The impact of FDI on firm survival in Italy

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The aim of the analysis is to investigate the impact of inward FDI on Italian manufacturing and services firm survival. The paper is organized in two steps. First, we carry out theoretically and empirically the analysis of firm survival distinguishing between foreign multinationals, domestic multinationals and domestic non multinational firms. The empirical analysis is based on survival functions as well as a Cox proportional hazard model, controlling for firm and industry specific covariates. Second, we examine the effect of foreign presence on the survival of host country firms distinguishing between the impact on Italian-owned (indigenous) multinational and non multinational firms and on other foreign-owned firms (i.e., other MNEs) located in the host country. The finding reveals that during the period 2005-2007 while manufacturing and service firms owned by foreign MNEs are more likely to exit the market than national firms, on the other hand domestic MNEs have a higher chance of survival. These results stand even when other firm and industry specific variables are controlled for. This result support the idea that foreign MNEs are inherently footloose while Italian MNEs are more firmly rooted in the local economy. The estimates also indicate that older, larger and more productive firms have higher survival rates. Finally, firm survival of foreign MNEs and domestic MNEs is unaffected by the increased presence of foreign MNEs. On the other hand, the increased foreign presence has a positive impact on Italian non-MNEs' survival only in the service sector.

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Abstract

The aim of the analysis is to investigate the impact of inward FDI on Italian manufacturing and services firm survival. The paper is organized in two steps. First, we carry out theoretically and empirically the analysis of firm survival distinguishing between foreign multinationals, domestic multinationals and domestic non multinational firms. The empirical analysis is based on survival functions as well as a Cox proportional hazard model, controlling for firm and industry specific covariates. Second, we examine the effect of foreign presence on the survival of host country firms distinguishing between the impact on Italian-owned (indigenous) multinational and non multinational firms and on other foreign-owned firms (i.e., other MNEs) located in the host country.
The finding reveals that during the period 2005-2007 while manufacturing and service firms owned by foreign MNEs are more likely to exit the market than national firms, on the other hand domestic MNEs have a higher chance of survival. These results stand even when other firm and industry specific variables are controlled for. This result support the idea that foreign MNEs are inherently footloose while Italian MNEs are more firmly rooted in the local economy. The estimates also indicate that older, larger and more productive firms have higher survival rates. Finally, firm survival of foreign MNEs and domestic MNEs is unaffected by the increased presence of foreign MNEs. On the other hand, the increased foreign presence has a positive impact on Italian non-MNEs' survival only in the service sector.

JEL classification: L25, F23, C41, F23, J31
Keywords : Domestic firms, Multinational Enterprises, Survival Analysis

1. Introduction

The aim of the paper is to follow a recently common approach to the investigation of the impact of inward Foreign Direct Investment (FDI) on Italian firms. Most of the literature on the effect of FDI on local context has focused on productivity spillovers (technological or pecuniary) and on the analysis of their determinants. In recent years a new approach to the measure and transmission of technological and pecuniary externalities has been introduced in some empirical works. Moving from a common criticism to empirical measures of productivity, often distorted, this literature "tries to look beyond productivity spillovers" (Görg and Strobl, 2004) and investigate the transmission mechanisms and the channels through which these externalities impact on firms survival. This is an important topic because plant survival shapes the competitive landscape of the economy and is linked to the persistence of jobs and both issues have an impact on welfare in the economy.

To the best of our knowledge, to-date the effects of MNEs on these issues, survival and entry-exit dynamics of firms, have not yet received any in-depth attention in the literature (either Italian or international) with respect to Italy. However, this topic is quite relevant for this country which exhibits a structural high rate of mortality of domestic firms and an increasing role of FDI inflows over the last decade.

We first focus on the review of the large literature which has compared the survival patterns of foreign and domestic plants (firms). A common shortcoming in many of the studies on this topic is the lack of proper consideration of the role of firm heterogeneity. This implies to take into account not only firm and industry characteristics but also, as far as possible, the firm choices in terms of internationalisation and whether the firm has a national or multinational status. The separation of the indigenous firms (plants) into multinationals and non-multinationals is restricted to few and recent papers (often due to lack of data). However, this distinction is crucial since the hypothesis that MNEs are more footloose i.e. more likely to exit the market than indigenous plants (Rodrik, 1997), is associated with the higher flexibility due to their globalised network which makes them able to react almost instantaneously to adverse changes in the host country shifting their production to another country. This footloose behaviour of MNEs is regardless of the nationality of ownership and is likely to be observed also in domestic multinationals.

The first aim of this paper is to study the effect of foreign ownership on the domestic companies survival prospects. Therefore, in this study we will compare the survival rates of three categories of firms: foreign-owned MNEs, Italian-owned MNEs and domestic non-MNEs. Testing the different survival dynamics of these three types of firms implies to check for the footloose multinational hypothesis.

Secondly, this paper will provide an empirical analysis on whether and how foreign presence affects the survival prospects and dynamics of foreign MNE, domestic MNEs and domestic non-MNEs separately. We assume that if there are increases in productivity through technology spillovers due to foreign investment this should reduce the domestic firm's average cost of production with important benefits for domestic firms in terms of survival. However, on the other hand, multinationals may also have negative effects on firm survival as they increase output and often pay higher wages pushing up domestic firms average costs of production which might reduce domestic firms' chances of survival and produce a selection effect. Conversely, the effect of MNEs' presence on other foreign-owned firms in the host country in terms of potential for positive spillovers and higher survival should be less important since all MNEs may be expected to use a similarly high level of technology.

The finding reveals that during the period 2005-2007 manufacturing and service firms owned by foreign MNEs are more likely to exit the market than Italian (both MNEs and non-MNEs). These results stand even when other firm and industry specific variables are controlled for. This result support the idea that MNE firms are inherently footloose. The estimates also indicate that older, larger and more productive firms have higher survival rates. Finally, firm survival of foreign MNE and domestic MNEs is unaffected by the increased presence of foreign MNEs. On the other hand, the increased foreign presence has a positive impact on Italian non-MNEs' survival active in the service sector.

The plan of the paper is as follows. In section 2 we present the basic theoretical and empirical premises on the determinants of survival and summarize the main empirical results of the literature. Section 3 presents the data and shows some descriptive statistics on foreign and Italian MNEs and domestic non-MNEs to see to what extent they differ. Section 4 presents the model used in the paper and

the results of the survival function and Cox proportional hazard model. Section 5 summarizes and concludes.

2. Theoretical and empirical literature on firm survival

The focus of this section is on the literature investigating upon the dynamics of survival of multinational enterprises versus domestic ones and on the impact of multinational ownership on foreign acquired and domestic firms survival.

The literature on firm survival focuses on four lines of investigation: 1) plant exit has been the subject of a large number of studies all of which have documented the importance of plant and industry characteristics for firm dynamics and turnover (Caves, 1998 for a survey)[1]; 2) the ownership structure of the plants (firms) (single or multi-unit ownership) has also been an important focus of many analyses[2]; 3) further, whether the plants (firms) are globally engaged or not has attracted much attention[3]; 4) finally, the most recent literature has turned to the analysis of different survival dynamics of domestic firms with respect to foreign owned firms and on how foreign acquisitions affect the survival prospects.

In this paper we are concerned with this strand of research.

2. 1. Different survival dynamics

Many recent studies have focused on the dynamics of foreign and domestic establishments survival in the local context, i.e. entry, selection (exit) and post-entry performance in terms of survival and growth covering a wide spectrum of countries (among the others, Konings and Walsh for Ireland, 1997; Görg and Strobl, 2000, 2001, 2002 and 2004 for Ireland; Kosova, 2006 for Czeck R.; Bandick, 2007 and Bandick and Görg, 2009 for Sweden; Burke, Görg and Hanley, 2007 for UK). However, no such study has never been carried out with respect to Italy.

