

## **The impact of FDI on growth, employment and inequality: the Argentine experience<sup>1</sup>**

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Argentina was one of the main destinations for inward foreign direct investment (FDI) flows in the developing world during the 1990s. Between 1992 and 2001 more than U\$S 76 billion arrived to the country. Nearly 2/3 of these inflows comprised takeovers of public firms (privatizations) and private companies.

FDI came mainly from the United States and some European countries such as Spain, France, Italy, the Netherlands, Germany and the United Kingdom. There were, however, also some major inflows from Chile and, to a lesser extent, from Brazil. The oil industry attracted one-third of FDI inflows between 1992 and 2000, while the manufacturing industry received around 22 per cent of those inflows. The rest went into services, in privatizations –e.g., communications, electricity and gas supply- and also into banking, the retail trade, etc.

As a result of the massive arrival of FDI, the presence of Transnational Corporations (TNCs) in Argentina's economy, which was already large, expanded substantially. The number of TNC affiliates among the 500 Argentine leading firms increased from 219 in 1993, to 318 in 2000 and to 340 in 2003. Their share in total production value augmented from 60 per cent to 79 per cent and to 82 per cent in the respective years (estimations on the basis of INDEC's data).

The FDI boom took place during a period of deep structural reforms that comprised trade and capital accounts liberalization, a large-scale privatization program and ambitious deregulations in different markets. Jointly with structural reforms, in early 1990s the Convertibility Plan –a currency board scheme- was adopted, which succeeded in getting price stabilization after many failed attempts in the 80s.

Between 1991 and 1998 the economy grew at an annual rate of 6%, investment increased from 14.6% to 21% of GDP and exports doubled, although imports grew at faster rates than exports (the former from 4% to 10% and the latter from 6% to 9% of GDP, being the resulting trade deficits financed via foreign capital). However, since late 1998 growth stopped and the economy entered into a long recession that ended in the worst crisis in the country's history in 2001-2002.

Structural reforms cum price stabilization were expected to induce a strong entrepreneurial response –which would materialize in new investments, technological modernization and productivity increases- and improvements in welfare and resource allocation efficiency due to trade liberalization. However, even during the growth phase, some unexpected –at least from the point of view of the reformers- problems began to appear, notably, growing unemployment<sup>3</sup>, income inequality and poverty –which obviously aggravated after 1998-<sup>4</sup>.

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<sup>3</sup> Unemployment reached almost 20 per cent of the labor force in 1995.

Furthermore, the positive impacts from structural reforms were not as large as expected by the government. As seen above, exports growth was not enough as to match import increases. Although investment rates increased *vis a vis* the 80s, between 1991 and 2001 it only reached an average of 18.5 of the GDP. Productivity gains existed but they were concentrated in some sectors and business firms (see FIEL, 2002). In this regard, since most SMEs had serious competitiveness problems and were generally more exposed to market failures in fields such as finance, technology, information, and others, they find it hard to adapt to the new scenario. Many of them went bankrupt, while others lost market share, had to retreat to the lower end of their respective markets, sold their businesses and/or became importers (Gatto and Yoguel, 1993; Yoguel, 1998).

In this scenario, it is relevant to ask about the impact of FDI on the evolution of some of the key variables through which the outcomes of the reforms' process are usually evaluated. In fact, FDI has been often mentioned as a source of some of the problems that arose during the last decade (e.g. unemployment). At the same time, FDI was expected to have a positive influence on Argentina's economy competitiveness, through its contribution to productivity gains, technological modernization and export capabilities.

Foreign firms usually have ownership advantages (Dunning, 1993) that allow them to successfully compete with local firms in the host markets where they invest. Ownership advantages may arise, among other sources, from access to state of the art technologies that make possible to compete through new products and processes of production as well as from the possession of superior organizational, productive, managerial and/or marketing (including brands) capabilities.

Foreign firms' advantages should be reflected in their productivity record and in their innovative capabilities to launch new products and processes of production in the market where they compete. Unless they invest only to serve the internal market where the affiliate is located, those advantages should also be reflected in TNCs affiliates' export performance. In this connection, the deployment of international production and trade systems controlled by TNCs should impact the export performance of their affiliates, since those affiliates could participate in those systems as suppliers of certain products or components to the parent company or other affiliates and as recipients of inputs and products from them.

Hence, it is expected that FDI could have a number of direct effects on host countries. The received literature has aimed at analyzing these effects in a number of areas (such as productivity, foreign trade, employment, etc.), a task which is often undertaken comparing foreign firms' performance *vis a vis* domestic firms' (Barba Navaretti and Venables, 2004). To deal with this issue we need to go beyond averages' comparison, and employ econometric techniques that allow controlling for observable and unobservable firm characteristics in order to isolate the effects of the ownership status. Hence, in comparing foreign and domestic firms, the focus is on understanding whether foreign ownership *per se* explains differences in performance.

FDI could also have indirect effects on host countries, mainly through the impact of TNCs presence on domestic firms' performance. These effects are usually called spillovers, an issue that has been extensively addressed in the received literature, especially in relation

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<sup>4</sup> 29.3 per cent of the population was below the poverty line in Greater Buenos Aires in 2000, a figure that escalated to a historic peak of 52 per cent in 2002 (Household Permanent Survey). In turn, the Gini coefficient in Greater Buenos Aires increased from 47.4 in 1999 to 50.7 percent in 2002.

with productivity. The analysis of the indirect effects from FDI is very relevant since it aims at understanding how the presence of TNCs affects the behavior of local firms, which are the bulk of the business sector in almost all countries.

In this paper both the direct and indirect effects from FDI are analyzed through the use of econometric techniques. To undertake this task, we focus on firms that were taken over by TNCs in Argentina during the 90s. By concentrating on takeovers our findings make a distinctive contribution to the literature on the subject. Then, the taken over firms are our treatment group. The firms that remain in domestic hands are our control group, because we assume that they mimic a “counterfactual” scenario –that is, they allow us to know what would have happened to taken over firms if they would not have been acquired by foreign buyers. Given data availability, research is concentrated in the manufacturing sector. The impact areas which are analyzed are productivity, innovation, trade, employment and wages<sup>5</sup> –in the latter case, a different approach is employed to study the effects of FDI, since we have no data on wages at the firm level (see section 7)-.

Our original idea was to distinguish FDI from different rich countries in order to analyze whether their respective policies towards outward FDI could have had an influence on the FDI impacts in Argentina (see Moran, 2005). As long as we start working deeply on that issue, we realized that this approach had strong limitations, since the impacts of FDI are mostly dependent on the strategies followed by the subsidiaries and on the specific conditions and policies in force in the host countries, and could not be directly related to the policies on outward FDI in the respective home countries. Hence, we decided to focus on the general impact of FDI in Argentina.

Section 1 presents the basic data and descriptive statistics of the database employed to undertake that analysis. Section 2 deals with the estimation strategy and econometric analysis. Next we report the results of our research on employment (section 3), productivity (section 4), trade (section 5) and innovation (section 6). Then, in section 7 the impact of FDI on wages and wage inequality is analyzed using data from the Permanent Household Survey. Section 8 concludes.

## **1. Basic data and descriptive statistics**<sup>6</sup>

Data from two innovation surveys are available for this project. The first survey covered the period 1992-96 and included 1639 firms (INDEC-SECYT, 1998). This sample represented 53% of sales, 50% of employment and 61% of exports of the manufacturing industry in 1996. The second survey covered the period 1998-2001 and included 1688 firms (INDEC-SECYT-CEPAL, 2003) which represented 65%, 42% and 80% of sales, employment and exports in 2001, respectively<sup>7</sup>.

Both samples were drawn from the National Economic Census of 1993 and from the Input-Output Matrix survey of 1997, respectively. They intended to be representative samples of the manufacturing industry at the beginning of the periods they covered. Furthermore,

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<sup>5</sup> We had analyzed some of these issues in previous studies (Chudnovsky and López 2001 and 2002, Chudnovsky et al, 2006a and b). The novelty of the present contribution *vis a vis* those studies is the concentration on takeovers and, in some cases, the use of more rigorous econometric techniques.

<sup>6</sup> In this section we describe the data and descriptive statistics employed in the analysis of the following variables: employment, productivity, trade and innovation. Data used to analyze inequality issues is described in the respective section.

<sup>7</sup> Response rates reached 70% and 76%, in the first and second surveys, respectively.

since the samples of firms considered in each survey were obtained from two different sources, innovation surveys in Argentina form a rotating panel and the decision to sample firms in both surveys may be safely regarded as being random.

Both surveys provide information on most of the issues discussed above. Ownership, sales, employment, labor quality, exports, imports, investment in capital goods, innovation activities and product and process innovations data (among others) are available for the years 1992, 1996, 1998 and 2001. Unfortunately, no data is available on the stock of capital of each firm, on wages<sup>8</sup> and hours worked.

As one of our aims was to work with the firms that were taken over after 1992 and with the always domestic-owned firms (see below), we did not include in the sample the firms that were always foreign-owned during the period. Following that criteria, we dropped 129 always foreign-owned firms that appeared in both surveys, 80 always foreign-owned that only appeared in the first survey and 112 always foreign-owned that were included only in the second survey. We also dropped 20 foreign firms which were acquired by domestic investors during the period under analysis.

Moreover, to process the survey's data we excluded from our sample,

- Firms with no sales.
- Firms with less than 5 employees.
- Firms with only one observation of the variables of interest in the four years.
- Firms that do not declare nationality.

