes profits to fall, and as a consequence entrepreneurial income and wages to decrease ($\Pi_{DOM}2 < \Pi_{DOM}1$ and $W_{DOM}2 < W_{DOM}1$[8]). As foreign firms pay on average higher wages than domestic firms ($w_{MNE} < w_{DOM}2$) and offer additional benefits for very talented managers/workers[9], these persons are worse off if they decide to stay entrepreneur. The result is that foreign direct investment causes not only the number of domestic entrepreneurs to fall ($x_3 - x_1 < x - x_1$) but also the best (domestic) entrepreneurs to become workers.

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results ceteris paribus in higher wages. We assume a dual labor market where wage differences between foreign firms and domestic firms may persist.

[3] Provided that the elasticity of substitution between k and l is less than 1 (Lucas (1978)).

[4] $dm/dL = m(LF_{ll} + KF_{kl})/(K^2F_{kk} + 2KLF_{kl} + L^2F_{ll})$ where F_{kk}, F_{ll} and F_{kl} are the second order derivatives of the production function F with respect to respectively k, l, and k and l

The positive sign can easily be derived by combining Jovanovic's result ($dm/dk < 0$ or $m(LF_{ll} + KF_{kl})/(K^2F_{kk} + 2KLF_{kl} + L^2F_{ll}) < 0$) and the fact that the denominator in (2) is equal to the sum of $(KF_{kk} + LF_{kl})$ and $(LF_{ll} + KF_{kl})$.

[5] In Grossman's model (1984) there is no effect on wages because of the infinitely elastic labor supply in developing countries.

[6] With managerial ability denoted as x and worker ability y, $y = f(x)$ for some strictly increasing function f.

[7] x_1 is the level of entrepreneurial capability for individuals are indifferent between becoming entrepreneur and wage worker.

[8] Wage incomes $W_{DOM} = w_{DOM} \cdot y$ and $W_{MNE} = w_{MNE} \cdot y$.

INSERT FIGURE 1 HERE

3. An empirical model of domestic entrepreneurship for Belgium

Since Orr's (1971) influential work on entry in Canadian manufacturing, an extensive literature has emerged studying incentives and impediments to firm entry and exit (see for an overview Siegfried and Evans (1994), Geroski (1995)). Reflecting the typical closed economy setting of theoretical work on firm formation, most empirical applications in the entry/exit literature were developed in national industry contexts that focused almost exclusively on domestic supply factors inducing or impeding entry/exit. An exception is Sleuwaegen and Dehandschutter (1991) who analyzed the importance of international demand and supply factors for entry and exit in Belgium.

Recent work increasingly distinguishes between different types of entry and exit, including domestic entry/exit (i.e. by domestic entrepreneurs) and foreign entry/exit (i.e. by MNEs). Unfortunately this research has continued to disregard the effect of international competition on entry and exit of domestic entrepreneurs. The analyses concentrated merely on the differential impact of incentives and barriers for domestic and foreign entry/exit clearly (Gorecki (1976), Shapiro (1983), Baldwin and Gorecki (1987), Khemani and Shapiro (1988), Geroski (1991), Mata and Portugal (1997)). The interdependence between domestic and foreign entry/exit has not yet been analyzed.

By not taking into account the negative effect of international competition on domestic entrepreneurship, previous studies on entry/exit in (small) open economies may have produced

[9] Examples are bonuses, stock options, promotion overseas...which essentially means giving the best individual a kind of entrepreneurial income.

biased results[10]. Aggregate data of entry in Belgium for example suggest a real effect of openness on domestic entrepreneurship as Belgium reported lower entry rates while import competition and the presence of multinational firms were consistently higher than in other EC countries (Table 1). Likewise, in the most recent period Belgium shows a net outflow of FDI and a simultaneous rise in the number of domestic firms (Table 2).

INSERT TABLES 1 AND 2 HERE

This paper empirically assesses the role of international competition in the formation of domestic entrepreneurs by linking domestic entry/exit in Belgium during the years 1990-1995 to import competition and foreign direct investment on the industry level. Based on the occupational choice models of section 2 it is hypothesized that domestic entry (i.e. number of domestic entrepreneurs starting their own business) is negatively affected by increasing import competition and the inflow of FDI. Likewise, in explaining domestic exit, it is expected that import competition and foreign direct investment stimulate the exit of domestic firms.

