

## FOREIGN OWNERSHIP: THE CASE OF ITALY

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First draft

### 1. Introduction

The increasing globalisation of markets and firms is mirrored in a wide variety of operations ranging from international trade to strategic alliances, joint ventures and foreign direct investment (FDI). The latter, in particular, has increased dramatically over the last few decades, both in relative and absolute terms, mainly due to a series of technological, economic and political changes, including the diffusion of ICTs as well as the liberalisation and privatisation processes.

Before falling dramatically in 2001-02 due to the collapse of the speculative bubble, and following a decade of 13% annual growth during the 1980's (to be compared to 5% for GDP and 7% for export) the world FDI flows almost reached 1,300 billions \$ in year 2000, a record 19% on the world gross product (UNCTAD, 2001). In 2001 sales of foreign subsidiaries (estimated at 18.517 bill. \$) were far more than double the total volume of world export of goods and non-factor services (7.430 bill. \$), and gross output of foreign subsidiaries (3.495 bill. \$) was almost 11% of world GDP (31.900 bill. \$) (UNCTAD, 2002).

The geographical pattern of world FDI underwent significant changes in the postwar period. The falling share of the US over the stock of outward FDI was matched by an increasing US share as an area of destination. Over the last two decades the location of world FDI inward stock shifted in favour of US (from 13% to 19%), Western Europe (from 36% to 40%) and Latin America (from 4.5% to 6%). In the most recent period Eastern Europe and Asia (China in primis) play an increasingly important role as location of greenfield investments.

Italy's position has been modest and shrinking over the last decade, from 3.1% of the world inward stock in 1990 to 1.6% in 2001: in the same period the share of the European Union hovered around 39%. The ratio of inward FDI to gross domestic product at the end of 2000 was 10.5% for Italy, as against 17.1% for the world average and 30.3% for the European Union. The ratio of inward FDI to gross fixed capital formation has been increasing worldwide in the second half of the '90s, while Italy went from less than 2% to 6.3% in year 2000, European Union went from 6.5% up to an exceptional 50.1%. Compared to cumulative flows of inward and outward OECD investments in 1992-2001, Italy ranks 12<sup>th</sup> investor (97.7 bill. \$) and 15<sup>th</sup> country of destination (60.6 bill.\$, less than half relative to Mexico and Spain). In terms of the UNCTAD "transnationality index of host

economies" (measured as share of each country on world FDI inflows relative to its share on world GDP-employment-export), Italy also ranks quite low, lagging behind all European countries as well as a number of large developing countries such as Brasil, Indonesia, China, Mexico, Korea (UNCTAD, 2002, p. 21). Within the world's top 100 non-financial TNC's ranked by foreign assets in 2000 ( a group that generates about 15% of world employment and 16% of world turnover), Italy had only 2 (Fiat, Eni), as many as Spain, Sweden and Canada, far less than 10 groups from Germany, 13 from France and UK, 16 from Japan, 24 from the US.

This paper dwells on the internationalisation of the Italian system (with reference to the inward side of the story) as of the beginning of 2002, and the recent historical trends. In particular, the aim of the paper is twofold:

- (1) to provide a detailed description of foreign ownership in Italy also in comparison with other major industrialised countries;
- (2) to provide some further evidence upon the controversial topic of the consequences of foreign ownership for the host country's economic performance.

The remainder of the paper is organised as follows. Section 2 provides some evidence about foreign presence in Italy at the beginning of 2002, and through the last 15 years. Data are drawn from the database Reprint, developed at Politecnico di Milano and recently sponsored by ICE (the Italian Trade Institute) Section 3 briefly reviews the empirical literature on the impact of foreign presence on the host country and the local economy. Section 4 focusses on the methodology and data employed in the empirical study. Specifically, the empirical analysis covers foreign M&As<sup>1</sup> in Italy over the 90s, and the methodology employed relies on parametric tests (T test on matching pairs) run on counterfactuals, i.e. comparing local firms that were subjects of foreign acquisition with firms that were not.

Section 5 illustrates the empirical findings, while section 6 summarizes.

## 2. Foreign ownership in Italy: the evidence 1986-2002

## *2.2. The database Reprint*

In order to illustrate foreign presence in Italy, we rely on the database Reprint, recently sponsored by the Italian Foreign Trade Institute and developed by Politecnico di Milano<sup>2</sup> since the late '80s.

The database Reprint registers inward and outward Italian FDI since 1986, and it is updated every two years. Traditionally, data have been gathered only for manufacturing sectors while the most recent updating (1.1.2002) of the database includes information upon manufacturing, service and business-related service sectors. In particular, the following sectors are included:

- mining and manufacturing - codes 11-37 (Ateco nomenclature);
- public utilities (energy, gas and water) – Ateco codes 40-41;
- buildings – Ateco code 45;
- wholesale trade – Ateco code 51;
- transports and logistics – Ateco codes 60-63 (excluding 63.3);
- TLC services – Ateco code 64.2;
- software and information technology services – Ateco code 72;
- other business services – Ateco codes 71, 73, 74.
- Service sectors only include business related services , therefore excluding agriculture; real estate; retail trade; social services.

Moreover, for the sake of data homogeneity, financial sectors (banking and insurance, financial services, financial holdings) have been excluded, mainly due to their peculiar accounting rules. However one should notice that the sector of financial intermediation absorbed a very large share (39%) of the stock of inward FDI in Italy at the end of the '90s: a share much larger than in other major European countries (from minimum 5.3% in Sweden to maximum 26.5% in UK at the end of 1998), while the share of industry was more or less in line with other European partners and the opposite was true for the share of wholesale trade (Mariotti-Mutinelli, 2002).

## *2.2. The general picture*

The database Reprint at 1.1.2002 lists 5,075 Italian affiliates of foreign parent corporations; with almost 900,000 employees and a 2000 turnover of more than 320,000 billion €(Table 1).

The foreign share of manufacturing industry is overwhelming, ranging from 44% of the number of firms to nearly 70% of employees. The second most important sector is Wholesale Trade, with a share of about 30% in terms of firms and turnover, and 10% in terms of employees (see Table 1).

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<sup>1</sup> The focus is on M&As, as they constitute the lion's share of the foreign initiatives and the most visible face of globalisation (as far as developed countries are concerned).

<sup>2</sup> The database had been traditionally sponsored by CNEL (National Council for Economy and Labour), while ICE has started sponsoring it from the beginning of 2001.