After having made this procedure, the sample was finally composed by 700 firms that appeared in both surveys, 633 firms that only appeared in the first survey and 562 firms only included in the second survey. Table 1 shows the sectoral distribution of the firms in the sample.

**TABLE 1. Sectoral distribution of the firms in our sample**

	1992		1996		1998		2001	
	All firms	F-T	All firms	F-T	All firms	F-T	All firms	F-T
Food & beverages	319		319	20	265	13	265	16
Tobacco					5		5	
Textile & apparel	125		125	3	119	2	119	3
Clothing	47		47		44		44	2
Leather & footwear	29		29	2	40	1	40	3
Wood & wood products & cork processing, except furniture	41		41		32		32	1
Pulp, paper & paper products	32		32	3	35	2	35	2

<sup>8</sup>. For wages data we use the ongoing household survey. This survey is representative of the urban population -the relevant group in this study- and is available on a two waves per year basis since 1990.

Publishing & printing	63	63	70	1	70	4	
Petroleum	7	7	5		5		
Chemicals	89	89	12	88	4	88	7
Rubber & plastics	69	69	2	85	2	85	4
Non-metallic minerals	61	61	3	65	5	65	6
Steel & aluminum	49	49	2	38	2	38	3
Metal products, except machinery & equipment	70	70	3	69	3	69	4
Machinery & equipment	124	124	5	105	3	105	5
Computer & office equipment	2	2		2		2	
Electrical machinery & apparatus	54	54	3	43	1	43	1
Radio, TV & communication equipment	15	15		14		14	2
Medical, precision & optical instruments	18	18		19		19	
Automotive & transport equipment	55	55	9	46	7	46	8
Other transport equipment	20	20		28		28	
Manufacture of furniture & other industrial activities	44	44		45		45	
<b>Total</b>	1333	1333	69	1262	46	1262	71

Regarding the size of the firms in 1992, the sample was composed by 30.8% of firms with less than 40 employees, 44.6% with more than 40 and less than 200 employees and 24.6% with more than 200 employees.

In Table 2 we present some basic performance indicators that have been estimated for all firms included in both innovation surveys (INDEC-SECYT-CEPAL, 2003). This allows us to clearly distinguish contrasting trends between both periods covered by those surveys. While in 1992-96 all performance indicators show relevant upward trends (except employment), the impact of the recession is clearly visible in 1998-2001, when only exports grow. The first period is one of booming labour productivity (measured as the ratio between sales<sup>9</sup> and employment) whereas the second shows a stagnating trend in that variable.

**TABLE 2. Performance indicators of the firms included in the Innovation Surveys**

Indicators	1992-1996	1998-2001
Sales	35.5	-8.6

<sup>9</sup>. Only sales of goods produced by the firms are included (i.e., re-sales of third-party products are excluded).

Exports	87.6	13.4
Imports	55.6	-28.6
Gross investment	66.9	-48.5
Employment	-5.9	-8.0
Capital goods imports	70.3	-54.4

## **2. Econometric analysis**

For the study of the impact on employment, labor productivity, trade and innovation, our objective is to estimate the effect of foreign takeover on the firms' performance<sup>10</sup>. In principle, we would like to compare the performance of firms that changed ownership with the counterfactual- i.e., the performance of the same firm that remained under domestic control. Since the counterfactual is never observed and we do not have a controlled randomized-trial, we are forced to turn into non-experimental methods that mimic the counterfactual under reasonable conditions.

We propose to use the always domestic-owned firms during the period of analysis as control group for the firms that were taken over by foreigners. A major concern is that firms that were domestic before the foreign takeover could have been different from firms that have always been domestic during the period of analysis and that these differences may be correlated with their performances.

In principle, many unobservable characteristics that may complicate comparison are those that vary across firms but are fixed over time. A common method of controlling for time invariant unobserved heterogeneity is to use panel data and estimate difference-in-differences<sup>11</sup> models. We use this identification strategy, and hence, compare the change in outcomes in the treatment group, i.e. the firms that were taken over by foreign investors to the change in outcomes in the control group, i.e. the always domestic-owned firms during the period. By comparing changes, we control for observed and unobserved time invariant firms characteristics as well as for time-varying factors common to both controls and treatments that might be correlated with foreign takeover as well as with firms' performance. The change in the control group is an estimate of the true counterfactual— i.e. what would have happened to the treatment group if there were no foreign takeover. Another way to state this is that the change in outcomes in the treatment group controls for fixed characteristics and the change in outcomes in the control group controls for time varying factors that are common to both control and treatment firms.

Formally, the difference-in-differences model can be specified as a two-way fixed effect linear regression model. We estimate it for six dependent variables: employment, productivity, exports, imports, the probability of introducing a new (or improved) product and/or process innovations and total R&D expenditures,

All estimates (in constant prices) are presented initially for the whole sample. Then, the estimation strategy is repeated for two different samples. A first one considers only the firms included in both surveys, which is referred to as “balanced sample”. The comparison

<sup>10</sup>. The methodology employed in the analysis of wages is described in the respective section.

<sup>11</sup>. Difference-in-differences methods compare a treatment and a comparison group (first difference) before and after the intervention (second difference).

of the results between this sample and the whole sample checks for the possible bias induced by firm attrition in our sample. A second one is a restricted sample in a way that the treatment and control firms are similar in labor productivity in 1992. By restricting the sample to firms with similar characteristics we try to ensure that they are subject to the same external influences and have the same capabilities to react to them. This “matched sample” is restricted to firms whose labor productivity is in the common support of the distribution of labor productivity for treated and control firms. To implement this, we drop firms with labor productivity lower than the one at the bottom of the distribution of the treated firms and higher than the one at the upper of the distribution of the treated firms<sup>12</sup>.

In order to evaluate the impact of foreign takeover on employment, labor productivity, trade and innovation, we will estimate the following equations using panel data on firms of the form:

$$Y_{ijt} = \alpha_0 + \varphi_1 \text{Foreign}_{ijt} + \gamma Z_{ijt} + \text{SectoralTrend}_{jt} + c_t + \mu_i + \varepsilon_{it} \quad (1)$$

Where

$Y_{ijt}$ : employment, labor productivity, trade and innovation variables in firm  $i$ , in sector  $j$  in period  $t$ .

$\text{Foreign}_{ijt}$ : this is the explanatory variable of interest. It is a dummy defined as 1 if at least 10 percent of the equity is foreign owned of firm  $i$  in sector  $j$  in period  $t$ <sup>13</sup>. Therefore, if the presence of foreign capital increases  $Y_{ijt}$  at the firm level, we would expect  $\varphi_1$  to be positive.

$Z_{ijt}$ : firm specific control variables depending on the issue.

$\text{Sectoral Trend}_{jt}$ : in this specification, we can include trends per sector. This is very important since it will control for other things that are affecting  $Y_{ijt}$  in each sector and will avoid confounding those effects with the effect of FDI.

$c_t$ : we have included time dummies to control for unobservable effects that could have affected all firms in the same way over time.

The parameter of interest is  $\varphi_1$ . It measures the effect of change in  $Y_{ijt}$  after the firm was acquired respect to domestic firms. The specification in equation (1) assumes that the foreign takeover affects  $Y_{ijt}$  immediately and that the effect is constant over time. However, it may take time to implement organizational and technological changes in the acquired firm and therefore the impact of a foreign takeover may be stronger as time passes. If the impact of a foreign takeover on employment is cumulative, then test scores should be correlated with the length of exposure to the treatment.

In order to capture the length of exposure, we estimate a more flexible version of equation (1):

<sup>12</sup>. As the question about introducing a new (or improved) product and/or process is answered only once in each survey (since it refers to the whole period under analysis in each case), we do have to work only with the balanced sample.

<sup>13</sup>. Following the criterion used by the International Monetary Fund and applied in the Argentine FDI statistics, it is considered as *foreign* a firm in which non resident investors own more than 10% of its equity capital.

$$Y_{ijt} = \alpha + \varphi_{1s} \text{Foreign}_{ijt} * \text{Years}_s + c_t + \mu_i + \varepsilon_{ijt} \quad (2)$$

where  $s$  indexes the number of years firm  $i$  in sector  $j$  has been under foreign control in year  $t$ ,  $s=4$  is assigned to the firms acquired between 1992 and 1996 at year 1996,  $s=6$  is assigned to that firm at year 1998 and  $s=9$  at 2001. We follow the same procedure for the firms acquired since 1996<sup>14</sup>.

Next, we focus our analysis on the identification of spillovers in domestic firms on the basis of the methodology generally used in the received literature.

$$Y_{ijt} = \alpha_0 + \varphi_1 \text{Foreign}_{ijt} + \varphi_2^{H,B} \text{sfdi}_{jt}^{H,B} + \gamma Z_{ijt} + \text{SectoralTrend}_{jt} + \mu_i + \varepsilon_{it} \quad (3)$$

Where

$\text{sfdi}_{jt}$ : is the variable that captures the spillovers from foreign takeover. We explore the possibility of intra-sectoral (Horizontal) and inter-sectoral (Backward) spillovers.

$\text{Horizontal}_{jt}$  captures the foreign presence at a sectoral level. It is measured by the ratio between the sales by foreign firms in a particular sector and the total sales of the sector<sup>15</sup>. It is defined in the following way:

$$\text{Horizontal}_{jt} = \frac{\sum_j \text{Sales}_{ijt} * I(\text{ForeignFirms} = 1, \text{DomesticFirms} = 1)}{\sum_j \text{Sales}_{ijt}}$$

being  $I(\phi)$  a function which is equal to 1 if the condition  $\phi$  is met (which, in this case, is  $\text{OWN} > 10\%$ ). Therefore, if the foreign presence generates positive (negative) spillovers on domestic firms in the same sector (horizontal spillovers),  $\varphi_2^H$  will be positive (negative).