The theoretical *a priori* are quite ambiguous. In comparison with purely domestic firms, multinationals have an enhanced ability to shift production between various locations within the firm, establishing new production locations at a relatively lower cost. All these factors should increase the use of the extensive margin of adjustment (shutdown) for foreign firms relative to domestic firms. However, foreign multinationals may face substantially higher sunk costs of plant creation, especially in developing countries and for Greenfield investments, than do comparable domestic firms, which should lead to lower exit rates for them. Some works on close topics suggests that firms with cross-border operations are relatively more flexible in terms of labour demand (Helpman, 1984; Feenstra and Hanson, 1997).

To disentangle the impact of foreign ownership on firm survival from other determinants it is important to consider the relevance of factors related to firm (or plant) size and age (Evans, 1987; Dunne et al., 1988; Dunne and Hughes, 1994), and to other firms and industry characteristics, such as capital intensity, productivity, industry growth and concentration (Doms et al., 1995; Audretsch and Mahmood, 1995; Mata and Portugal, 2002). A relatively smaller size may imply the "liability of smallness" effect (Aldrich and Auster, 1986) including cost disadvantages, difficulties in rising capital and competing for labour. Therefore, small plants (firms) should be more likely to exit than large ones. As for the other plant (firm) characteristics, plants (firms) using advanced technologies and having higher productivity are more

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[1] Dunne, Roberts, and Samuelson (1988, 1989) established that plant survival is positively associated with both plant age and size and that exit rates vary across industries and persist over time. Subsequent studies have repeatedly confirmed these findings for different time periods in different countries (e.g. Disney, Haskel, and Haden, 2003).

[2] As for the ownership structure of the plants (firms) (single or multi-unit ownership), Dunne et al. (1989) and Disney et al. (2003) find that group ownership, i.e. multi-unit plants, increases the probabilities of survival in US and UK manufacturing, respectively, while Bernard and Jensen (2005) find, after controlling for plant variables, that single plants rather than multi-unit plants enjoy better survival prospects in US manufacturing.

[3] On global engagement and firms survival, Kimura and Fujii (2003) and Esteve Pérez et al. (2004), include for the first time firms export status among the determinants of the probability of surviving, finding that globally engaged firms have greater chances to survive than domestic oriented firms in the Japanese and Spanish manufacturing, respectively. However, Giovannetti *et al.* (2007) find that internationalized firms show higher failure risk as on average competition is stronger on international markets and force firms to be more efficient.

likely to adopt new production methods and therefore this should increase their survivability. With respect to industry characteristics, plants (firms) in growing and more technologically advanced industries should be also more likely to survive, while the effects of industry concentration on survival is ambiguous: on the one hand, competition drive inefficient firms out of the markets increasing mortality on the other hand, collusion in concentrated markets make incumbents more able to retaliate against entrants.

In analyzing how the structure of ownership influences the exposure to exit risk one must consider the important differences between foreign and domestic establishment in many characteristics associated with survival, in other words it is crucial taking properly into account heterogeneity across firms (see Helpman, E., M. J. Melitz, and S. R. Yeaple, 2004). Karpaty (2004), show that foreign owned establishment differ in many respects from indigenous firms. Besides, there is large heterogeneity also within domestic industries. Doms and Jensen (1998) and Bandick (2004) argue that the main differences are between multinationals (foreign and domestically owned) and non-multinational firms rather than between foreign and domestic owned firms.

If we look at stylized facts about multinational enterprises, we observe that they undertake more R&D, have a relatively higher proportion of administrative staff over production workers, pay higher wages and predominate in industries with high advertising/sales ratios and high firm concentration. Besides, they do not know the foreign market and its *modus operandi* as well as local firms do and incur increased costs of coordinating business units across distance. To compensate for all these disadvantages, firms that go abroad must possess some type of asset that gives them some other sort of advantage, known in the theory of multinational enterprises, as 'ownership advantages.' These include financial advantages, product differentiation and marketing advantages, and advantages accruing from knowledge economies or from the ability to exploit economies of scale at the plant level (Dunning, 1993).

The empirical evidence on the impact of foreign acquisitions on survival probabilities is rather recent. Görg and Strobl, (2001 and 2003) Mata and Portugal (2002), Bernard and Sjöholm (2003), provide some of the first evidence on the "footloose" nature of multinationals in the host country in Portugal, Indonesia and Ireland, respectively. These first studies do not make any distinction between domestic multinational and non multinational firms but only separate firms according to their domestic or foreign ownership.

The question Mata and Portugal (2002) rise, in their study on the determinants of the survival of new firms in Portugal during the period 1983-89, is whether the "ownership" characteristics explain the differences in survival rates between new foreign owned and new domestic firms. They use a semiparametric modelling of plant hazard rates (Cox proportional hazard model) (following Mata and Portugal, 1994; Audretsch and Mahmood, 1995), and find survival to be determined by several ownership advantages (size and growth strategies, age and internal organization of firms), and by industry and environment characteristics (economies of scale, industry entry and growth, and degree of foreign presence). After controlling for all these characteristics, they find that domestic and foreign firms do not exhibit different chances of survival, that they do respond in similar fashions to the determinants of survival and display identical time patterns of exit.

Görg and Strobl (2001 and 2003) find that foreign owned Irish plants, observed over 1973-96, with majority foreign ownership, are more likely to exit their sample of manufacturing plants (where exit can be either due to closure or to a change in ownership). In order to examine whether foreign plant's survival differs from that of domestic plants not only the authors include a dummy equal to one if the plant is foreign owned and zero otherwise, but they also use an interactive term of this dummy with all the factors affecting plant survival (size, minimum efficient scale, industry concentration index, net sectoral growth in terms of employment), stating that foreign firm are also likely to react differently to changes in these other factors. From these interaction terms the main findings are confirmed and in some cases reinforced: e.g. size is less important for foreign owned firms as factor reducing failure risk, while being in a growing sectors is more important as a survival factor for them suggesting that foreign multinational are easier to exit from a declining sector.

A similar testing is made by Bernard and Sjöholm (2003) which distinguish foreign owned from domestic firms in Indonesia over 1975-1989. Using an *unconditional* analysis they find that plants with any foreign ownership are far less likely to close than wholly-owned domestic plants. However, the lower probability of shutdown is a result of the larger size, age and efficiency of foreign plants rather than their

nationality of ownership. They also use information on changes of ownership (domestic to foreign) as a robustness check: the result further confirm that foreign ownership, rather than unobserved plant characteristics, are associated with the lower survival rates.

A robustness factor with respect to previous studies is introduced by Girma and Görg (2003) which investigate the survival prospects of foreign acquired plants in the UK electronics and food industries for the period 1980 to 1993 controlling for possible endogeneity using both a matched sample of firms[4] and instrumental variables. The estimates include plant age and size as independent variables and also allow for non-linear relationships between the age and size variables and survival by including squares of the two variables. Three industry variables are included, industry growth, the industry Herfindahl index and a variable capturing the incidence of a domestic plant being acquired by a foreign owner. In order to capture the effect of a foreign takeover on plant survival, in the first instance, they include a dummy variable set equal to one once the plant has been taken over and thereafter. However, as it is likely that such a dummy variable is endogenous if foreign firms are more likely to acquire firms with particularly good survival prospects, they construct as instrumental variable the probability of a plant being taken over by foreign owners. Estimating a standard hazard model both with instrumental variables and without they find that foreign takeover reduces the liftetime of the acquired plant in both the electronics and food sectors.