In line with previous research, entry and exit are modeled as responses to departures from long run profits[11] where long run profitability is a function (typically linear assumed) of entry/exit barriers. Since the differences between actual and long run profits are expressed as industry averages masking differences in efficiency between firms, also replacement (exit induces entry) and displacement (entry induces exit) effects are included in the analysis. The inclusion of lagged exit and entry variables controls for the fact that less efficient incumbents are replaced/displaced by more efficient entrants[12]. The empirical model supplements this 'traditional' set up by including import competition and foreign direct investment as moderators that are largely exogenously determined. Previous research has shown indeed that other than domestic (i.e. of Belgium) factors were responsible for the large FDI inflow in Belgium, including the effects of European integration which forced multinational firms to serve the European market from a

[10] Although Sleuwaegen and Dehandschutter (1991) acknowledge the strong discipline of international competition as being important, import competition and foreign direct investment were not included in their analysis.
[11] Also called limit profits (Bain (1956)).
[12] Modeling entry and exit separately as gross variables instead of modeling net entry, prevents that symmetry is imposed on the entry and exit processes.

limited number of centrally located subsidiaries (Sleuwaegen (1987), Motta and Norman (1990)). While the activities of multinational firms were not primarily targeting the Belgian domestic market, the inflow of foreign direct investment nevertheless may have affected domestic entrepreneurship through the supra discussed product and labor market effects.

Entry and exit in industry i at time t are modeled according to the following short run response functions:

$$\begin{aligned} DOMENTRY_{i,t} = {} & b_0 + b_1 PROFIT_{i,t-1} + b_3 DOMGROWTH_{i,t-1} + b_4 PHYSCAP_{i,t-1} + b_5 SCALE_{i,t-1} \\ & + b_6 DOMEXIT_{i,t-1} + b_7 IMPGROWTH_{i,t-1} + b_8 FORENTRY_{i,t-1} + \\ & b_9 FOREXIT_{i,t-1} + b_{10} LINK_{i,t-1} \end{aligned} \quad (2)$$

$$\begin{aligned} DOMEXIT_{i,t} = {} & b_0 + b_1 PROFIT_{i,t-1} + b_3 DOMGROWTH_{i,t-1} + b_4 PHYSCAP_{i,t-1} + b_5 SCALE_{i,t-1} \\ & + b_6 DOMENTRY_{i,t-1} + b_7 IMPGROWTH_{i,t-1} + b_8 FORENTRY_{i,t-1} + \\ & b_9 FOREXIT_{i,t-1} + b_{10} LINK_{i,t-1} + NUMDOM_{i,t-1} \end{aligned} \quad (3)$$

The dependent variables in this model $DOMENTRY_{i,t}$ and $DOMEXIT_{i,t}$ are expressed as entry and exit rates, and are defined as the number of domestic entrants (exiters) in year t divided by the total number of firms in year t-1 in the industry[13].

The variable $PROFIT_{i,t-1}$ measures the actual profit level in an industry and is defined as the industry's average price cost margin, while the variable $DOMGROWTH_{i,t-1}$ measures the growth rate of the domestic market[14]. Previous research showed that entry is higher in more profitable and rapidly growing industries, while exit is stronger in industries where profits and market growth are lower (Siegfried and Evans (1994), Geroski (1995)). The coefficients of these variables are hypothesized to be positive in the entry-equation while negative in the exit-equation. As entry and exit responded to departures from long run profits (Geroski (1991)), a three year moving average of past price cost margins and market growth rates was used in constructing the variables.

[13] The entry rate corresponds to the first year of reported positive employment.
[14] The domestic market measures the total sales volume and is calculated as the sum of domestic sales and imports minus exports

A number of observable proxies for barriers to entry is hypothesized to affect the level of (unobservable) long run profits. Physical capital intensity ($PHYSCAP_{i,t-1}$ defined as the logarithm of the value of industry's fixed assets over total employment in the industry) and the scale intensity of industries ($SCALE_{i,t-1}$ defined as the logarithm of the median size in terms of value added) have been included as factors hindering entry. Since entry barriers also act as exit barriers, the effects of the variables $PHYSCAP_{i,t-1}$ $SCALE_{i,t-1}$ are predicted to be negative both in the entry equation and the exit equation. In industries that require large physical investments and/or a large scale of operation in order for firms to break even, excess profits persist longer without inducing entry. At the same time large investments discourage exit if they have a sunk cost character. Moreover with falling profits, firms typically postpone the decision to exit given the limited alternative use of industry specific assets and the value of waiting if profits have shown important variation in the past (Dixit and Pindyck (1994)).

