Tango with the Dragon:
Employment Effects of Trade Integration with China
The Case of Argentina [*]

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Abstract

This paper estimates the effects of trade integration between China and Mercosur on employment. The case of Argentina, in particular, is investigated. Highly disaggregated data at the industry level is used for the first time to estimate labor demand elasticities in order to estimate the effects of trade with China on the employment rate. According to this, trade with China did not have a significant effect on industrial employment, even in a period of swift trade liberalization like the nineties.

Key words: China, Trade Integration, Import Competition, Trade and Labor Market Interactions, Employment, Argentina.

JEL Classification: F14, F15, F16, F17, L60.

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1. Introduction

Imports from the Popular Republic of China (PRC) increased exponentially in Argentina in the last decade, in parallel to a shredder deterioration of the Argentine social indicators. Industrial employment, in particular, suffered a stiff reduction over this period. Labor-intensive industries, highly contested by imported products not only from the PRC, in particular, experienced the most pronounced fall in employment and production. Poverty increased and income distribution worsened up significantly, raising concerns on the potentially disruptive effects of highly competitive Chinese imports on jobs of the Argentine poor.

As the PRC is rapidly becoming one of the most important destinations of Argentina's exports and a privileged source for its imports, talks about a possible free trade agreement (FTA) between China and the Common Market of the South (MERCOSUR) have resounded louder. For instance, in a recent book, Castro, Monat and Tramutola (2005) examine the feasibility of that FTA and its potential economic effects for the MERCOSUR countries, with particular attention to Argentina.

What is the relationship between trade with the PRC and the steep decrease in manufacturing employment experienced by Argentina in the last decade? In this paper we try to empirically answer this question for the first time in the literature. To do so, we draw on to a dynamic econometric model that uses panel data for 28 sub-sectors of the Argentine manufacturing industry for 1989-2003. As the empirical literature on the effects of trade with low-wage countries on labor demand has been so far focused on developed countries, this paper makes an additional contribution at exploring for the first time the impact of a low-wage economy such as China on industrial employment in a developing country, Argentina.

2. Trade and Employment in Argentina

Perhaps the phenomenon that has aroused more controversy amongst the public and expert opinion in Argentina on regards of an increased trade relationship with China is its potential impacts on employment, in particular in the industrial sector. This controversy, in turn, is part of a much broader debate on the effects of international trade on employment.

As a contribution to this ongoing debate, in this section we provide, firstly, a brief examination of the available statistical information as well as a review of the literature on the effects of trade on employment in Argentina. Secondly, we present the results of an econometric analysis aimed at measuring the incidence of trade liberalization, and trade with China in particular, on industrial employment.

2.1. A brief review of the literature for the Argentine case

The empirical evidence on the impacts of trade on employment in Argentina during the 1990s is far from being conclusive. In an early study, Márquez y Pages (1998), examined the relationship between trade and unemployment in Latin America since the 1960s and could not find any substantial effects. A comprehensive study of the IADB (2004), using household survey data for 10 Latin-American countries including Argentina, could not find a statistically significant association between the two phenomena. In a similar work, that also contemplates the effects of exchange rate appreciations, Haltiwanger and others (2004), did not find robust results on regards the relationship between trade liberalization and changes in net employment in the region.

Particularly for the case of Argentina, Sanguinetti y Galiani (2003) only found a small correlation between trade opening and the rate of employment in the nineties. Pessino and Andres (2005), in turn, attribute the negative effects of trade liberalization on net employment more to the distortions and rigidities of the Argentine labor market institutions than to trade itself. Sánchez and Buttler (2002), points out to other explicative factors beyond trade liberalization, such as labor costs, access to credit finance, financial and real shocks, informality, amongst the most important. Other studies, such as Altamir and Beccaria (1999), Beckerman (2000), and Damill, Frenkel and Mauricio (2002), in contrast, point out to the exchange rate appreciation combined with the accelerated process of trade liberalization as the main culprit of the net loss of employment suffered by the Argentine industry over the period.

In sum, the evidence presented in the studies on the trade and employment for the case of Argentina is far from being conclusive and the matter seems to be an open debate yet.

2.2. Some stylized facts

Beyond the controversies of the debate, it is possible to describe some stylized facts of the evolution of industrial employment and the process of trade liberalization in Argentina for 1991-2003. This description will provide the background for our

posterior econometric analysis of the impact of international trade, and trade with China in particular, on Argentina's industrial employment.

2.2.1. Trade liberalization and industrial employment

Figure 1 illustrates one of the key features of the period: a continuous reduction in the employment levels in the Argentine industrial sector. Between 1991 and 2002, industrial employment fell by almost 40%. Losses in industrial employment were only partially compensated by a rise on employment in the services sector. The net effect on overall employment was negative; that reflected in two-digits unemployment rates over most of the period. Only from 2003 on, employment in the industrial sector has experienced a nuance recovery.

