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Foreign Ownership and Economic Performance in Italy: Not all is Cherry-Picking!

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This paper studies the effects of foreign participation on economic performance in Lombardy, a Northern Italian region accounting for more than 40% of Foreign Direct Investment inflows in Italy. We employ a large database consisting of balance sheet and foreign ownership information for more than 13,000 firms and analyze different dimensions of economic performance: capital and knowledge intensity, productivity, wages, returns to investments and financial structure. We find that foreign multinationals are more knowledge intensive, more productive, pay higher wages and show a more solid financial structure than national firms; at the same time, foreign multinationals show lower returns to investments. Propensity score estimation shows that this difference implies a true effect from foreign participation in the manufacturing sector; in the service sector, instead, the difference in favour of multinationals is mostly accounted for by a differential pattern of industry location between the two types of firms, by the larger size of multinationals and by the tendency for the latter to invest in already high-performing national firms.

Field of Research: Multinational Enterprises; Economic Performance

1. Introduction

This paper studies the effects of foreign participation on economic performance in Lombardy, a Northern Italian region accounting for more than 40% of Foreign Direct Investment inflows in Italy. We employ a comprehensive database consisting of balance sheet and ownership structure information on more than 13,000 manufacturing and service firms, to study whether foreign participation is associated with substantial improvements along several dimensions of economic performance: capital and knowledge intensity, productivity, wages, returns to investments and financial stability.

We first run unconditional comparisons between foreign-owned, multinational firms (MNEs) and national firms, and show that the former are characterized by more knowledge intensive techniques, higher labor productivity, higher wages and a more solid financial structure; nevertheless, MNEs exhibit lower returns to investments,

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according to all of the indicators used in the analysis. The better performance of MNEs in unconditional comparisons does not necessarily imply a premium from foreign participation, but could also depend on the different industry distribution of the two types of firms, on the larger dimension of MNEs and on the tendency for the latter to invest in national firms that are already characterized by higher performance. In order to account for these problems, in the second part of the paper we select an appropriate counterfactual sample of national firms, by means of propensity score estimation. We then re-run the previous comparisons on the counterfactual sample. Results show that much of the difference between the two groups of firms disappears in the service sector, thereby suggesting that the unconditional comparisons reflected a different industrial distribution between the two types of firms, the larger size of MNEs and the tendency for the latter to *cherry-pick* already high-performing national enterprises. In the manufacturing sector, instead, MNEs continue to show higher knowledge intensity, productivity and wages, along with a more equilibrated financial structure. We attribute this difference to a true premium associated with foreign participation.

This paper contributes to the large literature on foreign participation and economic performance (see section 2 for a review) in two ways. First, we expand the comparison between MNEs and national firms beyond traditional productivity indicators, to include several other dimensions of economic performance. Second, we apply a non-parametric framework to condition the comparison between the two groups of firms on two important variables that can affect economic performance without being directly linked to foreign participation: size and industry distribution. The estimation strategy also allows us to control for the potential endogeneity of foreign ownership, whereby MNEs choose to participate in already high-performing national enterprises. The remainder of the paper is structured as follows. Section 2 reviews the existing empirical literature on foreign participation and economic performance; Section 3 describes the database and presents our methodology; Section 4 illustrates the main results; Section 5, finally, concludes.

2. Literature Review

Studies comparing MNEs and national firms are based on the following research questions: Are foreign and national firms different in terms of economic performance? Does this difference really represent an MNE-premium? The answer to the first question is “unambiguously yes”: MNEs are more productive than national firms and tend to pay higher wages.[1] Answering the second question is instead more complicated, because of three methodological issues. First, there is a problem of identification: MNEs may exhibit better performance either because they really benefit from firm-specific advantages (Dunning, 1977; Markusen, 1995; Caves, 1996), or because they systematically differ from national firms along other dimensions that are correlated with economic performance: for instance, MNEs employ more skilled workers (Griffith and Simpson, 2001; Almeida, 2007) and rely on more capital-intensive technologies (Oulton, 1998b), are larger (Criscuolo and Martin, 2003a,b) and tend to concentrate in high-tech industries (Davies and Lyons, 1991). As a consequence, a meaningful comparison of the two groups of firms has to appropriately take account of the whole set of variables that may be simultaneously

correlated with foreign ownership and economic performance, in order to isolate the pure effect of foreign participation. Once controlling for these variables, the productivity advantage of MNEs tends to shrink significantly (Harris, 2001; Harris and Robinson, 2003), and often becomes statistically insignificant (Davies and Lyons, 1991; Globerman *et al*., 1994, Griffith, 1999; Pfaffermayr and Bellak, 2000; Criscuolo and Martin, 2003b); there still remains, however, some evidence of a wage premium associated with foreign ownership.[2]