Table 1 – Inward FDI in Italian industrial and service sectors, 1/1/2002

	Firms		Employees		Turnover		Added Value	
	(No.)	%	(No.)	%	(Bn. €)	%	(Bn. €)	%
Industry	2,237	44.08	623,762	69.63	186,072	58.00	41,704	61.57
Energy, Water, Constructions	68	1.34	11,127	1.24	8,325	2.59	4,070	6.01
Wholesale Trade	1,669	32.89	92,700	10.35	88,083	27.45	8,388	12.38
Logistics and Transports	227	4.47	38,293	4.27	10,780	3.36	2,022	2.99
Software and TLC services	389	7.67	80,104	8.94	18,477	5.76	8,070	11.91
Other Business Services	485	9.56	49,844	5.56	9,098	2.84	3,484	5.14
<b>Total</b>	<b>5,075</b>	<b>100.00</b>	<b>895,830</b>	<b>100.00</b>	<b>320,835</b>	<b>100.00</b>	<b>67,738</b>	<b>100.00</b>

The marked, long standing preference of foreign investors for majority-owned forms in their Italian involvement is clearly shown in Tables 2 and 3: 4,766 firms (93.9% of the total), almost 760,000 employees (84.7%), about 272,000 bn € turnover and 56,500 bn € gross output (84.7% and 83.5, respectively) relate to majority-held interests.

Table 2 – Inward FDI in Italian industrial and service sectors: sectoral composition of majority- owned operations, 1/1/2002

	Firms		Employees		Turnover		Added Value	
	(No.)	%	(No.)	%	(Bn. €)	%	(Bn. €)	%
Industry	2,028	42.55	515,387	67.89	148,056	54.50	35,038	61.97
Energy, Water, Constructions	58	1.22	8,170	1.08	2,911	1.07	1,191	2.11
Wholesale Trade	1,631	34.22	90,741	11.95	86,302	31.77	8,258	14.61
Logistics and Transports	209	4.39	33,297	4.39	9,800	3.61	1,813	3.21
Software and TLC services	368	7.72	62,857	8.28	15,617	5.75	6,819	12.06
Other Business Services	472	9.90	48,737	6.42	8,967	3.30	3,417	6.04
<b>Total</b>	<b>4,766</b>	<b>100.00</b>	<b>759,189</b>	<b>100.00</b>	<b>271,652</b>	<b>100.00</b>	<b>56,536</b>	<b>100.00</b>

Table 3 – Inward FDI in Italian industrial and service sectors: percentage share of majority ownership control by sectors, 1/1/2002

	Firms	Employees	Turnover	Added Value
Industry	90.7	82.6	79.6	84.0
Energy, Water, Constructions	85.3	73.4	35.0	29.3
Wholesale Trade	97.7	97.9	98.0	98.4
Logistics and Transports	92.1	87.0	90.9	89.7
Software and TLC services	94.6	78.5	84.5	84.5
Other Business Services	97.3	97.8	98.6	98.1
<b>Total</b>	<b>93.9</b>	<b>84.7</b>	<b>84.7</b>	<b>83.5</b>

The incidence of foreign presence upon domestic employment is about 12% at the end of 90s (see Table 4, with a great sectoral variance from a top 25.6% in Software and TLC services, down to 1.4% in Energy, Water and Constructions. The share of foreign ownership on manufacturing employment is about 18%, a level in line with US and surpassing only Japan, but well below Netherlands, France, UK and Sweden. Within Europe, only Germany exhibits a lower rate of foreign penetration, partly due to the remarkable increase of domestic employment after the

reunification, while very few foreign investors were inclined to enter the former DDR. Ireland, where about half of the total workforce in manufacturing belongs to foreign affiliates, is a well known example of favourable locational advantages as well as of successful "invest in" public policy. In general one may see countries such as Ireland, Spain and Portugal as relatively young members, with lower labour costs and more energetic approach to marketing of their own territorial attractiveness.

Table 4 – Share of foreign affiliates in the Italian economic system (%)

	Employees [1999] Total <sup>a,b</sup> (a)	Employees [2002] Foreign affiliates (b)	Incidence (b/a)
Industry	3,459,478	623,762	18.0
Energy, Water, Constructions	808,867	11,127	1.4
Wholesale Trade	955,808	92,700	9.7
Logistics and Transports	672,165	38,293	5.7
Software and TLC services	312,922	80,104	25.6
Other Business Services	1,198,765	49,844	4.2
Total	7,408,005	895,830	12.1

<sup>a</sup> Values have been estimated from the 1996 Italian Census data

<sup>b</sup> Artisan firms have been excluded

This confirms the poor attractiveness of the Italian economic system already highlighted in UNCTAD (2000). Italy is a laggard not only relative to major developed countries, but also to countries like Hong Kong, Spain, Mexico, Argentina, Singapore, Australia, Ireland and Malaysia.

### 2.3. Trends of inward FDI in the manufacturing industry, 1986-2002

The analysis of trends of the foreign presence in Italy in the last decade focuses upon the manufacturing industry, since no time series is available for services.

Table 5 shows there has been a gradual increase in inward FDI in Italian industry. In particular, the most remarkable increase in the foreign presence starts from the mid 80s, probably due to the approaching of the Single Market. Indeed, between 1986 and 2002 the number of Italian industrial affiliates of foreign parent companies rose from 1,292 to 2,237 (+ 73.14%), the number of establishments rose from 1,751 to 3,646 (+108.22%) and the number of employees from 467,121 to 623,762 (+ 33.53%). The faster increase in the number of affiliates and plants, relative to the size of employment, reflects the marked orientation to invest in smaller size companies.

A breakdown of employment by nationality of the investor and by the broad Pavitt's sectoral classes is shown in Table 6 over the period 1986-2002.