The sign of the lagged exit variable ($DOMEXIT_{i,t-1}$) in the entry equation is hypothesized to be positive as entry consists to some extent of the replacement of exiting firms, with exit providing room for potential entrepreneurs in the industry (Sleuwaegen and Dehandschutter (1991), Rosenbaum and Lamort (1992) Johnson and Parker (1994)). Displacement on the other hand concerns the positive effect of entry on exit, from new entry that results in stronger competitive pressure leading to the exit of incumbent firms. Consequently, the coefficient of the lagged entry variable ($DOMENTRY_{i,t-1}$) in the exit equation is hypothesized to be positive.

The impact of international competition on domestic entrepreneurship is captured in the variables IMPGROWTH, FORENTRY and FOREXIT. Consistent with Grossman (1984) the variable $IMPGROWTH_{i,t-1}$ (measured as the growth rate of imports in year t) is supposed to negatively affect domestic entry since lower prices on product markets decreases entrepreneurial incomes more than wages, inducing individuals to become worker instead of entrepreneur. Correspondingly increasing import competition is predicted to have a negative sign in the entry equation, while positive in the exit equation.

Focusing on the impact of foreign direct investment on domestic entrepreneurship, the sign of lagged foreign entry ($FORENTRY_{i,t-1}$) is predicted to negatively (positively) affect domestic entry (exit) from stronger competition on the product as well as labor market. Likewise, the coefficient of lagged foreign exit ($FOREXIT_{i,t-1}$) is hypothesized to be positive (negative) in the entry (exit) equation. The variables foreign entry and exit ($FORENTRY_{i,t-1}$ and $FOREXIT_{i,t-1}$) are

analogously defined as domestic entry and exit variables, i.e. the number of foreign firms entering (exiting) in year t-1 divided by the total number of firms in year t-2.

The empirical model also considers possible positive effects of FDI on domestic entrepreneurship as managerial skills may spill over to domestic firms from domestic managers leaving foreign firms and starting up their own business, and/or by domestic entrepreneurs watching successes and mistakes of foreign firms (Caves (1996)). Also, networking activities of foreign firms may induce domestic entry through buyer-supplier relations and/or knowledge spillovers. Recent theoretical work in international business increasingly modeled the positive effects of FDI on domestic entrepreneurship through backward and forward linkages, showing that MNEs may foster the development of domestic firms in the host country (Rodriguez-Clare (1996), Markusen and Venables (1999)). The inclusion of the variable $LINK_{i,t-1}$ controls for the existence of these positive networking and learning effects. The variable is defined as the growth in foreign firms' sales in related industries[15], multiplied by the importance of outsourcing[16] for foreign firms in Belgium. Linkage effects are expected to be more important in industries where foreign firms outsource an important share of their activities[17].

The variable $NUMDOM_{i,t-1}$ (i.e. the logarithm of the number of domestic firms) is included in the exit equation to control for differences across industries in the presence of domestic firms. Industries where more domestic firms are active should reveal, ceteris paribus, a higher domestic exit rate measured as the ratio of exiting domestic firms over the total number of firms.

4. Results

The empirical model is tested against data on 129 manufacturing industries in Belgium defined on the NACE 3-digit level. As observations for the period 1990-1995 are pooled, year dummies

[15] Related industries are defined as industries belonging to the same NACE-2 digit level.
[16] Calculated as 1 minus the ratio value added over sales of MNEs; this ratio is a proxy for the average level of vertical integration of MNEs in industries.
[17] Apart from some case studies especially in developing countries, the positive link between FDI and domestic entrepreneurship has not been statistically established in empirical work. Instead, the positive effects of MNEs are analyzed in terms of productivity enhancements in domestic firms (see for an overview Blomstrom and Kokko (1996)).

allow for time specific effects (Kmenta (1997)). The use of a censored estimation procedure was necessary to account for zero cells in the data set (Tobin (1958)).
As the variance of entry/exit rates differed substantially across industries, we estimated industry-specific variances (σ^2_i) following Dunne and Roberts (1991):

$$(\sigma^2_i) = (1/5)\Sigma e^2_{it}$$

where the e_{it} are the residuals of estimating (4) and (5). These industry-specific variances were used to obtain weighted Tobit estimates in the entry and exit equations.