$\text{Backward}_{jt}$  is a proxy for the foreign presence in the industries that are being supplied by the sector to which the firm in question belongs. Backward spillovers were measured for every sector using the weighted average of the foreign presence in all the other sectors and the technical coefficients from the Input-Output Table of 1997<sup>16</sup>.

In brief, the parameters of interest are the  $\varphi_1$  and  $\varphi_2$ , which enable us to test whether:

- Firms taken over by foreign investors show higher  $Y_{ijt}$  than domestic firms. Requires evaluating if  $\varphi_1 > 0$ .

<sup>14</sup>. Due to space restriction, tables containing these estimations are available upon request. However, we report the respective results.

<sup>15</sup>. We also calculated an alternative measure based on the foreign presence on sectoral employment. As the results of the estimations were similar to those obtained with the sales measure, we do not report them here.

<sup>16</sup>. For example, assume that the orange producers sell half of their output to marmalade producers and half to orange juice producers. If there are no TNCs in the marmalade industry but 60% of total employees working in the juice sector belong to TNCs, the *BACKWARD* variable will be calculated as  $(0.5*0) + (0.5*0.6) = 0.3$ .

- If domestic firms receive  $Y_{ijt}$  spillovers from TNCs activities. Requires testing if  $\varphi_2^H > 0$  and/or  $\varphi_2^B > 0$  respectively.

### **3. Employment**

Our analysis is divided in two parts. First we evaluate whether takeover firms employ less labor than domestic firms. Second, we analyze whether FDI presence affects the skill composition of labor at the firm level. In both steps of the analysis, we will test whether foreign presence generates spillover effects on domestic firms.

#### **3.1 Conceptual framework and previous studies**

Economic theory does not suggest a unique impact of FDI on total employment. Dicken (2003) points out that the overall employment effect of TNCs in host economies depends upon the balance between job-creation and job-displacing forces. On one hand, the jobs created could be direct and/or indirect -in linked firms (e.g. suppliers, clients), which are often domestically owned-. The number of direct jobs created in a particular TNC plant will depend upon the scale of its activities and the technological nature of the operation, particularly on whether it is capital-intensive or labor-intensive. Whereas the number of indirect jobs created will also depend upon the extent of local linkages forged by the TNC with domestic firms, and the amount of income generated by the TNC and retained within the host economy. On the other hand, domestic enterprises may be squeezed out by the size and strength of foreign branch plants while new firm formation may be inhibited. In this case, TNCs may displace existing or potential jobs in domestic enterprises.

The empirical evidence on the FDI net effect on employment is limited and ambiguous (Taylor and Driffield, 2005). In a recent study Banga (2005) finds that lagged FDI in India did not have a significant impact on its industrial employment. The fact that FDI has mainly entered into capital-intensive industries like chemicals, automobiles, pharmaceuticals, etc may be a plausible reason on why it did not have an employment enhancing effect.

As regards the skill composition of labor at the firm level, Barba Navaretti and Venables (2004) point out that the evidence available for whether TNCs employ more skilled workers than do local firms in host countries is not conclusive and fails to provide clear-cut answers. According to the theory, the relative demand for skilled labor depends on the factor intensities of the home and host activities of the TNCs and on the relative factor endowments of host and home countries. One pattern that emerges from studies using industry-level data is that the gap in skill intensity between TNCs and national firms is larger in developing countries, like Mexico, than in advanced countries, like the US (Feenstra and Hanson, 1997; Blonigen and Slaughter, 2001).

#### **3.2 Econometric analysis**

To estimate equations (1), (2) and (3), we divide our analysis in two parts. First, our dependent variable is the total employment. Then we concentrate on the skill composition of total employment. Hence, our dependant variable is the ratio between skilled and total employees. Total sales and investment in capital goods per employee are our firm specific control variables in this case.

### 3.3 Main results

The findings for total employment are as follows:

- The coefficient of the variable *Foreign* is not statistically significant. This result is robust to a series of alternative specifications and firm-level controls (Table A1.1).
- The coefficient of the interaction term of *Foreign* dummy with the years since the firms were acquired is not significant.
- The regressions do not show significant coefficients on the measure of horizontal and backward spillovers (Table A1.2).

The findings for the share of skilled workers in total employment are as follows:

- The coefficient of the variable *Foreign* is positive and statistically significant, suggesting that, *ceteris paribus*, the share of skilled workers in total employment increased after the firm was acquired as compared with domestic firms. The share is estimated to increase 19.8 percent as a result of firm denationalization.<sup>17</sup> These results are robust to a series of alternative specifications and firm-level controls (Table A1.3).
- The coefficient of the interaction term of *Foreign* dummy with the years since the firms were acquired was positive and significant. This shows that the increase seems to be gradual.
- We did not find any evidence of horizontal or backward spillovers on the share of skilled workers in total employment (Table A1.4).

In synthesis, we find evidence that a foreign takeover does not have either a direct or an indirect impact on total employment. This is an important finding in itself and in relation to the impact of FDI on inequality (see below).

As regards the skill composition, we find a positive impact on the share of skilled workers on total employment. Like in Feenstra and Hanson (1997) and Blonigen and Slaughter (2001), our results confirm the hypothesis that there exist a gap in skill intensity between TNCs and national firms.

## 4. Productivity

### 4.1 Conceptual framework and previous studies

When it comes to the question about whether differences in performance attributable to foreign ownership, studies employing econometric techniques find evidence that foreign ownership improves performance, but the effect becomes much weaker and in some cases is not significant as compared with the findings of previous studies that simply compared averages (Barba Navarreti and Venables, 2004). This means that these previous studies wrongly attributed to foreign ownership an impact that was partly due to other factors such as size, sector, etc.

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<sup>17</sup>.  $\text{Exp}(0.178)-1=0.198$

Regarding the question about how the presence of FDI affects local firms, since foreign firms are not always able to reap all the benefits associated with their ownership advantages, different kinds of positive spillovers for domestic firms may arise:

a) TNCs affiliates usually are more productive than the local firms with whom they compete. Thus, horizontal or intra-sectoral spillovers may appear when domestic firms are induced to increase their productivity or improve the quality of their products by reorganizing their businesses, increasing their innovative efforts and/or acquiring machinery, equipment and disembodied technologies. Sometimes, knowledge leakages (in areas such as work process organization, product design, marketing, etc.) that can help domestic firms to enhance their productivity levels may arise from the presence of TNCs, although the latter have an incentive to prevent these spillovers (Kugler, 2000).

b) Contrary to the above case, TNCs affiliates may have an incentive to promote vertical or inter-sectoral spillovers. The diffusion of knowledge across sectors could benefit them to the extent that it helps their clients and/or suppliers to increase their productivity and become more competitive and efficient. For instance, TNCs may provide technical and marketing assistance, information, training, etc. to their suppliers contributing to generate positive spillovers. Furthermore, it has been argued that affiliates established through acquisitions are likely to source more locally than those taking the form of green field projects. While the latter have to put time and effort in developing local linkages, the former can take advantage of the supplier relationships of the acquired firm (Javorcik, 2004)

But not only positive spillovers may arise from TNCs presence. Foreign affiliates could also lead to negative horizontal spillovers when domestic firms are forced to reduce their production –causing lower productivity in their establishments if they are operating with high fixed costs-, or even to exit the market, as a result of the increasing presence of TNCs (Aitken and Harrison, 1999). Negative vertical spillovers may also appear when, for instance, domestic suppliers are displaced from the market as a consequence of the affiliates' bias in favor of foreign suppliers.

An important conceptual consideration must be made at this point. If FDI spillovers are associated with knowledge leakages, then speaking about negative spillovers has no sense (since we would be forced to assume that domestic firms reduce their productivity because of those leakages). However, if FDI spillovers include the effects derived not only from technological and geographical proximity but also from TNCs competition in the product market with domestic firms it is possible to consider the possibility of negative spillovers.

Most recent studies on spillovers, which are mostly based on panel data and applying the mentioned approach, either failed to find a significant effect or find negative horizontal spillovers<sup>18</sup>; in some cases, positive spillovers are found only for certain groups of local firms (these studies typically divide local firms according to their productivity gaps with foreign ones, their absorption or innovative capabilities or other factors). Although very few studies have been carried out on vertical spillovers, they have started to provide evidence of positive FDI spillovers through backward linkages -see especially Javorcik (2004) and Blalock and Gertler (2005)-.

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<sup>18</sup>. For surveys of the literature on spillovers from FDI see Gorg and Strobl (2001), Gorg and Greenaway (2002) and in Chudnovsky *et al* (2006b).

## 4.2 Econometric analysis

We estimate equations (1), (2) and (3) in which the logarithm of the ratio of total sales<sup>19</sup> deflated by sectoral price indexes of the firm  $i$  operating in the sector  $j$  in period  $t$  and the total number of employees is the dependent variable<sup>20</sup>.

In this case, the ratio between skilled employees and total employees and investment in capital goods per employee are included as controls of firm characteristics on labor productivity.