In particular, concerning the geographic composition one can notice:

- At the beginning of 2002, almost two thirds (60.6%) of employees belong to foreign affiliates of Western European MNEs, and more than 30% to affiliates of US companies, while the role of other countries is rather modest (the weight of Japan is 3.2% out of the remaining 6.2%);
- The share of US subsidiaries declines until the mid 90s (from 42.8% in 1986 to 26.2% in 1996), and then recovers in the most recent years (from 27.7% in 1998 to 33.2% in 2002) (essentially due to the acquisitions of Alumix by Alcoa, Avir by Illinois Owens Corp., and Gallino by Breed Technologies). In the same period the Japanese presence slightly increases from 0.5% in 1986 to 3.2% in 2002, largely due to the takeover of Magneti Marelli - San Salvo by Denso;
- A corresponding increase until the mid '90s and a subsequent decrease in 2002 in the share of Western European MNEs: in terms of employees, their share goes up from 55.6% in 1986, to 67.1% in 1996 and then declines to 60.6% in 2002);

Looking at the sectoral breakdown, no wonder that more than half of the employees in foreign affiliates at the beginning of 2002 belong to Scale-intensive sectors, a reflection of both a worldwide high propensity to FDI in these industries and of the relevant size of the Italian domestic market. On the opposite end, one could also expect a relatively minor role (less than 25% of the total) of specialised suppliers and supplier dominated industries, both strongholds of Italian comparative advantages and characterized by a high fragmentation of output among smaller size companies. A distinguished feature of Italian inward FDI, compared to most advanced countries, is the relatively small and declining share (from more than 30% in the mid-80s to 23% in the recent years) of High tech (or Science-based) sectors.

The regional distribution of inward FDI is consistently skewed in favour of Northern Italy (about four fifths of the total), with a tendency of NorthEastern regions to gain share (from 13% in 1986 to 18% in 2000) vis-à-vis NorthWestern ones whose share fell from 65% to 61% in the same period. Central regions absorb about 14% and the remaining Southern regions (including Sicily and Sardinia islands) a modest 6-7% of the total.

Table 5 – Majority investments held by foreign parent companies in Italian industrial enterprises, 1.1.1986 – 1.1.2002

	Majority investments (a)		Total (b)		% a/b
	No.	Index	No.	Index	
<i>Italian industrial affiliates</i>					
1.1.1986	1,110	100.0	1,315	100.0	84.4
1.1.1988	1,144	103.1	1,358	103.3	84.2
1.1.1990	1,327	119.5	1,573	119.6	84.4
1.1.1992	1,393	125.5	1,638	124.6	85.0
1.1.1994	1,454	131.0	1,689	128.4	86.1
1.1.1996	1,522	137.1	1,774	134.9	85.8
1.1.1998	1,711	154.1	1,956	148.7	87.5
1.1.2000	1,837	165.5	2,097	159.5	87.6
1.1.2002	2,028	182.7	2,237	170.1	90.7
<i>Establishments of Italian industrial affiliates</i>					
1.1.1986	1,491	100.0	1,782	100.0	83.7
1.1.1988	1,523	102.1	1,828	102.6	83.3
1.1.1990	1,801	120.8	2,172	121.9	82.9
1.1.1992	1,989	133.4	2,354	132.1	84.5
1.1.1994	2,115	141.8	2,480	139.2	85.3
1.1.1996	2,289	153.5	2,717	152.5	84.2
1.1.1998	2,639	177.0	3,073	172.4	85.9
1.1.2000	2,904	194.8	3,355	188.3	86.6
1.1.2002	3,285	220.4	3,646	204.6	90.1
<i>Employees of Italian industrial affiliates</i>					
1.1.1986	377,243	100.0	467,129	100.0	80.8
1.1.1988	369,912	98.1	473,080	101.3	78.2
1.1.1990	412,408	109.3	522,349	111.8	79.0
1.1.1992	430,745	114.2	519,914	111.3	82.8
1.1.1994	419,599	111.2	505,256	108.2	83.0
1.1.1996	432,762	114.7	534,439	114.4	81.0
1.1.1998	472,621	125.3	572,682	122.6	82.5
1.1.2000	492,234	130.5	579,331	124.0	85.0
1.1.2002	515,387	136.6	623,762	133.5	82.6

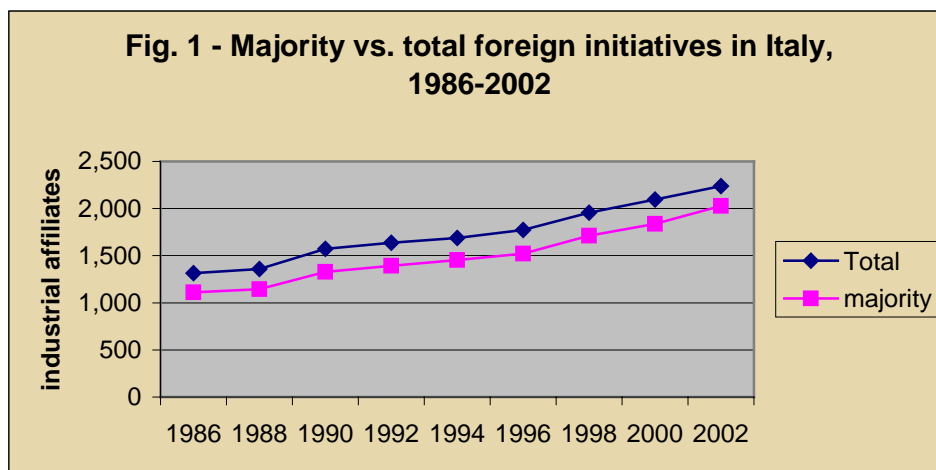


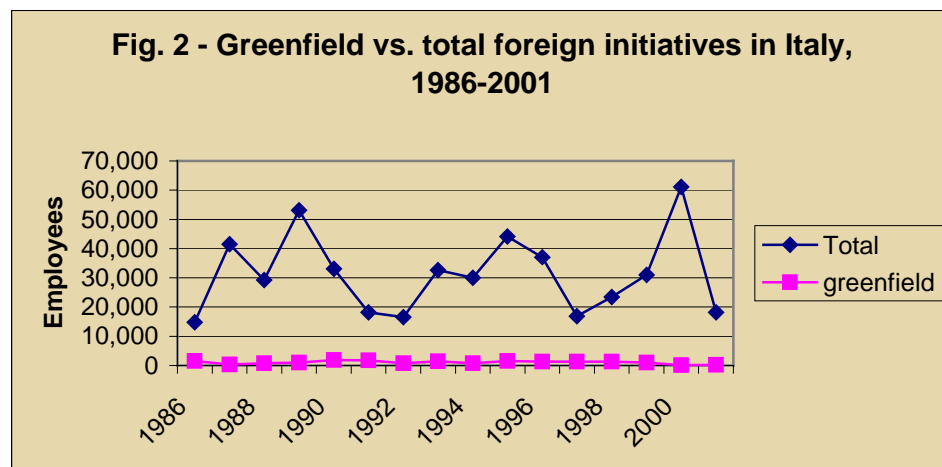
Table 6 – Breakdown of employees of Italian affiliates of foreign parent companies by their home country and Pavitt's sector, 1.1.1986 – 1.1.2002