The second methodological issue is represented by the endogenous nature of the investment decision: MNEs may decide to *cherry-pick* the best national firms. If the investment decision is endogenous, a positive link between foreign ownership and economic performance will simply reflect that fact that MNEs have invested in already high-performing national firms. Focusing on Italy, Benfratello and Sembenelli (2006) find that, after accounting for endogeneity in an Instrumental Variable set-up, the productivity advantage of foreign firms disappears, with the only exception of U.S.-owned establishments: this implies that foreign firms tend to cherry-pick the best Italian firms, without contributing to raising their economic performance.[3] In the case of wages and wage growth, Almeida (2007) finds that, after accounting for endogeneity, foreign acquisition brings about only small increases in the average worker compensation and in the level of human capital of Portuguese firms. Martins (2004) finds that wages may even *decrease* after foreign acquisition. On the contrary, Girma and Gorg (2007) still find some positive effects of foreign acquisition on wage growth in the U.K..

The third methodological issue relates to the choice of the dimensions of economic performance along which to compare foreign and national firms. Existing studies have almost exclusively focused on productivity and wages.[4] However, other dimensions of economic performance may be of interest, especially for policy reasons. This paper tries to improve upon the previous literature, by dealing with the aforementioned methodological issues. We use propensity score estimation to account for both the endogeneity of foreign participation and the role of variables that correlate with foreign ownership and economic performance. Likewise, we expand the set of performance indicators beyond productivity and wages, by considering also such dimensions as capital and knowledge intensity, financial structure and returns to investments.

3. Data and Methodology

Our database consists of unconsolidated balance sheet information for more than 13,500 manufacturing and service firms operating in Lombardy, a Northern Italian region; the data come from AIDA (“Analisi Informatizzata Delle Aziende”), a large database administered by Bureau Van Dick. Information on the ownership structure of the firms comes from REPRINT, a database administered by the Politecnico of Milan and the Italian Institute for Foreign Trade.[5] We exclude firms with sales below €2.5 millions, as well as those operating in retail and wholesale trade, banking and finance, and hotels and restaurant, due to the lack of information on the ownership structure in the REPRINT database. Finally, we implement standard data cleaning

procedures, eliminating outliers and aberrant observations. As a result, we are left with 13,096 firms, observed over the period 2000-2005.

Two thirds of the firms operate in the manufacturing sector. MNEs represent 8.3% of the total number of firms (1089), but account for almost 30% of total sales, total employment and total capital in both manufacturing and services. The average MNE has sales, production volumes and total costs exceeding those of the average national firm by 5 times; employment and value added in MNEs are on average higher by 3.5 and 4 times respectively. MNEs are especially concentrated in refined petroleum, chemical and high-tech industries, R&D, telecommunication and consulting; national firms are concentrated in traditional industries, in the construction sector and in the utilities (i.e., gas, water, electricity). This confirms the main conclusions from the previous literature: MNEs are larger than national firms and concentrated in high-tech industries.

In order to account for the larger size and the different industry distribution of MNEs, we employ propensity score estimation techniques. The idea is to build up a counterfactual sample of national firms that are as similar as possible to MNEs in terms of size and industry location. The comparison between the sample of MNEs and the counterfactual group of national firms will yield the true effect of foreign participation on economic performance, which will not be influenced by systematic differences between the two types of firms. Moreover, results will not be affected by the endogeneity problems discussed before, because the counterfactual sample of national firms is selected so as to be as close as possible to that of MNEs. We now briefly sketch the methodology; a more technical discussion can be found, among others, in Rosembaum (1984), Rosembaum and Rubin (1983, 1985), Imbens and Angrist (1994), Heckman (1992, 1997) and Wooldridge (2002). Let us define with y a generic performance indicator, and let us call it *outcome* for simplicity. Let us also define with D_i an indicator variable taking on value 1 if the i-th firm is an MNE and 0 otherwise. Finally, let us call y_{i1} and y_{i0} the outcomes with and without treatment. The effect of treatment (the foreign participation in our case) is then defined as:

$$E[y_{i1} | D_i=1]-E[y_{i0} | D_i=1]$$

Estimating this quantity entails two problems. First, either y_{i1} or y_{i0} is observed for each firm in the sample, because firms are either MNEs or purely national. Second, in empirical applications the treatment is usually not random: firms generally self-select into treatment according to their observed outcome (e.g., MNEs may participate in high-performing firms). Under this circumstance, sample averages of treated and non-treated firms yield biased estimates of the treatment effects. Hence, it is necessary to construct a counterfactual sample of non-treated units, which makes the treatment random and provides an estimate for $y_{i0.}$ To this purpose, we will assume that a set of observable covariates exists that exclusively determines the selection of firms into treatment; therefore, conditional on this set of covariates, selection into treatment can be considered as random. Let us define with $\boldsymbol{x}$ this set of observables. Rosembaum and Rubin (1983) show that if treatment is random within cells of $\boldsymbol{x}$, it is also random within cells of the *propensity score*, which is defined as follows:

$$Pr(D_i=1|\ \boldsymbol{x}_i)=F(h(\boldsymbol{x}_i))$$

where *F(.)* is the normal c.d.f. and *h(.)* is a function of the observable covariates. We estimate the propensity score through probit, assuming that *h(.)* is a linear function of log sales and a full set of 3-digit industry dummies. We then select the counterfactual sample of firms based on the *nearest-neighbor* method: for each treated unit *i*, the algorithm identifies a control unit *j* with the closest value of the estimated propensity score.[6] The matched sample contains 1086 untreated (i.e., national) firms; this means that only 3 MNEs out of 1089 do not get matched, because their estimated propensity score falls outside the common support. We check the balance property of the counterfactual sample by performing a T-test of equal means on log sales across MNEs and national firms: the resulting T-statistic is equal to 0.32, suggesting that the difference in average sales across the two groups of firms is insignificant. We also use other standard tests, like comparison of the median biases and of the Pseudo- R^2 before and after matching (Rosembaum and Rubin, 1985): results provide evidence that the balance property is satisfied. As a final check, we also compare the distribution of MNEs and national firms across industries. Also in this case, we find evidence that the counterfactual sample is balanced.[7]

4. Results

In this section, we report the results of the comparison between MNEs and national firms. We focus on a large set of performance indicators: capital and knowledge intensity, productivity, wages, financial structure and returns to investments. In the first part of the section, we summarize the results of unconditional comparisons, which are carried out between MNEs and the full sample of national firms. We then show the conditional results, obtained by comparing the MNEs with the counterfactual sample of national firms selected by means of propensity score estimation.

4.1 Unconditional Results

We start presenting four indicators of capital intensity and four indicators of knowledge intensity. As for the first group, we use the *ratio between total investments and sales*, the *ratio between total investments and employment*, the *ratio between investment in physical capital and* sales, and the *ratio between investment in physical capital and employment*. As for the second group, we use the *ratio between investment in immaterial assets and sales*, the *ratio between investment in immaterial assets and employment*, the *ratio between R&D expenditure and sales*, and the *ratio between R&D expenditure and employment*. We present averages computed separately for the manufacturing and the service sector. Table 1 reports the results. MNEs are more intensive in physical capital than national firms in the manufacturing sector, while the opposite pattern emerges in services. This probably reflects the fact that national firms are more concentrated than MNEs in very high capital intensive service industries, like construction and utilities. Turning to investments in immaterial assets, Table 2 shows evidence that MNEs are more knowledge intensive than national firms, in both manufacturing and services.