## 4.3 Main results

The findings are as follows:

- The coefficient of the variable *Foreign* is positive and statistically significant, suggesting that, *ceteris paribus*, labor productivity increased after the firm was acquired as compared with domestic firms. Labor productivity is estimated to increase 18 percent as a result of firm denationalization<sup>21</sup>. These results are robust to a series of alternative specifications and firm-level controls (Table A1.5).
- The coefficient of the interaction term of *Foreign* dummy with the years since the firms were acquired was positive and significant. This shows that the increase in productivity has been gradual over time.
- Horizontal and backward spillovers do not appear to be statistically significant (Table A1.6).

## 5. Foreign trade

### 5.1 Conceptual framework and previous studies

As regards the impact of FDI on exports, there are relatively few works on that issue (see Gorg and Greenaway, 2004, for a summary). Some studies find that TNCs export more than domestic firms (see Kneller and Pisu (2004) –United Kingdom- and Roper and Love (2001) –for Ireland and North Ireland-). In contrast, we have found no studies for developed countries showing that TNCs import more than domestic firms.

If we concentrate our attention in research for developing countries, there are some studies worth of interest. Moreira (1999) carries out an econometric exercise, involving both exports and imports, for the base-year 1997 in the Brazilian economy. Controlling for sectors and firms' size, the exports of foreign companies are, on average, 179% higher than those of domestic companies, while in the case of imports, the corresponding figure is 316%. In the same line, Pinheiro and Moreira (2000) find that foreign-owned firms are more likely to export and that the expected value of their exports is 32% higher than that of domestic firms. In the case of imports, De Negri (2003) finds that foreign firms in Brazil import a 290% more than domestic firms. Aitken *et al* (1997) use panel data of 4.148

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<sup>19</sup>. Excluding sales of goods produced by third parties.

<sup>20</sup>. Although it would be preferable to use the ratio between total sales and the total numbers of hours worked as the productivity variable, as already mentioned the latter information is not available in the innovation surveys.

<sup>21</sup>.  $\text{Exp}(0.1648)-1=0.1792$

Mexican manufacturing firms between 1986 and 1990, and find that TNCs export significantly more than the domestic ones. Bittencourt *et al* (2006) also find that foreign firms have a higher propensity to export and import than domestic firms in Uruguay.

Additionally, TNCs can affect domestic firms export behavior through three main channels<sup>22</sup>: export information externalities, demonstration effects and competition effects. Firstly, export information externalities occur when the domestic firms learn from TNCs about the foreign markets because of easier access to information possessed by the subsidiaries. Secondly, domestic firms can benefit through processes of demonstration and imitation of new technologies and management techniques, which may encourage their exports. This is referred to as demonstration effects. Finally, there are competition effects when the presence of foreign firms induces domestic firms to improve their export performance, because of the increased competition.

As regards empirical studies on spillovers, some studies find positive effects (Aitken *et al* (1997) –México-, Greenaway *et al* (2004) –United Kingdom-, Alvarez (2005) –Chile-, Kokko *et al* (2001) -Uruguay-), but others do not find evidence of them (Barrios *et al* (2001) –with a panel of Spain firms -). More recent studies also show divergent results. Bittencourt *et al* (2006), using panel data, do not find horizontal spillovers from TNCs presence on the trade performance of domestic firms in Uruguay. Hiratuka and Dias de Araujo (2006) find that spillovers exist but their magnitude is mostly small and their signs differ according to the productivity levels of domestic firms.

## 5.2 Econometric analysis

For firm  $i$  in sector  $j$  and period  $t$ , we estimate equations (1) and (2) for four dependent variables:

$Ex_{ijt}$ : exports deflated by sectoral price indexes or exports intensity (i.e. exports as share of total sales) of the firm  $i$  operating in the sector  $j$  in period  $t$ .

$Mx_{ijt}$ : imports deflated by sectoral price indexes or imports intensity (i.e. as share of total sales) of the firm  $i$  operating in the sector  $j$  in period  $t$ .

To identify if domestic firms receive export spillovers from TNCs activities, we use the methodology presented for equation (3). In this case, size and labor quality are the controls.

## 5.3 Main results

The findings are as follows

- In the case of exports, the coefficient of the variable *Foreign* is positive and statistically significant, suggesting that the amount of exports increased after the firm was acquired respect to domestic firms. These results are robust to a series of alternative specifications and along the samples. In particular, the direct increase in the amount of exports due to a foreign takeover in the manufacturing sector is approximately 216

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<sup>22</sup>. See Greenaway *et al* (2004).

percent<sup>23</sup>. In the case of imports, the positive coefficient is significant only in the whole sample. In this case, the increase is nearly 146 percent<sup>24</sup> (Table A1.7).

- When analyzing export intensity, the coefficient of the variable *Foreign* is positive and statistically significant, suggesting that the export intensity increased after the firm was acquired. These results are strongly robust to a series of alternative specifications and firm-level controls. The direct increase in the export intensity due to a foreign takeover in the manufacturing sector is approximately 32 percent<sup>25</sup>. In the case of imports, the positive coefficient is always significant, except in the matched sample. In this case, the increase is nearly 36 percent<sup>26</sup> (Table A1.8).
- The coefficient of the interaction term of *Foreign* dummy with the years since the firms were acquired was positive and significant for the exports, exports and imports intensity. This shows that increases in those variables seem to be gradual.
- We find that intra and inter-sectoral spillovers do not appear to be statistically significant on the amount of firms' exports and export intensities (Tables A1.9 and A1.10).

Summing up our findings, while as expected foreign affiliates have a greater propensity to export and import than domestic firms, the latter receive no positive spillovers from the greater access of TNCs to foreign markets.

## **6. Innovation**

### **6.1 Conceptual framework and previous work**

The TNCs concentrate more than a half of the world expenditures in R&D and more than two thirds of private R&D expenditures. Although TNCs have traditionally located R&D activities in their headquarters, and eventually in other industrialized countries, in the last years it has been observed a decentralization of those activities to Asia, and, to a lesser extent, to some Latin American countries, specially Brazil (UNCTAD, 2005)

This issue is relevant as long as the recent literature trends to suggest that the increase in productivity and competitiveness in developing countries depends not only in the incorporation of imported modern technologies, but also on the development of local systematic efforts in R&D (Lederman and Maloney, 2003).

Compared with the substantial research on the globalization of R&D by TNCs among developed countries, there is relatively little empirical research on the R&D activities of TNCs in developing countries. Erdilek (2005), in a study for Turkey, finds that FDI has a positive role in the R&D activities in Turkish manufacturing sector but indicates that this impact is stronger in establishments with minority foreign ownership than in those with majority or full foreign ownership. By contrast, in a study for India, Kumar and Aggarwal (2000) find that foreign affiliates spend less in R&D than domestic firms. Srholec (2005) works with Czech data and finds that TNCs have less probabilities of carrying out R&D

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<sup>23</sup>.  $\text{Exp}(1.151)-1= 2.161$

<sup>24</sup>.  $\text{Exp}(0.901)-1= 1.462$

<sup>25</sup>.  $\text{Exp}(0.281)-1=0.324$

<sup>26</sup>.  $\text{Exp}(0.304)-1=0.355$

activities than domestic firms. The same finding appears in Jefferson *et al* (2002) for a panel of Chinese firms.

In the case of Brazil Laplane *et al* (2006) present several econometric exercises with cross-section data. They find that affiliates of TNCs spend in R&D less than domestic firms, after controlling for size, skills and export performance. Dias de Araujo (2005) finds the same result. These results do not mean that TNCs in Brazil innovate less than domestic firms. In fact, according to an innovation survey 68% percent of TNCs innovate, whereas only 30% of domestic firms do it. This means that foreign affiliates use the knowledge provided by their corporations for launching innovations to the market.

There are very few studies aimed at testing potential spillovers of TNCs R&D activities to domestic firms. In particular, our research question could be as follows: does the fact that TNCs carry out R&D activities increases the probability that domestic firms do the same? The results of Erdileck (2005) for Turkey support the indirect role of FDI in term of positive spillovers effect of foreign ownership on R&D activities of national establishments. In the case of Brazil, Laplane *et al* (2006) find that foreign presence affects positively the R&D efforts of domestic firms. However, the spillovers are relatively small. Araujo (2005) also finds positive spillovers (as he differentiates between domestic and foreign firms, per sector and levels of productivity, he also finds some special cases of negative spillovers).

## 6.2 Econometric analysis

Again, we divide our analysis in two parts. In the first one, we account for the innovation output in which  $Y_{ijt}$  is the latent variable for the intensity of the innovation output. Its observable counterpart is a dummy  $Y_{ijt}^1$  equal to one if the firm introduced new products or processes in  $t$  and zero, otherwise.

In this case, firm specific control variables include size, labor quality and expenditures in R&D and technology (e.g. capital goods, licenses, etc.). Equation (1), (2) and (3) will be based on the probability that innovation outputs are zero or positive. For estimation, we assume that (conditional on the regressors and the fixed effects) the probability of introducing a new (or improved) product and/or process innovations follows a logistic distribution. Under this assumption, we are specifying a conditional fixed effects logit model, which makes it possible to obtain parameter estimations without imposing any assumption about how the unobservable fixed effect  $\mu_j$  is related to the regressors.

In the second part, we estimate equations (1), (2) and (3) for the R&D expenditures.  $Y_{ijt}$  is the R&D expenditures deflated by sectoral price indexes or the intensity of R&D of firm  $i$  in sector  $j$  in period  $t$ . Here, our firm specific control variables are labor quality and size.

## 6.3 Main results

The findings are as follows:

- The coefficient of the variable *Foreign* is positive and, in general, statistically significant, suggesting that the probability of introducing a new (or improved) product and/or process innovations may have increased after the firm was acquired (Table A1.11).