Tobit-coefficients cannot be interpreted as ordinary regression coefficients. Multiplying the coefficients with the fraction reported in the last row of table 3, ensures a proper discussion of the estimated results (McDonald and Mofitt (1980))[18]. The fractions for the domestic entry and domestic exit equation are 0.906 and 0.915 respectively[19], implying that more than 90% of the total change in the domestic entry/exit rate (resulting from changes in the independent variables) is generated by marginal changes in the number of entering foreign firms, whereas less than 10% is generated by changes in the probability of foreign firms entering at all.

INSERT TABLE 3 HERE

Consistent with previous studies on gross entry, the results show that domestic entry is higher in more profitable and/or growing industries. Past profitability (PROFIT) signals profitable opportunities to domestic entrepreneurs, while a strong growth of the domestic market (DOMGROWTH) accommodates a larger number of firms. The positive coefficient of past domestic exit (DOMEXIT) suggests that the exit of domestic entrepreneurs in the year before creates additional room for the entry of new domestic entrepreneurs. The negative and significant

[18] These authors show that the change in the dependent variable is composed of (1) the change in the dependent variable of those observations where entry > 0, weighted by the probability of entry being above zero and (2) the change in the probability of entry being zero weighted by the expected value of the dependent variable if above zero.
[19] The fraction are computed by evaluating the model at the mean of the independent variables.

coefficient of PHYSCAP demonstrates that the barriers to entry are higher in capital intensive industries resulting in less entry of domestic entrepreneurs in these industries[20].

The results in table 3 support the main hypothesis that international competition hinders the formation of domestic entrepreneurs. The negative and significant coefficients of IMPGROWTH and FORENTRY clearly suggest that import competition and the inflow of FDI have a negative short term effect on the entry of domestic entrepreneurs. Strong import competition causes prices to fall on product markets and discourages domestic entrepreneurs to enter the shrinking the domestic market. The inflow of FDI impedes the entry of domestic entrepreneurs, because of stronger competition on the product market and the skimming off the (best) workers on the labor market.

Also the results for the domestic exit equation clearly support the crowding out effect of domestic firms by foreign firms. The positive coefficient of FORENTRY demonstrates that the inflow of FDI forces domestic entrepreneurs to exit, because of lower prices on product markets and/or higher wages on the labor market (encouraging domestic entrepreneurs to become wage workers).

The results for the LINK variable in both equations show no evidence in favor of networking effects. However, linkage effects between MNEs and domestic firms may partially account for the positive coefficient of FOREXIT, such that the exit of foreign firms may directly result in the exit of domestic supplying/buying firms.

The results in table 3 further demonstrate the existence of important impediments to exit because of capital investments and scale effects, shown by the significant negative coefficients of PHYSCAP and SCALE. The observed symmetry between entry and exit barriers can be attributed to sunk cost, as the sunkness of investments directly discourages exit as no (or limited) valuable alternative use for the investments exist. At the same time sunk costs provide incumbent with a credible threat to remain in the industry thereby deterring entry of new firms. Industries characterized by lower barriers to entry and exit show a persistent higher turnover of firms than industries in which barriers to entry and exit are substantial. The positive sign of DOMENTRY confirms the hypothesis that new entrants in turbulent industries induce the exit of incumbent firms.

[20] The insignificant coefficient of the SCALE-variable is in line with previous work (Baldwin and Gorecki (1987), Jeong and Masson (1991), Mata (1993)). Unlike that on capital requirements, the evidence on scale

The empirical model has also been estimated for foreign entry and exit, with foreign entry and exit rates instead of the domestic entry/exit rates as dependent variables. The results are reported in table 3 and confirm our working hypothesis that other than domestic (i.e. of Belgium) factors have motivated the inflow and outflow of FDI in Belgium; only market growth seem to have a (small) incentive effect on foreign entry and exit. The reported coefficients in table 3 for the foreign entry and exit equations also demonstrate that foreign entry/exit is more prominent in capital intensive industries. This observation is consistent with previous empirical work that barriers to domestic entry/exit can easily be overcome by foreign multinationals.