Table 1 – Indicators of Physical Capital Intensity (averages 2000-2005)

Sector		Total Investment, Per Capita (€, '000)	Total Inv./Sales. (%)	Investment in Physical Capital, Per Capita (€, '000)	Investment in Physical Capital/Sales (%)
MANUFACTURING					
	Mean	**9.9**	**4.2**	**7.4**	**3.2**
National	*Std. Dev.*	*19.5*	*4.1*	*13.8*	*3.3*
	# Obs.	*35399*	*40572*	*35399*	*40573*
	Mean	**12.8**	**4.7**	**7.5**	**2.9**
MNE	*Std. Dev.*	*27.9*	*6.2*	*16.0*	*4.5*
	# Obs.	*3538*	*3736*	*3538*	*3737*
SERVICES	**Mean**				
	Std. Dev.	**12.9**	**4.3**	**8.0**	**2.5**
National	*# Obs.*	*48.1*	*61.4*	*32.6*	*5.9*
	Mean	*13124*	*16416*	*13124*	*16416*
	Std. Dev.	**12.8**	**4.1**	**6.1**	**1.9**
MNE	*# Obs.*	*49.9*	*8.3*	*38.2*	*4.3*
	Mean	*1721*	*1868*	*1721*	*1868*

Source: Authors' calculations based on AIDA and REPRINT

Table 2 – Indicators of Knowledge Intensity (averages 2000-2005)

Sector		Investment in Immat. Assets, Per Capita (€, '000)	Investment in Immat. Assets/Sales (%)	R&D Expend., Per Capita (€, '000)	R&D Expend./Sales (%)
MANUFACTURING					
	Mean	**1.9**	**0.7**	**0.5**	**0.2**
National	*Std. Dev.*	*11.6*	*1.6*	*4.2*	*1.8*
	# Obs.	*35401*	*40573*	*36720*	*42274*
	Mean	**3.6**	**1.2**	**0.4**	**0.2**
MNE	*Std. Dev.*	*17.5*	*2.8*	*2.7*	*1.2*
	# Obs.	*3540*	*3737*	*3598*	*3806*
SERVICES					
	Mean	**3.9**	**1.0**	**0.5**	**0.2**
National	*Std. Dev.*	*34.0*	*4.9*	*7.1*	*2.2*
	# Obs.	*13124*	*16415*	*14261*	*17966*
	Mean	**3.7**	**1.4**	**0.8**	**0.1**
MNE	*Std. Dev.*	*14.5*	*2.6*	*10.0*	*1.3*
	# Obs.	*1720*	*1867*	*1762*	*1915*

Source: Authors' calculations based on AIDA and REPRINT

In Table 3, we show our indicators of productivity and wages. We measure productivity as *value added per worker*. Our wage variable is the *ratio between total labor costs and employment*. We find clear evidence that MNEs are more productive and pay higher wages than national firms, in both the manufacturing and the service sector.

Table 3 – Productivity and Wages (averages 2000- 2005)

Sector		Per Capita Value Added (€, '000)	Per Capita Labor Costs (€, '000)
MANUFACTURING			
	Mean	**60.8**	**30.8**
National	*Std. Dev.*	*66.1*	*11.7*
	# Obs.	*35987*	*36379*
	Mean	**70.2**	**39.5**
MNE	*Std. Dev.*	*73.4*	*20.5*
	# Obs.	*3479*	*3558*
SERVICES			
	Mean	**70.5**	**34.5**
National	*Std. Dev.*	*140.6*	*21.6*
	# Obs.	*10521*	*13805*
	Mean	**84.4**	**42.2**
MNE	*Std. Dev.*	*120.9*	*24.3*
	# Obs.	*1114*	*1707*

Source: Authors' calculations based on AIDA and REPRINT

Does the higher productivity of MNEs translate into higher ability to reward the shareholders? That is, are MNEs able to generate higher returns to investments than national firms? In order to answer this question, we use several indicators of profitability. The first two measure the ability of the firm's core business to generate value for the shareholders: the *EBITDA margin* is constructed by subtracting labor costs from value added and dividing the resulting quantity (EBITDA) by total sales; the *EBIT per capita* is constructed by subtracting total investments from the EBITDA and dividing the resulting quantity by the number of employees. Our second set of proxies provide information on the ability of total sales to generate gross and net profits: in particular, we use the *pre-tax profit-sales ratio* and the *after-tax profit-sales ratio*. Finally, we also employ conventional measures of *returns on investments* (ROI), *returns on assets* (ROA) and *return on equity* (ROE).