All manufacturing sectors tended to reduce its labor force but natural resources-intensive sub-sectors such as foodstuff and beverages did so in a minor proportion. In parallel to these steep job losses, the aggregate productivity of the industrial sector, increased on average of 6.8% for 1991-1999. Productivity increased the most in capital-intensive sub-sectors such as iron and steel, electric machinery and transport equipment and the least in natural resources and labor-intensive sub-sectors.[1]

In parallel to these changes in the level and composition of industrial employment, Argentina experienced a deep and accelerated process of trade liberalization[2]. The trade-opening (exports plus imports) coefficient as percent of the GDP went from 6% in 1993 to 23.4% in 2001, falling to 21.7% in 2003 as a result of the peso depreciation in 2002. Imports as percent of the GDP increased from 9% in 1990 to 11% in 2001, and fall to 8% in 2003. Exports as percent of the GDP augmented from 7% to 12% over the period[3].

Nonetheless, as we observe in Figure 2, trade penetration varied significantly across manufacturing sub-sectors in the nineties. For capital-intensive sectors such as electric and non-electric machinery, transport equipment, professional and scientific instruments, and other manufactures, import penetration was far superior to the manufacturing industry media. Some labor-intensive sectors such as shoes also experienced a significant increase in imports' competition. However it is not possible to determine from these simple figures whether the sub-sectors with the highest import penetration coefficients were the ones suffering the highest reductions in employment.

In order to measure with more rigor whether the increase in import competition was associated with a destruction or creation of employment in the manufacturing sector, in Table 1 we calculated a simple correlation coefficient between the rate of employment and the import penetration coefficient across sub-sectors and time.

[1] For a comprehensive analysis of the changes in the Argentine industrial employment see Altimir and Beccaria (1999), and Beccaria, Altimir and Gonzalez Rosada (2003). Dussel Peters (2004) offers a comparative analysis with respect to Mexico and Brazil.
[2] See Berlinski (2004) for a detailed account of the Argentine trade liberalization process in the 1990s.
[3] These indicators were calculated with data retrieved from ECLAC (2004)

The results seem to suggest that the increase in imports penetration was on average not associated with a significant process of employment destruction in the manufacturing sector of Argentina in the 1990s[4]. These results must be taken with caution, however, as they are only simple correlations that do not control by other factors' influence –as macroeconomic phenomena and reforms to the labor market institutions – on industrial employment. In addition, they do not allow to explore the dynamic effects of trade liberalization, that is, how trade integration impinges on the rate of employment over time; in the understanding that labor market adjustments are not automatic but only take place gradually[5]. In order to conduct such an analysis is required an econometric methodology that allows us to investigate the effects of trade liberalization controlling for these additional variables. In the next section, we present the results of such an empirical analysis with particular attention to the case of trade with the PRC.

2.2.2. Trade with the PRC and changes in manufacturing employment

Significant trade with China is a relatively new experience for Argentina. Figure 3 shows the import penetration coefficient distinguishing by sourcing country. As can be observed there, imports from the PRC have only become a relevant share of the total import coefficient of Argentina since the mid-1990s. This already small share of Chinese imports declined severely as a result of Argentina's economic collapse in 2001 and only slightly recovered in 2003.

Beyond these aggregate trends, it is important to know what happened at the sectoral level. Table 2 shows information on PRC import penetration and exports to the PRC for 28 sub-sectors of the Argentine manufacturing industries between 1990 and 2003. Chinese imports penetration is concentrated in a few sectors, mostly capital-intensive, such as electric and non-electric machinery, scientific and professional instruments and other manufactures. These sub-sectors, as we showed in the previous section, are the ones facing more competition from imports from all sources not only from China. Some labor intensive sectors as shoes and clothing also faced relatively higher import competition from China. In a similar fashion, Argentine exports penetration to the PRC was also concentrated in a few sectors such as food, leather products and iron and steel.

2.3. Trade with the PRC and industrial employment

The stylized facts presented above and the existing literature for the Argentine case seem to suggest that increased integration to international trade flows had only a minor influence on the changes occurred to employment in the Argentine manufacturing industry in the last decade. Other factors such as changes in sectoral productivity, real exchange rate fluctuations, business cycles and labor market institutions seem to have a more important bearing on the sheer decline in manufacturing employment exhibited by Argentina over the period.

[4] Sanguinetti and Galiani (2003) reach similar results.

[5] For instance, the presence of annual collective wage-setting mechanisms introduces a certain lag in the transmission of trade shocks –and other shocks- to wages. Laws and norms that regulate the firing and hiring of workers also retard the impact of these shocks on the employment rate.