- No horizontal spillovers on innovation outputs were found. In contrast, the regressions show a positive and significant coefficient on the measure of backward innovation linkages (Table A1.12).
- The coefficient of the variable *Foreign* is not statistically significant in the case of R&D expenditures, suggesting that they did not increase after the takeover (Table A1.13). Therefore, the estimates which reflect the interaction of R&D expenditures with the years since the firms were acquired are also not significant<sup>27</sup>.
- There is no evidence of horizontal or backward spillovers on R&D expenditures (Table A1.14).

While FDI does not seemingly have an impact on R&D expenditures, it increases the probability of launching innovations to the market. This is explained by the fact that foreign affiliates do not need to undertake R&D in Argentina since they can adopt new product or process technologies developed by their headquarters or by other affiliates of their corporations. The finding of positive vertical innovation spillovers suggests that in order to become a TNC supplier domestic firms need to upgrade their product and/or process technologies.

## **7. Wages and wage inequality**

According to Lipsey (2002, p.20), “it is rare to find a study on FDI and wages in any host country that does not find that foreign owned firms pay higher wages, on average, than at least privately owned local firms”. In addition, if foreign owned firms pay higher wages than domestic firms their presence might affect the level of wages in domestically owned plants. Such effects are referred to as wage spillovers to domestically owned plants. In theory, domestic firm wage effects from inward investment could take place whenever the supply curve for labor was not horizontal (i.e. there is no “industrial reserve army” of unemployed).

On the other hand, FDI could also generate some undesirable affects upon the labor market. In this sense, the role of FDI and TNCs in explaining raising wage inequality has received specific attention. However, the available evidence on this subject is scant.

Our analysis attempts to answer the following questions:

- i. Does FDI presence increase/decrease wages in Argentina’s manufacturing sector?
- ii. Does FDI have an impact on wage inequality?

### **7.1 Conceptual framework and previous work**

Beyond the possibility that TNCs employ higher skilled labor, there are other reasons why they might pay higher wages to identical workers (i.e. *ceteris paribus*). First, they would probably want to minimize the risk that their proprietary knowledge or cumulated firm-specific skills get dissipated through frequent labor turnover. Second, because of their limited understanding of local labor markets, TNCs might pay higher wages to attract better workers, while more knowledgeable local firms can identify and attract better workers without paying them higher wages. Finally, foreign firms may be more profitable

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<sup>27</sup>. We also found the same result in the case of total innovation expenditures.

than local firms and, as Blanchflower *et al* (1996) argue, wages can be positively correlated to profits, which is shown empirically for the case of Ghana (Söderbom and Teal, 2001).

For Gorg *et al* (2002), one explanation for the fact that foreign firms pay higher wages than their domestic counterparts may be the provision of on-the-job training. Under the assumption that training in foreign firms is more productive than training in domestic firms, workers receiving training in foreign firms experience higher wage growth than trained workers in domestic firms.

Regarding the impact of FDI on wages in developing countries, Barry *et al* (2001) argue that since FDI creates demand for skilled labor and hence raises wages for only that kind of labor, it leads to higher wage inequality in host countries. On the other hand, Gorg and Greenaway (2004) consider that when unskilled labor is either unemployed or underemployed, foreign firms may pay relatively higher wages (i.e., wages over and above opportunity cost of labor) to unskilled workers and therefore reduce the wage gap.

In general, the overall impact of FDI upon wages depends upon the initial equilibrium and underlying parameter changes. Consequently the impact upon unskilled labour can be either positive or negative according to chosen specifications (Taylor and Driffield, 2005). In the same line, the recent empirical evidence on the issue is not clear<sup>28</sup>.

## 7.2 Econometric analysis

The usual practice in this field has been to employ firm or sector level data in order to test whether the share of skilled labor wages in total wages is higher in TNCs, after controlling for the endogeneity in the choice of firms acquired (since TNCs might buy relatively skill intensive firms). As long as Argentine Innovation Survey does not have data on wages, we have used a different approach relying on household survey data.

To do this, we extend the empirical framework proposed in Galiani and Sanguinetti (2003), Acosta and Gasparini (2004) and Galiani and Porto (2006), by making the estimated skill premium to depend on foreign presence in the sector in which individuals are employed.

Specifically, we test, using micro data, whether those sectors where FDI presence deepened during the nineties are also the sectors where, *ceteris paribus*, a higher increase in wage inequality is observed. In this perspective, in order to test whether FDI increases wages we will estimate the following model using household survey data on individual wages:

$$w_{ijt} = \alpha_0 + \lambda sfdi_{jt} + \beta x_{ijt} + \sum_g \delta_{gt} dS_{igt} + c_t + \mu_j + \varepsilon_{ijt} \quad (4)$$

Where

$w_{ijt}$ : is the log of the hourly earnings of the sampled individuals  $i$  in their main occupation in sector  $j$  in period  $t$ .

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<sup>28</sup>. See Bruno *et al* (2004) and Taylor and Driffield (2005).

$sfd_{ijt}$ : this is the causing variable of interest to measure the general impact of FDI on wages. It is measured by the ratio between the sales by foreign firms in a particular sector and the total sales of the sector in period  $t$ .

$x_{ijt}$ : set of human capital individual controls –age, age squared, tenure, tenure squared, gender and marital status.

$dS_{igjt}$ : educational attainment dummies. The schooling groups ( $g=1,2,3$ ) are the unskilled group (individuals with no schooling, complete and incomplete primary education, and incomplete secondary education), the semi-skilled group (those individuals that have finished secondary school (and may have incomplete college education) and the skilled group (those that have finished college).

To examine whether FDI affect wage inequality, we estimate the following model:

$$w_{ijt} = \alpha_0 + \lambda sfd_{jt} + \sum_g \varphi_g dS_{igjt} sfd_{jt} + \beta x_{ijt} + \sum_g \delta_{gt} dS_{igjt} + c_t + \mu_j + \varepsilon_{ijt} \quad (5)$$

This model differs from (4) in that we add interaction terms between the FDI presence variable and the educational attainment dummies ( $dS_{igjt}$ ). The coefficients of these interactions,  $\delta_g$ , can be interpreted as the differential impact of FDI presence on the wage of individuals with different education.

In all our specifications, we include survey (time) effects and sector dummies. These effects control for aggregate shocks (related to policy or business cycle) and sector-specific characteristics as to avoid spurious correlations between FDI presence and wages (Galani and Porto, 2006).

When the aggregation data are used at micro data level, it is likely to bias the estimates, which leads to incorrect standard errors that exaggerate the statistical significance of the included group variables (Moulton, 1986). In order to implement the estimation of equations (4) and (5) and to obtain standard errors that are robust to a group structure in error term, we included group-level, which is a sector-state cell clustering in the estimation.

We report findings from four different econometric models. In model 1, the returns to schooling ( $\delta_g$ ) and sectoral dummies are constant across time; in model 2, the returns to schooling are allowed to vary from survey to survey ( $\delta_{gt}$ ), but the sectoral dummies are not time-varying. This will control for all other things that are affecting wage differentials. In model 3, we further allow for a sectoral linear trend in the model to control for possible trends in the change in wages that might be a confounding factor for the impacts of FDI presence. In model 4, both the returns to schooling and the sectoral dummies vary across surveys.

We turn now to the labor force data. The standard source of individual data on labor earnings and worker characteristics in Argentina is the Permanent Household Survey. This is a typical labor force survey with information on wages, employment status, and individual and family characteristics (age, gender, family size, etc.). The data are usually collected twice a year, in May and October. The micro data used in the section are gathered from the October wave of the household survey for 1992, 1996, 1998 and 2001. Additionally, the data for FDI presence by sector at three digit level are taken from the two abovementioned innovation surveys. The data correspond to the “horizontal” variable used

previously. We estimate equations (4) and (5) by sampling workers in the manufacturing sector only, since this is the only group of workers for which we have FDI data.

### **7.3 Main results**

The main results from model (4) —where we include FDI presence as regressors, without interactions with the skilled dummies— are reported in Table A2.1. Columns (i) to (iv) correspond to Models 1 to 4, respectively. We do not find any effect of FDI presence on wages. This result is robust to a series of alternative specifications and wage controls.

Table A2.2 presents the estimates of interactions with the skilled dummies. We find evidence of a positive and significant effect of foreign presence in the manufacturing sector on the skill premium (at the 10 percent level). The magnitudes of the coefficient range from 0.050 to 0.055. In all the models, we find that foreign presence affected positively and significantly the returns to higher education. These results are robust (and remain practically unchanged) to the inclusion of sector specific linear trends (see columns i and iv). Following a ten percent increase in FDI presence, that elasticity implies a growth in the wages of skilled workers of roughly 1.02 percent<sup>29</sup>.

Thus, our evidence shows that the wage premiums of the skilled workers increase with the level of FDI presence in the industry where they work. During the 90s, in those industries where the FDI presence increased the most, wage inequality also widened relatively more in favor of the most skilled workers.

Our regression results are seemingly robust. Like in Galiani and Porto (2006), they are not artifact of the business cycle or spurious trends since we control for year effects. They are not being confounded by sector characteristic due to the inclusion of dummies per sector and sectoral specific trends. They are not the result of concurrent confounding policy factors, like labor reforms or industrial policies, since individual characteristics and time varying returns to education help control for them. Overall, thus, the results do not seem to be driven by unobservables.