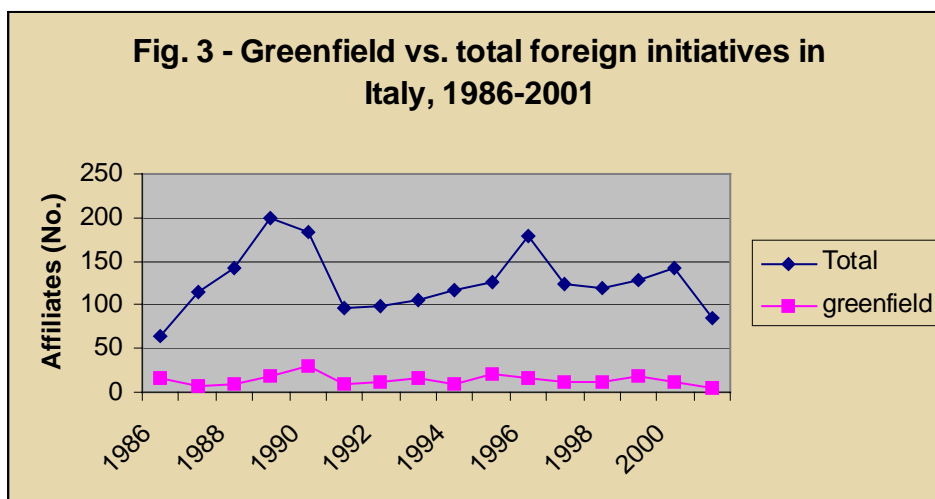
	SD	SI	SS	SB	Total
<i>1986</i>					
Western Europe	3.2	28.7	10.3	13.4	55.6
North America	2.5	14.8	7.5	17.9	42.8
Japan	0.0	0.4	0.1	0.0	0.5
Other countries	0.0	0.4	0.6	0.0	1.1
Total	5.8	44.4	18.4	31.4	100.0
<i>1990</i>					
Western Europe	5.0	30.8	13.8	17.3	66.9
North America	1.9	12.5	4.6	11.0	30.0
Japan	0.1	0.5	0.3	0.4	1.4
Other countries	0.1	1.1	0.4	0.1	1.8
Total	7.2	44.9	19.1	28.7	100.0
<i>1994</i>					
Western Europe	3.8	32.3	12.4	17.4	65.9
North America	1.6	12.1	4.1	12.2	29.9
Japan	0.3	0.8	0.7	0.7	2.5
Other countries	0.2	0.7	0.6	0.2	1.7
Total	5.8	46.0	17.7	30.5	100.0
<i>1996</i>					
Western Europe	3.2	32.8	12.8	18.2	67.1
North America	2.0	12.3	5.1	6.8	26.2
Japan	0.2	0.8	0.8	0.8	2.5
Other countries	0.3	2.9	0.8	0.2	4.1
Total	5.7	48.7	19.5	26.0	100.0
<i>1998</i>					
Western Europe	3.4	32.0	13.0	16.0	64.4
North America	1.9	13.6	5.1	7.2	27.7
Japan	0.2	1.2	0.7	0.8	2.8
Other countries	0.1	3.8	1.1	0.2	5.1
Total	5.5	50.5	19.9	24.1	100.0
<i>2000</i>					
Western Europe	3.5	34.3	12.7	15.2	65.7
North America	1.9	13.4	5.4	7.5	28.2
Japan	0.2	1.9	0.7	0.7	3.4
Other countries	0.2	1.3	0.9	0.2	2.7
Total	5.7	50.9	19.8	23.6	100.0
<i>2002</i>					
Western Europe	3.8	30.5	11.0	15.2	60.6
North America	1.7	19.4	5.0	7.2	33.2
Japan	0.2	1.7	0.8	0.5	3.2
Other countries	0.1	1.8	0.7	0.4	3.0
Total	5.8	53.4	17.5	23.3	100.0
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Legenda:	SD = Supplier-dominated sectors		SI = Scale-intensive sectors		
	SS = Specialised supplier sectors		SB = Science-based sectors		

Concerning the entry mode preferred by foreign firms in Italy (Table 7), trends look similar to most of the highly industrialised countries. Especially in the most recent years, the bulk of foreign initiatives consists of acquisition of already existing local firms, while only a marginal share is undertaken as a greenfield operation. Greenfield are only about 7% throughout the last decade, less than 6% at the beginning of the millennium, in terms of number of affiliates; and even less (1%) in terms of employees.

Table 7 – Incidence of greenfield investments over the total of new foreign initiatives, 1986-2002

	All new initiatives (a)		Greenfield investments (b)		% (a)/(b)	
	Affiliates	Employees	Affiliates	Employees	Affiliates	Employees
1986	64	14,781	16	1,583	25.0	10.7
1987	115	41,552	8	297	7.0	0.7
1988	142	29,216	10	736	7.0	2.5
1989	200	53,120	18	953	9.0	1.8
1990	184	33,015	29	1,857	15.8	5.6
1991	97	18,166	9	1,755	9.3	9.7
1992	98	16,546	12	793	12.2	4.8
1993	105	32,605	16	1,409	15.2	4.3
1994	118	30,001	10	754	8.5	2.5
1995	127	44,184	20	1,555	15.7	3.5
1996	179	37,083	16	1,275	8.9	3.4
1997	125	16,895	12	1,289	9.6	7.6
1998	119	23,431	12	1,258	10.1	5.4
1999	128	30,961	19	1,031	14.8	3.3
2000	143	61,169	12	149	8.4	0.2
2001	86	18,159	5	240	5.8	1.3





The effects of FDI on host country's performance: suggestions from the empirical literature

The effects of ownership change on the target company's labour productivity and employment

In the next sections, we aim at investigating the impact of foreign presence upon the Italian economic system. Specifically, as the lion's share of the foreign presence occurs through acquisition of local firms, we focus on the effects of the ownership change upon the target firms' labour productivity and employment level.