The results for the lagged entry and exit variables suggest that MNEs are less hampered by domestic competition than domestic firms are by foreign competition. The negative coefficient of DOMENTRY in the foreign entry equation is relatively small, (-0.138 x 0.167) indicating that in the short run domestic entry discourages MNEs to enter the industry only to a small extent. Further on, unlike the fact that foreign entry forces domestic firms to exit, domestic entry seems not to induce the exit of foreign firms. On the other hand foreign exit is negatively affected by growing import competition; industries where imports rise strongly indeed report higher exit rates for foreign firms. Import competition does however not deter the entry of foreign firms in Belgium; instead foreign entry is in principal the replacement of foreign firms that have exited the year before.

5. Conclusion

In analyzing firm entry and exit in the small and open economy of Belgium, this paper presents evidence that import competition and foreign direct investment crowd out domestic entrepreneurs on product and labor markets. The empirical analysis demonstrates that the inflow of foreign direct investment decreases domestic entry while increasing domestic exit in the short term. The empirical analysis showed no evidence of networking and linkage effects between foreign and domestic firms as suggested in some of the recent theoretical work. The results further suggest that the entry and exit behavior of foreign firms is only hampered to a small extent by domestic

economies as barrier to entry is ambiguous.

competition. The decision of MNEs to enter or exit a small economy like Belgium appears principally determined by international factors, i.e. factors outside the domestic market of Belgium.

However, the observation that the inflow of MNEs negatively affects domestic entrepreneurship does not justify restricting measures against foreign direct investment knowing that multinational firms typically transfer new technology and create substantial value added in host countries. Moreover the empirical analysis has focused on short term effects of international competition on domestic entrepreneurship. Further research is needed on long term effects of FDI including positive networking effects that may only materialize after a number of years.

Table 1: Entry rate[21], import competition and FDI, 1990

%	*entry rate*[22]	*import share*[23]	*inward FDI stock*
Belgium	10.9	71.2	18.1
Denmark	14.3	30.1	7.1
France	13.3	22.6	7.2
Germany	20.1	26.1	7.4
Ireland	n/a	53.8	22.5
Italy	6.5	20.7	5.3
Netherlands	14.5	49.6	25.9
Portugal	10.7	45.4	7.6
Spain	n/a	20.5	13.3
United Kingdom	5.9	27.1	22.3

[21] Due to major differences in legislation between countries, exit rates are not comparable across countries.
[22] Data for France and Portugal are 1989 figures. Source: Eurostat (1993), SME Observatory
[23] in % of GDP; Source: Eurostat

Table 2: Number of domestic firms and MNEs in Belgium, 1990-1995

	Multinational firms	*Domestic firms*
1990	1.002	15.583
1991	1.002	16.687
1992	985	17.402
1993	972	17.755
1994	959	17.459
1995	924	16.741