To sum up, these findings confirm part of our intuitions: the higher FDI presence leads to increases in the skilled wage premium, a fact which is consistent with the finding that TNCs employ relatively more skilled workers. Hence, FDI has an impact on wage inequality.

### **8. Concluding remarks**

The economic and social impact of FDI in Argentina during the period under consideration can be summarized as follows:

- 1) Contrary to what is often assumed in Argentina -and generally when analyzing FDI through takeover-, we do not find evidence that total employment decreases (or increases) as a result of the acquisition of a domestic firm by a TNC. The same happens with wages. However, whereas a foreign takeover has no impact on total employment, it has a significant effect on its composition, since the share of skilled labor in total employment increases after the acquisition.

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<sup>29</sup>. Using the elasticities reported in column (iv) of Table A2.2.

2) Labor productivity increases after a domestic firm is acquired by foreign investors. As expected, the growth in productivity takes place gradually since the year in which the firm changed ownership.

3) Exports and exports propensities (i.e. exports/sales ratio) increase after the firm changed ownership. The findings are similar in the case of imports and imports propensities. As expected, the increase in foreign trade levels takes place gradually since the takeover.

4) Takeover by foreign investors has no effect on the expenditures and intensity of R&D in the acquired firms, but it increases the probability of introducing a new (or improved) product and/or process.

5) In the case of employment, productivity, innovation and trade we did not find any evidence of horizontal and backward spillovers, except for the case of positive backward spillovers on the innovation output (meaning that firms that supply to sectors where a takeover has taken place may have been induced to launch new products and processes to the market).

6) We find a positive impact of FDI presence on the skill premium.

Summing up our results, we can state that the new owners of former domestic firms seem to have transferred inputs (such as organizational and production technologies) to the acquired firms that allowed them to launch new products and to increase labor productivity and trade more than in the control group of always domestic-owned firms. However, research and development activities seem to have been unaffected by the takeover.

While the direct effects of FDI through takeover seems to be positive on the variables we have analyzed so far, the results on the indirect effects of the foreign presence in Argentine manufacturing industry are less encouraging. As in many other studies, the results on horizontal spillovers from FDI on the productivity of domestic firms are neither positive nor negative. The same happens with trade and innovation. Backward spillovers only arise in the case of innovation outputs, meaning that domestic firms need to upgrade their technological assets to become TNCs suppliers.

Finally, our estimations show that unemployment, a severe social problem that emerged in Argentina during the 1990s, cannot be attributed, at least directly, to the increased presence of foreign firms in the manufacturing sector. However, there is a relatively small impact of FDI on wage inequality, although it does not seem to be the main cause of the deterioration of income distribution during the last decade (which has been attributed to factors such as trade liberalization, unequal access to education or unemployment –see Gasparini *et al*, 2001, for an analysis).

Summing up, we may say that FDI in Argentina was neither a panacea nor a poison. Its effects on economic restructuring have been mostly positive but almost no spillovers on domestic firms have taken place. In turn, its social impact has been mild, not being the main cause of the severe social problems faced by Argentina in the 90s. Hence, the policy agenda lies mainly on the domestic arena, both helping domestic firms to capture positive spillovers from FDI as well as attacking the main causes of unemployment and inequality. In other words, FDI cannot replace the absence of well designed development policies.

## **References**

Acosta, P. and L. Gasparini (2004), "Capital Accumulation, Trade Liberalization and Rising Wage Inequality: The Case of Argentina" CEDLAS, Centro de Estudios Distributivos, Laborales y Sociales, Universidad Nacional de La Plata, Working Paper 05.

Aitken, B. and A. Harrison (1999). "Do Domestic Firms Benefit from Direct Foreign Investment? Evidence from Venezuela". **American Economic Review**, Vol. 89, pp. 605-618.

Aitken, B., G. Hanson and A. Harrison (1997). "Spillovers foreign investment, and export behavior". **Journal of International Economics**, No. 43, pp. 103-32.

Alvarez, R. (2005). "Explaining Export Success in a Developing Country: Firm Characteristics and Spillover Effects". UCLA Anderson School of Management, Working Paper.

Banga, R. (2005). "Impact of Liberalisation on Wages and Employment in Indian Manufacturing Industries". Indian Council for Research on International Economic Relations, Working Paper No. 153.

Banga, R. (2006). "Foreign Direct Investment Policies in Rich Countries and their Impact on Poverty in Developing Countries". Indian Council for Research in International Economic Relations (ICRIER), Commissioned by Global Development Network for the Project "Impact of rich countries' policies on poverty in developing countries".

Barba Navaretti, G. and A. J. Venables (2004). **Multinational Firms in the World Economy**. Princeton University Press.

Barrios, S., H. Görg and E. Strobl (2001). "Explaining Firms' Export Behaviour: The Role of R&D and Spillovers". University of Nottingham, GEP Research Paper 01/27.

Barry, F., H. Görg, and E. Strobl (2001). "Foreign Direct Investment, Agglomerations and Demonstration Effects: an empirical investigation". Leverhulme Centre for Research on Globalisation and Economic Policy, Research Paper 2001/25.

Bittencourt, G., R. Domingo and N. Reig (2006). "Efectos de derrame de las ET sobre el comercio exterior de la industria manufacturera uruguaya 1990-2000", in M. Laplane (coord.), **El desarrollo industrial del MERCOSUR: ¿qué impacto han tenido las empresas extranjeras?**, Siglo XXI Editora Iberoamericana.

Blalock, G. and P. Gertler (2005). "Foreign direct investment and externalities: The case for public intervention", in T. Moran, E. Graham and M. Blomstrom (eds.), **Does foreign direct investment promote development?**, Washington DC., Institute for International Economics.

Blanchflower, D.G., A.J. Oswald and P. Sanfey (1996), "Wages, profits and rent-sharing", **Quarterly Journal of Economics**, 111, pp. 227-251.

Blonigen, B. and Slaughter, M. (2001). "Foreign-affiliate activity and U.S. skill upgrading". **Review of Economics and Statistics**, Vol. 83, pp. 362-376.

Bruno G., R. Crinó and A. Falzoni (2004). "Foreign Direct investment, Wage Inequality, and skilled Labor Demand in EU Accession Countries". CESPRI Working Paper N° 154.

Chudnovsky, D. and A. López (2001). **La Transnacionalización de la Economía Argentina**. Eudeba, Buenos Aires.

Chudnovsky, D. and A. López (2002). "Integración regional e inversión extranjera directa. El caso del MERCOSUR". Serie REDINT, INTAL, Banco Interamericano de Desarrollo.

Chudnovsky, D., A. López and G. Pupato (2006a), "Innovation and productivity in developing countries: A study of Argentine manufacturing firms' behavior", **Research Policy**, Volumen 35, N° 2, pp. 181-342, March.

Chudnovsky, D., A. López and G. Rossi (2006b), "Derrames de la Inversión Extranjera Directa, políticas públicas y capacidades de absorción de las firmas nacionales del sector manufacturero argentino (1992-2001)", in M. Laplane (coord.), **El desarrollo industrial del MERCOSUR: ¿qué impacto han tenido las empresas extranjeras?**, Siglo XXI Editora Iberoamericana.

De Negri, F. (2003). "Desempenho comercial das empresas estrangeiras no Brasil na década de 90". Tesis de Doctorado, Campinas, Instituto de Economía, Universidad Estadual de Campinas (UNICAMP).

Dias de Araujo, R. (2005). "Esforços tecnológicos das firmas transnacionais e domésticas", in J. A. De Negri and M. Salerno, **Inovações, padrões tecnológicos e desempenho das firmas industriais brasileiras**, Brasilia, IPEA.

Dicken, P. (2003). **Global shift: Reshaping the global economic map in the 21<sup>st</sup> century**. Sage, London.

Dunning, J. (1993). **Multinational Enterprises and the Global Economy**. Reading Addison Wesley.

Erdilek, A. (2005). "R&D activities of foreign and national establishments in Turkish manufacturing", in T. Moran, E. Graham and M. Blomstrom (eds.), **Does foreign direct investment promote development?**, Washington DC., Institute for International Economics.

Feenstra, R. and G. Hanson (1996). "Globalisation, outsourcing and wage inequality". **American Economic Review**, Vol. 86, pp. 240-45.

Feenstra, R. and G. Hanson (1997). "Foreign direct investment and relative wages: Evidence from Mexico's Maquiladoras". **Journal of International Economics**, Vol. 42, pp. 371-93.

FIEL (2002), **Productividad, competitividad y empresas. Los engranajes del crecimiento**, Buenos Aires.

Figini, P. and H. Görg (1998). "Multinational companies and wage inequality in the host country: The case of Ireland". Trinity Economic Paper No:98/16.

Fosfuri, Andrea, Massimo Motta and Thomas Ronde (2001): "Foreign Direct Investment and Spillovers Through Workers' Mobility", **Journal of International Economics**, Vol. 53, pp. 205-222.

Galiani S. and G. Porto (2006). "Trends in Tariff Reforms and Trends in Wage Inequality", Mimeo, January.

Galiani, S. and P. Sanguinetti (2003). "The Impact of Trade Liberalization on Wage Inequality: Evidence from Argentina", **Journal of Development Economics**, N° 72.

Gasparini, L. M. Marchionni y W. Sosa Escudero (2001), **La distribución del ingreso en la Argentina. Perspectivas y efectos sobre el bienestar**, Fundación Arcor, Buenos Aires.