In this section, we present the results of a dynamic econometric analysis that uses panel data for 28 industrial sub-sectors from ECLACs' PADI database to measure the impact of trade liberalization in general, and trade with the PRC in particular, on the sectoral and aggregate employment of the Argentine manufacturing industry for 1989-2003.

Our econometric methodology was originally developed by Greenaway, Hine and Wright (1998) for the United Kingdom and has been adapted here to fit the peculiarities of the Argentine employment and production data. This methodology permits to quantify the changes in industrial employment resulting from a more efficient utilization of labor as result of an intensified import competition. It also allows capturing the dynamic effects of gradual adjustment over time of the rate of industrial employment to changes in the import and exporting penetration coefficients.

2.3.1. The model

As we detailed in the next section, our econometric approach is based on a dynamic model of labor demand that permits to quantify job losses deriving from a more efficient use of labor.

Following Greenway et. al. (1998), we assume a Cobb-Douglas production function for a representative firm *i* in time *t*:

$$q_{it} = A^{\gamma} k_{it}^{\alpha} l_{it}^{\beta} \qquad (1)$$

where *q* is gross real production, *k* is capital stock and *l* units of labor utilized, and where α and β are the share of each factor used in production. Firms demand labor and capital until the marginal benefit of labor is equal to the cost of labor. (*w*) and the marginal benefit of capital is equal to the interest rate (*c*). Solving this system of equations for the firm's production to eliminate capital from the equation yields the following expression:

$$q_{it} = A^{\gamma}\left(\frac{\alpha L_{it}}{\beta} \cdot \frac{w_i}{c}\right)^{\alpha} {l_{it}}^{\beta} \qquad (2)$$

Using logarithms and rearranging equation (2), we obtain the derived labor demand for the firm and thus the industry:

$$\ln l_{it} = \phi_0 + \phi_1 \ln\left(w_i \big/ c\right) + \phi_3 \ln q_{it} \qquad (3)$$

where $\phi_0 = -(\gamma \ln A + \alpha \ln \alpha - \alpha \ln \beta)/(\alpha + \beta)$; and, $\phi_1 = -\alpha/(\alpha + \beta)$; and $\phi_2 = 1/(\alpha + \beta)$

Assuming the technological efficiency of the production process increases over time and the rate of technological change is correlated with the changes in trade flows, we assume that the parameter *A* in the production function changes in the following way:

$$A_{it} = e^{\delta_0 T_I} M_{it}^{\delta_1} X_{it}^{\delta_2}, \delta_0, \delta_1, \delta_2 > 0 \qquad (4)$$

where t is a time trend, M is the import penetration coefficient y X is the export penetration coefficient. This allows us to rewrite equation (3) as:

$$\ln l_{it} = \phi_0^* - \mu_0 T - \mu_1 \ln M_{it} - \mu_2 \ln X_{it} + \phi_1 \ln\left(w_i / C\right) + \phi_2 \ln q_{it} \qquad (5)$$

where $\phi_0^* = -(\alpha \ln \alpha - \alpha \ln \beta)/(\alpha + \beta)$; $\eta_0 = \eta\delta_0$; $\eta_1 = \eta\delta_1$; $\eta_2 = \eta\delta_2$; y $\eta = \gamma/(\alpha + \beta)$

2.3.2. Data

The PADI Database comprises production, employment and wages data for 28 ISIC Rev.2 3-digit industrial sectors. Since the series stops in 1998, updating became the only solution in order to come up with a longer dataset. This was done with more recent data not available in electronic format, from two Argentine official statistical and research agencies *Instituto Nacional de Estadisticas y Censos* (INDEC) and *Centro de Estudios de la Produccion (CEP).* Specifically, an hourly wage index, a production index and an employment index were used to update the data for all sectors. Trade data came from COMTRADE (2004).

One problem common to all studies using the ISIC classification lies in the arrangement of industries within each chapter or subheading. In this case, some industries particularly vulnerable to Chinese imports, such as toys, bicycles, etc, are included in catch-all categories, presenting additional problems to isolate the potential effects of higher imports on employment on each of them. The other problem is the lack of public and reliable firm-level surveys for Argentina. This allows us only to work with industry aggregates, as opposed to other[6] studies that are able to setup up firm-level panels.

2.3.3. Econometric Strategy

The selection of our econometric strategy was dictated by the statistical information available, in this case, the PADI database of ECLAC that contains data on employment, production, wages and productivity at the industry level (three digits of the ISIC classification, as mentioned above) for 1970-1998, updated until 2003 with data from INDEC and CEP.