The impact of inward investment on the host economy has raised considerable interest within the theoretical and empirical literature, owing to the increasing role played by MNCs as engines of growth and technology diffusion, while a number of incentives and measures have been put forward by policy makers to attract MNCs and stimulate inward FDI<sup>3</sup>. The issue has to do with various aspects of balance of payments, capital stock and resources, transfer of profits, profitability, and above all labour productivity and employment. Empirical studies continuously reveal that the impact of inward investment on the host economy partially stems from the existence of performance gaps between foreign-owned and domestically-owned firms across countries, industries, over time and also at the plant level. In particular, specific concerns have been mainly focused on:

- (1) whether foreign-owned firms are more efficient than domestically-owned ones (McGuckin *et al.*, 1995; Doms and Jensen, 1998; Girma *et al.*, 2000; McGuckin and Nguyen, 2001). Most of the literature acknowledges that, according to the dominant theories of the multinational firm, foreign MNCs enjoy ownership advantages which allow them to compete successfully in the host country, thus making them more efficient than their domestic counterparts (for a survey, see Gorg and Strobl, 2001). The reasons for performance differences between foreign-owned

and domestically-owned firms are nicely summarised by OECD (1996): in general, they are “due to the technological and organisational advantages of the firms, which have the resources to operate internationally, the advanced industries in which they operate, and their larger average size”.

- (2) Whether the foreign presence engenders positive or negative externalities for domestic factors of production (Globerman et al., 1994; Blomström and Kokko, 1998; Gorg and Greenaway, 2001; Lipsey, 2002) thus influencing plant productivity (Aitken and Harrison, 1999) and the turnover of domestic firms (Görg and Strobl, 2000). On the one hand, positive externalities occur if the entry and expansion of relatively efficient foreign firms: (i) trigger diffusion of technology and managerial culture to host country firms through movements of highly skilled staff from MNCs and the so called “demonstration effect”, and (ii) encourage domestically-owned firms to achieve comparable levels of productivity by enhancing competition and search for greater X-efficiency (“competition effect”). On the other hand, competition may also reduce productivity in domestic firms because MNCs attracts away demand from their domestic competitors. This is called “market stealing effect”, and induces negative spillovers on domestic firms (see Haddad and Harrison, 1993, in the case of Morocco; and Aitken and Harrison, 1999, in the case of Venezuela).

Empirical studies dealing with these research issues investigate the impact of foreign presence on labour or total factor productivity at the industry level (Caves, 1974; Globerman, 1975; Davies and Lyons, 1991; Driffield, 1996; 1999).

#### 4. The empirical analysis on the Italian case: methodology and data

##### 4.1. *The methodology*

The present section aims at investigating the impact of foreign acquisitions, i.e. whether the ownership change induces any significant variation in labour productivity and employment level of the target companies.

The literature has already suggested many caveats in interpreting the results of this kind of empirical investigations.

- (1) Multinational entrants may be attracted to more productive and/or more profitable industries (e.g. Dunning, 1985), thus leading to spurious observed relationship between ownership changes and productivity levels of target firms in cross-section studies.

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<sup>3</sup> Hanson (2001) and UNCTAD (2001) refer that over the 90s, about 135 countries have relaxed constraints towards FDI, and that 94 per cent of the 1,035 changes worldwide in the laws governing FDI created a more favourable framework for FDI.

- (2) Since establishments experiencing a change of ownership are normally smaller than those characterized by a stable ownership, even in absence of any effect of ownership change on performance one would expect the former to exhibit higher employment growth (Lichtenberg and Siegel, 1992; McGuckin and Nguyen, 2001; Conyon *et al.*, 2002a). Indeed, it is well known that there is a strong negative correlation between the initial size of firms and their subsequent growth rates (Hall, 1987).
- (3) Technological progress may significantly affect firm's performances and productivity over the period. Therefore, it is necessary to control for the effect of time in order to rule out idiosyncrasies in particular periods.

The methodology we employ tries to circumvent these three sources of bias. Specifically, we suggest to evaluate the impact of ownership change in the medium term, by investigating what would happen if such a change did not occur. In order to do that, we compare labour productivity and employment performance for firms that have experienced acquisitions, with the same performance of firms which have not undergone any acquisition at all in the same period (the control sample). Similar procedures, consisting in comparing "like with like", have been applied to analyze the effects of domestic ownership changes on employment and wages, for example by Armington and Robb (1988), Brown and Medoff (1988), Lichtenberg and Siegel (1987)

Our operational procedure is the following:

$A_{ij}^{t_0}$  is a firm, belonging to the dimensional class  $i$  and to the industrial sector  $j$ , which has been acquired at time  $t_0$ ; with:

$i = 1, 2, \dots, 7$  are the dimensional classes (in terms of employees). as indicated by the Italian National Institute for Statistics<sup>4</sup>; and

$j = 1, \dots, 59$  refer to the three digit industrial classification ATECO 91

while

$t_0 = 1993, 1994, 1995, 1996, 1997$ .

Each firm  $A_{ij}^{t_0}$  has been associated to a domestically-owned firm (randomly selected from the set  $[I_{ij}^{t_0}]$ ) which is "similar" to the former. Specifically, similarity has been defined in terms of (1) industry; (2) size; and (3) interval period. Therefore, the main difference between the two samples of firms is that the former has undergone acquisition, while the latter did not experience any ownership change in the same period.

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<sup>4</sup> The seven classes are the followings: 1-19; 20-49; 50-99; 100-199; 200-499; 500-999;  $\geq 1000$  employees.

Then, we calculated percentage changes in labour productivity (LPROD, measured by added value per employee), and employment level (EMP, measured by the number of employees) in the medium term, i.e. in a T-year interval, with T = 2, 3, 4, after the acquisition (occurred at  $t_0$ ) as follows:

$$\Delta LPROD_{T\_A_{ij}} = \{ [LPROD_{A_{ij}^{t_0+T}} - LPROD_{A_{ij}^{t_0}}] / LPROD_{A_{ij}^{t_0}} \} * 100$$

and

$$\Delta EMP_{T\_A_{ij}} = \{ [EMP_{A_{ij}^{t_0+T}} - EMP_{A_{ij}^{t_0}}] / EMP_{A_{ij}^{t_0}} \} * 100$$