Gatto, F. and G. Yoguel (1993). "Las PyMEs Argentinas en una Etapa de Transición Productiva y Tecnológica," in B. Kosacoff (ed.), **El Desafío de la Competitividad. La Industria Argentina en Transformación**, ECLAC/Alianza, Buenos Aires.

Görg, H. and E. Strobl (2001). "Multinational Companies and Productivity Spillovers: a Meta-Analysis". **Economic Journal**, Vol. 111, No. 475, 2001, pp. 723-739.

Görg, H. and D. Greenaway (2004). "Much ado about nothing? Do domestic firms really benefit from foreign direct investment". **The World Bank Research Observer**, Vol. 19, No.2, pp. 171-197.

Görg, H., E. Strobl and F. Walsh (2002). "Why Do Foreign-Owned Firms Pay More? The Role of On-the-Job Training," IZA Discussion Papers 590, Institute for the Study of Labor (IZA).

Greenaway, D., N. Sousa and K. Wakelin (2004). "Do domestic firms learn to export from multinationals?". **European Journal of Political Economy**, Vol. 20, pp. 1027-44.

Hiratuka, C. and R. Dias de Araujo (2006). "Influencia da presença de firmas transnacionais sobre as exportações das firmas domésticas". NEIT-UNICAMP, mimeo.

INDEC-SECYT (1998). **Encuesta sobre la conducta tecnológica de las empresas industriales argentinas**. Serie Estudios, No. 31, Buenos Aires.

INDEC-SECYT-CEPAL (2003). **Segunda Encuesta Nacional de Innovación y Conducta Tecnológica de las Empresas Argentinas**. Serie Estudios, No. 38, Buenos Aires.

Javorcik, B. S. (2004). "Does Foreign Direct Investment Increase the Productivity of Foreign Firms? In Search of Spillovers through Backward Linkages". **American Economic Review**, Vol. 94, N° 3, pp 605-27.

Jefferson G., B. Huamao, G. Xiaojing and Y. Xiaoyun (2006). "R&D Performance in Chinese Industry". **Economics of Innovation and New Technology**, Volume 15, issue 4-5

Kneller, R. and M. Pisu (2004). "Export oriented FDI in the UK". **Oxford Review of Economic Policy**, Vol. 20, No. 3, pp. 424-439.

Kokko, A., M. Zejan and R. Tansini (2001). "Trade regimes and spillover effects of FDI: Evidence from Uruguay". **Weltwirtschaftliches Archiv**, Vol. 137, pp. 124-49.

Kugler, M. (2000). "The Diffusion of Externalities from Foreign Direct Investment: Theory Ahead of Measurement". University of Southampton - Department of Economics Paper 0023.

Kumar, N. and A. Aggarwal (2000). "Liberalisation, Outward Orientation and In-house R&D Activity of Multinational and Local Firms: A Quantitative Exploration for Indian Manufacturing", in S. Tendulkar, A. Mitra, K. Narayanan and D. Kusum Das (eds.), **India: Industrialisation in a Reforming Economy**, Academic Foundation.

Laplane, M., J. Padovani Gonçalves and R. Dias de Araújo (em prensa). "Efeitos de transbordamento de empresas estrangeiras na indústria brasileira (1997-2000)", in M. Laplane (coord.), **El desarrollo industrial del MERCOSUR: ¿qué impacto han tenido las empresas extranjeras?**, Siglo XXI Editora Iberoamericana.

Lederman, D. and W. Maloney (2003). "R&D and development". World Bank Policy Research Working Paper Series N° 3024, Washington D.C.

Lipsev, R. (2002). "Home and host country effects of FDI". NBER Working Paper 9293.

Mitnik, O. and S. Montoya (1995). "Pobreza y distribución del ingreso: dinámica y características. Gran Buenos Aires, 1974-1994". **Revista Estudios**, N° 74, Julio-septiembre.

Moran, T., E. Graham and M. Blomstrom (eds.) (2005). "Does foreign direct investment promote development?". Institute for International Economics, Washington DC.

Moran, T. (2005). "Rationale for Components of a Scoring System of Developed Country support for International Investment Flows to Developing Countries", Center for Global Development, Washington DC, April.

Moreira, M. M. (1999). "Estrangeiros em uma economia aberta: impactos recentes sobre produtividade, concentração e comércio exterior", in F. Giambiagi and M.M. Moreira (orgs.), **A economia brasileira nos anos 90**, Rio de Janeiro, Banco Nacional de Desarrollo Económico y Social (BNDES).

Moulton, B. (1986). "Random group effects and the precision of regression estimates". **Journal of Econometrics**, Vol. 32, pp. 385-97.

Pinheiro, A. and M. Moreira (2000). "The profile of Brazil manufacturing exporters in the Nineties: What are the main policy issues?". Banco do Desenvolvimento de todos os Brasileños (BNDES), Working Paper No. 80.

Roper, S. and J. Love (2001). "The determinants of export performance: Panel data evidence for Irish manufacturing plants". Northern Ireland Economic Research Centre (NIERC), Working Paper No. 69.

Söderbom, M. and F. Teal (2001), "Firm size and human capital as determinants of productivity and earnings", Oxford University: CSAE Working Paper WPS/2001-09.

Srholec, M. (2005). "Innovation activities of foreign affiliates in the Czech Republic", presented in the **UNCTAD Expert Meeting on the Impact of FDI on Development**, Ginebra, 24-26 January.

Taylor, K. and N. Driffield (2005). "Wage dispersion and role of multinational: Evidence from U.K Panel data", **Labour Economics**, Volume 12, Issue 2, Pages 223-249.

UNCTAD (2005). **World Investment Report 2005: Transnational corporations and the internationalization of R&D**, United Nations, Nueva York.

World Bank (2003). "Crisis and Poverty 2003 A Poverty Assessment". Report N° 26127-AR Argentina in **Poverty Reduction and Economic Management Latin America and the Caribbean Region**, World Bank.

Yoguel, G. (1998), "El Ajuste Empresarial Frente a la Apertura: La Heterogeneidad de las Respuestas de las PyMEs," **Desarrollo Económico**, Vol. 38, Special Edition, Autumn, pp. 177-198.

Yoguel, G. and R. Rabetino (2002). "Algunas Consideraciones Generales sobre la Incorporación de Tecnología en la Industria Manufacturera Argentina", in R. Bisang, G. Lugones and G. Yoguel (eds.), **Apertura e Innovación en la Argentina**, Madrid, Editorial Miño y Dávila.

## Appendix A1

**Table A1.1: The impact of foreign takeovers on total employment**

	Whole Sample				Balanced Sample		Matched Sample	
	i	ii	iii	iv	i	iv	i	iv
Foreign	0.026 (0.064)	0.019 (0.061)	-0.042 (0.054)	-0.036 (0.052)	0.015 (0.080)	-0.046 (0.065)	-0.024 (0.083)	-0.083 (0.066)
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Controls	No	No	Yes	Yes	No	Yes	No	Yes
Trends per Sector	No	Yes	No	Yes	No	Yes	No	Yes

Note: (robust st. error in parenthesis) \*\*\* if the coefficient is statistically different from zero at the one percent significance level. \*\* five percent significance level. \*ten percent significance level.

Number of firms: WS=1795, BS=699, MS=628

Number of Observations: WS=4899, BS=2708, MS=2428

**Table A1.2: The impact of foreign takeovers on total employment in domestic firms**

	Whole Sample			Balanced Sample			Matched Sample		
	i	ii	iii	i	li	iii	i	ii	iii
Horizontal	0.096 (0.071)		0.097 (0.071)	0.114 (0.084)		0.114 (0.084)	0.178 (0.094)		0.179 (0.094)
Backward		-0.040 (0.118)	-0.046 (0.118)		-0.083 (0.138)	-0.085 (0.138)		-0.039 (0.142)	-0.049 (0.141)

Note: Include Firm Fixed Effects, Year Fixed Effects, Firms controls and Trends per Sector

Number of firms: WS=1700, BS=624, MS=571

Number of Observations: WS=4604, BS=2451, MS=2212

**Table A1.3: The impact of foreign takeovers on the share of skilled labor on total employment**

	Whole Sample				Balanced Panel		Matched Sample	
	i	ii	iii	iv	i	iv	i	iv
<b>Skilled/Employment</b>								
Foreign	0.179*** (0.068)	0.174** (0.068)	0.168** (0.068)	0.167** (0.068)	0.219** (0.086)	0.203** (0.087)	0.176** (0.089)	0.173* (0.090)
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Controls	No	No	Yes	Yes	No	Yes	No	Yes
Trends per Sector	No	Yes	No	Yes	No	Yes	No	Yes

Number of firms: WS=1795, BS=699, MS=628

Number of Observations: WS=4899, BS=2708, MS=2428

**Table A1.4: The impact of foreign takeovers on the share of skilled labor on total employment in domestic firms**

	Whole Sample			Balanced Sample			Matched Sample		
	i	ii	iii	i	ii	iii	i	ii	iii
Horizontal	0.004		0.005	-0.025		-0.025	-0.160		-0.161
	(0.115)		(0.116)	(0.138)		(0.138)	(0.151)		(0.151)
Backward		-0.033	-0.033		-0.033	-0.033		0.024	0.033
		(0.182)	(0.182)		(0.221)	(0.221)		(0.226)	(0.226)

Note: Include Firm Fixed Effects, Year Fixed Effects, Firms controls and Trends per Sector  
 Number of firms: WS=1700, BS=624, MS=571  
 Number of Observations: WS=4604, BS=2451, MS=2212