This statistical information allowed us to set up a dynamic panel data methodology. Following Fajnzylber and Maloney (2001) and Greenway et.al (1998) we commenced from the following specification,

$$l_{it} = \mu_0 T - \sum_j \mu_{1j} \ln M_{i,t-j} - \sum_j \mu_{2j} \ln X_{i,t-j} + \sum_j \phi_{0j} \ln l_{i,t-j} + \sum_j \phi_{ij} \ln w_{i,t-j} + \sum_j \phi_{2j} \ln Q_{i,t-j} + \theta_t + \theta_i + \varepsilon_{it} \qquad (5)$$

[6] Such as Sánchez and Buttler (2003)

where l is employment, w wages, q is gross sectoral production, θ_t and θ_i are fixed effects for year and industry respectively and ε_{it} is an error term. The index i and t denote industry and time. All the variables are expressed as logarithms, thus the η coefficients are the relevant elasticities.

In order to correct for potential heteroesquedacity and serial correlation problems, we used first differences of each variable, eliminating the time error term μ_i in the following way,

$$\Delta l_{it} = \eta_l \Delta l_{i(t-1)} + \sum_{j=0}^{n} \eta_{w(t-j)} \Delta w_{i(t-j)} + \sum_{j=0}^{n} \eta_{q(t-j)} \Delta q_{i(t-j)} + + \mu_t + \varepsilon_{it} \quad (2)$$

where Δ is a time-difference operator. This differentiation gives necessarily an error term transformed in a MA(n) structure that is correlated with the lagged and differenced dependent variable. This problem was solved including additional lagged variables as instruments in order to enhance the efficiency of the estimates, in what is called a Generalized Methods of Moments (GMM)[7]. Estimations were carried out using three different specifications: GMM in levels, GMM in differences and GMM system (that combines levels and differences). Our preferred specification is the last one, thus results always refer to it.

Finally, following Bernard, Jensen and Schott (2003), an indicator of transportation costs was introduced as an instrument to control for potential correlation problems between the trade variables –specifically, imports from different origins and exports to different destinations-. Here, transport costs are proxied by the distance in miles to each partner. This, in turn, is weighted by the period's average trade weight.

2.3.4. The results

The econometric analysis presented here examines, firstly, the relationship between international trade –measured by changes in the total import and export penetration coefficients[8]- and changes in industrial employment controlling for other variables. Secondly, the effects of trade with the PRC are examined.

2.3.4.1. Total trade

Table 3, equation (1), shows that, consistent with the results of studies for other countries[9], an increase in production has a positive effect on labor demand whereas a rise in wages has a negative impact but that operates with some lag. That is, raising production levels induces an expansion in the demand for labor and increasing the cost or price of labor – the wage or salary- induces a fall in it.

[7] See Arellano and Bond (1991) for a detailed description of the GMM technique.

[8] The import penetration coefficient was calculated for each industry as the share of total imports on total production minus exports. For exports, the coefficient was calculated as the share of total exports on total sectoral production. All the variables we converted to 1985 US dollars.

[9] Hamermesh (2004) provides an excellent summary of the main results of the existing econometric studies on trade and changes in the derived labor demand.

Results suggest that import penetration had a negative and lagged effect on labor demand, as only the second lag is statistically significant. This seems to imply that firms reduced gradually their demand for labor in response to a higher import competition. On the other hand, exports penetration does not show the expected signs and remained not significant throughout this experiment.

Inclusion of control variables such as the business cycle and multilateral real exchange rate (MRER) in equations (2) and (3) respectively, altered neither the sign nor the dimension of the relevant coefficients[10]. Only the MRER was significant, suggesting that the business cycle could be correlated with other independent variables such as production. The Sargan and autocorrelation tests yielded better results when including the control variables.

2.3.4.2. Trade with the PRC

As the factor proportion theory emphasizes, one should expect that imported goods coming from the PRC will have a different effect on industrial employment than imports coming from, let say, the United States. If the pattern of trade is determined by countries' factor endowments, trade with the PRC should induce a relocation of output and employment away from the low-skilled and labor-intensive industries and towards medium/high skilled and natural resources intensive industrial activities where Argentine has a relative comparative advantage. This effect will be mediated by the flexibility of labor markets and an ample variety of macro and microeconomic factors, thus it is difficult to anticipate what will be its net effect on employment.

More importantly, is the fact that not all the goods imported from the PRC compete with locally produced products. For instance, imported inputs and raw materials such as parts and components are complements for domestic production. Low price imports from the PRC of these goods will reduce local firms' production costs for final goods, increasing their productivity and inducing in turn a reduction in labor demand. However, in parallel, increased exports to the PRC will permit to expand production, inducing the creation of new jobs that could potentially compensate the job losses resulting from increased productivity levels. In sum, to determine what was the effect of Chinese imports in the Argentine manufacturing employment remains mostly an empirical matter.

Table 4 reports the results for trade with the RPC between 1990 and 2003 of our econometric analysis. It can be observed, firstly, in equation (1) that production and first lagged wages coefficients signs are consistent with the ones obtained in table 16 for total trade, and statistically significant as measured by its P-value.