Özller and Taymaz (2004 and 2007) also find no evidence for different survival probability between domestic and foreign owned firms in Turkish manufacturing industries for the period 1983–2001. They test some fundamental hypotheses: whether the initial (entry) size of foreign establishments is larger than that of domestic establishments; whether foreign establishments have lower survival probability i.e. are footloose, or have higher survival probability (due to better pre-entry assessment of the market conditions); whether the foreign presence reduces domestic establishments' survival probability. Their data on entry characteristics reveal that foreign and domestic firms start their lives differently, and entry-time differences seem to persist. More specifically, foreign entrants are almost two times larger than domestic entrants[5]. They then ask whether ownership matter for survival and show that the survival rates for foreign and domestic firms are different. However, large domestic firms' survival rates are comparable to those of foreign firms. This finding points out that the firm size is an important explanatory variable able to explaining most of the differences in survival rates, consistently with all empirical studies on survival (see Audretsch et al, 2001). Moreover, they find that foreign presence seems to have no long-term effect on the survival prospects of domestic plants.

Two important new findings are added to the literature by Alvarez and Görg (2005) study of the link between multinational enterprises and plant exit in Chile. First, foreign-owned plants had a lower probability of survival than domestic plants in Chilean manufacturing industries in the late 90s, when the Chilean economy experienced a massive slowdown. This suggests that foreign multinationals are more likely to react to economic crises by exiting and therefore do not act as "stabilisers" of the economies as commonly believed. Secondly, the paper investigates whether the exit probability of multinationals depended on their export orientation. Their data suggest that only domestic market oriented multinationals responded to the negative shock of the economy by being more "footloose" while this did not happen for multinational exporters.

Bernard and Jensen (2007) perform an analysis of US manufacturing plants' deaths in order to determine the impact of the multinational character of US firms on exit patterns in the home country (however they do not consider foreign MNEs for they have no data on them). First, they look at the effect of operations outside the United States on the survival of domestic plants. Then, they examine the effect

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[4] The matching approach is used to construct a reasonable counterfactual by creating a control group of establishments with similar characteristics to the acquired plants not experiencing acquisition. This group is then used in the comparison of survival and employment growth. Specifically, the author draw a four-digit industry-stratified random sample of establishments that act as a control group in the analysis from the population of domestic establishments that did not experience a change of nationality of ownership during the sample period. In order to obtain a control group as similar as possible to the acquired plants, control group plants are chosen according to three criteria; same age and size group and a similar level of efficiency relative to the industry frontier.

[5] The difference in entry size is explained by real options theory and liquidity constraint. Since foreign firms may have more information about their performance and, possibly, on market conditions as a result of their prior experience in other countries, the problem of sunk commitment could be less severe for foreign firms than domestic firms. Besides, since foreign firms may have relatively abundant financial resources, and better access to external funding, they are not financially constrained.

of a change in ownership on plant survival, i.e. whether takeover targets close more often. Their model also takes into account whether an establishment is part of a single- or a multi-plant firm[6]. The authors show that plants at multiunit and multinational firms are substantially larger, older, and more productive than single-plant firms. Once they control for these plant attributes known to reduce the probability of shutdown, they find that plants of multiunit or multinational firms have significantly greater chances of being closed.

Bandick (2007) using a panel of the entire Swedish manufacturing plants during the period 1993 and 2002 tries to overcome what he consider a common shortcoming in the previous literature: the lack of separation of the indigenous plants (firms) into multinationals and non-multinationals. The author provides the first study that analyzes the survival differences between foreign MNEs and domestic MNEs, on one hand, and between globally engaged plants and purely domestic plants, on the other. Thanks to this more detailed identification of firm types, the empirical analysis of the paper is strictly linked to the recent literature on firm heterogeneity in international trade (e.g., Helpman et al., 2004) which predict that these types of plants are intrinsically different. The aim of his paper is then three-fold: i) to empirically test whether MNEs, Swedish-owned MNEs and foreign-owned MNEs, located in Swedish manufacturing have different survival rates than domestic non-MNEs; ii) whether globally engaged domestic non multinational plants and purely domestic plants also exhibit different survival rate; iii) how foreign presence affects the survival prospects of the domestic MNEs, export-active and purely domestic-oriented plants. The results suggest that plants owned by MNEs, regardless of nationality of ownership, have higher probability to exit the market than plants owned by Swedish non-MNEs. The results are robust even when other variables affecting the survival probabilities are controlled for. However, by using a higher disaggregragation of firm types, the results reveal that foreign MNEs and export active plants have the highest survival rates while the domestic oriented and especially domestic MNEs have the lowest rates. The estimates also indicate that older, larger and more productive plants and plants in export intensive and growing industries have the highest surviving rates. Finally, foreign presence seems to explain some part of the exit risk of only domestic oriented plants but not of Swedish MNEs and of Swedish exporters.

Van Beveren (2006 and 2007) also documents differences for Belgium in survival rates between foreign multinationals and domestic plants for the years 1996–2001, covering all sectors of the economy and controlling for various firm and industry-specific factors. Like Bandick (2007), she is able to distinguish domestic multinationals from purely domestic plants. Her findings show that foreign multinationals are more likely to shut down operations compared to national firms in both manufacturing and service sectors, and domestic multinationals also exhibit significantly higher exit rates than national firms but only in manufacturing industries. The author stresses how the results reached have important policy implications, especially in terms of the desirability of a large reliance on multinational firms for employment and output generation in Belgium.

Recently, Bandick and Görg (2009) have proposed a further investigation of the effect of foreign acquisition on survival probability and employment growth of target Swedish manufacturing plants during the period 1993-2002. The authors (following Görg and Girma, 2003) control for possible endogeneity of the acquisition dummy (for example due to "cherry picking") by implementing an instrumental variables approach and checking the robustness of the IV approach with estimations on a matched sample of firms based on propensity score matching. Their results suggest that acquisition by foreign owners increases the lifetime of the acquired plants but only if the plant was an exporter and if the takeover is vertical, not horizontal. They also find robust positive employment growth effects only for exporters, and only for vertical takeovers. This is the first paper which distinguishes acquisitions motivated by either horizontal or vertical motives[7].

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[6] The theoretical possibilities are ambiguous with respect to also the multiplant issue as for the multinational one. Multiplant firms may be less likely to close a plant because they can shift resources within the firm in bad times, or they may be more likely to close a plant since such plant closures do not also shut down the firm.

[7] Different hypotheses can be made about the impact of these different motivations. For the horizontal motivation, firms acquire plants abroad in order to gain market access. If the aim of the market access is to eliminate competition and consolidate the industry, then it is likely that it may lead to plan closures and plant downsizing. On the other hand, this type of acquisition may be designed to open new markets by using the already existing facilities owned by other firms in the foreign markets (to "grow by acquisition" intent). In this case, the prospects for the acquired target would be positive in terms of both survival and

The findings on the role of multinationals in plant closure suggest a potential explanation for the wage premium. Higher wages at multinationals may partially compensate workers for the increased risk of plant closure and job loss.

2. 2. The impact of foreign ownership on domestic and foreign firm survival

Less attention has been paid in the literature on how foreign presence affects the host country firm survival. As discussed in Görg and Strobl (2000) the effects of foreign presence are ambiguous. On the one hand, foreign presence may increase the host country plants (firms) survivability thorough knowledge and technological spillovers from foreign MNEs to indigenous companies. On the other hand, domestic companies, which in general are less endowed with advanced techniques, may find it hard to stay in business due to the competition imposed by foreign MNEs.

In the standard models of multinationals, these types of firms are generally assumed to have some sort of firm specific asset or efficiency advantage that enables them to operate abroad successfully (Markusen, 2002; Helpman, Melitz, Yeaple, 2003). A common assumption made in this literature is that there is a potential technology gap between the domestic firms and MNEs (due to MNEs' firm-specific assets), which creates the opportunity for technology spillovers between the two groups of firms. An increase in productivity through technology spillovers will reduce a host country firm's average cost of production, so increasing their price-cost-margins with a positive effect on firm survival (Audretsch, 1991, 1995). However, as far as the effect of MNEs' presence on other foreign-owned firms in the host country is concerned, the potential for positive spillovers is less important since all MNEs may be expected to use a similarly high level of technology.