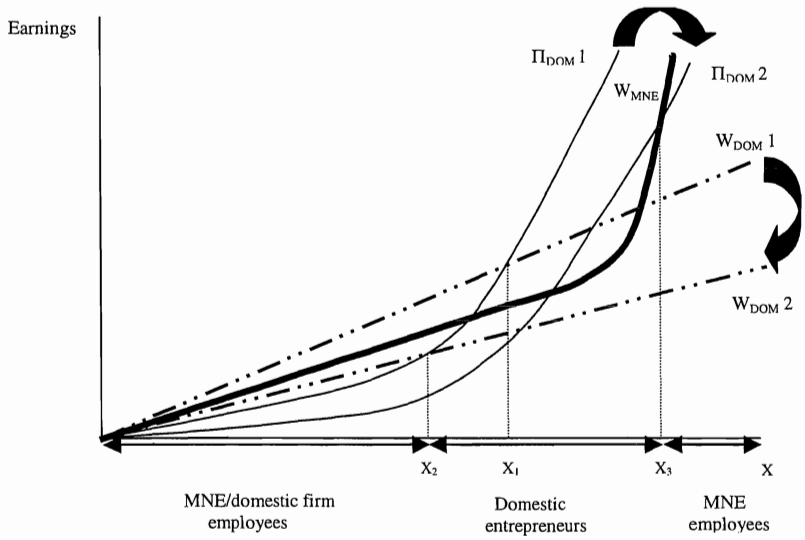
Table 3: Regression results

Tobit-coefficient (standard error) N = 645	***DOMENTRY$_{i,t}$***	***DOMEXIT$_{i,t}$***	***FORENTRY$_{i,t}$***	***FOREXIT$_{i,t}$***
CONSTANT	0.171****	0.115****	- 0.135***	- 0.046*
	(0.021)	(0.020)	(0.044)	(0.025)
PROFIT$_{I,t-1}$	0.123***	0.039	0.092	0.003
	(0.040)	(0.033)	(0.069)	(0.040)
DOMGROWTH$_{i,t-1}$	0.078****	- 0.017**	0.079**	- 0.018
	(0.022)	(0.009)	(0.032)	(0.015)
PHYSCAP$_{i,t-1}$	- 0.014****	- 0.014****	0.018***	- 0.001
	(0.002)	(0.002)	(0.006)	(0.003)
SCALE$_{i,t-1}$	- 0.001	- 0.002*	0.001	0.001
	(0.002)	(0.001)	(0.002)	(0.002)
DOMENTRY$_{i,t-1}$		0.164****	- 0.139**	0.002
		(0.024)	(0.058)	(0.031)
DOMEXIT$_{i,t-1}$	0.118***		0.102	0.045
	(0.045)		(0.072)	(0.044)
IMPGROWTH$_{i,t-1}$	- 0.026****	0.004	- 0.004	0.021**
	(0.007)	(0.006)	(0.014)	(0.009)
FORENTRY$_{i,t-1}$	- 0.291**	0.199**		0.015
	(0.118)	(0.099)		(0.098)
FOREXIT$_{i,t-1}$	- 0.147	0.398**	0.659**	
	(0.191)	(0.165)	(0.310)	
LINK$_{i,t-1}$	- 0.007	0.004		
	(0.005)	(0.007)		
NUMDOM		0.005**		
		(0.002)		
NUMFOR				0.012****
				(0.002)
YEARDUMMIES	Yes	Yes	Yes	Yes
σ	0.035	0.029	0.038	0.023
fraction	0.906	0.915	0.167	0.241
LogLikelihood (L_1)	1176.3	1275.8	22.5	154.7
LogLikelihood (L_0)[24]	239.9	456.5	- 111.9	- 105.3

* $p < 0.10$;
** $p < 0.05$;
*** $p < 0.01$;
**** $p < 0.001$;

[24] L_0 is the loglikelihood of the model with all coefficients, except the intercept term, equal to zero; L_1 is the loglikelihood of the proposed model.

Figure 1: Entrepreneurial choice and FDI inflows



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ANNEX 1

Descriptive statistics of the independent variables

	Mean	*Standard deviation*
$PROFIT_{i, t-1}$	0.093	0.044
$DOMGROWTH_{i, t-1}$	0.047	0.094
$PHYSCAP_{i, t-1}$	6.981	0.710
$SCALE_{i, t-1}$	2.417	0.943
$DOMENTRY_{i, t-1}$	0.109	0.123
$DOMEXIT_{i, t-1}$	0.064	0.067
$IMPGROWTH_{i, t-1}$	0.025	0.267
$FORENTRY_{i, t-1}$	0.009	0.063
$FOREXIT_{i, t-1}$	0.006	0.052
$LINK_{i, t-1}$	0.048	0.378

ANNEX 2

Correlation matrix of the independent - lagged variables

	PROFIT	DOM GROWTH	PHYS CAP	SCALE	DOM-ENTRY	DOM-EXIT	IMP-GROWTH	FOR-ENTRY	FOR-EXIT	LINK
PROFIT	1.000	0.018	0.270*	0.017	0.105*	0.027	- 0.011	0.130*	0.013	- 0.053
DOMGROWTH		1.000	- 0.034	- 0.037	0.212*	- 0.034	0.415*	0.107*	- 0.009	0.052
PHYSCAP			1.000	0.471*	- 0.078	- 0.123*	- 0.013	0.116*	0.287*	- 0.007
SCALE				1.000	- 0.020	- 0.056	0.033	0.099*	0.008	0.102
DOMENTRY					1.000	0.018	0.024	- 0.024	- 0.070	0.027
DOMEXIT						1.000	0.019	- 0.044	0.051	- 0.084
IMPGROWTH							1.000	0.015	- 0.017	0.078
FORENTRY								1.000	- 0.013	0.080
FOREXIT									1.000	- 0.214*
LINK										1.000

* $p < 0.05$