Whereas imports from Brazil had a contemporaneous and negative but not statistically significant effect, imports from China seem to have a very small negative and

[10] The business cycle was calculated using annual real GDP time series and applying the commonly utilized Hodrick-Prescott filter. The multilateral real exchange rate is a trade weighted-inflation adjusted measure.

significant effect that operated also with some lag over time.[11]. However, the significance of these coefficients tends to weaken when control variables are included.

As import penetration varies significantly across sectors, we introduced a time variant variable that, following Kletzer (2001), differentiates between high, medium and low import penetration. The results do not permit to obtain firm conclusions as the coefficients were quite low and similar across import penetration levels and none of them were significant[12].

With respect to exports by destination, exports to Brazil appear to have a positive but lagged effect on the changes in manufacturing employment. However, this effect disappears when control variables are included, suggesting that it is also not particularly significant. Exports to the PRC and the US did not have any effect on manufacturing employment, as the coefficient is also not statistically significant in any case.

Bernard et. al. (2003) find for the US that capital-intensive firms are less prone to be negatively affected by low-wages imports competition in the form of reduced production and employment. To test this result for Argentina, we included in the regressions a variable that measures capital intensity (*Capital*). This is only a proxy variable as it was constructed using gross capital investment and not capital stock data that was unavailable at the industry level. Our results do not support the hypothesis that firms with a higher capital intensity suffer fewer losses in employment. The coefficient did not the expected sign and was not statistically significant.

As Argentina underwent a process of structural reforms as well as major macroeconomic imbalances over the period, we test for structural breaks in the data introducing time-dummies. The results were disappointing, as we could not find any significant effects. Corresponding coefficients were low and not statistically significant[13]. Only two years, 1997 and 2003, reported positive coefficients. A close examination of the employment trends for those years reveals that those years were the only ones when employment increased over the period.

One important caveat worth mentioning is the absence of reliable and consistent time-series of labor reform indicators for countries like Argentina. This in fact, could affect our results since labor market rigidities do affect employment outcomes and adjustment to sudden changes in relative prices. The use of other proxies to try to isolate these effects was considered but turned down due to its lack of specificity. Thus, the inclusion of labor market rigidities indicators to this sort of exercises should be kept in the agenda for further research.

[11] These results are similar to the results obtained by Greenaway et.al (1998) for the United Kingdom and Freeman and Revenga (1999) for the United States: imports sourced in developed countries seem to have a larger (negative) impact on manufacturing employment than imports from low-wage countries in this case the PRC. Bernard et. al. (2003), however, find the opposite effect in their study for the United States manufacturing industry.

[12] Results are not displayed here but can be provided upon request.

[13] The authors can provide upon request the results of these regressions that are not shown here.

3. Conclusions

Imports from the PRC increased exponentially in the 1990s for Argentina. Some labor and capital-intensive manufacturing sub-sectors, in particular, faced soaring Chinese import competition. This paper considers the role of trade with the PRC in the Argentine manufacturing employment outcomes over the period.

We find that total import penetration had a small negative and lagged effect on industrial employment in Argentina over the nineties. This seems to suggest that manufacturing firms reduced only gradually their demand for labor in response to a higher import competition. Regarding imports by country of origin, goods imported from the PRC seem to have only a very small negative effect that operated also with some lag over time. Nonetheless, these negative effects of import competition weakened when the role of the business cycles and the real exchange rate fluctuations was taken into account in the estimations. In consistency with previous studies, this seem to suggest that trade would only had a minor role in explaining the outcomes of industrial employment vis-à-vis other economic phenomena in Argentina in the 1990s. Similar results were obtained for exports penetration by destination, with only exports to Brazil exhibiting a positive but lagged effect on manufacturing employment. However, this effect also fades away when control variables were included, suggesting that it is not particularly important.

This paper only begins to examine the role of increased trade with a low-wage country, the PRC, on manufacturing industry employment in a developing country such as Argentina. To the extent the literature has largely ignored the potential implications of trading with the PRC and other low-wage countries for non-developed economies, additional theoretical and empirical work is required, opening a very interesting new avenue for further research.