The literature also shows another channel of impact on firm survival: the pecuniary externalities created if multinationals demand for domestically produced supplies (Markusen and Venables, 1999). According to this model, the presence of multinationals has three effects on the host economy. First, a competition effect as multinationals compete with domestic final good producers. The increase in total output due to output produced by multinationals decreases the market price, which leads to the exit of some domestic firms. Second, multinationals create additional demand for domestically produced intermediate goods through linkages with indigenous suppliers. This causes the third effect: a fall in the price of intermediates which induce the entry of domestic final good producing firms. The latter two positive effects may outweigh or not the potential negative competition effect.

A different view may be that multinationals, due to their advantages, may use foreign acquisitions in order to gain market access and eliminate competition by taking over a rival and closing it down afterwards. The negative competition effects on the survival of indigenous firms are described by Aitken and Harrison (1999). They argue that foreign firms producing at lower marginal costs than indigenous firms have an incentive to increase output and attract demand away from indigenous firms. This will cause host country rivals to cut production which, if they face fixed costs of production, will raise their average cost and, therefore, reduce their probability of survival. Besides, to the extent that the presence of multinationals leads to higher wage demands in the economy, this will increase a firm's average costs reducing its probability of survival.

Whether the effect of MNEs on the survival of host and foreign country firms is, on average, positive or negative is, therefore, ambiguous and needs to be assessed empirically.

A first study is provided by De Backer and Sleuwaegen (2003) which analyze firm entry and exit across Belgian manufacturing industries and present evidence that import competition and foreign direct investment discourage entry and stimulate exit of domestic entrepreneurs. These results are in line with theoretical occupational choice models in open economy (Grossman, 1994) that predict foreign direct

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employment growth. If the motive is to acquire plants at different stages of the production process (vertical acquisition), the outcome is also ambiguous. It is likely that this is done with a view to integrating these into the multinational company structure. In this case, the acquirer may transfer technology and improve quality in the acquisition target, leading to improvements in survival and employment prospects. But foreign acquirers may also use the acquisition as a device to acquire access to the country, technology, skills, etc. and once these resources have been acquired the acquiring firm may divest itself of the acquired establishment. In this case, there would be clear negative effects on survival probabilities after foreign acquisition.

investment would crowd out domestic entrepreneurs through their selections in product and labor markets. However, the empirical results also suggest that this crowding out effect may be moderated or even reversed in the long-run due to the long term positive effects of FDI on domestic entrepreneurship as a result of learning, demonstration, networking and linkage effects between foreign and domestic firms.

The paper by Görg and Strobl (2000 and 2004) examines the effect of the presence of multinational companies on firm survival in Irish manufacturing industries. The authors distinguish between the impact of MNEs on Irish-owned (indigenous) firms and on foreign-owned ones (i.e., other MNEs) located in the host country, the latter essentially serving as a natural control group. Both studies confirm that the larger the foreign presence in an industry, the higher are domestic establishments' probabilities of survival. However, according to these authors this only holds for plants in high tech industries, which suggests that firms in low tech industries have not enough absorptive capacity to profit of the spillovers from technological gap. These findings are similar to those obtained by Konings and Walsh for Ireland (1997).

However, Burke et al. (2007) find an opposite result for UK examining the impact of Foreign Direct Investment (FDI) on the survival of business start-ups: a negative effect of foreign presence on survival of firms in dynamic industries, alongside a net positive effect in static industries[8]. In dynamic industries both new ventures and foreign firms are more likely to be engaging in innovation, then the relationship between them is more likely to be competitive and negative for survival. By contrast, in static industries new ventures are more imitative and hence have more scope to benefit from knowledge spillovers from foreign firms.

Bandick (2007) also investigates how survival of the domestic plants is determined by the presence of foreign ownership (measured by the share of foreign employment at the industry level) separately for the domestic MNEs, export active plants, and purely domestic oriented plants. The result reveals that foreign presence only has negative effect on the survival of the latter type of plants while foreign presence seems not to explain the high exit rate of Swedish MNEs.

Görg and Strobl (2001 and 2003), Girma and Görg (2003) and recently, Alvarez and Görg (2007) and Bandick and Görg (2009) are the only studies in which there is also an attempt to assess the impact produced by foreign firm entry, selection and exit on employment. In terms of employment persistence, they find that in spite of the higher volatility of firm, employment is not more volatile: jobs generated in MNEs appear to be more persistent than jobs generated in indigenous firms and MNEs are also quicker to recover lost jobs than indigenous firms.

3. Data and summary statistics

In order to investigate the relationship between foreign ownership and domestic firm survival, we used firm-level data taken from the AIDA database (Analisi Informatizzata Delle Aziende) provided by Bureau Van Dijk SPA. In its complete version, AIDA collects annual accounts of all the Italian firms that are obliged to submit the balance sheet to the Italian Chambers of Commerce. In the specific case and in relation to our propose, from this database we carried out information at firm level on budget items such as sales, costs of employees, added value, sector of activity in addition to the number of employees and ownership status of Italian firms. Moreover, in order to determine the firm's age - measured by the number of years of activity - we used the date of incorporation[9].

In our dataset each firm is identified by a unique identifier code (VAT number) that, as we can see below, assumes a decisive role in analysing survival.

Our study covers the period 2005-2007 and regards only corporate enterprises such as limited companies and partnerships limited by share[10]. However, it is important to highlight that, in constructing the dataset we collected information on Italian firms taken from four yearly AIDA surveys (2005-2008), and not from the last available survey – as common in most empirical works on FDI using firm level data

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[8] Dynamic markets are typically characterised by high rates of churn (firm entry plus exit relative to the stock of firms) which tends to be higher at earlier stages of the diffusion of innovation in an industry. In these markets, new ventures are often innovative and tend to introduce new technology (Audretsch and Mahomood 1995, Geroski, 1995). By contrast lower churn (more static) industries are associated with later stages of innovation diffusion as price competition become more prevalent.

[9] The authors would like to thank Umberto De Marco (Senior Sales Executive of Bureau Van Dijk-Electronic Editions) for his assistance with Aida Database.

[10] In 2007, they represented about 53 percent of total Italian corporate enterprises and about 87 percent of total employees (**ISTAT, ASIA, 2008**)".

provided by Bureau Van Dyck.[11] The advantage in doing so is twofold. Firstly, it allows us to easily identify the precise moment of entry and exit. In fact, following the definition of entry and exit used by Mata and Portugal (2002), Bandick (2007) and Bandick and Görg (2009), the appearance of a new VAT code in a yearly survey rather than in the previous year's file indicates that a new firm has entered. On the other hand, the disappearance of a former number means that this firm has exited. Finally, if the number remains unchanged in subsequent years, it means that the firm has survived. This would not have been possible if we had used a survey relating only to a single year[12].

Secondly, this approach allows us to overcome one of the major drawbacks in the empirical literature on ownership and plant survival (Van Beveren, 2007) i.e. the consideration that ownership status is a time-invariant variable - generally referring to the latest year available: e.g. Van Beveren (2007) used a survey with ownership status updated to 2004 (Belfrist database by BVD) in order to analyze an eight-year period (1996-2003).

By merging the four databases using the VAT code, and omitting all observations for which the necessary data are incomplete, we obtained an unbalanced panel of 1,127,655 observations.

Thanks to information on ownership status and following the procedure used in some empirical studies on survival Bandick, 2007; Van Beveren, 2007; Bandick and Görg, 2009), we classified our firms in three categories: Domestic MNEs, Foreign MNEs and Domestic firms non MNEs (hereafter Domestic firms). Specifically, we considered Domestic MNE to be a non foreign-owned firm with a share of direct ownership greater/equal to 10 percent in firms located in countries other than Italy. Likewise, we classified Foreign MNEs as being Italian firms whose Global Ultimate owner is foreign[13].