With the only exception of ROE, national firms show higher returns to investments than MNEs (Table 4). There are several explanations for this finding. First MNEs may exploit their global network of affiliates to transfer some of their profits in more fiscally-convenient locations (*transfer pricing*). Second, MNEs may be more exposed to international competition, and therefore forced to limit their price-cost margins and the associated returns to capital. Third, MNEs may be less in need of retained earnings to finance their investments and growth, because they can make larger recourse to intra-firm loans. We now turn to the financial structure of the two types of firms. In particular, we ask the following questions: 1) Are MNEs more or less dependent on debt than national firms? 2) Do MNEs and national firms have a different composition of liabilities? 3) Are MNEs better able to deal with their liabilities given the current level and composition of their assets? In Table 5, we deal with the first question, by presenting several indicators of the degree to which the two types of firms depend on debt as a source of financing. These indicators are: the *ratio between total debts and total capital*, the *debt-equity ratio*, and the *ratio between*

profits and total capital. Results show that MNEs are less dependent on debt than national firms; the difference is particularly striking in the service sector.

Table 4 – Profitability Indicators (averages 2000-2005)

Sector		Ebit Per Capita (€, '000)	Ebitda Margin (%)	Pre-Tax Profit/ Sales (%)	After-Tax profit/Sales (%)	ROS (%)	ROI (%)	ROE (%)
MANUFACTURING								
	Mean	**18.5**	**11.0**	**4.0**	**5.1**	**4.8**	**6.5**	**7.6**
National	*Std. Dev.*	*52.0*	*12.4*	*12.9*	*16.3*	*6.6*	*7.3*	*24.2*
	# Obs.	*34510*	*38075*	*42222*	*34071*	*42244*	*40709*	*41479*
	Mean	**17.8**	**8.7**	**4.4**	**2.5**	**3.8**	**5.4**	**6.9**
MNE	*Std. Dev.*	*59.3*	*15.9*	*38.0*	*11.3*	*8.7*	*9.5*	*32.0*
	# Obs.	*3415*	*3499*	*3804*	*3509*	*3757*	*3524*	*3575*
SERVICES								
	Mean	**19.8**	**7.8**	**4.0**	**5.6**	**4.3**	**6.4**	**12.5**
National	*Std. Dev.*	*140.6*	*31.8*	*33.5*	*17.6*	*7.0*	*7.5*	*30.2*
	# Obs.	*9667*	*11942*	*17877*	*13244*	*17958*	*16964*	*17628*
	Mean	**15.7**	**7.7**	**2.6**	**2.3**	**3.1**	**5.6**	**14.7**
MNE	*Std. Dev.*	*153.3*	*24.0*	*36.0*	*14.7*	*10.6*	*10.5*	*38.8*
	# Obs.	*1080*	*1142*	*1912*	*1713*	*1880*	*1641*	*1682*

Source: Authors' calculations based on AIDA and REPRINT

Table 5 – Structure of Financing (averages 2000-2005)

Sector		Total Debts/Total Capital	Debt-Equity Ratio	Profits/Total Capital (%)
MANUFACTURING				
	Mean	**0.7**	**8.3**	**25.2**
National	*Std. Dev.*	*0.2*	*30.3*	*19.3*
	# Obs.	*41375*	*42552*	*42718*
	Mean	**0.6**	**5.3**	**28.6**
MNE	*Std. Dev.*	*0.2*	*31.3*	*20.7*
	# Obs.	*3798*	*3824*	*3840*
SERVICES	**Mean**			
	Std. Dev.	**0.7**	**20.4**	**17.5**
National	*# Obs.*	*0.2*	*69.0*	*18.8*
	Mean	*18061*	*18491*	*18625*
	Std. Dev.	**0.7**	**9.9**	**20.3**
MNE	*# Obs.*	*0.2*	*45.8*	*20.5*
	Mean	*1907*	*1926*	*1936*

Source: Authors' calculations based on AIDA and REPRINT

Table 6 – Structure and Cost of Liabilities (averages 2000-2005)