These variables have been compared (through a Paired *t*-test) to the same changes occurred in the control firm, i.e. the national firm ( $I_{ij}$ ) that has not undergone any ownership change in the same time interval  $t_0 - t_{0+T}$  but that presents a (sectoral and dimensional) similar profile to firm  $F_{ij}$ :

$$\Delta LPROD_{T\_I_{ij}} = \{ [LPROD_{I_{ij}^{t_0+T}} - LPROD_{I_{ij}^{t_0}}] / LPROD_{I_{ij}^{t_0}} \} * 100$$

and

$$\Delta EMP_{T\_I_{ij}} = \{ [EMP_{I_{ij}^{t_0+T}} - EMP_{I_{ij}^{t_0}}] / EMP_{I_{ij}^{t_0}} \} * 100$$

The null hypothesis is:

$$H_0: [\Delta LPROD_{T\_A_{ij}} - \Delta LPROD_{T\_I_{ij}}] \leq 0$$

In other words, rejecting the null hypothesis means that the ownership change causes better performances in terms of labour productivity and employment, than the absence of any ownership change. It should be noticed that, as the percentage changes may assume both positive and negative values, rejecting the null hypothesis implies that:

- when labour productivity (and employment) change is positive, it does not increase less in firms which underwent the ownership change;
- when the change is negative, it does not decrease more for firms which underwent the ownership change.

At the same time, as rejecting the null hypothesis allows to accept the alternative one (i.e.  $[\Delta LPROD_{T\_A_{ij}} - \Delta LPROD_{T\_I_{ij}}] > 0$ ), we can assert that the percentage change in labour productivity (and employment level) for firms which underwent acquisition performs better than the change in their domestic counterparts which did not experience any ownership change. Namely, if increasing, the former increases more; if decreasing, it decreases less.

#### 4.2. The data

The paper considers acquisitions of domestic firms in Italian manufacturing industry throughout the 90s. Specifically, in order to observe the effects of ownership changes due to the foreign entry, we tried to account for performance changes associated with a change in ownership *per se* (Brown and Medoff, 1988; Conyon et al., 2002b). Therefore, we employed a panel design that allows for firms subject to domestic acquisitions and those subject to no ownership changes to be used as controls.

The firm-level data used come from a unique database that was obtained by merging four data sources:

- (1) the database Reprint, for foreign acquisitions;
- (2) the database on M&As, developed by a public stock corporation Nomisma, for domestic acquisitions. Specifically, Nomisma records more than 19.000 acquisitions undertaken by Italian companies from 1983 onwards;
- (3) the Central Balance Sheet data base, collecting the annual reports of all firms active in Italian manufacturing;
- (4) the database Aida, recording financial and market data for more than 120.000 Italian firms from 1992 onwards.

Specifically, as our purpose is to assess the medium-term impact, i.e.  $t_0+2$ ,  $t_0+3$  and  $t_0+4$ , we focussed on acquisitions occurred in the 5 year period 1993-1997.

In order to isolate the effects of individual acquisitions, and partly to avoid the likely presence of measurement error problems, it was necessary to exclude those firms that suffered multiple acquisitions within the period analysed. Only acquisitions of the target company's majority share have been considered. Additionally, since our aim is to study the effect of the change of ownership on labour productivity in the medium term, we screen the data for the availability of employment, wages and output for at least two years after the acquisition.

The final samples thus consists of 176 foreign and 129 domestic acquisitions, the yearly frequency distribution of which is illustrated in Table 8. Accordingly, the control samples are constituted by 176 and 129 domestically-owned firms, which did not experience any ownership change in the period considered. Table 9 illustrates the average characteristics of Italian firms at the time of their acquisition (i.e. in  $t_0$ ). Specifically, firms targeted by foreign bidders appear consistently smaller (both in terms of employment and added value) but, importantly, labour productivity does not show significant differences.

## 5. Empirical findings

Table 10 reports the results of Paired T-tests for the labour productivity and employment rate growth in the medium term after the acquisition ( $t_0+2$ ,  $t_0+3$ ,  $t_0+4$ ). They show that, as far as foreign acquisitions are concerned, labour productivity increases after the acquisition; such increase is more than 60% in the medium term ( $t_0+2$ ,  $t_0+3$ ,  $t_0+4$ ) and is never smaller than the change occurred in firms which did not undergo the foreign acquisition (the null hypothesis can be rejected at  $p<.01$ ). Likewise, the percentage change in the employment level goes from 11,6% (in  $t_0+2$ ) to 35,4% in

$t_0+4$ , and it is never smaller than that recorded for non acquired firms (the null hypothesis can be rejected at  $p<.05$ ).

As far as domestic acquisitions are concerned, the average increase in labour productivity after the acquisition is higher than that recorded for foreign acquisition at the beginning (81,2% vs. 64,9% and 101,1% vs 91,5%) while in  $t_0+4$  is the opposite (55,9% vs. 69,8%), but the null hypothesis can be rejected at  $p<.05$  and  $p<.10$ .

Concerning the employment level, although domestic acquisitions seem to favour a higher increase (14,2%) than foreign ones (11,6%) in the short term, the reverse seems true at times  $t_0+3$  and  $t_0+4$ . However, we could not reject the null hypothesis that changes in the employment level induced by domestic acquisitions in the target firms are lower than changes without acquisition.

Table 11 confirms that such results especially hold for smaller firms (1-49 employees). Indeed, when acquired by foreign companies, their labour productivity does not decrease. The same holds for domestic acquisitions, although the significance of T-tests here is generally lower throughout the period considered. However, the effect on the employment level is even more significant as the null hypothesis can be rejected at  $p<.01$  when smaller firms are taken over by foreign companies; while on the contrary, it cannot be rejected at all when the acquisition is undertaken by domestic bidders.

According with other empirical studies (e.g. Conyon et al. 2002a) we distinguish foreign acquisitions by the acquirer's country of origin, as we expect MNEs of some nationalities to be more strongly associated with the transfer of work practices and intangible proprietary assets. Specifically, we discriminated between acquisitions by firms from the US, EU and Other foreign countries<sup>5</sup>. The results of this exercise are given in Table 12.

An increase in productivity is observed for both US and EU acquisitions, although it is higher for the latter (always greater than 80%, while never higher than 60% for the former). Specifically, the null hypothesis can be significantly rejected for both of them, thus meaning that they both induce improvements in labour productivity (as compared with firms which did not experience any ownership change). However, as far as the employment level is concerned, only European acquisitions seem to induce increases which are significantly higher than the control sample ones. The null hypothesis can indeed be rejected at least at  $p<.05$ .