By combining all this information we can compare the entry, the exit and the survival patterns of foreign firms with domestic companies.

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[11]The reason we focused on this period was that, due to the collaboration of Bureau Van Djck with MF Honyvem (official provider of data coming from Italian Chambers of Commerce), the AIDA survey of 2005 provides more complete information about the covertures and nature about ownership status. Moreover, in the construction of dataset we used data for 2004 but only as a criterion which allows us to identify new entrants i.e. firms present in 2005 but not in 2004. At the same way, the survey on 2008 was necessary in order to collect information on 2007.

[12] Due to the restrictions of the AIDA survey, our data does not allow us to identify if the disappearance of a firm is due to an operation of M&A; so we don't consider this aspect in our analysis.

[13]Although AIDA database offers a flexible definition of ultimate ownership (over 25% or over 50%), in our analysis we considered a share of 25%.

Table 1 presents the distributions of firms by ownership status and size, the latter measured by the number of employees.

Table 1: Distribution of Italian firms by size and ownership status

		FMNEs	DMNEs	Domestic	Total
2005	size_1_49	992	876	343,336	345,204
	size_50_249	574	1,243	15,368	17,185
	size_250_	254	663	1,970	2,887
	Total	*1,820*	*2,782*	*360,674*	*365,276*
2006	size_1_49	1,289	962	371,190	373,441
	size_50_249	490	1,533	15,850	17,873
	size_250_	201	775	1,970	2,946
	Total	*1,980*	*3,270*	*389,010*	*394,260*
2007	size_1_49	1,526	416	346,919	348,861
	size_50_249	614	506	15,304	16,424
	size_250_	295	271	2,268	2,834
	Total	*2,435*	*1,193*	*364,491*	*368,119*

The figures in the table confirm the strong presence of relatively small domestic firms in the Italian productive system and a rather low number of both Domestic and Foreign Multinationals. Moreover we can see that if most of Domestic MNEs have a size of 50_249 employees, the foreign presence is mainly present in smaller size firm.

A more detailed description of our sample can be obtained by looking at **Table 2,** which reports the distribution of the number of firms by ownership status, sector of activity (manufacturing sectors and services) and year.

Table 2: Distribution of Italian firms by sector of activity and ownership status (value Average exit rate in percentage

		FMNEs	DMNEs	Domestic	Total
2005	Manufacturing	773	1,724	97,800	100,297
	Services	1,047	1,058	262,874	264,979
	Total	**1,820**	**2,782**	**360,674**	**365,276**
2006	Manufacturing	723	2,072	101,350	104,145
	Services	1,257	1,198	287,660	290,115
	Total	**1,980**	**3,270**	**389,010**	**394,260**
2007	Manufacturing	925	697	94,770	96,392
	Services	1,510	496	269,721	271,727
	Total	**2,435**	**1,193**	**364,491**	**368,119**
	Average exit rate	**12.58**	**7.74**	**11.79**	**8.63**

As we can see, the foreign multinational enterprises are mainly concentrated in service sectors, vice versa domestic multinational enterprises prevail in manufacturing sectors.

The last section of the table also reports the average exit rate of firms within the various kinds of ownership status, measured by the number of exiting firms relatively to the total number of firms.

The exit rate is, on average, highest among FMNEs suggesting that the probability of exit is larger in Foreign multinational enterprises than in Domestic Multinational enterprises. These latest result to be more rooted to the territory even than domestic non multinational enterprises.

**4. The Firm Survival analysis: the modelling and estimation**

Let us first examine whether MNEs, either foreign or domestic, are *unconditionally* more or less likely to exit than national firms. In doing so, we calculate (nonparametric) Kaplan-Meier survival functions, given by:

$$S(t) = \prod_{j|t_j \le t} \left(\frac{n_j - d_j}{n_j} \right)$$

(1)

where S(t) denotes the probability of surviving past time t, n_j is the number of firms that have survived and d_j is the number of firms that died respectively at time *t*.

Figure 1 shows the Kaplan-Meier survival functions for the three groups of firms (control = 3 for national firms; 1 for foreign MNEs and 2 for domestic MNEs. Analysis time represents the number of years the firm has been in the sample. From the graph, we observe different exit patterns between domestic and foreign MNEs compared to national firms. While foreign MNEs are unconditionally less likely to survive than non-MNE firms, domestic MNEs have a higher survival rate than both foreign MNEs and national firms. These results are slightly different from those of previous studies on the survival probabilities among these three groups of firms. For example, Bandick (2007) found that Swedish MNEs firms were less likely to survive than non-MNE firms while Van Beveren (2008) found that in Belgium multinationals (foreign or domestic) had a higher survival rate than national firms[14].

Figure 1 : Kaplan-Meier survival estimates

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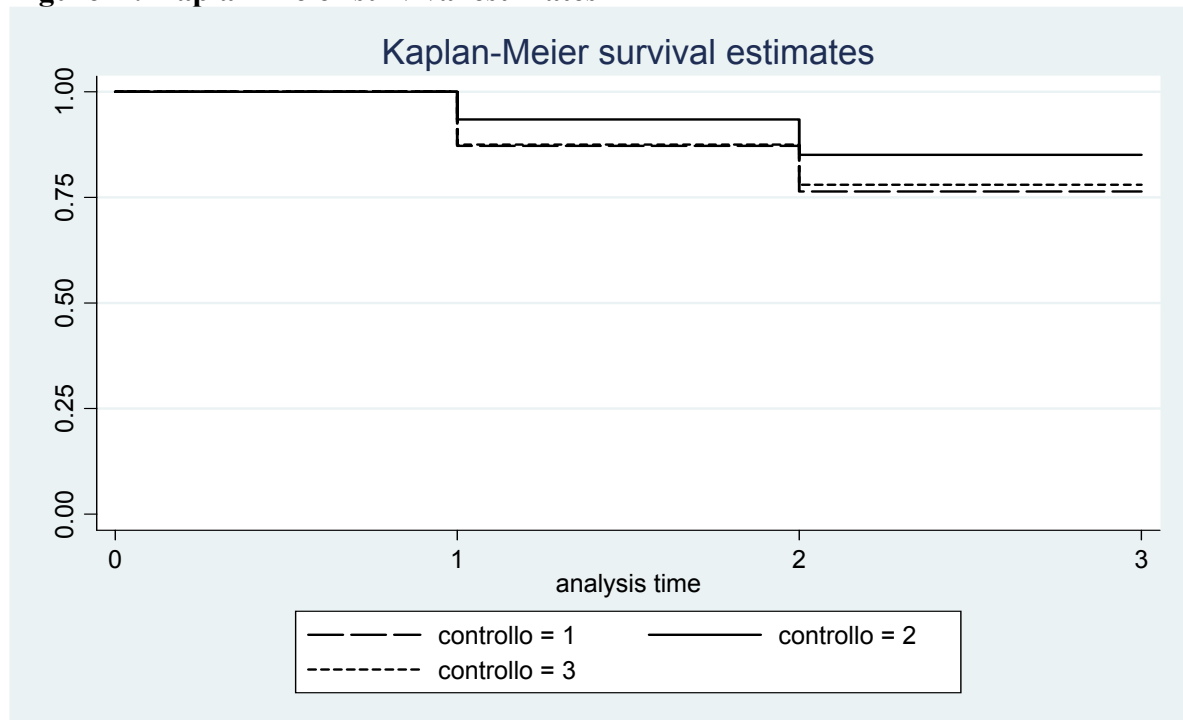
[14] Also, foreign MNEs are found to be unconditionally less likely to survive than domestic non-MNEs in Gorg and Strobl (2003) for Ireland and Bernard and Sjoholm (2003) for Indonesia.