Sector		S-T Debts/ Total Debts (%)	Average Length of Debts (Days)	Banking Debts/ Total Debts (%)	Banking Debts/ Sales (%)	Cost of Debt/ Total Debts (%)
MANUFACTURING						
	Mean	**88.3**	**186**	**20.0**	**11.8**	**2.8**
National	*Std. Dev.*	*15.6*	*89*	*23.2*	*16.3*	*3.6*
	# Obs.	*41462*	*29716*	*42653*	*42491*	*42649*
	Mean	**90.4**	**136**	**12.6**	**6.5**	**2.7**
MNE	*Std. Dev.*	*18.2*	*89*	*19.4*	*11.8*	*4.6*
	# Obs.	*3809*	*3282*	*3838*	*3812*	*3834*
SERVICES						
	Mean	**90.8**	**210**	**12.0**	**7.6**	**2.4**
National	*Std. Dev.*	*17.2*	*129*	*20.0*	*14.7*	*15.4*
	# Obs.	*18122*	*5963*	*18643*	*18227*	*18630*
	Mean	**95.1**	**167**	**6.7**	**3.4**	**1.6**
MNE	*Std. Dev.*	*14.7*	*123*	*14.7*	*8.9*	*2.4*
	# Obs.	*1917*	*593*	*1937*	*1932*	*1936*

Source: Authors' calculations based on AIDA and REPRINT

Table 7 – Liquidity Indicators (averages 2000-2005)

Sector		Current Ratio	S-T Credits / S-T Debts	Liquidity Index	Liquidity/Sales (%)
MANUFACTURING					
	Mean	**1.51**	**0.87**	**0.98**	**6.78**
National	*Std. Dev.*	*5.39*	*0.95*	*0.72*	*10.38*
	# Obs.	*35641*	*40113*	*42712*	*38178*
	Mean	**1.64**	**1.34**	**1.18**	**5.42**
MNE	*Std. Dev.*	*1.21*	*11.20*	*0.93*	*9.14*
	# Obs.	*3267*	*3703*	*3837*	*3521*
SERVICES					
	Mean	**1.56**	**0.92**	**1.00**	**6.56**
National	*Std. Dev.*	*11.21*	*1.71*	*0.74*	*10.97*
	# Obs.	*11495*	*17553*	*18627*	*16268*
	Mean	**1.48**	**1.14**	**1.32**	**8.63**
MNE	*Std. Dev.*	*1.53*	*1.04*	*0.92*	*13.33*
	# Obs.	*1010*	*1865*	*1938*	*1827*

Source: Authors' calculations based on AIDA and REPRINT

Having assessed that MNEs are less exposed to third parties' financing, we now move to study whether they also show a significantly different structure of liabilities. To this purpose, we use five indicators: the *ratio between short-term debts and total debts*, the *average length of debts*, the *ratio between banking debts and total debts,* the *ratio between banking debts and sales*, and the *ratio between cost of debt and total debts*. Table 6 shows that MNEs are characterized by a lower weight of short-term debts over total debts and by a lower length of their liabilities. The table also shows that MNEs resort less intensively to bank loans, and prefer instead other types of liabilities like bonds. Finally, our indicators suggest that the cost of debt is lower for

MNEs than for national firms. These findings unambiguously apply to both the manufacturing and the service sector.

We finally turn to study whether the available liquidity and short-term credits make MNEs more likely than national firms to cope with their liabilities. To this purpose, we use four indicators: the *current ratio*, the *ratio between short-term credits and short-term debts*, the *liquidity index*, and the *ratio between liquidity and sales*. Table 7 shows that MNEs are characterized by a more solid and equilibrated financial structure, and are therefore better able to deal with their financial obligations using the available funds and short-term credits; by and large, this finding applies to both the manufacturing and the service sector. It is however worth noticing that national firms do not exhibit serious pitfalls in their financial structure: although generally inferior to MNEs', the performance of national firms is not suggestive of any serious disequilibrium.

4.2 Conditional Results

We now discuss the results obtained by comparing the MNEs with the counterfactual sample of national firms. We use the same indicators as before and present them in the same order. Because MNEs are now compared with a sample of otherwise "equal" national firms, any positive differences in the indicators in favour of foreign multinationals will suggest the existence of a pure MNE-premium. Table 8 reports our indicators of physical capital and knowledge intensity. Notice that now national firms outperform MNEs in terms of physical capital intensity in both the manufacturing and the service sector. Instead, MNEs show higher knowledge intensity, at least in manufacturing: in this sector, therefore, foreign participation is associated with a change in production techniques towards a more intensive use of knowledge capital.