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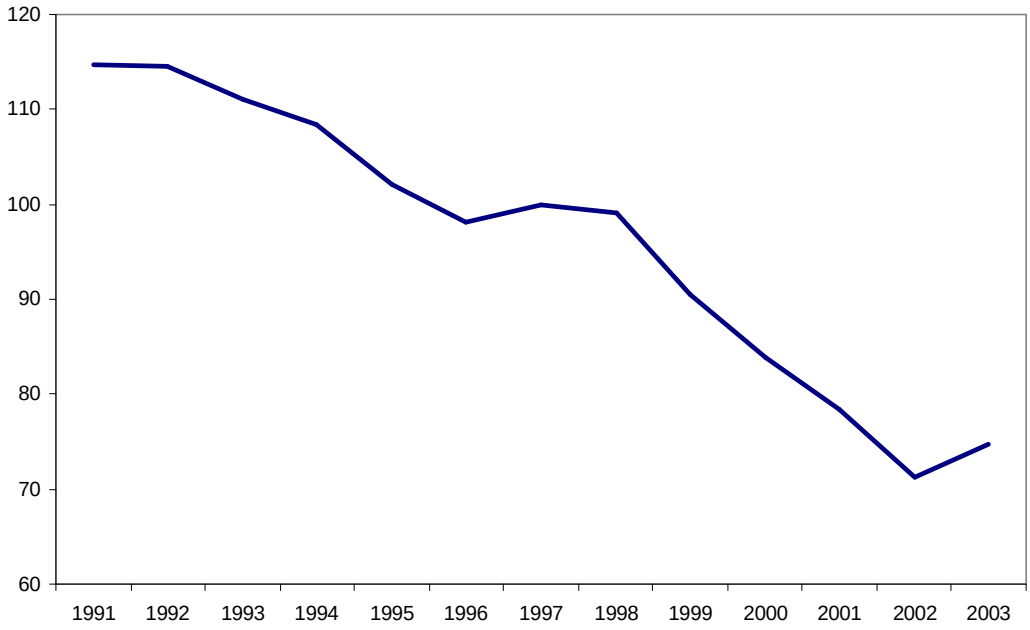
Tables and Figures

Figure 1: Industrial Employment, 1991-2003 (Index 1997=100)



Sources: Own calculations based on ECLAC-PADI (2003) and UN COMTRADE (2004)

Table 1: Import penetration coefficient in the manufacturing industry

Sector	Import Penetration Coefficient		Unemployment
	80-89	90-99	91-03
Foods	1.0	4.6	-2.0
Beverages	0.8	2.3	-4.2
Tobacco	0.2	0.1	-6.2
Textiles	1.8	9.5	-4.9
Apparel	1.6	9.3	-6.5
Leather Products	0.4	5.0	-6.6
Footwear	1.0	**17.3**	-2.4
Wooden Products	8.9	**17.9**	-2.1
Furniture	0.2	7.8	-1.2
Paper	9.4	**22.1**	-4.3
Printing and Publications	1.6	5.9	-0.8
Chemical Products	25.4	**46.7**	-3.8
Other Chemicals	5.7	15.5	-1.6
Oil Refineries	1.3	2.4	-10.3
Oil and Coal Products	6.7	8.1	-6.4
Rubber Products	4.7	21.9	-2.5
Plastic Products	3.1	21.8	-0.7
Ceramic Products	1.7	4.4	-5.6
Glass	4.8	17.5	-6.5
Other Non Metalic Minerals	3.3	3.1	-4.0
Iron and Steel	12.8	10.9	-5.5
Non Ferrous Metals	17.9	**28.7**	-4.2
Metal Products	4.0	13.5	-2.2
Non Electric Machinery	36.1	**167.7**	-4.0
Electric Machinery	28.7	**69.5**	-4.7
Transport Equipment	10.2	**29.2**	-1.2
Scientific and Professional Equipment	77.9	**251.3**	-5.9
Other Manufactures	31.5	**231.5**	-1.4
Total Manufactures	***8.7***	***20.6***	**-3.2**

Sources: Own calculations based on ECLAC-PADI (2003) and UN COMTRADE (2004)

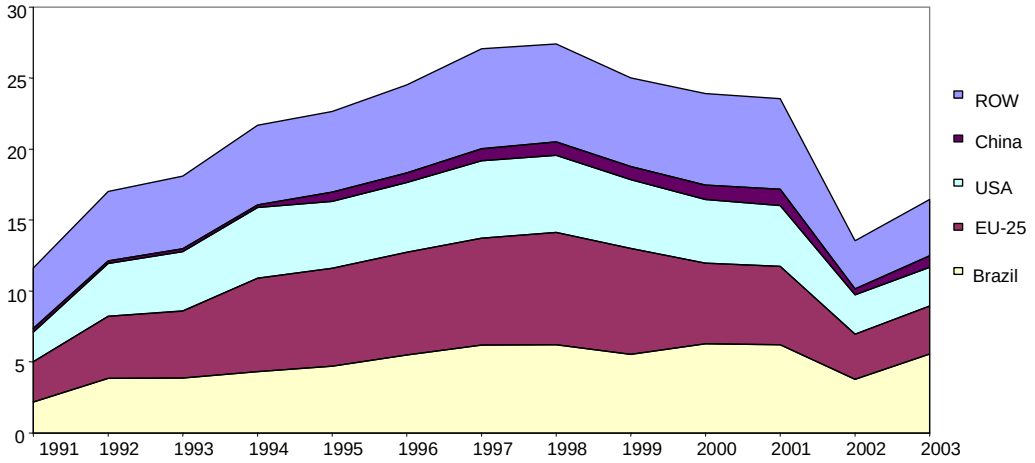
Table 2: Import penetration and employment rate.