A log-rank test of equality of the survival functions reject the hypothesis that survival functions across the three groups of firms are equal[15].

However, it is well known that a severe limitation of using Kaplan and Meier survival functions to compare MNE and non-MNE exit patterns is that such analysis does not consider other factors that may affect firm survival. So, in order to properly control for other characteristics with are associated with the survival probabilities, we turn to a non-parametric modelling of firms' hazard rates. Following most of the empirical literature, we utilise the Cox proportional hazard model:

$$h(t) = h_0(t)e^{X\beta}$$
(2)

where $h(t)$ is the rate at which firms exit at time t given that they have survived in t-1 and $h_0(t)$ is the baseline hazard function (the parametric form of which is not specified) when all of the covariates are set to zero. X is a vector of covariates, firm and industry specific characteristics which affect the survivability of firms. Following the main literature on firm survival, we include in our model the following variables:

Firm-specific variables

- SIZE, defined in terms of employment at time t. Firm size is expected to have a negative effect on the hazard rate (positive effect on firm survival).
- AGE, defined as the difference between year t and the official year of incorporation of the firm. We expect that the probability of exit declines with the age of firms.
- PROD, defined as the ratio of labour productivity (net value added per employee) at firm level in year t by labour productivity at industry (3-digit) level Since several theoretical models (Jovanovic 1982; Hopenhayn 1992) predict that the exit of firms is motivated to a large extent by productivity differences at the firm level, we expect that the survival rates of firms are higher within more productive firms.

Industry specific variables

- HERF is the Herfindhal concentration ratio at industry level (3-digit Ateco) Theoretically, the expectation of market concentration on survival is not clear-cut. On the one hand, higher market concentration may lead to higher price-cost margins in the industry which, ceteris paribus, should increase a firm's probability of survival. On the other hand, firms in highly concentrated markets may be subject to fierce aggressive behaviour by rivals which may reduce chances of survival[16].
- MES is the minimum efficient scale of the industry. It is measured as the median employment size in sector j. Theoretically, the expectation of market concentration on survival is ambiguous. On the one hand, sectors where the MES is high are expected to have higher price-cost margins and, therefore, a higher firms' probability survival. On the other hand, Audretsch (1995) argues that a reason why firms exit is that their entry size is smaller than the minimum efficient scale in the industry and, therefore, their suffer a cost-disadvantage vis-à-vis the most efficient firms in the market.
- FP is a proxy for foreign penetration and is defined as the share employment by MNEs in sector j at time t. A negative coefficient of this variable means that a greater presence of MNEs acts to decrease the probability of exit of domestic firms and therefore captures the presence of spillovers effects from FDI. On the other hand, a positive coefficient means that a greater presence of MNEs acts to increase the probability of exit and shows competition effects on firm survival.

Ownership dummy variables

- OUT is the domestic multinational ownership dummy that takes a value of 1 if firm i is an Italian owned MNE and 0 otherwise.
- INW is the foreign multinational ownership dummy that takes a value of one 1 if firm *i* is foreign owned and 0 otherwise.

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[15] Summary statistics and other results not presented in the paper are available on request
[16] Görg and Strobl (2003) found a significantly positive impact of concentration on hazard rates at firm level, while Mata and Portugal(1994) found a negative, though insignificant effect of concentration on exit patterns.

There is no clear theoretical indication about the impact of multinational ownership on exit patterns at the firm level. On the one hand, we can suppose that MNEs are more able to shift production around the world being more swiftly as a consequence of adverse shocks in the home or host country, ceteris paribus. On the other hand, the (on average) higher sunk costs that MNES have to face in setting up production, cause them to exit the market less rapidly, ceteris paribus.[17] Also, we may suppose a different degree of reaction between foreign and domestic multinationals to adverse shocks assuming that domestic multinationals are likely to be more firmly rooted in the local economy.

4.1. Estimation results

Tables 3 to 5 provide the regression results of the Cox proportional hazard model of eq.(2) applied to our sample of Italian firms over the period 2005 and 2007. All estimations are stratified by 2-digit (Ateco) industry classification which allows for equal coefficients of the covariates across strata (industries), but baseline hazards unique for each stratum (industry). For each regression, we report coefficients and associated robust standard errors, adjusted for clustering at the firm level. Wald tests provide satisfactory support for our model specification.

Table 3 show the results of the model applied to all sectors (Ateco 15–99), while tables 4 and 5 present estimates separately for manufacturing and services, respectively. In each table we show three different specifications of the model: the first one considers only covariates at firm level and industries dummies; the second one inserts two industry level such as HERF and MES; finally, in the third specification we add the foreign penetration covariate.

Table 3: Estimation results: Cox Proportional Hazard Model

	All sectors		
OUT	-0.12459	-0.12275	-0.12174
	(0.048805)***	(0.048817)***	(0.048816)***
INW	0.33406	0.33507	0.33786
	(0.04699)***	(0.04699)***	(0.04700)***
AGE	-0.00510	-0.00508	-0.00508
	(0.00048)***	(0.00050)***	(0.000488)***
SIZE	-0.000194	-0.000200	-000200
	(0.00004)***	(0.00004)***	(0.00004)***
PROD	-0.014254	-0.014246	-0.014247
	(0.00047)***	(0.00047)***	(0.00047)***
HERF		0.00003	0.00003
		(0.00003)***	(0.00000)***
MES		0.03008	0.02883
		(0.00506)***	(0.00508)***
FP			-0.27279
			(0.09869)***
Year dummies	*yes*	*yes*	*yes*
Number of obs	*1007081*	*1007081*	*1007081*
No. of subjects	*416564*	*416564*	*416564*
Wald test Chi square	*219****	*265****	*275****

***,**,* indicate statistical significance at the 1,5 and 10 percent levels. Robust standard errors, adjusted for clustering at the firm level in parentheses.

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[17] Finally, time dummies are included to capture business cycle effects while industry dummies are included to control for specific industry characteristics that may affect the survival rates.

Overall, we see that the coefficients on INW are always positive and statistically significant while those on OUT are always negative and statistically significant. This means that while foreign MNEs are more likely to exit the market than national firms on the other hand domestic MNEs have a higher chance of survival. This result is quite different from the findings of Van Beveren (2008) and Bandick (2007) for Belgium and Sweden, respectively and lend support to the hypothesis that only foreign MNEs are more "footloose" than national firms.

Hence, our regression results are in line with those of the Kaplan and Meier survival functions above suggested. Once we control for other factors, foreign MNEs have a higher chance of exiting than their Italian counterparts. This result is also true regardless the sector of activity in which firms are involved. On this point, we should note that foreign MNEs engaged in service activities exhibit a lower exit rates than foreign MNEs engaged in manufacturing activities.

In order to be able to interpret the magnitude of these effects, we convert all coefficients to hazard ratios by taking their exponential. It should be noted that for the case of a dummy variable covariate, the hazard ratio can be interpreted as the increase in the overall hazard rate facing the firm when *INW* or OUT is equal to 1, holding everything else constant. Thus when the hazard ratio has a value grater than one should be interpreted as decreasing firm survival, ceteris paribus, or if they take a value less than one should be interpreted as increasing firm survival, other thing be equal.

Thus, the hazard ratio for the coefficients on INW yields 1.32 (for services) and 1.55 (for manufacturing), indicating that the hazard rate of foreign firms is approximately between 1.3 and 1.5 times higher for foreign MNEs than for national firms, depending on their sector of activity.

Similarly, taking the exponential of the coefficient on *OUT* yields hazard ratios between 0.82 for services and 0.87 for firms operating in manufacturing. This means that domestic MNEs are 0.18 times and 0.13 times less likely to exit than national firms, depending on their sector of activity.