Table 8 – Indicators of Physical Capital and Knowledge Intensity, Counterfactual Sample (averages 2000-2005)

Sector		Investment in Physical Capital, Per Capita (€, '000)	Investment in Physical Capital/Sales (%)	Investment in Immat. Assets, Per Capita (€, '000)	Investment in Immat. Assets/Sales (%)
MANUFACTURING					
	Mean	**9.0**	**3.5**	**2.8**	**0.9**
National	*Std. Dev.*	*11.02*	*3.72*	*9.41*	*1.94*
	# Obs.	*3347*	*3589*	*3348*	*3589*
	Mean	**7.5**	**2.9**	**3.6**	**1.2**
MNE	*Std. Dev.*	*15.98*	*4.53*	*17.50*	*2.8*
	# Obs.	*3438*	*3737*	*3540*	*3737*
SERVICES					
	Mean	**7.5**	**2.6**	**7.0**	**2.0**
National	*Std. Dev.*	*24.91*	*10.36*	*59.97*	*7.19*
	# Obs.	*1518*	*1744*	*1519*	*1744*
	Mean	**6.1**	**1.9**	**3.7**	**1.4**
MNE	*Std. Dev.*	*38.15*	*4.25*	*14.47*	*2.61*
	# Obs.	*1721*	*1868*	*1720*	*1867*

Source: Authors' calculations based on AIDA and REPRINT

Turning to productivity and wages, Table 9 shows that value added per worker is higher in MNEs in manufacturing, suggesting that foreign participation brings about improvements in average productivity in that sector; by contrast, we find evidence of cherry-picking in the service sector, where average productivity is now lower in MNEs than in national firms. In both sectors, MNEs are characterized by higher average wages relative to national firms, suggesting that foreign participation is associated with a rise in worker compensation.

Table 9 – Productivity and Wages, Counterfactual Sample (averages 2000-2005)

Sector		Per Capita Value Added (€, '000)	Per Capita Labor Costs (€, '000)
MANUFACTURING			
	Mean	**69.9**	**34.4**
National	*Std. Dev.*	*71.97*	*12.84*
	# Obs.	*3388*	*3415*
	Mean	**70.2**	**39.5**
MNE	*Std. Dev.*	*73.42*	*20.50*
	# Obs.	*3479*	*3558*
SERVICES			
	Mean	**90.5**	**39.1**
National	*Std. Dev.*	*150.72*	*36.50*
	# Obs.	*1135*	*1540*
	Mean	**84.4**	**42.2**
MNE	*Std. Dev.*	*120.86*	*24.27*
	# Obs.	*1114*	*1707*

Source: Authors' calculations based on AIDA and REPRINT

In terms of profitability, results based on propensity score estimation corroborate the main evidence emerged from the unconditional comparisons: MNEs exhibit lower returns to investments than national firms, in both the manufacturing and the service sector. We therefore omit those results to save on space, and refer the interested reader to Crinò and Onida (2007). To conclude, we discuss the results of the analysis on the financial structure of the two types of firms. Because we do not find any substantial differences across sectors, we report averages over the entire sample. Table 10 shows that MNEs make less recourse to third parties' funds even when compared to the matched national firms. Hence, foreign participation brings about an improvement in the financial structure of firms, in terms of lower dependence on external financing. Turning to the composition and the cost of debt, the comparison between MNEs and national firms on the matched sample suggests that foreign participation is associated with substantial improvements in the financial structure of domestic enterprises. MNEs continue in fact to show higher levels of short-term debts, lower dependence on bank loans and lower cost of debt (Table 11).
Finally, MNEs also exhibit higher values of the liquidity indicators,[8] which is evidence that foreign participation improves the balance between available liquidity and liabilities (Table 12).

Table 10 – Structure of Financing, Counterfactual Sample (averages 2000-2005)

		MNE	National
Total Debts/ Total Capital (%)	**Mean**	**0.6**	**0.7**
	Std. Dev.	*0.2*	*0.2*
	# Obs.	*5705*	*5497*
Debt-Equity Ratio	**Mean**	**6.9**	**9.2**
	Std. Dev.	*36.9*	*44.1*
	# Obs.	*5750*	*5566*
Profits/Total Capital (%)	**Mean**	**25.8**	**26.1**
	Std. Dev.	*21.0*	*20.5*
	# Obs.	*5776*	*5603*