Correlation coefficients

Period	Import Penetration Coefficient	Export Penetration Coefficient
90-99	-0.04	0.21

Sources: Own calculations based on ECLAC-PADI (2003) and UN COMTRADE (2004)

Figure 2: Import Penetration Coefficient by sourcing country



Sources: Own calculations based on PADI (2003) and UN COMTRADE (2004)
Notes: ROW is "rest of the world".

Table 3: Chinese Imports Penetration Coefficient and Export Penetration Coefficient in China

Sector	Chinese Imports Penetration Coefficient			Argentine Export Penetration Coefficient in China		
	80-89	90-99	00-03	80-89	90-99	00-03
Foods	0.0	0.0	0.0	0.3	**1.2**	**2.0**
Beverages	0.0	0.0	0.0	0.0	0.0	0.0
Tobacco	0.0	0.0	0.0	0.0	0.0	0.0
Textiles	0.1	0.5	0.4	0.5	0.4	1.0
Apparel	0.0	**1.8**	1.6	0.0	0.0	0.1
Leather Products	0.0	**1.8**	**2.5**	0.5	**2.3**	**8.5**
Footwear	0.0	**3.1**	**1.4**	0.0	0.0	0.0
Wooden Products	0.0	0.2	0.2	0.0	0.0	0.2
Furniture	0.0	0.2	0.5	0.0	0.0	0.0
Paper	0.0	0.0	0.0	0.0	0.0	0.5
Printing and Publications	0.0	0.1	0.2	0.0	0.0	0.0
Chemical Products	0.1	0.7	1.4	0.3	0.1	0.3
Other Chemicals	0.0	0.2	0.2	0.0	0.0	0.1
Oil Refineries	0.0	0.0	0.0	0.0	0.0	0.0
Oil and Coal Products	0.0	0.0	0.0	0.0	0.0	0.0
Rubber Products	0.0	0.3	0.7	0.0	0.0	0.0
Plastic Products	0.0	1.7	1.5	0.0	0.0	0.0
Ceramic Products	0.1	1.0	1.1	0.0	0.0	0.0
Glass	0.0	0.4	0.8	0.0	0.0	0.0
Other Non Metalic Minerals	0.0	0.0	0.1	0.0	0.0	0.0
Iron and Steel	0.0	0.1	0.2	2.3	**1.3**	**1.9**
Non Ferrous Metals	0.0	0.1	0.4	0.8	0.2	0.7
Metal Products	0.0	0.7	1.1	0.0	0.0	0.0
Non Electric Machinery	0.0	**3.1**	**9.6**	0.1	0.1	0.3
Electric Machinery	0.0	**2.8**	**4.8**	0.0	0.0	0.0
Transport Equipment	0.0	0.2	0.4	0.0	0.0	0.0
Scientific and Professional Equipment	0.3	**8.3**	**18.4**	0.0	0.0	1.1
Other Manufactures	0.8	**40.5**	**67.4**	0.0	0.0	0.0
Total Manufactures	*0.0*	*0.5*	*0.8*	*0.4*	*0.4*	*1.5*

Sources: Own calculations based on ECLAC-PADI (2003) and UN COMTRADE (2004)
Notes: in bold penetration coefficients larger than 1%.

Table 4: Changes in trade penetration and employment rate in the manufacturing industry

Dependent Var.: Ln (Employmentt) - Ln (Employmentt-1)

Independent Variables		(1) Coeff.	(1) Prob.	(2) Coeff.	(2) Prob.	(3) Coeff.	(3) Prob.
Constant		-0,033	0,000	-0,504	0,211	-0,530	0,182
Ln (Employment)	LD	0,119	0,272	0,051	0,676	0,025	0,838
Ln (Employment)	L2D	-0,021	0,820	-0,040	0,670	0,018	0,856
Ln (Wages)	D1	-0,229	0,006	-0,233	0,006	-0,259	0,002
Ln (Wages)	LD	-0,070	0,123	-0,083	0,078	-0,098	0,038
Ln (Wages)	L2D	-0,004	0,896	-0,002	0,949	-0,006	0,852
Ln (Production)	D1	0,179	0,000	0,183	0,000	0,183	0,000
Ln (Production)	L1	0,100	0,014	0,109	0,009	0,119	0,004
Ln (Production)	L2	0,012	0,665	0,017	0,556	0,015	0,603
Ln (Exports to WLD)	D1	-0,022	0,098	-0,015	0,306	-0,012	0,419
Ln (Exports to WLD)	LD	-0,019	0,110	-0,016	0,204	-0,015	0,219
Ln (Exports to WLD)	L2D	-0,023	0,070	-0,018	0,163	-0,019	0,136
Ln (Imports from WLD)	D1	0,089	0,000	0,079	0,001	0,083	0,000
Ln (Imports from WLD)	LD	-0,029	0,071	-0,032	0,053	-0,028	0,085
Ln (Imports from WLD)	L2D	-0,014	0,355	-0,003	0,881	-0,003	0,853
Ln (GDP)				0,096	0,242	0,101	0,210
Ln(MRER)						0,007	0,069
Sargan Test (Pr>Chi^2)		0,232		0,243		0,244	
AC 1 (Pr>z)		0,000		0,000		0,000	
AC 2 (Pr>z)		0,924		0,843		0,803	