Table 4: Estimation results: Cox Proportional Hazard Model

	Manufacturing		
OUT	-0.12801	-0.12889	-0.12895
	(0.06426)***	(0.06435)**	(0.06435)**
INW	0.43861	0.43715	0.43752
	(0.07731)***	(0.07733)***	(0.07736)***
AGE	-0.00496	-0.00496	-0.00496
	(0.00096)***	(0.00096)***	(0.00096)***
SIZE	-0.00003	-0.00004	-000200
	(0.00006)	(0.00006)	(0.00006)
PROD	-0.06144	-0.06067	-0.06066
	(0.0026)***	(0.0026)***	(0.0026)***
HERF		0.00006	0.00006
		(0.00002)***	(0.00002)***
MES		0.02455	0.02430
		(0.01125)**	(0.01137)**
FP			-0.03253
			(0.21854)
Year dummies	yes	yes	yes
Number of obs	281341	281341	281341
No. of subjects	110217	110217	110217
Wald test Chi square	78.71	98.4	98.6

***,**,* indicate statistical significance at the 1,5 and 10 percent levels.Robust standard errors, adjusted for clustering at the firm level in parentheses

Moreover, from tables 3-5 we see that results obtained on the firm and industry independent variables are almost in accordance with our expectations and with those of other previous studies. In particular, the coefficients on firm age and productivity are always significantly negative, supporting the hypothesis that older, larger and more productive firms tend to exhibit lower exit rates than new and less productive firms. Firms size affect firm survival positively only in the service sector, i.e., small firms face a higher hazard of exit than do large firms Moreover, the coefficient on HERF is always positive and statistically significant; this support the fact that the higher the level of concentration in the sector, the less likely a firm is to survive. The coefficient on minimum efficient of scale is also always positive and statistically significant supporting the idea that the higher the extent of the economies of scale in the sector, the less likely a firm is to survive. Finally, we find a positive effect of the presence of MNEs on the survival of firms statistically significant only in the service sector.

Table 5: Estimation results: Cox Proportional Hazard Model

	Services		
OUT	-0.18669	-0.18645	-0.18395
	(0.07664)**	(0.07664)**	(0.07664)**
INW	0.28405	0.28543	0.28856
	(0.05922)***	(0.05922)***	(0.05923)***
AGE	-0.00530	-0.00526	-0.00528
	(0.00056)***	(0.00056)***	(0.00056)***
SIZE	-0.00030	-0.00031	-0.00031
	(0.00007)***	(0.00007)***	(0.00007)***
PROD	-0.01357	-0.01356	-0.01356
	(0.0054)***	(0.0054)***	(0.0054)***
HERF		0.00002	0.00002
		(0.00000)***	(0.00002)***
MES		0.03325	0.03195
		(0.00570)***	(0.00571)***
FP			-0.33299
			(0.11136)***
Year dummies	*yes*	*yes*	*yes*
Number of obs	*725740*	*725740*	*725740*
No. of subjects	*306762*	*306762*	*306762*
Wald test Chi square	*165*	*205*	*215*

***,**,* indicate statistical significance at the 1,5 and 10 percent levels. Robust standard errors,
adjusted for clustering at the firm level, in parentheses

The second aim of this paper is to empirically analyse whether foreign presence affects the survival prospects and dynamics of foreign MNE, domestic MNEs and domestic non-MNEs separately. We have estimated the model for foreign MNE, domestic MNEs and domestic non-MNEs, separately. From our results, we found that firm survival of both foreign MNE and domestic MNEs is unaffected by the increased presence of foreign MNEs. These results is valid both for the manufacturing and the service sectors[18].

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[18] Results not presented in the paper are available on request

Table 6: Effects of foreign presence on firm survival

	Manufacturing	Services
FP	-0.15230	-0.33590
	(0.22592)	(0.11198)***
AGE	-0.00442	-0.00524
	(0.00098)***	(0.00057)***
SIZE	-0.00017	-0.00039
	(0.00013)	(0.00008)***
PROD	-0.06920	-0.01364
	(0.00286)***	(0.00053)***
HERF	0.00007	0.00002
	(0.00002)***	(0.00000)***
MES	0.03027	0.03142
	(0.01157)***	(0.00573)***
Year dummies	*yes*	*yes*
Number of obs	274278	719378
No. of subjects	109153	305738
Wald test Chi square	59.9	175.6

***,**,* indicate statistical significance at the 1,5 and 10 percent levels. Robust
standard errors, adjusted for clustering at the firm level in parentheses.

In table 6 we show the results only for the case of the impact of foreign presence on Italian non-MNEs survival. Foreign presence has different impact between the service and the manufacturing sector; in particular, it has a positive impact on the survival of Italian non-MNEs active in the service sector (the coefficient of FP is negative and statistically significant) while it has no effect on the survival of domestic non-MNEs engaged in the manufacturing (the coefficient of FP is positive but it is not significant).
Overall, we may assert that the result found in the service sector may be due to the existence of FDI productive spillovers on Italian local firms which, reducing the average cost will, ceteris paribus, increase their probability of survival.

5. Conclusions
This paper has examined the effects of the presence of MNEs on Italian firm survival empirically, using firm level data for the period 2005-2007. To this end, first, we carry out both theoretically and empirically the analysis of firm survival distinguishing between foreign multinationals, domestic multinationals and domestic non-multinational firms. The empirical analysis is based on survival functions as well as a Cox proportional hazard model. We compare whether survival rates for foreign and Italian-owned firms are different, i.e., whether foreign firms are more likely to exit than domestic firms and how domestic firms differ in their rate of failure according to whether they are multinational or not controlling for several firm and industry covariates. Furthermore, we examine the effect of MNEs on the survival of host country firms distinguishing between the impact of MNEs presence on Italian-owned (indigenous) multinational and non multinational firms and on other foreign-owned firms (i.e., other MNEs) located in the host country.
The finding reveals that during the period 2005-2007 while manufacturing and service firms owned by foreign MNEs are more likely to exit the market than national firms, on the other hand domestic MNEs have a higher chance of survival. These results stand even when other firm and industry specific variables are controlled for. This result support the idea that foreign MNEs are inherently footloose while Italian MNEs are more firmly rooted in the local economy. The estimates also indicate that older, larger and more productive firms have higher survival rates. Finally, firm survival of foreign MNEs and domestic MNEs is unaffected by the increased presence of foreign MNEs. On the other hand, the increased foreign presence has a positive impact on Italian non-MNEs' survival only in the service sector.

References

Ayyagari, M. and R. Kosova (2006), "Does FDI facilitate Domestic Enterpreneurship? Evidence from the Czech Republic", draft.

Aghion, P., Blundell, R., Griffith, R., Howitt, P. and Prantl, S. (2006), The Effects of Entry on Incumbent Innovation and Productivity. NBER WP n. 12027.

Agosin, M. and Mayer, J. (2000) Foreign Investment in Developing Countries: does it crowd in domestic investment?, UNCTAD Discussion Paper no. 146

Aldrich, H. E., and E. Auster (1986). "Even Dwarfs Started Small: Liabilities of Size and Age and their Strategic Implications", Research in Organizational Behavior, 8, 165-198.

Almeida, R.K. (2007), The Effects of Foreign Owned Firms on the Labor Market, *Journal of International Economics*, 71, 75-96

Alvarez, R. and H. Görg (2005), "Multinationals and Plant Exit: Evidence from Chile", IZA Discussion Paper No. 1611.

Andrew Burke, Holger Görg and Aoife Hanley (2007) "The Impact of Foreign Direct Investment On New Firm Survival in the UK : Evidence For Static v. Dynamic Industries", GEP Research Paper 07/09.