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<sup>5</sup> As in Conyon et al. (2002a) this tricotomisation of foreign acquisitions was essentially driven by the preponderance of EU and US acquirers. Unfortunately, the number of acquirers from Japan, the country most obviously associated with distinctively different work practices, was too small for meaningful analyses.

## 6. Summary and conclusions

After a prolonged postwar period of remarkable foreign ownership penetration, in the last two decades Italy lost several positions as a country of destination of worldwide inward FDI. At the beginning of the new millennium Italy ranks about 13<sup>th</sup> on the stock and 21<sup>st</sup> on the recent flows of inward FDI. The share of industrial employment belonging to foreign owned companies (18%) is much smaller than what we may observe in other major European countries, except Germany whose situation partly reflects the impact of the reunification. The recent flows of inward FDI have been mainly addressed to smaller companies, as it appears from a rate of increase in the number of foreign affiliates far higher than in the volume of employment at the same foreign subsidiaries. Greenfield investment plays only a minor role, as in most developed areas of destination. The sectoral composition is characterized by a low and decreasing share of FDI in high tech industries. The paper presents some interesting results about the impact of foreign ownership on labour productivity and employment. To avoid the standard caveats about the interpretation of these comparisons, we perform a series of paired T-tests between samples of companies which were subject to change in ownership (foreign, domestic), each compared to two appropriate samples of companies that did not experience any change of ownership, controlling for firm size and sector. Compared to firms that were not subject to any ownership change, companies targeted by foreign investors marked an increase in both labour productivity and employment level a few years after the acquisition. This result holds especially true when the target firm is a small firm and when the investor is a European multinational company. Interestingly enough, domestic acquisitions also lead to an increase in labour productivity of the target firm, while data do not allow any clear conclusion about changes in the employment level.

Table 8 – The sample, breakdown by acquisition's year

	Domestic		Foreign	
	No. M&As	Frequency (%)	No. M&As	Frequency (%)
1993	13	10.08	16	9.09
1994	18	13.95	28	15.91
1995	30	23.26	28	15.91
1996	30	23.26	68	38.64
1997	38	29.46	36	20.45
Total	129	100	176	100

Table 9 – The sample, descriptive statistics at  $t_0$ 

Acquirer company	Size (No employees)	Value Added (Thousands of Euro)	Labour Productivity (Value added per employee)
<i>Foreign</i>			
Mean	130.05	5914	54
Std.dev	123.46	5922	43
Min	5	-1994	-12
Max	744	31091	346
<i>Domestic</i>			
Mean	360.12	26745	59
Std.dev	1385.96	144869	83
Min	3	-3862	-18
Max	11806	1419826	812

Table 10 – Percentage changes in the target company's labour productivity and employment (Paired  $t$  test values)

Acquirer company	$t_0 + 2$	$t_0 + 3$	$t_0 + 4$
<i>Foreign</i>			
Observations	167	153	96
Labour productivity			
Sample	64.9	91.5	69.8
Control Sample	10.8	7.8	14.1
Paired T-test	(3.038) ***	(2.734) ***	(2.974) ***
Employment			
Sample	11.6	21.9	35.4
Control Sample	5.8	10.7	13.6
Paired T-test	(1.819) **	(2.289) **	(2.159) **
<i>Domestic</i>			
Observations	124	108	58
Labour productivity			
Sample	81.2	101.1	55.9
Control Sample	10.2	17.6	6.7
Paired T-test	(1.702) **	(1.790) **	(1.488) *
Employment			
Sample	14.2	16.1	14.4
Control Sample	10.4	11.9	11.3

	Paired T-test	(0.777)	(0.601)	(0.326)
Table –				
		t <sub>0</sub> +2	t <sub>0</sub> +3	t <sub>0</sub> +4
<i>Acquirer company</i>				
Domestic MNEs				
Observations		34	26	15
Labour productivity				
Sample		34.5	52.5	15.7
Control Sample		12.1	17.4	12.9
Paired T-test		(1.025)	(1.057)	(0.162)
Employment				
Sample		8.5	6.5	18.8
Control Sample		7.0	5.3	16.7
Paired T-test		0.221)	(0.133)	(0.105)

Notes:

\* H<sub>0</sub> can be rejected at p<.10

\*\* H<sub>0</sub> can be rejected at p<.05

\*\*\* H<sub>0</sub> can be rejected at p<.01

Table 11 – Post ownership changes of employment and labour productivity. breakdown by dimensional classes. (Paired *t* test values)

	$t_0+2$	$t_0+3$	$t_0+4$
<u>Foreign</u>			
1-49			
Observations	48	44	28
Labour productivity	62.8 (1.375)*	55.6 (2.227)**	22.4 (1.434)*
Employment	27.2 (3.053)***	50.7 (3.187)***	84.9 (2.544)***
50-249			
Observations	93	84	53
Labour productivity	66.8 (2.327)***	75.7 (2.261)**	100.1 (2.421)***
Employment	5.1 (-0.339)	11.5 (0.009)	20.2 (1.109)
>249			
Observations	26	25	16
Labour productivity	62.0 (1.457)*	207.8 (1.313)*	51.2 (1.163)
Employment	5.6 (0.483)	6.0 (-0.123)	-3.0 (-0.811)
<u>Domestic</u>			
1-49			
Observations	28	25	12
Labour productivity	175.6 (1.133)	231.2 (1.478)*	178.7 (1.241)*
Employment	40.1 (1.190)	46.1 (0.676)	54.6 (0.991)
50-249			
Observations	66	56	26
Labour productivity	69.3 (1.253)	90.1 (1.127)	29.5 (1.150)
Employment	9.2 (-0.582)	10.1 (0.423)	7.1 (-0.154)
>249			
Observations	30	27	20
Labour productivity	19.5 (0.955)	3.3 (-0.633)	16.6 (-0.171)
Employment	1.0 (-0.341)	0.6 (-0.581)	-0.2 (-0.741)

Notes:

\*  $H_0$  can be rejected at  $p < .10$

\*\*  $H_0$  can be rejected at  $p < .05$

\*\*\*  $H_0$  can be rejected at  $p < .01$

Table 12 – Post ownership changes of employment and labour productivity. breakdown by the acquirer's country of origin (Paired *t* test values)