**Table A1.5: The impact of foreign takeovers on labor productivity**

	Whole Sample				Balanced Sample		Matched Sample	
	i	ii	iii	iv	i	iv	i	iv
Foreign	0.165**	0.139**	0.133*	0.112	0.170*	0.110	0.243***	0.177**
	(0.070)	(0.069)	(0.070)	(0.069)	(0.088)	(0.085)	(0.089)	(0.086)
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Controls	No	Yes	No	Yes	No	Yes	No	Yes
Trends per Sector	No	No	Yes	Yes	No	Yes	No	Yes

Number of firms: WS=1795, BS=699, MS=628  
 Number of Observations: WS=4899, BS=2708, MS=2428

**Table A1.6: Productivity & Spillovers**

	Whole Sample			Balanced Sample			Matched Sample		
	i	ii	iii	iii	iv	v	iii	iv	v
Horizontal	-0.059		-0.059	-0.098	-	-	-0.176	-	-
	(0.102)		(0.102)	(0.119)	0.253*	0.261*	(0.122)	0.324**	0.329**
Backward		0.042	0.045	0.321		0.335	0.143		0.152
		(0.203)	(0.203)	(0.205)		(0.204)	(0.175)		(0.174)

Note: Include Firm Fixed Effects, Year Fixed Effects, Firms controls and Trends per Sector  
 Number of firms: WS=1700, BS=624, MS=571  
 Number of Observations: WS=4604, BS=2451, MS=2212

**Table A1.7: The impact of foreign takeovers on firms' exports and imports**

	Whole Sample				Balanced Sample		Matched Sample	
	i	ii	iii	iv	I	iv	i	iv
<b>Exports</b>								
Foreign	1.363** (0.577)	1.293** (0.582)	1.209** (0.549)	1.151** (0.555)	1.985*** (0.691)	1.738*** (0.664)	1.489** (0.674)	1.289** (0.650)
<b>Imports</b>								
Foreign	1.108** (0.529)	1.037* (0.535)	1.022* (0.528)	0.961* (0.533)	0.796 (0.632)	0.640 (0.642)	0.594 (0.656)	0.457 (0.673)
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Controls	No	Yes	No	Yes	No	Yes	No	Yes
Trends per Sector	No	No	Yes	Yes	No	Yes	No	Yes

Number of firms: WS=1795, BS=699, MS=571

Number of Observations: WS=4899, BS=2708, MS=2428

**Table A1.8: The impact of foreign takeovers on firms' export and import intensities**

	Whole Sample				Balanced Sample		Matched Sample	
	i	ii	iii	iv	I	iv	i	iv
<b>Exports/Sales</b>								
Foreign	0.323*** (0.121)	0.301** (0.121)	0.302** (0.119)	0.281** (0.119)	0.476*** (0.149)	0.430*** (0.148)	0.369*** (0.143)	0.325** (0.142)
<b>Imports/Sales</b>								
Foreign	0.323** (0.114)	0.318** (0.115)	0.308** (0.114)	0.304** (0.115)	0.281** (0.141)	0.253** (0.142)	0.248 (0.145)	0.216 (0.148)
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Controls	No	Yes	No	Yes	No	Yes	No	Yes
Trends per Sector	No	No	Yes	Yes	No	Yes	No	Yes

Number of firms: WS=1795, BS=699, MS=628

Number of Observations: WS=4899, BS=2708, MS=2428

**Table A1.9: Exports & Spillovers**

	Whole Sample			Balanced Sample			Matched Sample		
	i	ii	iii	i	ii	lii	i	ii	lii
Horizontal	0.151 (0.743)		0.171 (0.743)	-0.725 (0.874)		-0.722 (0.874)	-0.527 (0.945)		-0.506 (1.977)
Backward		-1.298 (1.485)	-1.307 (1.486)		-0.447 (1.714)	-0.432 (1.714)		-0.998 (1.796)	-0.964 (1.797)

Note: Include Firm Fixed Effects, Year Fixed Effects, Firms controls and Trends per Sector

Number of firms: WS=1700, BS=624, MS=571

Number of Observations: WS=4604, BS=2451, MS=2212

**Table A1.10: Export Intensity & Spillovers**

	Whole Sample			Balanced Sample			Matched Sample		
	i	ii	iii	i	ii	iii	i	ii	iii
Horizontal	-0.049		-0.047	-0.197		-0.197	-0.055		-0.052
	(0.138)		(0.138)	(0.159)		(0.159)	(0.162)		(0.162)
Backward		-0.150	-0.148		-0.022	-0.017		-0.134	-0.130
		(0.302)	(0.302)		(0.343)	(0.343)		(0.356)	(0.356)

Note: Include Firm Fixed Effects, Year Fixed Effects, Firms controls and Trends per Sector

Number of firms: WS=1700, BS=624, MS=571

Number of Observations: WS=4604, BS=2451, MS=2212

**Table A1.11: The impact of foreign takeovers on the innovation output**

	Balanced Sample				Matched Sample	
	i	ii	iii	iv	i	iv
Foreign	0.872	1.778**	1.405*	2.344**	0.8014	2.341*
	(0.649)	(0.823)	(0.838)	(1.071)	(0.731)	(1.306)
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm Controls	No	Yes	No	Yes	No	Yes
Trends per Sector	No	No	Yes	Yes	No	Yes

Number of firms: BS=699, MS=628

Number of Observations: BS=2708, MS=2428

**Table A1.12: Innovation Output & Spillovers**

	Balanced Sample			Matched Sample		
	i	ii	iii	i	ii	iii
Horizontal	0.075		0.191	0.573		0.742
	(1.677)		(1.711)	(1.887)		(1.931)
Backward		4.630*	4.641*		4.365*	4.422*
		(2.693)	(2.694)		(2.705)	(2.713)

Note: Include Firm Fixed Effects, Year Fixed Effects, Firms controls and Trends per Sector

Number of firms: BS=624, MS=571

Number of Observations: BS=2451, MS=2212

**Table A1.13: The impact of foreign takeovers on R&D Expenditures**

	Whole Sample				Balanced Sample		Matched Sample	
	i	ii	iii	iv	i	iv	i	iv
<b>R&amp;D Expenditures</b>								
Foreign	-0.4285 (0.516)	-0.360 (0.508)	-0.560 (0.504)	-0.478 (0.495)	-0.540 (0.654)	-0.599 (0.630)	-0.363 (0.654)	-0.326 (0.618)
<b>R&amp;D Expenditures/Sales</b>								
Foreign	-0.609 (0.506)	-0.511 (0.497)	-0.712 (0.499)	-0.607 (0.490)	-0.725 (0.642)	-0.736 (0.624)	-0.561 (0.642)	-0.505 (0.615)
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Controls	No	Yes	No	Yes	No	Yes	No	Yes
Trends per Sector	No	No	Yes	Yes	No	Yes	No	Yes

Number of firms: WS=1795, BS=699, MS=628

Number of Observations: WS=4899, BS=2708, MS=2428

**Table A1.14: R&D Expenditures & Spillovers**

	Whole Sample			Balanced Sample			Matched Sample		
	i	ii	iii	i	ii	iii	i	ii	iii
<b>R&amp;D Expenditures</b>									
Horizontal	0.630 (0.583)		0.676 (0.582)	0.519 (0.712)		0.544 (0.710)	0.652 (0.826)		0.752 (0.823)
Backward		-2.927** (1.341)	-2.963** (1.342)		-4.102** (1.629)	-4.117** (1.630)		-4.422*** (1.711)	-4.473*** (1.714)
<b>R&amp;D Expenditures/Sales</b>									
Horizontal	0.726 (0.591)		0.774 (0.590)	0.635 (0.719)		0.660 (0.717)	0.821 (0.833)		0.923 (0.831)
Backward		-3.064** (1.357)	-3.105** (1.357)		-4.301*** (1.646)	-4.314*** (1.646)		-4.518*** (1.737)	-4.581*** (1.737)

Note: Include Firm Fixed Effects, Year Fixed Effects, Firms controls and Trends per Sector

Number of firms: WS=1700, BS=624, MS=624

Number of Observations: WS=4604, BS=2451, MS=2212

## **Appendix 2**

**Table A2.1: The impact of FDI on wages**

	i	ii	iii	iv
FDI presence	0.016 (0.035)	0.013 (0.035)	0.034 (0.046)	0.027 (0.046)
R-squared	0.39	0.39	0.40	0.40
Observations	2256	2256	2256	2256
Time dummies	YES	YES	YES	YES
Sectoral dummies	YES	YES	YES	YES
Time-varying returns o school	NO	YES	NO	YES
Sectoral trends	NO	NO	YES	YES

Notes: Standard errors in parentheses (clustered by 3-digit industry)

Other controls: age, age squared, tenure, tenure squared, gender and marital status.

**Table A2.2: The impact of FDI on wage inequality**

	i	ii	iii	iv
FDI presence	0.004 (0.039)	0.003 (0.039)	0.022 (0.048)	0.014 (0.05)
FDI presence* Skilled	0.09* (0.05)	0.094* (0.052)	0.099* (0.053)	0.102* (0.055)
FDI presence* Semi-skilled	0.022 (0.038)	0.029 (0.038)	0.024 (0.039)	0.031 (0.039)
R-squared	0.39	0.39	0.40	0.40
Observations	2256	2256	2256	2256
Time dummies	YES	YES	YES	YES
Sectoral dummies	YES	YES	YES	YES
Time-varying returns o school	NO	YES	NO	YES
Sectoral trends	NO	NO	YES	YES

Idem previous note