Arnold, J. and B.S. Javorcik. (2005) "Gifted Kids or Pushy Parents? Foreign Acquisitions and Plant Performance in Indonesia." CEPR Discussion Paper 5065.

Audretsch, D. B. and T. Mahmood (1995), "New-firm Survival: New Results Using a Hazard Function", Review of Economics and Statistics, Vol. 77, pp. 97-103.

Audretsch, D.B. and Mahmood, T. (1995), New-Firm Survival: New Results using a Hazard Function, *Review of Economics and Statistics* 77, 97-103

Audretsch, David B. (1991): "New-Firm Survival and the Technological Regime",*Review of Economics and Statistics*, Vol. 60, pp. 441-450.

Audretsch, David B. and Mahmood, Talat (1995): "New-Firm Survival: New Results using a Hazard Function", *Review of Economics and Statistics*, Vol. 77, pp. 97-103.

Audretsch, David B.; Houweling, Patrick and Thurik, A. Roy (2000): "Firm Survival in the Netherlands". *Review of Industrial Organization*, Vol. 16, pp. 1-11.

Bandick, R. (2004), "Do Workers Benefit from Foreign Ownership? Evidence from Swedish Manufacturing", ESI working paper 2004:15, Örebro university.

Bandick, Roger, 2007. "Multinationals and Plant Survivals in Swedish Manufacturing," Working Papers 2007:7, Örebro University, Swedish Business School.

Bernard, A. and Jensen, B. (2007), 'Firm structure, multinationals and manufacturing plant deaths', *Review of Economics and Statistics*, 89, 193-204.

Bernard, A. and Sjöholm, F. (2003), 'Foreign owners and plant survival', *NBER working paper 10039*.

Bernard, A., B. and F. Sjöholm (2003), "Foreign owners and plant survival", NBER Working Paper 10039.

Bernard, A.B. and J.B. Jensen (2005), "Firm structure, multinationals and manufacturing plant deaths", memeo, Dartmouth College.

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Coles, J., M. Lemon, F. Meschke (2007), Structural Models and Endogeneity in Corporate Finance: the Link Between Managerial Ownership and Corporate Performance, mimeo

Conyon, M.J., Girma, S., Thompson, S. and Wright, P.W. (2002): "The Impact of Foreign Acquisition on Wages and Productivity in the United Kingdom", *Journal of Industrial Economics*, Vol. 50, pp. 85-102.

Criscuolo, C. and R. Martin (2008), Multinationals and the US productivity leadership: Evidence from Britain, *Review of Economics and Statistics*, forthcoming.

Disney, R., J. Haskel and Y. Heden (2003), "Entry, Exit and Establishment Survival in UK Manufacturing", The Journal of Industrial Economics, Vol. 51, 91-112.

Disney, R., J. Haskel and Y. Heden (2003): "Entry, exit and establishment survival in UK manufacturing", *Journal of Industrial Economics*, Vol. 51, pp. 91-112.

Doms, M. and Jensen, B. (1998), 'Comparing wages, skills, and productivity between domestically and foreign-owned manufacturing establishments in the United States', in Baldwin, R, Lipsey, R. and

Richardson, D. (1998), *Comparing wages, skills, and productivity between domestically and foreign-owned manufacturing establishments in the United States*. Chicago: University of Chicago press.

Dunne, P. and A. Hughes (1994), "Age, Size, Growth and Survival: UK Companies in the 1980s", Journal of Industrial Economics, Vol. 42, pp. 115-140.

Dunne, T., M. J. Roberts, and L. Samuelson (1988), "Patterns of Firm Entry and Exit in US Manufacturing Industries", Rand Journal of Economics, 19, 495-515.

Dunne, T., M. J. Roberts, and L. Samuelson (1989). "The Growth and Failure of US Manufacturing Plants", Quarterly Journal of Economics, Vol. 104(4), 671-698.

Esteve Pérez, S., Sanchis Lilopis, A. and J.A. Sanchis Liopis (2004). "The Determinants of Survival of Spanish Manufacturing Firms", Review of Industrial Organization, 25, 251-273.

Fukao, K., K. Ito, H. Kwon, M. Takizawa (2006), Cross border acquisitions and target firm performance: Evidence from Japanese firm level data, NBER Working Paper No. 12422

Girma, S. and Görg, H. (2004), Blessing or Curse? Domestic plants survival and employment prospects after foreign acquisition, *Applied Economics Quarterly*, 50, 89- 110.

Girma, S. and Görg, H. (2007a), "Evaluating the foreign ownership wage premium using a difference-in-differences matching approach", *Journal of International Economics*, 72(1), 97-112

Girma, S. and Görg, H. (2007b), "Multinationals' productivity advantage: Scale or technology?", *Economic Inquiry*, Vol. 45, No. 2, pp. 350-362

Girma, S. and H. Görg. (2003), "Blessing or Curse? Domestic Plants' Survival and Employment Prospects after Foreign Acquisitions", IZA Discussion Paper No. 706.

Görg and Strobl (2004), "Foreign Direct Investment and Local Economic Development: beyond Productivity Spillovers", GEP The Leverhulme Centre for Research on Globalisation and Economic Policy, University of Nottingham.

Görg H. and E. Strobl (2001) "Multinational Companies, Technology Spillovers and Plant Survival: Evidence for Irish Manufacturing", European Economy Group Working Papers 8, European Economy Group.

Görg, H. , Strobl E. and Ruane F. (2000) "The Determinants Of Firm Start-Up Size: A Comparison Of Ireland And Portugal," Trinity Economics Papers 20008, Trinity College Dublin, Department of Economics.

Görg, H. and Greenaway, D. (2004), "Much Ado about Nothing? Do Domestic Firms Really Benefit from Foreign Direct Investment", World Bank Observer, 19.

Görg, H. and Strobl, E. (2001) "'Footloose' Multinationals?," CEPR Discussion Papers 3402, C.E.P.R. Discussion Papers also Manchester School, 71 (1):1-19.

Greenaway, D. and R. Kneller (2007), Firm heterogeneity, exporting and foreign direct investment', *The Economic Journal* . Vol. 117, Issue 517, pp. F134-161.

Helpman, E., M. J. Melitz, and S. R. Yeaple (2004), "Export vs. FDI with Heterogenous Firms", *American Economic Review*, 94(1), 300-316.

Karpaty, P. (2004), "Are foreign firms more productive? Evidence from Swedish firm data", ESI working paper 2004:6, Örebro university.

Konings, J., and A. P. Murphy (2006). Do Multinational Enterprises Relocate Employment to Low Wage Regions? Evidence from European Multinationals. *Review of World Economics/Weltwirtschaftliches Archiv* 142 (2): 267–286.

Kosová R. and F Lafontaine (2006), Survival and Growth in Retail and Service Industries: Evidence from Franchised Chains, MSPRA, working paper.

Leuven, E. and Sianesi, B. (2003), PSMATCH2: Stata module to perform full Mahalanobis and propensity score matching, common support graphing, and covariate imbalance testing. Available at http://ideas.repec.org/c/boc/bocode/s432001.html.

Mata J, Portugal P. (1994), Life duration of new firms. *Journal of Industrial Economics* 42: 227–246.

Mata, J. and Portugal, P. (2002), 'The survival of new domestic and foreign-owned firms', *Strategic Management Journal*, 23, 323-343.

Özler, S. and E. Taymaz (2004), "Does foreign ownership matter for survival and growth? Dynamics of competition and foreign direct investment". ERC Workning Paper in Economic 04/06.

Rodrik, D. (1997). *Has Globalization Gone too Far?* Washington, D.C.: Institute for International Economics.

Sutton, J. (1997). " Gibrat's Legacy", Journal of Economic Literature, 35(1), 40-59.

Van Beveren, I. (2007), 'Footloose multinationals in Belgium?' *Review of World Economics,* 143(3)