Source: Authors' calculations based on AIDA and REPRINT

Table 11 – Structure and Cost of Liabilities, Counterfactual Sample (averages 2000-2005)

		MNE	National
S-T Debts/Total Debts (%)	**Mean**	**92.0**	**88.4**
	Std. Dev.	*17.2*	*16.0*
	# Obs.	*5726*	*5518*
Average Length of Debts	**Mean**	**141**	**174**
	Std. Dev.	*96*	*90*
	# Obs.	*3875*	*3738*
Banking Debts/Total Debts (%)	**Mean**	**10.6**	**21.7**
	Std. Dev.	*18.2*	*23.2*
	# Obs.	*5775*	*5592*
Banking Debts/Sales (%)	**Mean**	**5.5**	**11.5**
	Std. Dev.	*11.0*	*15.7*
	# Obs.	*5744*	*5536*
Cost of Debts/Total Debts (%)	**Mean**	**2.3**	**3.1**
	Std. Dev.	*4.0*	*26.5*
	# Obs.	*5770*	*5586*

Source: Authors' calculations based on AIDA and REPRINT

Table 12 – Liquidity indicators, counterfactual sample (averages 2000-2005)

		MNE	National
Current Ratio	**Mean**	**1.6**	**1.5**
	Std. Dev.	*1.3*	*1.6*
	# Obs.	*4277*	*4363*
S-T Credits/S-T Debts	**Mean**	**1.3**	**0.9**
	Std. Dev.	*9.2*	*0.7*
	# Obs.	*5568*	*5338*
Liquidity Index	**Mean**	**1.2**	**1.1**
	Std. Dev.	*0.9*	*0.8*
	# Obs.	*5775*	*5601*
Liquidity/Sales (%)	**Mean**	**6.5**	**6.8**
	Std. Dev.	*10.9*	*11.1*
	# Obs.	*5348*	*5153*

Source: Authors' calculations based on AIDA and REPRINT

5. Conclusion

This paper has studied the effects of foreign participation on several dimensions of economic performance in Lombardy, a Northern Italian region accounting for 40% of total FDI inflows in the country. We showed that foreign multinationals are generally characterized by more knowledge intensive production techniques, higher productivity, higher wages and a more solid financial structure relative to national firms, in both the manufacturing and the service sector. At the same time, however, foreign multinationals show lower returns to investments. We then applied propensity score estimation techniques to select a counterfactual sample of national firms with similar size and industry distribution as the multinationals. Conditional comparisons on this sample have shown that the difference between the two types of firms persists in both sectors in terms of financial structure; for the remaining indicators, instead, the difference persists only in the manufacturing sector and disappears in the service sector. In the former case, therefore, foreign participation tends to improve the economic performance of national firms; in the latter case, instead, MNEs probably cherry-pick the already high-performing national firms, or their better performance is driven by their different industry distribution and their larger size.

Endnotes

1 See Oulton (1998a), Griffith (1999), Girma *et al*. (2001), Griffith and Simpson (2001), Criscuolo and Martin (2003a), Harris and Robinson (2002, 2003) for the U.K.; Howenstine and Zeile (1994) and Doms and Jensen (1998) for the U.S.; Globerman *et al.* (1997) for Canada; Pfaffermayr and Bellak (2000) for Austria; and Benfratello and Sembenelli (2006) for Italy. See also Barba Navaretti, Venables *et al*. (2004) for a more comprehensive survey of these studies.
2 See Lipsey (1994) and Feliciano and Lipsey (1999) for the U.S.; Oulton (1998a), Girma *et al*. (2001), Griffith and Simpson (2001),Conyon *et al*. (2002) for the U.K..
3 Similar conclusions have been reached for the U.K by Harris and Robinson (2002). Conyon *et al*. (2002) reach instead opposite findings, showing that foreign acquisition is associated with a productivity increase in British firms.
4 An exception is Pfaffermayr and Bellak (2000), who also examine profitability.
5 We define an MNEs as a firm having a foreign share equal to, or greater than 50%.
6 We use the Stata routine *psmatch2* to implement the matching (Leuven and Sianesi, 2003). We impose the common support restriction and match firms without replacement.
7 All these results can be found in the working paper version of this study (Crino and Onida, 2007).
8 The only exception is the ratio between liquidity and total sales, which is slightly higher for national firms.

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