	$t_0 + 2$	$t_0 + 3$	$t_0 + 4$
Foreign Sample			
EU Acquisitions			
Observations	113	106	65
Labour productivity	80.8 (2.674) ***	110.7 (2.366) ***	83.5 (2.507) ***
Employment	15.3 (2.454) ***	23.5 (1.939) **	38.7 (2.472) ***
US Acquisitions			
Observations	47	40	27
Labour productivity	35.2 (2.429) ***	51.6 (2.048) **	56.5 (2.687) ***
Employment	2.7 (-1.052)	18.9 (0.836)	14.2 (-0.303)
Other Acquisitions			
Observations	7	7	4
Labour productivity	7.0 (-0.046)	29.2 (0.168)	-56.1 (-0.724)
Employment	10.4 (1.079)	13.8 (1.243)	3.2 (1.706) **

Notes:

\*  $H_0$  can be rejected at  $p < .10$

\*\*  $H_0$  can be rejected at  $p < .05$

\*\*\*  $H_0$  can be rejected at  $p < .01$

## Bibliographical references

- Aitken B.J., Harrison A.E. 1999. Do Domestic Firms Benefit from Direct Foreign Investment? Evidence from Venezuela, *American Economic Review*, 89(3): 605-618.
- Armington C., Robb A. 1998. Mergers and acquisitions in the United States: 1990-1994, *Center for Economic Studies*, US Bureau of Census, Research paper 98/15.
- Blomström M., Kokko A. 1998. Multinational Corporations and Spillovers, *Journal of Economic Surveys*, 12: 247-277.
- Brown G., Medoff J. 1988. The impact of firm acquisition on labor. In Auerbach A.J. (ed.), *Corporate takeovers: causes and consequences*. London and Chicago: Chicago University Press.
- Caves R. 1974. *Multinational enterprise and economic analysis*. Cambridge University Press.
- Canyon M.J., Girma S., Thompson S., Wright P.W., 2002a, The Productivity and Wage Effect of Foreign Acquisition in the United Kingdom, *The Journal of Industrial Economics*, 50: 85-102.
- Canyon M.J., Girma S., Thompson S., Wright P.W., 2002b, The Impact of Mergers and Acquisitions on Company Employment, *European Economic Review*, 46: 31-49.
- Davies S.W., Lyons B.R., 1991, Characterising relative performance: the productivity advantage of foreign-owned firms in the UK, *Oxford Economic Papers (new series)*, 43: 584-595.
- Doms M., Jensen B.J. 1998, *Comparing Wages, Skills, and Productivity between Domestically and Foreign-Owned Manufacturing Establishments in the United States*, in Baldwin R.E., Lipsey R.E., Richardson J.D. (eds.), *Geography and Ownership as Bases for Economic Accounting*, Studies in Income and Wealth, 59, 235-255.
- Driffield N., 1999, Indirect Employment Effects of Foreign Direct Investment into the UK, *Bulletin of Economic Research*, 51(3): 207-221.
- Driffield N., 1996, *Global Competition and the Labour Market*, Harwood: Reading.
- Dunning J. 1985. The United Kingdom. In *Multinational Enterprises, Economic Structure and International Competitiveness*, ed. John Dunning (Chester: John Wiley).
- Girma S., Greenaway D., Wakelin K., Sousa N., 2000, *Host country effects of FDI in the UK: recent evidence from firm level data*. In Pain N. (2000), (ed.), *Inward Investment, Technological Change and Growth: The Impact of Multinational Corporations on the UK Economy*. Palgrave Press.
- Globerman S. 1975. Technological diffusion in the Canadian tool and dye industry, *Review of Economics and Statistics*, 57(4): 428-444.
- Globerman S., Ries J.C., Vertinsky I. 1994. The Economic Performance of Foreign Affiliate in Canada, *Canadian Journal of Economics*, 27(1): 143-156.
- Gorg H, Greenaway D. 2001, Foreign Direct Investment and intra-industry Spillovers: a Review of the Literature, Research Paper 37, Globalisation and Labour Market Programme, University of Nottingham
- Görg H., Strobl E., 2001, Multinational companies and productivity spillovers: A meta-analysis, *Economic Journal*, 111:723-739.
- Görg H., Strobl E. 2000. Multinational Companies and Indigenous Development: An Empirical Analysis, *Centre for Research and Globalisation and Labour Markets*, Research Paper 22.
- Haddad M., Harrison A. 1993. Are There Positive Spillovers from Direct Foreign Investment?, *Journal of Development Economics*, 42: 51-74.
- Hall B.H. 1987. The Relationship between Firm Size and Firm Growth in the US Manufacturing Sector, *Journal of Industrial Economics*, 35.
- Hanson G.H. 2001. Should Countries Promote Foreign Direct Investment?, G-24 Discussion Paper Series, N. 9.
- Lichtenberg F.R., Siegel D. 1992. Productivity and Changes in Ownership of Manufacturing Plants. In Lichtenberg (ed.), *Corporate Takeovers and Productivity*. MIT Press: Cambridge.
- Lichtenberg F.R., Siegel D. 1987. Productivity and Changes in Ownership of Manufacturing Plants, *Brookings Papers on Economic Activity*, 3

- Lipsev R.E. 2002, Home and Host Country effects of Foreign Direct Investment, Conference on "Challenges to Globalisation, 24-25 May 2002, Lidingo, Sweden
- Mariotti S., Mutinelli M. 2002. *L'internazionalizzazione della produzione: un confronto tra Italia e principali Paesi industrializzati*. In Galli G., Paganetto L. (a cura di), *La competitività dell'Italia Vol. II: Le imprese*, Milano: Il Sole 24 Ore, 2002.
- McGuckin R.H., Nguyen S.V. 2001. The Impact of Ownership Changes: A View from Labour Markets, *International Journal of Industrial Organisation*, 19: 739-762.
- McGuckin R.H., Nguyen S.V., Reznick A.P. 1995. The impact of ownership change on employment, wages and labour productivity in US manufacturing 1977-87, *Center for Economic Studies, US Bureau of Census*, 95-8.
- OECD. 1996. *Globalisation of Industry*. Paris.
- UNCTAD. 2000. *World Investment Report 2000: Cross-border Mergers and Acquisitions and Development*. New York and Geneva: United Nations.
- UNCTAD. 2001. *World Investment Report 2001: Promoting Linkages*. New York and Geneva: United Nations.
- UNCTAD. 2002 *World Investment Report 2002: Transnational Corporations and Export Competitiveness*. New York and Geneva: United Nations