Notes: All the variables are in logs and differences; *GDP* is the business cycle; and *MRER* is multilateral real exchange rate.
Sources: Own calculations based on ECLAC-PADI (2003) and UN COMTRADE (2004)

Table 5: Effects of trade with the PRC on manufacturing employment

Dependent Var.: Ln (Employmentt) - Ln (Employmentt-1)

		(1)		(2)		(3)		(4)	
Independent Var.		Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
Constant		-0,0394	0,000	-0,0626	0,204	-1,0158	0,037	-1,0142	0,037
Ln (Employment)	LD	0,0006	0,995	-0,0423	0,743	-0,1594	0,271	-0,1591	0,272
Ln (Employment)	L2D	0,0060	0,950	0,1339	0,187	0,1609	0,125	0,1620	0,123
Ln (Wages)	D1	0,0465	0,332	-0,0036	0,967	-0,0999	0,285	-0,1025	0,276
Ln (Wages)	LD	-0,1458	0,002	-0,0852	0,132	-0,1443	0,018	-0,1446	0,018
Ln (Wages)	L2D	.0097683	0,716	0,0026	0,943	-0,0131	0,724	-0,0147	0,696
Ln (Production)	D1	0,2682	0,000	0,2474	0,000	0,2481	0,000	0,2479	0,000
Ln (Production)	LD	0,1362	0,000	0,1184	0,019	0,1247	0,013	0,1237	0,013
Ln (Production)	L2D	0,0011	0,965	-0,1145	0,020	-0,1253	0,010	-0,1255	0,010
Ln (Exports to USA)	D1			-0,0035	0,593	-0,0003	0,969	-0,0002	0,973
Ln (Exports to USA)	LD			-0,0071	0,318	-0,0026	0,727	-0,0025	0,728
Ln (Exports to USA)	L2D			0,0026	0,656	0,0040	0,511	0,0041	0,499
Ln (Exports to Brazil)	D1			-0,0038	0,678	0,0053	0,597	0,0052	0,604
Ln (Exports to Brazil)	LD			-0,0157	0,061	-0,0124	0,138	-0,0123	0,140
Ln (Exports to Brazil)	L2D			0,0169	0,073	0,0125	0,188	0,0124	0,190
Ln (Exports to China)	D1			0,0055	0,142	0,0048	0,198	0,0047	0,202
Ln (Exports to China)	LD			-0,0005	0,901	-0,0009	0,817	-0,0011	0,789
Ln (Exports to China)	L2D			0,0000	0,996	-0,0014	0,701	-0,0015	0,675
Ln (Imports from USA)	D1			0,0192	0,155	0,0200	0,132	0,0202	0,129
Ln (Imports from USA)	LD			-0,0082	0,619	-0,0022	0,894	-0,0018	0,914
Ln (Imports from USA)	L2D			-0,0086	0,575	0,0011	0,944	0,0019	0,907
Ln (Imports from Brazil)	D1			-0,0096	0,494	-0,0110	0,483	-0,0112	0,478
Ln (Imports from Brazil)	LD			0,0003	0,977	-0,0023	0,854	-0,0027	0,827
Ln (Imports from Brazil)	L2D			-0,0017	0,879	0,0042	0,706	0,0036	0,752
Ln (Imports from China)	D1			0,0112	0,142	0,0119	0,116	0,0119	0,114
Ln (Imports from China)	LD			0,0041	0,692	0,0033	0,754	0,0031	0,762
Ln (Imports from China)	L2D			-0,0140	0,072	-0,0137	0,095	-0,0138	0,093
Ln (GDP)						0,2014	0,043	0,2027	0,042
Ln(MRER)						0,0068	0,181	0,0066	0,200
Ln (Capital)								0,0019	0,808
Sargan Test (Pr>Chi2)		0,010		0,381		0,432		0,397	
AC 1 (Pr>z)		0,000		0,001		0,005		0,005	
AC 2 (Pr>z)		0,834		0,250		0,190		0,185	

Notes: see table 4 and explanation in the text.
Sources: Own calculations based on ECLAC-PADI (2003) and UN COMTRADE (2004)